MATERNAL AND CHILD HEALTH

MANUAL

Commonwealth of Dominica

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Commonwealth of Dominica

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Ante Natal Care
ART	Anti Retroviral Therapy
ARV	Antiretroviral
BMI	Body Mass Index
CCT	Controlled Cord Traction
CD4	Cluster of Differentiantion (4)
CHN	Community Health Nurse
DMO	District Medical Officer
DNA	Deoxyribonucleic Acid
DPT	Diptheria Pertussis Tetanus
ECV	External Cephalic Version
EFV	Efavirenz
ELISA	Enzyme linked Immunosorbent Assay
EPI	Expanded Program on Immunization
FNP	Family Nurse Practitioner
GERD	Gastro-esophageal Reflux Disease
HAART	Highly Active AntiRetroviral Therapy
HEP B	Hepatitis B
HVS	High Vaginal Swab
IPV	Inactivated Polio Vaccine
IUCD	Intra Uterine Contraceptive Device
IUGR	Intra Uterine Growth Restriction
LVD	Lamivudine
MCH	Maternal and Child Health
MTCT	Mother to Child Transmission
NASBA	Nuclear Acid Sequence- Based Amplification
NVP	Niverapine
PCP	Pneumocystis Carinii Pneumonia
PCR	Polymerise Chain Reaction
PLHIV	Person Living With HIV
PMH	Princess Margaret Hospital
PMTCT	Prevention of Mother to Child Transmission
RNA	Ribonucleic Acid
RPR	Rapid Plasma Reagin
STI	Sexually Transmitted Infection
TC	Testing and Counselling
TMP-SMX	Cotrimoxazole
TORCH	Toxoplasmosis, Other (HepB, Syphillis, HIV, Parvo Virus B19),Rubella, Cytomegalovirus, Herpes Simplex Virus
UNICEF	United Nations Children Fund
VCT	Voluntary Counselling and Testing
WBC	White Blood Cell
WHO	World Health Organisation
ZDV	Zidovudine

INTRODUCTION

BRIEF OVERVIEW OF DOMINICA

Socio-economic, Political and Demographic Overview

The Commonwealth of Dominica, the largest and most northerly of the Windward Islands in the Lesser Antilles is situated between the French Departments of Martinique and Guadeloupe. The island covers an area of 790 square kilometres (km^2), and is popularly known as the Nature Isle of the Caribbean.

Dominica's population is approximately 70,000. The 15-44 age group constitutes 22% of the general population while the 0-4 years age group constitutes 29% (Health information unit).

The average number of deliveries annually is 979: Ninety – nine percent (99%) of these are conducted by qualified trained personnel.

TABLE 1
FREQUENCY OF VISITS

Place of delivery	2005	2006	2007	2008	2009	2010	2011	2012	2013
Home	12	12	6	2	-	5	2	3	-
Health Centre	42	66	29	36	36	20	16	26	20
Hospital	969	980	893	923	923	917	928	937	927
Total	1023	1058	928	961	959	942	946	966	947

Source: Health Information Unit

Maternal and Child Health Care has been an integral part of the nation's Primary Health Care program providing/focusing on the preventive, promotive, curative and rehabilitative aspects of health care.

The introduction of a Maternal and Child Health Manual in 1992 was intended to ensure that all those who provided maternal and child care services followed a given set of guidelines and procedures.

This revised manual seeks to provide guidelines for the efficient administration of health care to mothers and children, in keeping with current trends, and in addressing emerging needs of this target group. It is hoped that the health care providers using this manual will be able to achieve the three-fold objectives, namely:

1. To facilitate decision making for healthcare providers at all levels most specifically at primary health care level.
2. To facilitate the early identification/detection of high risk cases, abnormal or pathological conditions, their accurate diagnosis and institute appropriate course of action.
3. To standardize norms and procedures, calculate needed resources, improve on the quality of care, and strengthen efficiency of the health system.

To facilitate referencing, the manual has been divided into two sections.

Section **I:** MATERNAL CARE including preconception, prenatal, intranatal, postnatal and family planning.

Section II: CHILD CARE including the neonate, infant, preschooler, school child and adolescent.

OVERVIEW OF MATERNAL & CHILD CARE PROGRAM

Maternal and child care services have been given high priority on Dominica's health agenda from its initiation in 1866 (148 years to be exact). The programme was called Maternal and Child Welfare and initiated because Dr. Imray became disturbed about the high mortality rate among children.

In order to address the problems identified the Medical Officer of Health instituted day care centres "the baby Crèche" to serve a small proportion of the population. Great improvement in these conditions was recorded. Thus, the concept of midwives and child care was developed.

Traditionally the Chasse Femme took care of the maternity work in the villages but standards were so low that the Medical Officer of Health inserted a clause in the medical act of 1874 requiring these women to satisfy district medical officers of their competence.

By 1927 more improvement in the service was noticeable and infant mortality rate (per 1000 live birth) dropped from 149.1 to 119.83 but there were still some inadequacies in sanitation conditions. Hence a Maternal and Child Hygiene and School Health Service was established in 1946 as part of a broad public health programme in preventive medicine for rural areas.

Antenatal clinic and child hygiene clinics were closely associated. The ante natal clinics were responsible to care for all pregnant women of the labouring class irrespective of whether they were proposed to be delivered at the hospital or their homes. Individual and group teaching formed an important function of the clinics. In spite of continued improvement to the services, infant mortality rates continued to rise so the pursuit for measures to stabilize the situation continued.

During the 1960s health of the small children improved considerably, by 1963 a government integrated health programme was established and more emphasis was placed on health, education, nutrition and immunization against common communicable childhood diseases

So effective were these measures that the infant mortality rate dropped from 119.6 in the 1950s through 67.3 in the 1960s to 27.0 in 1977. The great improvement in infant mortality rate was accompanied by a drop in the mortality rate of children aged 1-4 years, from 36.8 in 1950 to 20.3 in 1963.

Over the years the programme has been undergoing several changes and adjustments to fulfil various intentions necessary to combat existing prerequisites of the times. The programme continues to be an integral part of the nation's primary health care with health care administered at:

- Fifty–two (52) health centers throughout the island, as well as at the Portsmouth, Marigot and Princess Margaret Hospitals and,
- Private Practitioners; but all deliveries are carried out in the public health system.

There are many factors which underscore an urgent need for the continuous review and strengthening of existing services. This urgency is dictated by a number of related factors:

(i) In other Caribbean countries, mothers and children comprise a large proportion (65%) of the total population, 20% of whom are women in the reproductive age, 15 to 44 years. In Dominica these age group account for 51% of the total population, 22% for reproductive age group and 29% for the 0-4yr old age group. (Health Information unit).

(ii) Population trends indicate that within the next decade the number of women in the fertile age groups will substantially increase. This increase calls for more services in family life education, responsible parenthood planning and maternal health services.

(iii) Recent fertility patterns in Dominica show the tendency for first pregnancies to occur earlier in the child bearing period (See Table 2).

(iv) The occasional maternal mortality is still a cause of concern.

(v) Additional consideration needs to be given to problems related to maternal morbidity.

TABLE 2
NUMBER OF TEEN PREGNANCIES BY YEAR

2005	2006	2007	2008	2009	2010	2011	2012	2013
142	158	133	143	170	145	133	137	129

Source: HIU

The prevalence of perinatal and infant mortality is a clear indication to emphasize the care of the mother during the ante, intra and post natal period. Care of the newborn is also critical.

GOAL OF THE MATERNAL AND CHILD HEALTH PROGRAM

The goal of the Maternal and Child Health Program in Dominica is to improve the health status of women, children and their families. It also ensures that every expectant and nursing mother maintains good health, has a safe delivery, bears healthy children and is provided with guidance in responsible parenthood planning.

STRATEGIES

In order to achieve these goals the following strategies are necessary.

a. Collaborate with other health related sectors to achieve the target

b. Maintain coverage of all MCH services to ensure that all women of reproductive age and children below the age of 18 receive quality health care.

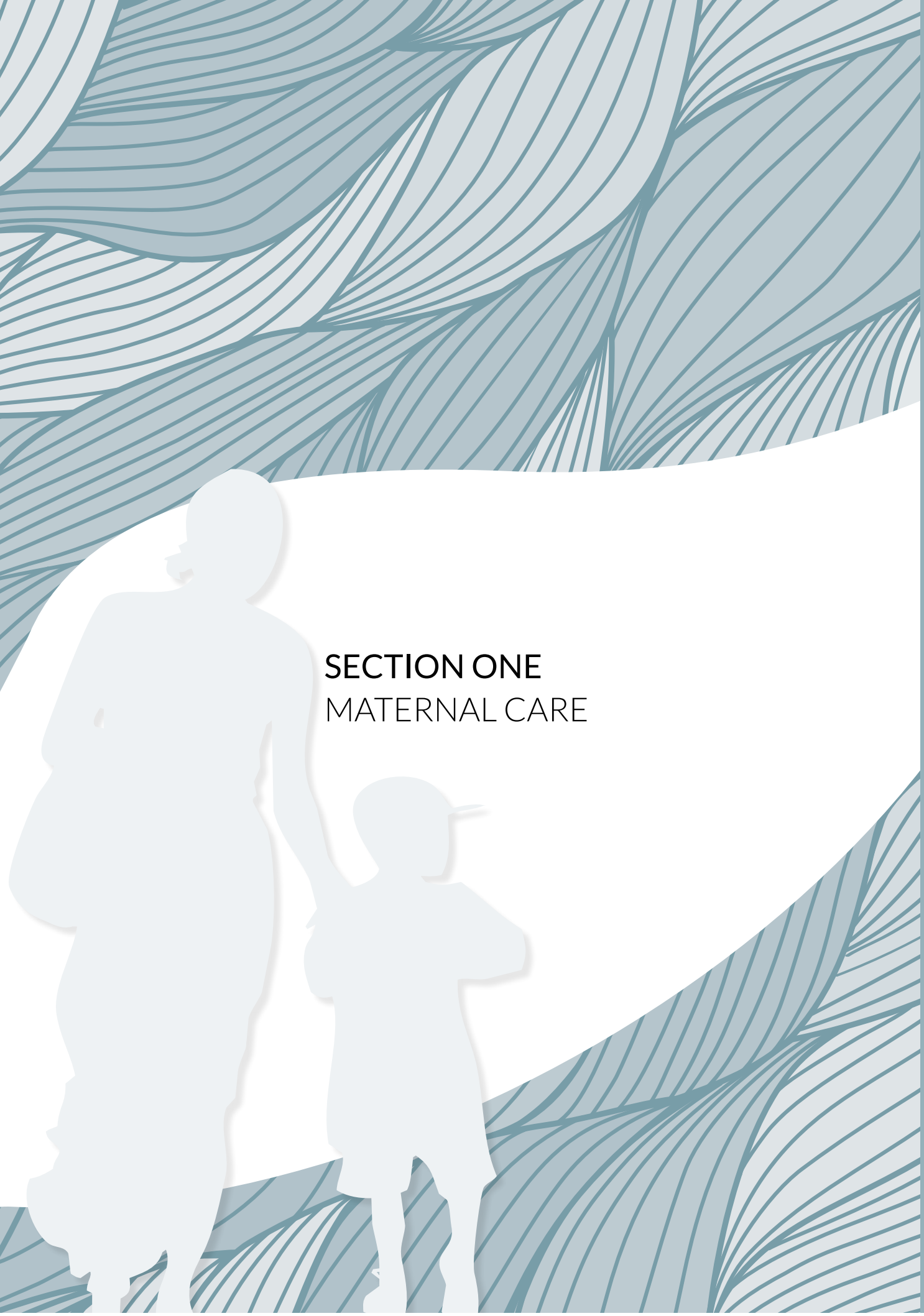
c. Continuous improvement of MCH services.

d. Continued education on new trends in MCH targeting all categories of health professionals in that field of practice.

METHODOLOGY

1. Use of the health Information System and the Primary Health Care Directives as the basis for planning and programming at district and national levels.

2. Monitoring and Evaluation of health conditions at district and national levels to determine achievement of goals.



SECTION ONE
MATERNAL CARE

SECTION I
MATERNAL CARE

The aim of maternal and child care services is to ensure that every expectant and nursing mother maintains good health, learns the art of child care, has a safe delivery and bears healthy children.

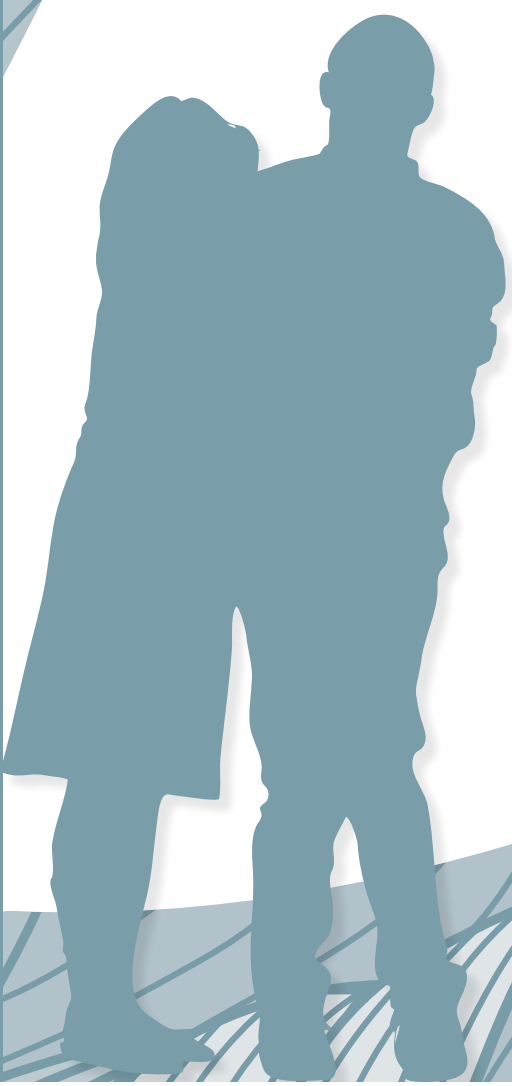
Maternal health care should consist of the care of pregnant women, intra and postnatal care, the care of the newborn infant, the supervision of breastfeeding and guidance in child care.

THE OBJECTIVES OF MATERNAL HEALTH SERVICES

- Provide optimal care to the pregnant women by trained health personnel
- Facilitate safe delivery of her child/children
- Deliver optimal post-natal care
- Initiate and maintain adequate lactation
- Provide information on care of the newborn, guidance in parenthood and family planning.
- Screening/detection/management of any gynecological(co-morbid) problem

COMPONENTS OF MATERNAL CARE

- Preconception Care
- Prenatal Care
- Intrapartum Care
- Postpartum Care
- The management of the pregnant woman with HIV and Syphilis and other STIs
- Family Planning



CHAPTER 1
PRECONCEPTION CARE

Preconception care is recognized as a critical component of health care of women at child-bearing age.

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PRECONCEPTION CARE

Preconception care is recognized as a critical component of health care of women at child-bearing age. It is defined as a set of interventions aimed at identifying and modifying the risk factors whenever possible. The goal of preconception counseling is to provide the couple with all the information required to make informed decisions with regard to their reproductive future.

Most pregnancies (over 50%) are unplanned and opportunities for preconception care are often missed. In the instances of planned pregnancies women of child bearing age should be counseled and informed prior to getting pregnant on an important list of issues that increases maternal-perinatal risk and which may be reduced and/or recognized at this stage. Before getting pregnant, women should be advised to talk to a health care provider about specific problems they are experiencing now or have had in the past. The opportunities for counseling in Dominica's setting are varied and may include: schools, medical clinics, other specialized clinics and through special programs that may be organized periodically.

1.1.
GENETIC COUNSELING

Genetic Counseling and other risk factors should be a critical component of preconception counseling. Areas to be discussed include:

- Recurrent abortions, foetal death, child death.
- Children with genetic disorders such as:

  Chromosomal: Down Syndrome (trisomy 21), Edward Syndrome (trisomy 18), etc.

  Structural changes: defects of the neural tube, ambiguous genitalia, heart disease, etc.
- Congenital Errors of Metabolism: Phenylketonuria, etc.
- Sickle Cell Disease
- Hematological: anemias, coagulation disorders.
- Neurological disorders: Muscular dystrophy, etc.

1.2
OTHER RISK FACTORS

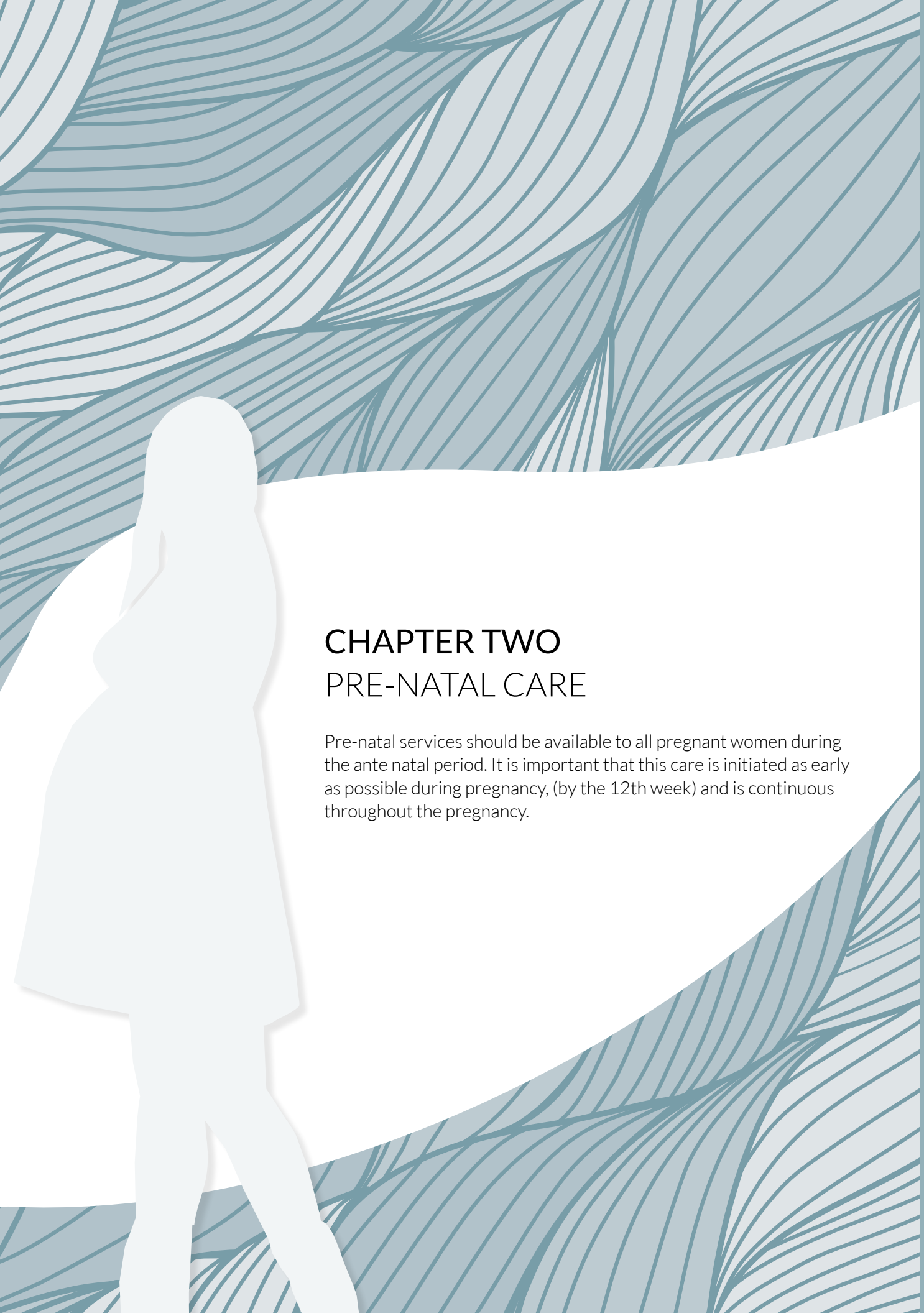
- **Maternal age:**
  - low and high maternal age as a risk factor for various complications such as preterm low birth weight infants and Down Syndrome
- **Occupational hazards in pregnancy:**
  - working long hours, standing, exposure to chemicals
- **Factors associated with lifestyle:**
  - nutrition, exercise, smoking, drinking alcohol, illicit drug use,
- **Personal history:**
  - parity, chronic non communicable diseases (diabetes, hypertension, epilepsy, heart diseases etc), use of prescription medication, exposure to radiation, communicable diseases (HIV, syphilis, toxoplasmosis, hepatitis B etc)

1.3
PRE CONCEPTION COUNSELING IN HIV+ WOMEN

In the case of women planning to get pregnant, pre-conception counseling should include:

- Information on an adequate nutrition,
- Replacing efavirenz when there are reasonable alternatives available and the viral load has become undetectable.
- Counseling and support must be provided to prevent the transmission to the sexual partner with a negative HIV status.
- For couples with serological mismatch in which the male partner has HIV, sperm washing or insemination from a donor.
- Insemination from a negative HIV donor eliminates any risk of transmission during conception, but it also eliminates the opportunity of an HIV+ man achieving genetic fatherhood.
- Unprotected intercourse should be discouraged in the case of discordant couples with an HIV positive female; these couples should be instructed about the self-insemination technique on the fertile days of the woman's cycle.
- When both members of the couple are HIV (+), re-infection with different strains is also a concern; consequently, unprotected intercourse should be discouraged to prevent this risk.

! Women of child bearing age should be advised to get vaccinated against rubella and to seek prenatal care as soon as they suspect they may be pregnant.



CHAPTER TWO
PRE-NATAL CARE

Pre-natal services should be available to all pregnant women during the ante natal period. It is important that this care is initiated as early as possible during pregnancy, (by the 12th week) and is continuous throughout the pregnancy.

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Pre-natal clinics are held at the health centres located in each village. Routine pre natal clinics are conducted by the resident nurse midwife who is supervised by the Community Health Nurse. All pre-natal women are referred to the District Medical Officer for physical examination and risk assessment.

High risk cases are referred to the Obstetricians at the High Risk Clinic at the Princess Margaret Hospital or Private obstetricians' office by12 weeks gestation with an obstetric ultrasound.

Emergencies may be referred to the Obstetric Ward (Stronach) if the pregnancy is at 20 weeks gestation or greater or the Gynaecology ward (Dawbiney) if pregnancy is less than 20 weeks gestation, at any time.

2.1
NORMAL PREGNANCY

2.1.1
SCHEDULE OF VISITS

The first visit should be as early as possible after the first (1st) missed period or by the 12th week of gestation. Strategies should be put in place so that all women with uncomplicated pregnancies can receive the minimum seven (7) visits and a total of ten (10) visits for nulliparous women (See Table 1). The optimum for an uncomplicated pregnancy is a total of twelve (12) visits. For the high risk pregnant woman, the number of visits will be on a case by case basis as recommended by the health care providers.

ALL pregnant women should have an ultrasound as early as 8-12 WEEKS to identify the following:

- Confirm dates
- Viability of foetus
- Multiple pregnancies
- Cervical length
- Other abnormalities

TABLE 1
FREQUENCY OF VISITS BY GESTATIONAL AGE

Week of pregnancy	Frequency of visits
10-24	Once monthly
25-35	Every two weeks
36-40	Weekly until delivery

2.1.2
FIRST VISIT

Average Time – 1 hour

The first prenatal clinic visit is usually the longest because all information pertaining to the woman and her obstetric history is recorded. This includes the relevant demographic data, medical history, past obstetric history, the history of the present pregnancy and a complete physical examination (Table: 3)

TABLE 3
STANDARDS AND PROCEDURES OF CLINIC VISITS

Demographic Data	▪ Name/alias ▪ Age ▪ Date of Birth ▪ Address ▪ Telephone number ▪ Next of kin (contact name, telephone number) ▪ Marital status ▪ Religion
History	▪ **Socio-economic** – occupation, housing, support system, assess risky lifestyle – smoking, alcohol or non-prescription/illegal drug use, violence in the home ▪ **Medical** – Diabetes, Hypertension, DVT, Asthma, Sickle Cell Anemia, Heart Disease, Infertility, Kidney Disease, Tuberculosis, Sexually Transmitted Infections etc., ▪ **Surgical** – Gynecological /Obstetrical conditions – cone biopsy, myomectomy, caesarean section, D&C (or surgery of reproductive tract) ▪ Blood Transfusion ▪ **Family History**: Asthma, Mental Illness, Diabetes, Hypertension, Tuberculosis, Epilepsy, Cancer, Multiple Pregnancies, Abnormalities at Birth and Handicaps.
Past Obstetric History	▪ Number, course and termination of earlier pregnancies. ▪ Live births and stillbirths ▪ Outcome of last pregnancy ▪ History of macrosomy or low birth weight ▪ History of twin pregnancies ▪ History of Pre-eclampsia and Eclampsia ▪ Diabetes ▪ Intrapartum complications

Past Gynecological history	▪ Menstrual History
	  ▪ Menarche, Menorrhagia, Polymenorrhea, Dysmenorrhea
	  ▪ Date of last menstrual period
	  ▪ Average duration of menstrual period
	▪ Dyspareunia, Postcoital bleed, Inter-menstrual bleed
	▪ Date of last PAP Smear

Present Pregnancy	▪ Presence of vaginal discharge (quantity, color, odor) ▪ Bleeding: vaginal or other Fetal movements. ▪ Severe discomfort

Table continues ›

TABLE 3
STANDARDS AND PROCEDURES OF CLINIC VISITS

Physical Assessment	▪ Weight, height, blood pressure, pulse, respiration, temperature ▪ Measure BMI and test urine for proteinuria ▪ Examination of head, neck, mouth, teeth and gums, lymph nodes ▪ Examination of chest, heart and lungs ▪ Breast examination: signs of pregnancy, abnormalities e.g. lump, inverted nipples. ▪ Examination of Abdomen: General appearance, height of fundus (see Appendix O), lie, presentation, fetal heart rate, fetal movements. Examination of the Skin: lesions, muscle tone ▪ Vaginal Examination: external genitalia, Bartholdin's glands, presence of discharge, state of cervix. ▪ Examination with vaginal speculum at doctor's/midwife's discretion. ▪ Pelvic Assessment: determine adequacy of pelvis for normal delivery. ▪ Examination of back-sacral oedema ▪ Examination of extremities: varicosity, oedema, (check femoral pulse). ▪ Examination of anus – hemorrhoids
Laboratory Investigation	▪ CBC blood group, RH factor ▪ Sickling ▪ RPR, HIV, HBsAg, ▪ Stool for parasites ▪ Urinalysis/Mid Stream Urine (patients with WBC in excess of 6 WBC per HPF should have urine culture) ▪ Haemoglobinopathies, anaemia, red cell allo antibodies, Rubella susceptibility and Syphilis (ideally before 10 weeks) ▪ Asymptomatic bacteriuria ▪ Serum screening at 15 weeks 0 days to 20 weeks 0 days (triple /quadruple screen). (where needed)
Ultrasonograph	▪ Ultrasound: Dating, viability and localization ▪ Down syndrome screening using: Nuchal translucency at 11 weeks 0 days to 13 weeks 6 days,
Other	▪ Identify women who may need additional care and plan management for the pregnancy ▪ Assess mood to identify possible depression or other mental conditions ▪ Identify women who have had genital mutilation ▪ Inform women younger than 25 years about the high prevalence of Chlamydia infection within their age group ▪ Screen for Gestational Diabetes in ALL patients ▪ Start iron and folic acid ▪ Advise clients against taking any non-prescribed medication during pregnancy. All medications given to or prescribed for the patients should be entered in the patients' records.

2.1.3
EDUCATION AND COUNSELLING

Pregnant women need correct health and lifestyle information to have a healthy pregnancy and a healthy baby, as staying healthy is part of their responsibility. Topics to incorporate in the education and counseling sessions include but are not limited to the following:

- Diet and lifestyle
- Pregnancy care services available
- Maternity benefits
- Breast care and breast feeding
- Exercise and sleep
- Advise on avoiding unnecessary drugs and alcohol
- Personal hygiene
- Dental care
- Suitable clothing
- Family planning
- Iron and folic acid supplements
- Minor disorders in pregnancy

2.1.4
REFERRALS

Routine referrals are necessary:

1. To the **dentist in the second trimester** for a thorough dental examination and prophylaxis. Recent research has indicated that periodontal or gum disease can contribute to women delivering preterm and low birth weight babies. These births can contribute to neonatal mortality hence it is essential that women receive oral health care during pregnancy.
2. To **District Medical Officer with laboratory results** – for physical examination and risk assessment
3. All other appropriate referrals as necessary: See Appendix B and C.

2.1.5.
SUBSEQUENT VISITS

TABLE 4
ROUTINE INFORMATION

Care & Assessment at Each Visit	Education at Each Visit
■ Weight	■ Discuss the importance of iron, vitamins plus folic acid
■ Measure blood pressure	■ Review diet and nutrition
■ Physical examination ■ Symphysiofundol height ■ Abdominal examination/Leopold's Maneuvers ■ Fetal heart sounds	■ Re-enforce importance of: ■ Proper hygiene, ■ Breast care and breast feeding ■ Management of expressed breast milk
■ Test urine for Proteinuria, Glucose and Ketones	■ Arrangement for delivery
■ Calculation of gestational age	
■ Review, discuss and record the results of all screening tests undertaken	
■ Reassess planned pattern of care for the pregnancy and identify women who needs additional care	

In addition to the routine care offered at each visit the following table lists other specific care and health information for dissemination at each subsequent visit. **Average Time – 20 minutes**

TABLE 5
SUBSEQUENT VISITS – TESTS/EXAMINATIONS

Visit/Weeks	Health Information	Specific Care (in addition to routine care)
2nd/16 Weeks N.B. Prophylactic iron and vitamin supplements should be started at the beginning of the second trimester at 16 weeks of gestation if required.	Routine Information (see 3.1.5, Table 4) Diet and nutrition Compliance with medications Importance of antenatal care	1. Record, Review and discuss the results of all screening tests undertaken at first visit 2. Reassess planned pattern of care 3. Investigate HB< 10
3rd/18-20 weeks N.B If patient was not referred to the District Medical Officer previously, refer patient at this time.	Routine Information (see 3.1.5, Table 4)	1. Ensure that all laboratory results are available and entered on patient's records. 2. Administer 1st dose of diphtheria tetanus toxoid.(If needed) 3. Offer ultrasound screening for structural abnormalities
4th/24 weeks	Routine Information (see 3.1.5, Table 4) Practical Preparation for receiving baby at home	1. Screen for gestational Diabetes (O'Sullivan's Test) NO FASTING NECESSARY.
5th/28 weeks	Routine Information (see 3.1.5, Table 4) Teach Breast Self Examination Discuss physiology of labour (Intra Uterine Growth Restriction (IUGR), Pre-eclampsia and mal-presentation)	1. Second Screening test for anaemic patients (offer iron supplementation if required) 2. Anti-D to rhesus negative women once IDCT is negative
6th/32 weeks NB: If there is mal-presentation and it persists at 34 week visit refer to High Risk Clinic	Routine Information (see 3.1.5, Table 4)	1. Review and discuss results of screening test conducting at 28 week visit 2. Repeat HB, HIV and RPR 3. Refer to DMO if abnormalities detected 4. Repeat tests after treatment 5. Ultrasound – Fetal growth, well being and presentation 6. Refer to obstetrician for pelvic assessment especially primigravida

Table continues ›

TABLE 5

SUBSEQUENT VISITS – TESTS/EXAMINATIONS

Visit/Weeks	Health Information	Specific Care (in addition to routine care)
7th/34 weeks NB: If mal-presentation persists refer to High Risk Clinic	Routine Information (see 3.1.5, Table 4) Preparation for labour and birth Recognizing active labour Birth plan Pain management	Administer second dose of anti-D to rhesus negative women Perform HVS for group B streptococcus Review results of test performed at 28 weeks Exclude pre-clampsia, Intra Uterine growth Restriction (IUGR), oligohydramnios
8th/36 weeks	Routine Information (see 3.1.5, Table 4) Discuss post partum contraception Management of breast feeding during the first three days Care of the newborn Vitamin K prohylaxis, Postnatal self care Post natal depression Post partum contraception Refer to the UNICEF Baby Friendly Initiative (**www.babyfriendly.org.uk**)	▪ Repeat RPR in women previously treated , if positive refer to DMO ▪ Repeat ultrasound if placenta extended over the internal cervical at previous scan ▪ Check position of baby ▪ Breech presentation – refer to HRC /Maternity Unit
9th/38 Weeks	Routine Information (see 3.1.5, Table 4) Discuss options for management of prolonged pregnancy Advise patient to report to district nurse/midwife if less than 10 fetal movements a day Reinforcement of signs plus symptoms of labour	
10th/40 weeks If foetus is satisfactory, keep patient until 41 week	Options for management of prolonged pregnancy	1. Assess foetal movement chart (FMC)(kick chart) 2. Sweep cervix 3. Cardiotocograph (CTG) Assessment
11th/41 weeks	Options for management of prolonged pregnancy	1. Membrane sweep 2. Offer induction of labour
*NB: PATIENTS SHOULD NOT BE ALLOWED TO REMAIN PREGNANT AFTER 42 WEEKS OF GESTATION		

2.1.6
IMMUNIZATION

Immunization coverage to the pregnant mother after the first trimester and by 36 week gestation should be provided for the prevention of tetanus neonatorum. The mother should be questioned as to whether she has had diphtheria tetanus in the past

First dose at sixteen to twenty-three weeks

Second dose at twenty-eight to thirty weeks

Booster dose at 24 – 36 weeks if indicated

2.1.7
HOMEVISITS

Home visits should be conducted during pregnancy:

- At least once for all pregnant women
- NO LATER THAN 2 DAYS PAST APPOINTMENT DATE
- Any woman who fails to keep her appointment
- High risk pregnancies, as necessary, and as stipulated in the Primary Health Care Manual

! **The practice of minimal risk obstetrics (not taking any chance) must be the guiding philosophy for persons practicing in the community**

2.2
HIGH RISK PREGNANCIES

Pregnant women with an increased expectation of complications are defined as being at risk. These high risk cases should be identified from the history, records and examination and provided with adequate medical services as early as possible, to prevent complications to both foetus and mother.

Initial risk therefore should be determined at booking. These cases must be referred to the Obstetrician to ensure follow-up.

Provide guidance and counseling involving family members.

General Criteria

- Height of less than 151 cm
- Obesity – BMI – >30Kg/m2
- Gravidity
  - First pregnancy occurring at 18 years of age or younger
  - First pregnancy occurring 30 years of age or older (or younger after surgery for infertility)
  - Multigravida (five or more previous pregnancies)

Refer to appendices B to L for details of High Risk Pregnancies and Section on Referrals (Section 2.1.4)

2.2.1
ANAEMIA IN PREGNANCY

All anaemic pregnant women should be given iron and folic acid routinely and this should continue up to six weeks postnatal. Pregnant women should have an Hb estimation done on the first antenatal visit- preferably before the 20th week of pregnancy and this should be repeated at thirty-six weeks and postpartum if indicated .

All pregnant women with AA or AS Haemoglobin ideally should reach labour with an Hb value of at least 10.gm.

Those with Hb value under 10gm/dl at the first ante-partum visit should be investigated as follows:

- Hb electrophoresis (if abnormal, counsel both parents)
- Serum Iron
- Total Iron Binding Capacity (TIBC)
- Serum transferrin
- Serum Ferritin
- Serum Folate
- Serum B12
- Stool Ova cysts plus parasites (OCP)
- Stool occult blood

The management of a pregnant woman with anemia is detailed in appendix F.

CHAPTER THREE
INTRANATAL CARE

The care given to the mother during the process of birth.

CHAPTER 3
INTRANATAL CARE

Definition

The care given to the mother during the process of birth.

Objectives

- Provide effective nursing and medical care in order that all mothers have a safe delivery.
- Identify and manage obstetric emergencies which may arise.
- To manage complications

PROTOCOLS

All deliveries should be done by a trained Midwife/doctor.

Normal deliveries can be done in type III clinics but all high risk deliveries should be done at the Princess Margaret hospital.

DRUGS USED IN LABOUR

Oxytocin: is used to augment labour, only in hospital as prescribed by obstetrician/ physician. 5-10 units in 1 litre normal saline at 10 drops per minute increasing by 10 drops Q1/2 hourly until 3-4 contractions in 10 minutes or end of the second stage.

Tramadol 50mg IM and Pethidine 2mg/kg: is used in pain control.

Buscopan 20 mg IV for cervical effacement.

Misoprostol is used for induction of labour; 100mcg (P0-P4) and 50mcg (P5 and greater), once daily for a total of 2 doses.

3.1
INDICATIONS FOR IMMEDIATE REFERRAL TO HOSPITAL

3.1.1
FIRST STAGE

- Maternal Distress (usually due to prolonged first stage)
- Foetal Distress
- Very strong uterine contractions with no progress
- Transverse lie or abnormal presentation
- Prolapse of umbilical cord
- Prolonged first stage (ensure correctness of time of onset True Labour)
  - 14 hours or more in primigravida
  - 10 hours or more multipara
- Vaginal bleeding
- Elevated blood pressure
- Preterm labour

3.1.2
SECOND STAGE

- Duration more than 60 minutes in primigravida or 45 minutes in multipara
- If head is visible for more than 20 minutes and no further advancement
- Impaction of the shoulder (usually with large baby)
- Maternal or foetal distress
- Prolapse of umbilical cord
- Vaginal bleeding

3.1.3
THIRD STAGE

- Haemorrhage (eg: placenta not yet delivered)
- Heavy vaginal bleeding after delivery of placenta (500 c.c or more)
- Signs of shock regardless of amount of blood loss
- If placenta is not delivered within 30 minutes
- Any severe laceration, vaginal haematoma
- Absence of portion of placenta or membranes
- Elevated blood pressure more than 130/90; temperature above 99.4 degrees F (36.6 degrees C)

!

The midwife should set up an intravenous drip preferably of Normal Saline prior to transportation to hospital.

When the placenta is retained and there is no heavy bleeding, intravenous Pitocin 30 units/ litre of IV fluid should be administered before transporting the patient.

3.2
LABOUR

When a pregnant woman presents to the health professional in presumed labour, the following need to be done:

- Review ante natal records
- Take adequate history
- Perform physical examination and based on findings, diagnose or exclude labour:
- Contractions: regular, frequent (>/2-3:10), leading to progressive cervical effacement and dilatation and expulsion of POC

Labour should NOT be mistaken for Braxton-Hicks Contractions

- Braxton-Hicks contractions may be painful and regular, but usually do not lead to cervical change.

3.2.1
THE STAGES OF LABOUR

FIRST STAGE

begins with onset of labour and ends when dilatation of the cervix is complete (10cm). This is divided into a Latent phase and Active phase

SECOND STAGE

full dilatation of the cervix to the birth of the baby

THIRD STAGE

from the birth of the baby to delivery of the placenta

FOURTH STAGE

begins one hour after birth involving the examination of patient's vital signs uterine size,vaginal loss and urine loss

The commencement of labour is not an event but a process.

This is evident by the fact that increasing uterine activity and even cervical changes begin to take place days before the patient is in established labour, therefore, the exact time at which labour commences cannot be accurately determined. For the purpose of management, the time at which labour starts is defined as the time the diagnosis is made. The diagnosis of labour must not always be based on the patient's recollection of when "pains began".

TABLE 6
THE FIRST STAGE OF LABOUR

Latent Phase	Active Phase
Begins at the onset of labour and ends when the cervix is effaced and 3cms dilated.	This begins at 4cm and ends at 10cm of cervical dilatation with full effacement.
NO LONGER than 6 hours in a Primigravida	Cervical dilation must be 1.0cm/h, ideally 1.2cm/h
NO LONGER than 4 hours in a Multigravida	Cervical dilation must be 1.0cm/h, ideally 1.5cm/h
Prolonged Latent Phase	**Prolonged Active Phase**
When a latent phase is longer than 6 hours in a primigravida and longer than 4 hours in multigravida, it is said to be prolonged.	When longer than 6 hours in a primiparous and 4 hours in a multiparous patient
May be treated with sedation, hydration, ambulation, rest, or Pitocin	Use partogram and take necessary action to expedite delivery

3.2.2
MANAGEMENT OF NORMAL LABOUR

FIRST STAGE

This stage should normally last 12 – 18 hours in a primigravida and 6 – 10 hours in a multigravida.

The following should be done:

START PARTOGRAM

- Record pulse, respiration blood pressure half hourly and temperature 4 hourly.
- Foetal heart rate and rhythm half (1/2) hourly.
- Uterine action, strength, frequency and duration of contractions half hourly.
- Urine: presence or absence of protein, glucose and ketones.
- Give warm water enema except in cases of late first stage:
  >6 cms dilation of cervix, preterm labour and antepartum hemorrhage.
- Allow patient/client to attend to personal hygiene needs
- Give analgesics as indicated or with sustained contractions 45-55 seconds and cervix 1cm long and 3cm-8cm dilated.

- Encourage relaxation exercises
- Encourage moral support from father of child or other close relative
- Record time membranes rupture as well as colour, amount, odour of liquor .

3.2.3
MANAGEMENT OF PROLONGED LATENT PHASE

If membranes are intact
If foetal condition is good

- Give simple sedatives and analgesics (eg) Paracetamol tabs one gram orally
- Monitor the patient hourly
- If the membranes have already ruptured or there is foetal compromise - Transfer to hospital.

The Active Phase: This phase begins when the cervix is 4 cm dilated and ends at full dilation of the cervix

Possible complications of first stage include:

1. Primary Dysfunctional Labour
2. Secondary Arrest

3.2.4
PRIMARY DYSFUNCTIONAL LABOUR (PDL)

Primary dysfunctional labour exists if:

- The normal active phase does not become established and
- Cervical dilation is progressing at a rate of less than 1cm per hour from the beginning of the active phase.

3.2.5
SECONDARY ARREST (SA)

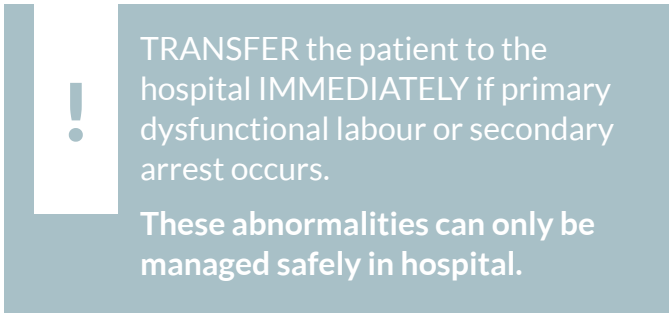
Secondary arrest occurs when:

- The active phase begins normally, but the rate of cervical dilation slows significantly (at less than 1cm per hour) late in the stage of labour, usually from 6cm dilation onwards.

3.2.6
CAUSES OF PRIMARY DYSFUNCTIONAL LABOUR AND SECONDARY ARREST

These are usually due to one or a combination of the following:

- Inefficient uterine contractions
- Malposition or malpresentation
- Cephalo-pelvic disproportion



3.2.7
MOLDING OF FOETAL SKULL & CAPUT

Assess molding at the sagittal and at one lambdoid suture. A score of 1 to 3 is given for molding at each of these sutures resulting in a maximum of 6.

** Molding Score:

1 - Closure of suture line

2 - Reducible overlap

3 - Irreducible overlap

3.2.8
MECONIUM STAINED LIQUOR

The presence of meconium in the amniotic fluid should not be disregarded (especially if thick). The patient must be transferred to hospital.

Causes include:

- mature foetus in distress
- possible foetal asphyxia
- breech presentation
- post maturity

NB. A molding score of 4 – 6 indicates that the foetus will be endangered if labour is allowed to continue. Refer to hospital/inform obstetrician if already in hospital.

3.3
THE SECOND STAGE OF LABOUR

The second stage of labour begins with full dilation of the cervix and ends with the delivery of the baby. The descent of the head as measured is the main criterion of progress in the second stage of labour.

The second stage of labour is divided into two phases:-

(1) **Propulsive Phase:** this begins at full dilation and ends when the head is on the pelvic floor

(2) **Expulsive Phase:** This commences when the head is on the pelvic floor (urge to bear down) and ends when the baby is born.

Patient must never be asked to bear down (push) unless she has the urge to do so.

Exhorting a patient to "push" before the expulsive phase of the second stage only gives rise to maternal exhaustion and possible unnecessary intervention.

During the expulsive phase – measure foetal heart rate every 5 minutes.

3.3.1
DURATION OF SECOND STAGE

The average duration of the second stage:
Primigravida – 60 minutes
Multigravida – 30 minutes

> ! N.B. If in district and delivery is not imminent after those times, transfer to Hospital

3.3.2
OBSERVATIONS DURING SECOND STAGE

Maternal

- Vital signs every 15 mins
- Strength, frequency and duration of uterine contractions.
- Note time membranes rupture and nature of amniotic fluid
- General condition of mother
- State of perineum

Foetal

- Descent of the presenting part
- Foetal heart rate every 5 minutes
- Cord prolapse
- malpresentation

General care of the mother

- Only sips of water and ice to suck during this stage
- Catheterize if bladder distended
- Reinforce advice on how to deal with contractions.

3.3.3
DELIVERY PROCEDURE

1. Place patient in the dorsal/ lithotomy position or as agreed by delivering personnel and patient.
2. Make sterile preparation for delivery
3. Encourage patient to make adequate use of the contractions.
4. Rupture membranes if indicated
5. Perform episiotomy if necessary.
6. Deliver head between contractions
7. Check if umbilical cord is around the infant's neck. If the cord is tight, check for ease of delivery, and perform episiotomy if necessary or clamp and cut the cord. If the cord is loose slip it over the infant's head, if not clamp and cut the cord. Once it is cut, try to deliver the baby as quickly as possible.
8. Deliver foetus
9. Active management of third stage
10. Clear the airway
11. Clean eyes of newborn from inner to outer canthus, using each swab once.
12. Clean the baby
13. Give Ergometrine 0.5 mgs to mother after delivery of anterior shoulder of infant in non hypertensive patients and give Oxytocin 10 units IV slow push to those with hypertension
14. Note time of delivery
15. Receive baby in sterile towel
16. Check apgar score and record
17. Collect cord blood for RPR, sickling Rh and blood group when indicated.
18. Initiate skin to skin contact.
19. Prepare for third stage.

3.4
THE THIRD STAGE OF LABOUR

This begins with the delivery of the baby and ends with the delivery of the placenta.

3.4.1
DELIVERY OF THE PLACENTA

Signs of separation

- Increased bleeding/gush of blood
- Lengthening of the cord
- Uterus enlarges & rises
- Uterus becomes globular and firm
- Normally separates within a few minutes after delivery
- Controlled Cord Traction (CCT) is performed after separation of the placenta has occurred.
- Support uterus to prevent inversion (Uterine Cupping)
- Massage the uterus after delivery of the placenta.
- Measure blood loss
- Asses the placenta.

The management of Postpartum Haemorrhage is described in Appendix K

! To prevent inversion of the Uterus, Controlled Cord Traction must not be performed before the Placenta is separated or without Uterine Cupping.

The uterus must not be massaged before the placenta is separated and delivered.

If it is done POST PARTUM HAEMORRHAGE will almost certainly ensue as a result of incomplete separation of the placenta.

3.5
THE FOURTH STAGE OF LABOUR

This begins from the delivery of the placenta.

3.5.1
EXAMINATION OF THE PLACENTA

1. Examine the placenta-maternal and foetal surfaces
2. Ensure that the cotyledons and membranes are fully delivered
3. Look for and record same
4. Confirm the presence of one (1) umbilical vein and two (2) umbilical arteries
5. Weigh the placenta
6. Record type and weight

3.5.2
EXAMINATION OF GENITALIA

1. Inspect and palpate the vaginal walls for lacerations.
2. Lacerations are felt as breaks in the surface of the vaginal wall.
3. If there are lacerations the fingers will come together at these points.
4. Inspect the external genitalia for lacerations.
5. Repair lacerations and/or episiotomy

3.5.3
EXAMINATION OF THE CERVIX AND UTERUS

CERVIX

1. Place the third finger of the examining hand into the cervical OS.
2. Place the index finger on the external surface of the cervix.
3. Sweep both fingers (with cervical tissue between them) circumferentially around the cervix

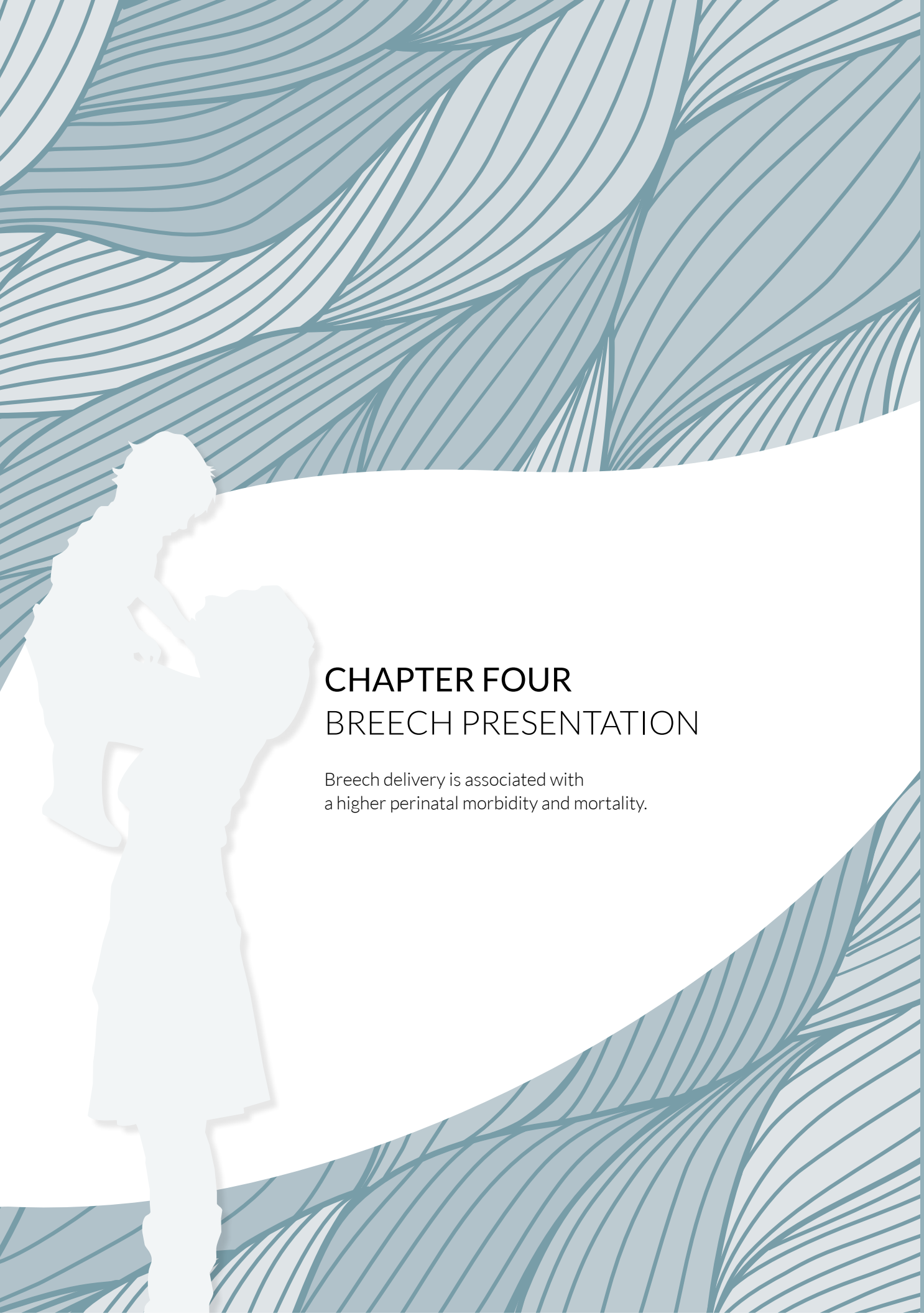
UTERUS:

1. Massage the uterus
2. Note the fundal height
3. Expel retained clots
4. Refer to senior staff colleague/PMH if perineal laceration or episiotomy is greater than second degree.

!

ONE HOUR LATER

- **Examine the patient**
- **Monitor blood pressure, temperature & pulse**
- **Note size of uterus**
- **Note vaginal blood loss**
- **Note urine output**



CHAPTER FOUR
BREECH PRESENTATION

Breech delivery is associated with
a higher perinatal morbidity and mortality.

CHAPTER 4
BREECH PRESENTATION

The frequency of breech presentation in term pregnant women with a single foetus weighing ≥ 2500 g. ranges from 2.5 to 3% of all childbirths. Breech delivery associates with a higher perinatal morbidity and mortality.

Circumstances that increase the frequency of the breech presentation:

- Preterm childbirth.
- Multiple pregnancy
- Polyhydramnios.
- Placenta previa.
- Fetal malformations (anencephaly, hydrocephaly, etc.).
- Uterine malformations
- Diabetes
- Foetal macrosomia

4.1
DIAGNOSIS OF BREECH PRESENTATION OR TRANSVERSE LIE

Clinical: Diagnosing the foetus's presentation in uterus requires familiarity with these Leopold's maneuvers specified.

First maneuver

Determination of fundal height. The symphysio-fundal measurement is taken.

Second manoeuvre

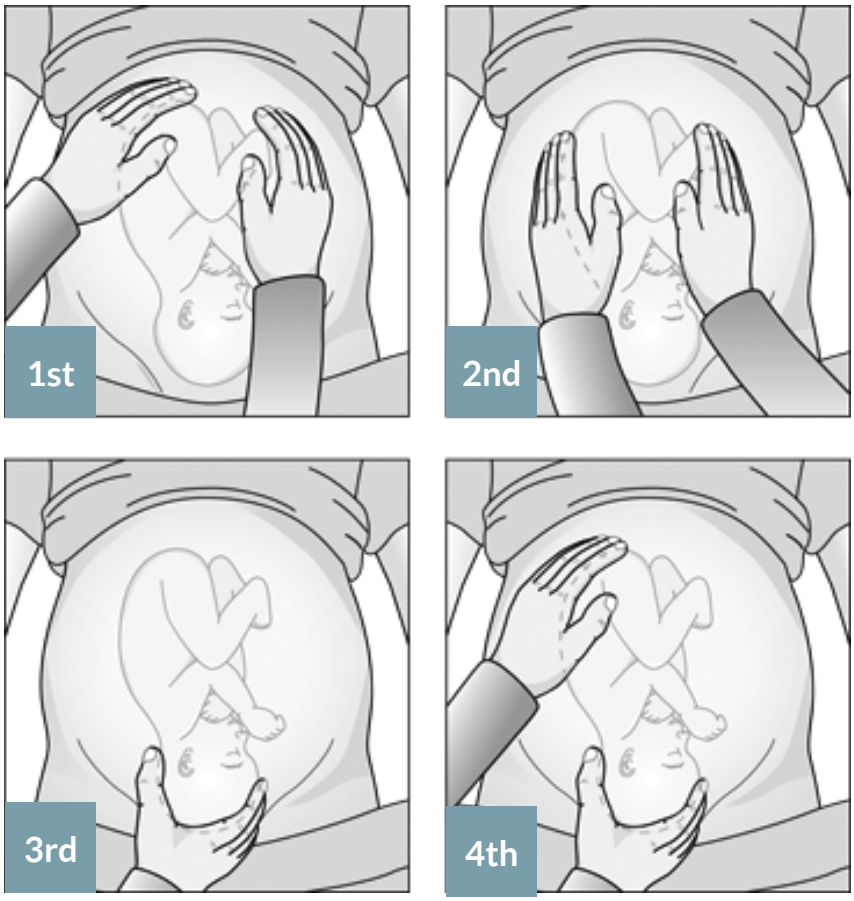
Determination of lie. palpation of the flanks helps to determine the situation and location of the foetal back. Normally, when the foetus is in longitudinal position, the foetus's spine is palpated on one side and the belly on the other. Conversely, in the transverse lie, both foetal poles are located at both sides of the mother's womb.

Third maneuver

Determination of presentation. If the pole is hard, round, regular and ballotable the pole is the foetal head. If the opoosite pole is soft, irregular and non ballotable, it can be assumed to be the foetal buttocks.

Fourth maneuver

Determination of engagement. The depth of the feotus in the pelvic brim.

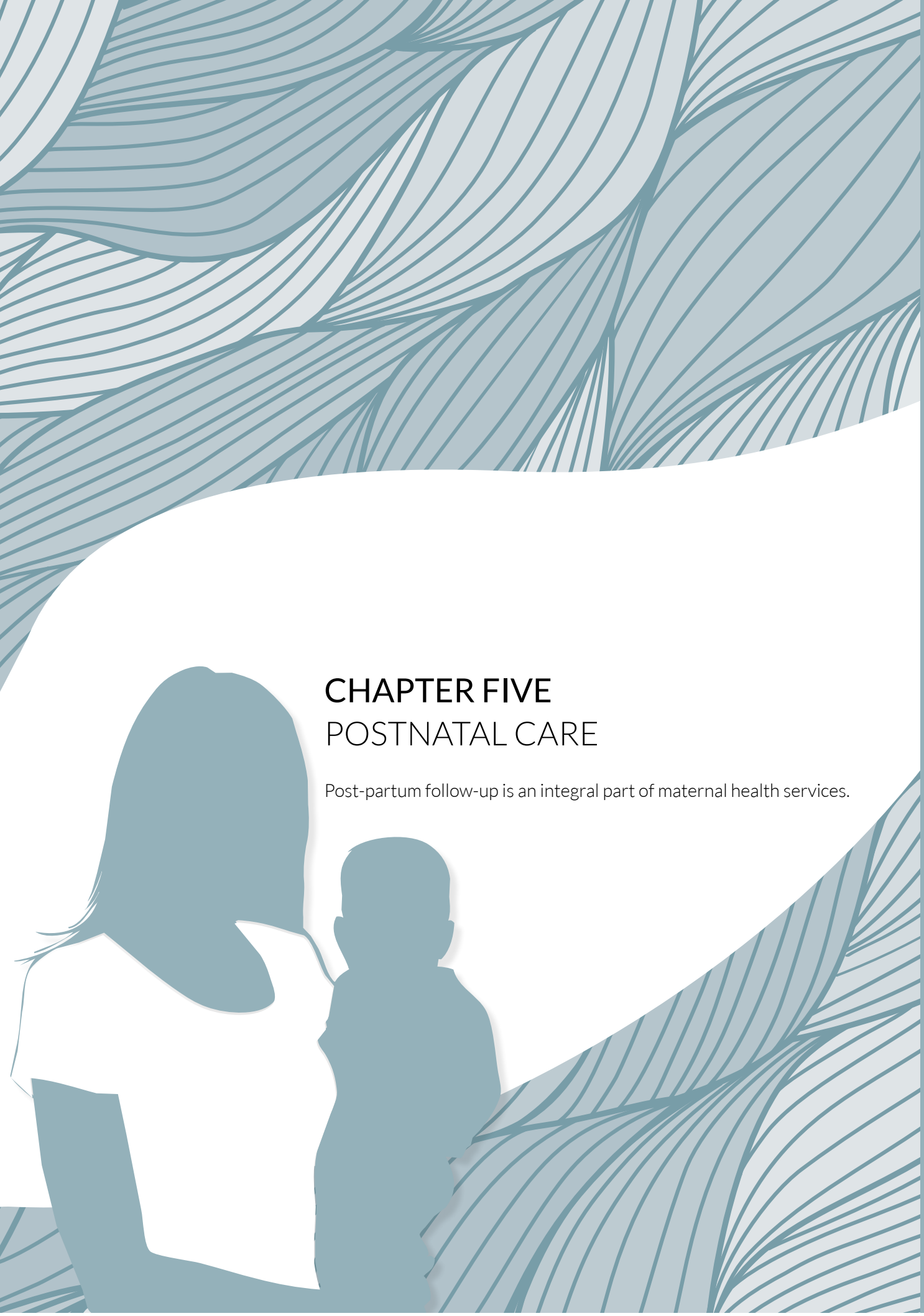


4.2
MANAGEMENT OF BREECH PRESENTATION AND TRANSVERSE LIE

After the 28th week, the foetal situation and presentation must be determined at every visit.

Evidence available to date suggests that a planned caesarean section has an equal risk of perinatal mortality and less neonatal respiratory depression, regardless of the woman's parity and the health care provider's training, as compared with vaginal delivery.

The elective caesarean section is recommended in cases of breech presentation and transverse lie at term.



CHAPTER FIVE
POSTNATAL CARE

Post-partum follow-up is an integral part of maternal health services.

CHAPTER 5
POSTNATAL CARE

Standards

Post-partum follow-up is an integral part of maternal health services. Patients are discharged from the hospital after 24 to 72 hours (subject to patient clinical condition and/or at the discretion of the physician/obstetrician, if there are no complications. A referral form and /or the patient's antenatal notes with delivery details should be given to the patient for follow up care by the district midwife/ Postnatal nurse.

Objectives

- To prevent infection during the puerperium
- To detect early abnormalities for prompt referral.
- To assist in establishing lactation and breastfeeding
- To provide information to the mother on good nutrition
- To initiate the mother on a birth control method of her choice
- To promote immunization

5.1
IMMEDIATE POSTNATAL CARE

Day 1:

1. Ask patient/client to empty bladder
2. Record blood pressure, temperature, pulse and respiration
3. Assess mucus membranes
4. Check breast for colostrum or any abnormalities
5. Continue promotion of maternal bonding and breast feeding
6. Palpate, measure and record fundal height of uterus
7. Check lochia (amount, color, odor, consistency)
8. Assess perineum and episiotomy site
9. Instruct on perineal care.
10. Check for painful calves.
11. Check for mood/coping mechanism/affect/ sleep patterns/hygiene

! **NB: Hb check, and vaginal examination with speculum on 3rd day if indicated.**

Upon discharge, a referral note is given for a six (6) weeks appointment for postnatal examination

5.2 SCHEDULE OF POSTNATAL VISITS

MINIMUM:
Daily home visits by the midwife for the first three (3) days post discharge.

OPTIMUM:
Daily home visits for the first ten (10) days post discharge

N.B. More visits may be necessary depending on the situation, (parity, mother's age, state of baby, socioeconomic status, etc)

Activities up to 10th Day

- Record blood pressure, temperature, pulse and respiration.
- Check lactation, fundal height perineum, lochia, bowel, micturition, and mother-child interaction
- Reinforce exclusive breast feeding.
- Discuss family planning
- Encourage post-natal exercises, and rest for at least 2 hours each day
- Guidance and counseling including personal hygiene, nutrition, child care
- Continue promotion of maternal bonding
- Continue iron/vitamin therapy for at least one (1) month, ideally until breastfeeding is discontinued
- Encourage early ambulation.

5.3 CRITERIA FOR REFERRALS TO HOSPITAL DURING THE PUERPERIUM

MOTHER
(Refer to the District Medical Officer/FNP/PMH)

- Pyrexia 38°C (101°F) after 1st 24 hours
- Offensive lochia
- Calf tenderness
- Tender/ infected lacerations or episiotomy
- Persistent red or heavy lochia
- Sub-involution/tenderness
- Painful varicose veins
- Behavioral changes
- Breasts – tenderness, mastitis, abscess
- Elevated blood pressure
- Depression and Psychosis (See Appendices K and L)
- Other signs of serious illness

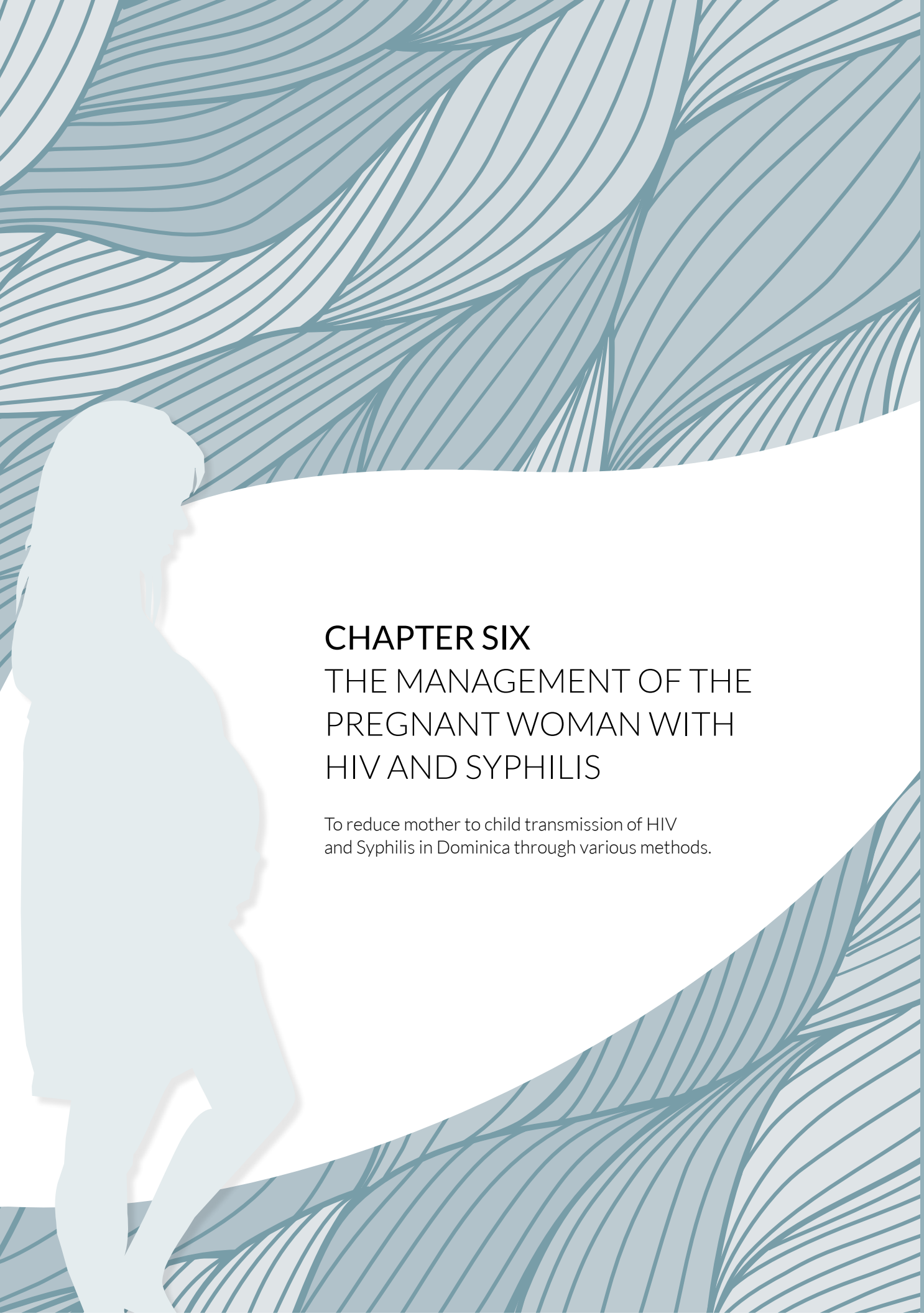
All mothers and infants are given appointments to attend the post-natal clinic six (6) weeks after delivery.

For high risk mothers this is done at an earlier date by the obstetricians.

TABLE 7
POSTNATAL EXAMINATION

Procedures	Counseling

■ Take and record pulse, blood pressure, weight and urine output.
■ Assess general health, nutritional status, condition of chest, breast, abdomen, uterus, pelvis, vagina, cervix.
■ Check extremities for varicose veins and deep vein thrombosis.
■ Speculum examination is done and the following noted:
  ■ Condition of cervix
  ■ Presence of erosion, discharge, signs of infection
  ■ Whether laceration/episiotomy healed
	■ Nutrition, personal care and hygiene
	■ Coping techniques
	■ Parenting
	■ Sexual activity .
	■ Breast feeding
	■ Family planning
	■ Care of the baby including immunization
	■ Sexually transmitted infections including HIV
	■ Importance of keeping clinic appointment



CHAPTER SIX
THE MANAGEMENT OF THE PREGNANT WOMAN WITH HIV AND SYPHILIS

To reduce mother to child transmission of HIV and Syphilis in Dominica through various methods.

CHAPTER 6
THE MANAGEMENT OF THE PREGNANT WOMAN WITH HIV AND SYPHILIS

Purpose

- To reduce mother to child transmission of HIV and Syphilis in Dominica through the following methods:
- Primary prevention of HIV and Syphilis among prospective parents
- Prevention of unwanted pregnancies among HIV and Syphilis infected women
- Prevention of transmission from infected women to their infants

6.1
INITIATIVE FOR THE ELIMINATION OF MOTHER TO CHILD TRANSMISSION OF HIV AND CONGENITAL SYPHILIS

The Caribbean Initiative for the Elimination of Mother to Child Transmission of HIV and Congenital Syphilis "Generations Free of HIV and Syphilis"

BACKGROUND

HIV and congenital syphilis are major public health problems affecting women and their newborns, creating life-long chronic conditions that shorten life expectancy and contribute to substantial human, social and economic costs. Without interventions, an estimated 15% to 45% of infants born to HIV positive women will become infected with HIV, and an estimated 50% to 80% of pregnancies with syphilis infection will result in adverse events.

Prevention of these conditions will contribute to reduction in maternal and neonatal morbidity and mortality, and to achievement of national, regional and global targets, including the MDGs. To achieve and sustain this requires a comprehensive approach. In Dominica between 2003 and 2012 there was no sero-conversion of HIV exposed infants. This is consistent with PAHO/ WHO guidelines. At present in Dominica the confirmatory test for Syphilis is not routinely done because it is not readily available. It is therefore difficult to determine the true extent of the prenatal exposure to Syphilis.

Goal

To eliminate Mother-to-Child Transmission of HIV and Congenital Syphilis in all the Caribbean countries and territories by 2015.

Impact Indicators

- Incidence of MTCT of HIV is maintain/ to 0.3 cases or less, per 1000 live births;
- MTCT of HIV from HIV+ pregnant women to their infants is maintained / reduced to 2%
- Incidence of Congenital Syphilis is reduced to 0.5 cases, or less, per 1000 live births.

COUNTRY SPECIFIC STRATEGIES FOR THE MANAGEMENT OF THE PREGNANT WOMAN WITH HIV AND SYPHILIS

Prevention of Mother to child transmission (PMTCT) has been identified as a significant achievement in the control of HIV infection in children below the age of ten years. Transmission of HIV can occur **before, during and after delivery.** The risk of transmission increases during the course of a pregnancy and is relatively frequent in late pregnancy and during delivery. Breastfeeding contributes substantially to this overall risk. The PMTCT program should be integrated to include mother to child transmission of Syphilis. This integrated program is outlined as follows.

Purpose

- To reduce mother to child transmission of HIV and Syphilis in Dominica through the following methods:
  - Primary prevention of HIV and Syphilis among prospective parents
  - Prevention of unwanted pregnancies among HIV and Syphilis infected women
  - Prevention of transmission from infected women to their infants.

- Policies
  - All pregnant women and their partners residing in Dominica will be eligible to receive free high quality testing and counseling (TC) services.
  - As an integral part of the counseling process, women and their partners will be provided with information on HIV and Syphilis infection, their mode of transmission, and in the case of HIV, the benefits of antiretroviral prophylaxis and withholding breastfeeding in the prevention of mother to child transmission.
  - All pregnant women will be offered TC at least twice during the pregnancy.
    - At admission into antenatal care, and (at a minimum) again at 28 to 32 weeks of pregnancy
    - Women not accepting these services will be offered again at subsequent visits or at delivery.
  - Women who test HIV negative (-ve) or have a non reactive RPR before the second trimester, will be offered retesting at 28-32 weeks to rule-out recent infection.
  - Women who are reactive on **2 consecutive rapid or ELISA** tests should be treated as HIV positive.
  - All women who test positive for HIV will be managed according to the treatment protocol.
  - All HIV-infected women will receive all routine antenatal booking investigations and follow-up care
  - All HIV positive pregnant women must be referred to PMTCT Coordinator, Clinical Team and High Risk Clinic.
  - Treat all pregnant women immediately (once the diagnosis of acute HIV infection is confirmed) with antiretroviral therapy, in order to reduce the risk of in utero transmission.
  - Women with a reactive RPR should be referred to a confirmatory lab
  - Treatment for pregnant women with reactive RPR should commence once results are obtained

- Infants
  - HIV Exposed infants are not to breast feed
  - Supplemental feeding will be provided to all HIV exposed infants for the first six

MONITORING THERAPY DURING ANTENATAL CARE

- Patients on ARVs should return for weekly visits for at least the first 2 weeks, then 4 weekly visits until 38 weeks gestation, when weekly visits should resume.
- Patients who are experiencing side effects, problems with adherence or other issues such as hyper-emesis should have more frequent contacts with the clinic.
- At each follow-up visit, providers should determine patient adherence to ARVs and adverse reactions and provide interventions or support as indicated. Blood investigations for adverse effects (such as Liver function tests and Haemoglobin) should be performed 2 weeks after starting the PMTCT protocol, and Haemoglobin monthly thereafter.
- Perform CD4 and viral load monitoring as recommended for non-pregnant HIV-infected adults (see Revised HIV STI Guidelines)
- At each follow-up visit, providers should determine patient adherence to safer sex practices and provide interventions or support as indicated including testing and treatment of the partner/s
- Infant feeding plans should be made prior to delivery. Formula (replacement) feeding is preferred, as breastfeeding is associated with a risk of HIV transmission to the infant. However, if formula feeding is not an option for the mother for whatever reason, interventions to reduce the risk of HIV transmission via breastfeeding should be discussed and planned; these interventions are described below in "Management of the HIV-Exposed Infant after delivery."

CONTACT INVESTIGATION AND PARTNER NOTIFICATION

The partners of all women testing positive for HIV and syphilis should be investigated using the appropriate guidelines and referred for testing and treatment where applicable. Partner notification should be discussed with all clients and encouraged as much as possible.

MEDICATION AND NUTRITION EDUCATION

Drug-drug and drug-food interactions may affect nutrient absorption and metabolism or reduce food intake. As such this should be addressed immediately to prevent weight loss, malnutrition, improved medication efficacy and improve client adherence to treatment.

MAIN FOOD AND DRUG INTERACTIONS

Food reduces absorption of:

- Isoniazid
- Rifampin
- Indinavir
- Zidovudine (especially in high-fat diet)

Many protease inhibitors cause changes in lipid levels and insulin resistance and may also cause osteoporosis (calcium supplementation 1500-2000mg daily) or bone disorders in PLHIV. Therefore it is advised to reduce intake of saturated fats and sugars. High-fat diets increase bioavailability of Tenofovir.

Alcohol consumption should be discontinued in patients on Didanosine as it can cause pancreatitis. It should also be discontinued in patients on Isoniazid as this may increase the risk of hepatitis.

All PLHIV should be referred to a Nutritionist or Dietician for management of their nutritional needs.

RECOMMENDATIONS FOR THE MANAGEMENT OF THE HIV- INFECTED MOTHER DURING LABOUR AND DELIVERY (ADAPTED FROM THE CARIBBEAN GUIDELINES).

CONSIDERATIONS REGARDING MODE OF DELIVERY:

Elective caesarean section, when performed before the onset of labour or membrane

rupture, has been associated with reduced MTCT among women not receiving HAART. If the pregnant woman is not on ART prior to delivery, or is on ART but is known to have a **viral load greater than 1000 copies/ml** at the time of delivery, elective C-section can be considered to reduce the risk of MTCT. This decision must take into account the potential risks of elective C-section, as C-sections are generally associated with higher levels of morbidity and mortality as compared with vaginal deliveries. Access to a Caesarean section for women for whom C-section is indicated based on standard indications other than HIV infection must be ensured.

MANAGEMENT OF THE HIV-INFECTED WOMAN IN LABOUR:

Women should be managed in the same **way as HIV-uninfected women in labour,** with the following additional considerations:

- Use of universal precautions is especially important, which include use Personal Protective Equipment (**PPE**) (gowns, gloves, boots and protective eyewear), safe use and disposal of sharps, sterilisation of equipment, and safe disposal of contaminated materials.
- Perform cervical examination only when absolutely necessary and with appropriate clean technique.
- Avoid unnecessary invasive procedures.
- Avoid episiotomy unless otherwise indicated.
- Avoid artificial rupture of the membranes unless obstetrically indicated.
- Minimise the use of forceps or vacuum extractors.
- **Avoid prolonged rupture of membranes,** as rupture of the membranes for more than six hours is associated with an increased risk of HIV transmission to the infant. Use of oxytocin may be considered to decrease the interval to delivery in this setting. C-section is not recommended to decrease the interval to delivery unless otherwise obstetrically indicated.
- Avoid using straight suture needles if possible to reduce the risk of needle stick.
- Clamp and cut the umbilical cord immediately after delivery and if possible, avoid using a scalpel to cut the umbilical cord.
- Exercise special care in handling the placenta.
- Handle the infant with gloves until bathing, and bathe the infant as soon as possible with soap and water.
- Perform routine post-delivery care, including weighing, measuring of the infant and eye care.
- Ensure that the infant receives ARV prophylaxis as outlined by protocol.
- Ensure that examination of the infant by a paediatrician is performed as soon as possible.

PMTCT FOR THE HIV-INFECTED WOMAN NOT AN ART WHO PRESENTS IN LABOUR

This scenario could apply to a woman whose HIV status has just become known through rapid testing at the time of delivery, or a woman whose HIV status was known but who is not on ART prior to onset of labour for whatever reason. Women in labour for whom delivery is not immediately imminent should receive the following interventions:

- single dose NVP at the onset of labour (or as soon as possible thereafter)
- AZT + 3TC, starting at the onset of labour (or as soon as possible thereafter) and continuing throughout labour and delivery;
- AZT + 3TC for seven days postpartum
- The infant should receive zidovudine for the first six weeks of life plus three doses of nevirapine during the first 8 days of life
- Prompt referral post-partum to a clinic/ physician experienced in HIV care for further workup and management of her HIV disease.

The Following Tables provides various scenarios for the management of HIV positive pregnant woman as well as management of the Exposed Infant. (Revised Guidelines 2012 for the OECS)

Scenario	Mother	Infant*	Comments
A: Woman who is already receiving HAART at the time she becomes pregnant	- Do not discontinue or change HAART regimen; continue during pregnancy, labour and post-partum.	Daily AZT or NVP until six weeks of age	Infant dosing of AZT: Infant dosing of NVP:
B: Pregnant woman not on HAART who now requires HAART based on clinical and/or immunologic staging	- Initiate HAART immediately - Preferred regimen: TDF + (3TC or FTC) + EFV - Alternative regimens: AZT + 3TC + (NVP or EFV or r/PI) - continue HAART during labour and post-partum	Daily AZT or NVP until six weeks of age	- can substitute AZT for TDF in the mother's HAART regimen if TDF contraindicated (e.g. pre-existing renal disease) - EFV or a r/PI is preferred over NVP in women with CD4 counts over 250 because a significantly higher risk of liver toxicity is seen in women with CD4 counts over 250 who initiate NVP
C: Pregnant woman who does not require HAART for her own health	Initiate HAART at 14 weeks gestation (or as soon as possible thereafter). - Preferred regimen: TDF + (3TC or FTC) + EFV - Alternative regimens: AZT + 3TC + (EFV or r/PI) - continue HAART during labour and post-partum	Daily AZT or NVP until six weeks of age	NVP is not recommended for the mother in this scenario because a significantly higher risk of liver toxicity is seen in women with CD4 counts over 250 who initiate NVP
D: HIV-infected woman without any prenatal ART who presents in labour	SD NVP immediately; AZT/3TC immediately and continued for seven days post-partum	zidovudine for 6 weeks plus three doses of nevirapine during the first 8 days of life	- Mother must be assessed postpartum for need for ART and enrolled into appropriate HIV care
E: Woman of unknown HIV status who presents in labour	Test for HIV (ideally using rapid test); - if positive, manage as scenario D - if positive but woman does not receive SD NVP during labour, manage as per scenario F below	Manage per scenario D or F, whichever is applicable	- do not wait for confirmatory testing before proceeding with PMTCT interventions; assume she is HIV-infected based upon one positive test result from rapid testing (confirm after delivery) - If mother tests positive for HIV infection, she must be assessed postpartum for need for ART and enrolled into appropriate HIV care
F: HIV-infected woman who has received no ART for PMTCT, either prepartum or during labour	N/A	zidovudine for 6 weeks plus three doses of nevirapine during the first 8 days of life4,5	- AZT and NVP unlikely to be useful for infants if not given within 3 days of birth. - Mother must be assessed postpartum for need for ART and enrolled into appropriate HIV care

Management of the HIV-exposed infant (HEI) immediately after delivery

a. Using gloves bathe the infant as soon as possible with soap and water.

b. Perform routine post-delivery care, including weighing, measuring of the infant Vitamin K prophylaxis and eye care. Cord blood samples for Blood Group and Hb electrophoresis screen should be collected as usual. NB cord blood is not used for testing for syphilis.

c. Examination of the infant by a paediatrician is performed as soon as possible.

d. Confirm maternal history, including status of ARV prophylaxis and Hepatitis B status, as well as any maternal (opportunistic infections) OIs

e. Avoid unnecessary invasive procedures.

f. Ensure that the infant and mother receive ARV prophylaxis as outlined by protocol.

g. Administer Hepatitis B vaccine and Immunglobulin administration (within 12-24hrs of age) if Mother HepsAg positive

h. Confirm individual feeding plan, including formula choice, feed schedule and volumes.

i. HIV-infected mothers should be counseled regarding the risk of HIV transmission to their infants via breastfeeding. Breastfeeding by HIV-infected mothers is generally discouraged in the OECS given the relative availability of safe drinking water, infant formula, and the social acceptability of formula feeding. However, some mothers may want to, or feel compelled to, breastfeed for a variety of reasons. The following interventions reduce the risk of MTCT via breastfeeding:

   i. Exclusive breastfeeding should be practiced, meaning that the infant receives only breast milk without any supplemental or mixed feedings (no water, tea, porridge, etc.). Mixed feedings increase the infant's susceptibility to HIV acquisition.

   ii. Exclusive breastfeeding should continue for at least the first 12 months of life, after which weaning should be performed without mixed feedings.

   iii. Unless the mother is on HAART, the infant should receive daily NVP throughout the entire period of breastfeeding. Daily NVP administration to the infant should be stopped one week after all breastfeeding has stopped.

Follow-up care of the HIV-infected woman post-partum

- Patients should return to High Risk Clinic for follow-up at 6-weeks postpartum. The community nursing service post-natal clinics will also follow women as per MCH schedule.
- Ensure linkage of mother into HIV care for herself and appropriate pediatric care for the infant – mothers will be referred to the HIV clinic and to the paediatric outpatient department.
- The surveillance officer or designate will ensure that patients attend the specialist clinic appointments and a protocol will be put in place for tracking appointments and missed visits.
- Educate on breast care and prevention of engorgement.
- Health care providers should ensure that patients are coping and adhering to feeding option chosen; replacement feeding or exclusive breast feeding. Ensure they have adequate supply of replacement feeds
- Ensure that patients have adequate ARV and other supplies and provide ongoing support to maximize adherence to ARV for infants and mothers (if appropriate).
- Monitor patients for complications related to delivery, HIV, ART etc. and refer to

relevant services as indicated.

- Initiate counseling for family planning and refer as indicated for follow up services.
- Continue to encourage disclosure and testing of partner(s) and older children if not already done as appropriate including referrals as indicated.
- Referrals into support groups as (PLWHA groups) and other care services.
- Patient education including nutrition and management of her HIV and her family and refer where applicable to nutrition specialist and social worker.

HIV testing of infants less than 18 months of age

Infants less than 18 months of age require specialized testing for HIV DNA or RNA; traditional HIV antibody testing is not accurate in this age group, since any HIV antibodies in infants could simply represent maternal HIV antibodies that crossed the placenta. Dried Blood Spot (DBS) testing is the preferred approach in this age group. A small sample of blood is collected on special filter paper; typically from a heel prick (phlebotomy is not required). The blood dries on the filter paper and is sent to the Ladymeade Reference Unit (LRU) in Barbados for HIV DNA testing. Results are typically available within 2-3 weeks. (OECS Guidelines2012)

Growth and Nutrition

Growth failure is a prominent feature of HIV infection; hence, nutritional assessment is important both as a diagnostic marker (when HIV status is unknown) and to maximise growth in infected children

Follow-Up Care

Close monitoring of HIV-exposed and an infected infant is critical.

Prior to Discharge from Hospital

- Infants should be reviewed prior to discharge by a paediatrician or the most senior available clinician.
- Infants should be docketed and clinic follow-up ensured.
- Mothers should be taught how to administer ARV prophylaxis to their infants.
- Any issues that may prevent adherence to ARVs or to prophylactic medications should be investigated and addressed.
- A supply of replacement feeds should be provided to mothers and a date for an appointment with the nutritionist established.

Follow-Up in One to Two Weeks

- Routine physical examination of infants should be performed, including growth parameters.
- Adherence to ARV prophylaxis should be ensured.
- Any evidence of side effects of ARV prophylaxis should be monitored.
- Mothers should be advised to continue formula feeds and ensure hygienic preparation of same.
- Any concerns of the parents should be accessed and addressed.

Follow-Up at Six Weeks to Two Months

- Routine physical examination of infants should be performed.
- Growth and development should be assessed.
- ARV prophylaxis should be discontinued.
- TMP-SMX prophylaxis should be commenced, using one of the dosing options outlined on page VIII-5. TMP-SMX prophylaxis should be continued until it is established that the child is HIV-negative.
- Iron and vitamin supplementation should also be commenced.
- Blood samples for HIV DNA PCR testing should be drawn.
- Blood samples for other tests should be

drawn, e.g. CBC and differential, TORCH screen, VDRL, and Hepatitis BsAg and HTLV-1 serology, as appropriate.

- Vaccination with pentavalent (DPT, Hib, and Hepatitis B (HBV)) and polio should be started. IPV is preferred, but if IPV is not available, OPV may be administered to asymptomatic infants.
- Continuation of formula feeds should be advised.
- Any medical problems should be treated.
- Any concerns of the parents should be accessed and addressed.

Follow-Up at Four Months

- Routine physical examination of infants should be performed.
- Growth and development should be assessed.
- Second dose of vaccinations should be given.
- Blood sample for second HIV DNA PCR testing should be drawn.
- TMP-SMX prophylaxis should be continued.
- Iron and vitamin supplementation should be continued.
- Continuation of formula feeds should be advised.
- Any medical problems should be treated.
- Any concerns of the parents should be accessed and addressed.

Follow-Up beyond Four Months

Ideally, HIV-exposed children should be followed up by a comprehensive team of paediatricians, nurses, and nutritionists. The routine follow-up schedule is similar to that of children who are not exposed to HIV. Subsequent to the four-month visit, patients should be seen again at age six months, then at three-month intervals or more frequently if indicated.

At Each Visit:

- Routine physical examination of infants should be performed.
- Growth and development should be assessed.
- Appropriate diet should be ensured.
- Adequate vaccination coverage should be ensured.
- TMP-SMX prophylaxis should be continued.
- Iron and vitamin supplementation should be continued.
- Any evidence of HIV or opportunistic infections (OIs) should be monitored.
- Any medical problems should be treated.
- Any concerns of the parents should be accessed and addressed.

Baseline follow-up physical examinations include temperature; measurement of weight, height, and head circumference (monitor on growth charts); and examination for thrush, adenopathy, skin eruptions, ear, nose, and throat infections, chest infections, abdominal organ enlargement, and neurological and developmental abnormalities.

The Management of the pregnant woman with syphilis (adapted from the OECS Guidelines).

In keeping with the syphilis elimination program mandated by PAHO and OECS countries, all women should be screened serologically for syphilis early in pregnancy at the first visit and later in the third trimester. HIV screening should also be performed at these times. The screening method may vary but either non treponemal or treponemal antibody testing can be used. However, women with reactive treponemal test should have confirmatory testing with non treponemal tests titres. Countries may choose to increase screening for both HIV and Syphilis based on their discretion. Any woman who delivers a still born infant after 20 weeks gestation should be tested for syphilis. No infant should leave the

hospital without the maternal serological status having been determined at least once during the pregnancy.

Evaluation and treatment of Infants during the first months of life

It is evident that the diagnosis of congenital syphilis is complicated by transplacental transfer of maternal treponemal and treponemal Ig G antibodies to the fetus which can complicate the interpretation of reactive serological tests for syphilis infants. Therefore the treatment decisions frequently must be made on the basis of;

- Identification of syphilis in the mother
- Adequacy of maternal treatment
- Presence of clinical, laboratory, or radiographic evidence of syphilis in the infant
- Comparison of maternal(at delivery) and infant non treponemal serological titres using the same test conducted preferably at the same laboratory as there may be interpretation variation in titre assessment.
- All infants born to women who have reactive serologic test for syphilis should be examined thoroughly for evidence of congenital syphilis.
- The quantitative non serologic test for syphilis should be performed on the infants sera (not on cord blood)

CHAPTER SEVEN
FAMILY PLANNING

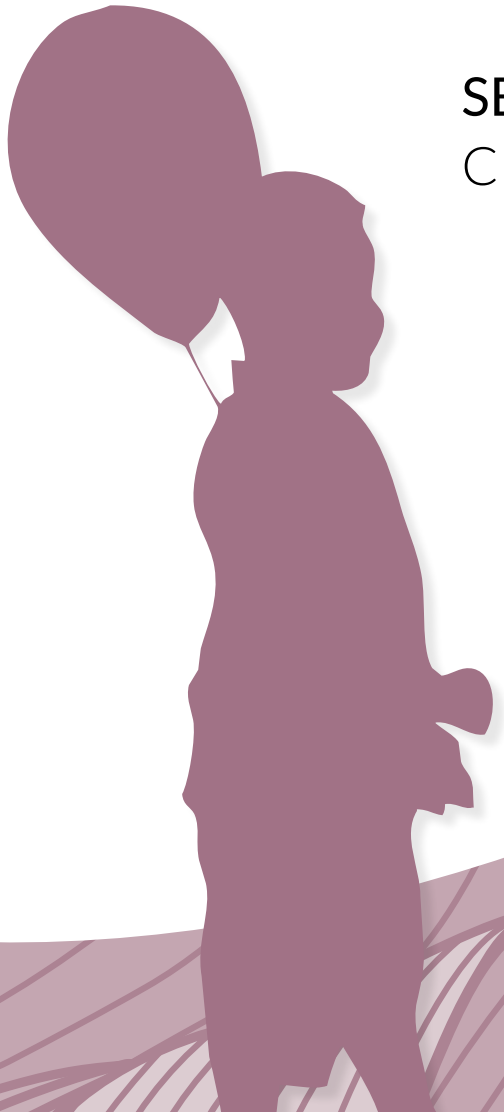
Family planning empowers women and their families to make informed choices regarding the spacing and number of children.

CHAPTER 7
FAMILY PLANNING

Family planning is an important component of the Maternal and Child Health program. It empowers women and their families to make informed choices regarding the spacing and number of children. This in turn influences positively the quality of their existence especially among poorly marginalized women at high risk of birth complications.

It plays a significant role in the lives of the individual woman and her family in that it may influence the quality of their existence and it may be of even greater importance in cases of high risk. The Dominica Planned Parenthood and other private agencies provide Family Planning services.

Details on methods and services are described in Appendix Q.



SECTION II
CHILDCARE

SECTION II
CHILDCARE

INTRODUCTION

Child care may be defined as the caring for and supervision of a child or children, usually from newborn to age thirteen. Child care is a broad topic covering a wide spectrum of contexts, activities, social and cultural conventions, and institutions.

Delivery of child care services is the responsibility of all health care providers at both primary and secondary care facilities. The health care of every child for disease prevention and management of common health problems are met at health centres, homes and schools. However in cases of complex health or health related problems the child is referred to the Hospital.

TARGET GROUP

The target group is newborn and all children to include infant 0-11 months, preschool and school-aged child, adolescent and any child considered to be abused.

GOAL

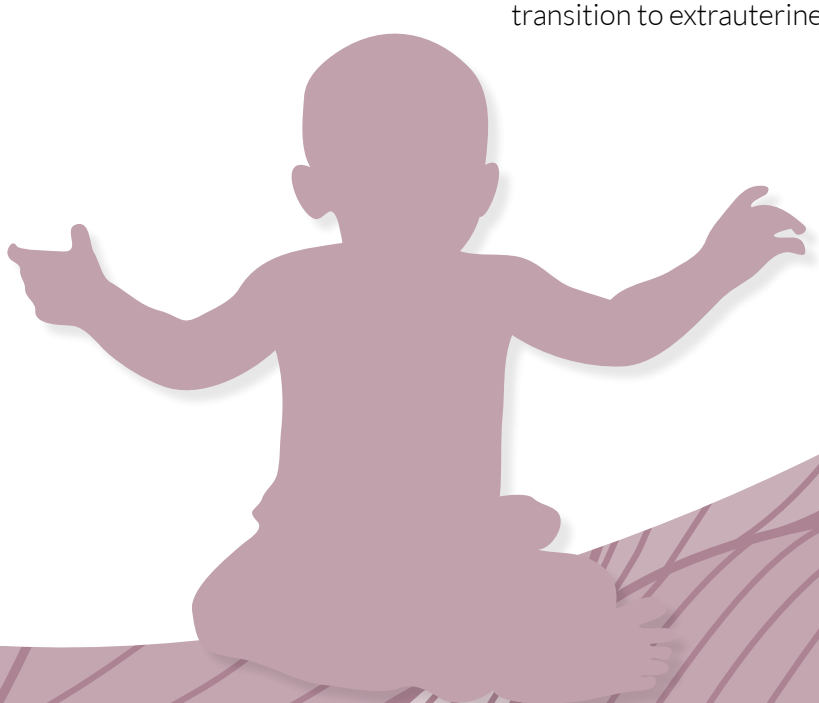
Every child must have normal growth and development to ensure optimal physical and psychosocial health.

OBJECTIVES

- Promote an atmosphere of love and protection within the home environment
- Promote good feeding practices associated with proper nutritional intake.
- Prevent illness, by means of immunization and good health practices.
- Identify disease or abnormality in a timely manner and make necessary referrals.
- Promote the elements of healthy living, leading to the realization of the individual's full physical and mental potential, and his adjustment as a member of society.
- Intensify health education activity for parents/guardians in the care and management of children.

CHAPTER EIGHT
NEONATAL CARE

Maternal and Child Health Care Providers must be aware of the many complications which may arise at this time of radical physiologic transition to extrauterine life.



CHAPTER 8
NEONATAL CARE

The majority of newborns (90%) require only minimal assistance at the time of birth (1). Despite this, maternal and child health care providers must be aware of the many complications which may arise at this time of radical physiologic transition to extrauterine life. Given the potential for an unexpected emergency, the delivery room must be adequately equipped beforehand for each delivery. It is also recommended that skilled assistance be present at every delivery, so that when necessary, appropriate resuscitative measures may be initiated promptly.

8.1
MANAGEMENT OF THE NEWBORN AT THE TIME OF BIRTH

8.1.1
PREPARATION FOR BIRTH

Identification of antepartum and intrapartum risk factors associated with need for neonatal resuscitation.

Every effort should be made to identify the antepartum risk factors during pregnancy, through consultation with the obstetric team. See Appendix 1 for a complete list of risk factors.

Equipment needed

A complete basic list is included in the appendix (see appendix 2). Sometimes additional equipment may be needed depending on particular anticipated clinical scenarios e.g. congenital airway anomaly.

All equipment must be readily available and systematically checked for function by the delivery room personnel prior to each delivery. (See appendix 3)

Personnel requirements

Low risk deliveries: Advanced resuscitation not anticipated

- Every delivery should be attended by at least one person who can immediately attend to the baby as their sole responsibility. This person should have at least basic neonatal resuscitation skills (as defined by the NRP programme).
- Other personnel must be readily available who are skilled in advanced neonatal resuscitation skills (intubation, medication administration).

High risk deliveries: Advanced resuscitation anticipated

- At least two persons who have sole responsibility for the infant are required to be present.
- At least one person must be skilled in advanced neonatal resuscitation. Additional personnel requirements can be customized to the anticipated clinical situation.

Training recommendations for the Neonatal Resuscitation Programme

All personnel who have the potential to participate in a delivery should be trained in either basic or advanced NRP skills. These skills must be recertified every 2 years for all personnel.

Basic skills:

- All midwives, obstetric physician staff, Paediatric unit nurses, and Accident and Emergency nurses.

Advanced skills:

- All paediatric physician staff, neonatal and paediatric intensive care nurses and all Emergency room physicians.

8.1.2
PROCEDURE FOR RESUSCITATION

The NRP programme should be consulted for full explanation of the flow diagram and associated procedures. (See Appendix 4)

8.1.3
INITIAL ROUTINE CARE & ASSESSMENT

Once the infant is born, routine care must be provided.

ESSENTIAL IMMEDIATE CARE AFTER DELIVERY OF A VIGOROUS NEWBORN

Vaginal Delivery

1. Deliver baby and place on the mother's abdomen.*
2. Ensure baby is dried thoroughly and assess breathing.
3. Immediately, or within 1 minute of delivery, give mother a uterotonic drug (ensure absence of second baby before giving uterotonic).
   - Oxytocin (10 IU, IV/IM) is the recommended uterotonic drug. A uterotonic should be offered to all women.
4. Once the baby has good spontaneous respirations, place skin to skin with mother as soon as possible. The infant should be placed between the mother's breasts. Mother and baby can then be covered with a blanket.
5. Delay umbilical cord clamping for 1-3 minutes after birth or until the cord ceases to pulsate, whichever comes first.**
6. During this time, ensure baby remains dry and warm and continues to have normal breathing or crying.
7. If the cord has stopped pulsating or > 3 minutes have passed, then clamp the cord.
   - If controlled cord traction is to be performed by a skilled birth attendant, it can be performed prior to clamping of the cord.
8. Following delivery of the placenta, assess uterine tone for early identification of uterine atony, and perform uterine massage if atony is present.
9. Any stable newborn should be allowed to bond with mother and attempt breastfeeding undisturbed for at least 1 hour after birth.
10. Document Apgar score
11. After bonding, measure the weight, length and head circumference of the infant.
12. Perform initial physical examination including gestational age assessment where appropriate.
13. Administer prophylactic eye drops and vitamin K injection.
14. The first bath should take place no sooner than 3-6 hours after birth except where the infant is heavily soiled,
15. Transfer to the postnatal ward.

Caesarean Delivery

1. Deliver baby onto sterile operative field, away from surgical site, and thoroughly dry baby and assess breathing.
2. Immediately, or within 1 minute of delivery, give mother a uterotonic drug.
   - Oxytocin (10 IU, IV/IM) is the recommended uterotonic drug. A uterotonic should be offered to all women.
3. Delay cord clamping (1 to 3 minutes after birth) — for all births.*
4. While waiting 1 to 3 minutes to clamp cord, ensure good visualization of surgical field (clear blood and fluid, use retractors), identify uterine incision edges and corners. Grasp uterine incision edges with ring forceps or clamps if bleeding.
5. Continue with standard newborn care while waiting 1 to 3 minutes to clamp cord—keep baby warm and dry, ensure normal breathing or crying.*
6. Perform controlled cord traction to deliver the placenta.
7. If the cord has stopped pulsating or > 3 minutes have passed, then clamp the cord.
8. Transfer the infant to the neonatal team.

Notes

- A vigorous newborn is defined as strong respiratory efforts, good muscle tone, and a heart rate > 100bpm.
- Delayed cord clamping may safely be practiced even in HIV positive mothers.
- If more than one provider is present, some of these steps can be conducted simultaneously.
- Early cord clamping (< 1 minute after birth) should be performed only when the newborn needs to be moved immediately for resuscitation.
- If the provider has experience providing effective positive-pressure ventilation without cutting the cord, ventilation can be initiated with the cord intact to allow for delayed cord clamping.

DELAYED CORD CLAMPING

The Benefits to the Infant of Delayed Cord Clamping include:

- Increased iron stores at birth and less infant anaemia requiring blood transfusion.
- Decreased intraventricular haemorrhage in preterm infants.
- Less necrotizing enterocolitis in preterm infants.
- Less neonatal sepsis in preterm infants.
- Fewer blood transfusions needed in preterm infants for low blood pressure.

Apgar Score

Each infant born should be assigned an Apgar score as a standardized way of reporting the status of the newborn infant and the response to resuscitation.

The Apgar score is a reflection of intervention/ resuscitative efforts, not an indicator for intervention.

This assessment should be done at 1 minute and 5 minutes after birth. Scoring should be continued every 5 minutes if the Apgar score is < 7 until 20 minutes.

- An Apgar score of 0 to 3 at 5 minutes may correlate with neonatal mortality but alone does **not** predict later neurologic dysfunction.
- The Apgar score is affected by gestational age, maternal medications, resuscitation, and cardiorespiratory and neurologic conditions.
- Low 1- and 5-minute Apgar scores alone are not conclusive markers of an acute intrapartum hypoxic event.
- Although scoring may be influenced by the intervention of the person attending delivery in the first seconds of life, it is widely accepted that the score at the 1st minute expresses the child's condition at birth. A score of 3 or less is indicative of severe respiratory depression. The presence of bradycardia suggests that depression is due to a severe foetal asphyxia.
- Score at the 5th minute summarizes the severity of initial depression and the outcome of the procedures performed. Persistence of bradycardia indicates that ventilation was ineffective, or that the condition is extremely severe.
- The newborn's prognosis improves when an initially low score (0-3) rises significantly within the first 5 minutes of life.

Figure A

The Expanded APGAR Score Reporting Form

An Apgar score assigned during resuscitation is not equivalent to a score assigned to a spontaneously breathing infant. The expanded Apgar score reporting form (above) will account for concurrent resuscitative interventions and provide information to improve systems of perinatal and neonatal care.

APGAR SCORE				MINUTES				
SIGN	0	1	2	1	5	10	15	20
COLOUR	Blue or Pale	Acrocyanotic	Completely Pink					
HEART RATE	Absent	<100 min	>100 min					
REFLEX IRRITABILITY	No Response	Grimace	Cry or Active Withdrawl					
MUSCLE TONE	Limp	Some Flexion	Active Motion					
RESPIRATION	Absent	Weak Cry: Hypoventilation	Good, crying					
			TOTAL					

COMMENTS	RESUSCITATION					
	MINUTES	1	5	10	15	20
	Oxygen					
	PPV/NCPAP					
	ETT					
	Chest Compressions					
	Epinephrine					

Prevention of Hypothermia in VLBW infants

Very low-birth-weight (<1500 g) or preterm babies are likely to become hypothermic despite the use of traditional techniques for decreasing heat loss. For this reason additional warming techniques are recommended:

- Prewarm the delivery room to 26°C.
- Prewarm the linen.
- Place the baby under radiant heat.
- Use a warming (exothermic) mattress, if available
- Cover the baby in plastic wrapping (food or medical grade, heat-resistant plastic e.g. Saran wrap), if requires immediate intervention.
- Dry and swaddle baby, place the baby skin-to-skin with the mother and cover both with a blanket (Kangaroo care) if clinically stable.

The infant's temperature must be monitored closely because of the risk of hyperthermia when these techniques are used in combination.

All resuscitation procedures, including endotracheal intubation, chest compression, and insertion of intravenous lines, can be performed with these temperature-controlling interventions in place.

Administration of Vitamin K

Vitamin K is essential for the formation of clotting factors II, VII, IX, and X. Foetal vitamin K is derived from the mother; however, placental transfer of the vitamin is poor. Vitamin K deficiency may cause 2 clinical scenarios:

Early vitamin K deficiency bleeding of the newborn

- This presents as unexpected bleeding during the first 2 weeks of life in previously healthy-appearing neonates. This was formerly known as classic haemorrhagic disease of the newborn.

Late Vitamin K deficiency bleeding of the newborn

- Presents with unexpected bleeding, attributable to severe vitamin K deficiency in infants 2 -12 weeks of age. The bleeding frequently affects the central nervous system. It occurs primarily in exclusively breastfed infants who have received no or inadequate neonatal vitamin K prophylaxis, and those with intestinal malabsorption defects

The efficacy of neonatal vitamin K prophylaxis in the prevention of early VKDB is firmly established.

Recommended dose (Neofax 2010):

Infant ≥ 32 weeks gestation
0.5-1.0mg at birth

Infant < 32 weeks gestation
Birth weight ≥1.0kg = 0.5mg i.m. at birth
< 1.0kg 0.3 mg/kg im at birth

Vitamin K1 should be given to all newborns as a single, intramuscular dose within the first 6 hours of life.

Administration of Prophylactic Eye Ointment

At the time of vaginal delivery, the newborn may be inoculated with Neisseria Gonorrhoea (Gonococcus) present in the genitalia of the mother presenting with an untreated cervicitis. The most severe manifestations of the infection caused by N. gonorrhoea in the newborn are Neonatal Ophthalmia and sepsis, which may include arthritis and meningitis. Less severe forms include rhinitis, vaginitis and urethritis.

Eye infection usually starts from 2 to 5 days after delivery and it may present complications such as eye perforation and blindness.

Routine Prophylaxis

The instillation of antimicrobials immediately after vaginal delivery or caesarean section is a safe, simple and low-cost practice. The choices available are:

a) 0.5% Erythromycin eye ointment (1-2cm ribbon) single application

b) 1% Tetracycline ophthalmic ointment (1-2cm ribbon) single application

They must be given within 2 hours of birth. None of the agents should be flushed from the eye. After 1 minute, excess ointment can be rubbed off.

Skin Care

The surface of the newborn's skin, the vernix, and the amniotic fluid are full of substances that help protect against bacterial invasion.

The following are recommended for the newborn's bodily hygiene:

- Avoid immediate bathing of preterm or low birthweight babies.
- Avoid removing the vernix from the skin.
- Full-term and stable newborns can be bathed with a sponge, but not by immersion, and care should be taken not to wet the umbilical cord.
- The scalp should be cleaned carefully, and excess blood should be removed.
- If covered with blood or amniotic fluid, the baby can be cleaned with cotton impregnated with sterile water and a non-antiseptic neutral soap.
- If a foul odour is present, or chorioamnioitis was suspected, use soap to clean.
- Careful hygiene of ears, nostrils, and places where blood has accumulated should be carried out.

A newborn's first bath usually is given at 3 to 6 hours of life when stability through the transitional period has been demonstrated. Before the umbilical cord falls off, a newborn should have **sponge baths only.** Thereafter, infants can be placed directly into warm water (warm to touch on the inside of one's wrist or elbow).

In general, the first bath should be as brief as possible, in a warm room, and using only mild, non-perfumed soaps. Skin folds, such as behind the ear, in the neck, and on the groin, should get extra attention. The skin should be patted dry after bathing. Hair should be shampooed at least twice a week with baby shampoo.

8.1.4
EXAMINATION OF THE NEWBORN

Anthropometry and Gestational age assessment of the newborn

Birth Weight

This is the first weight recorded after cutting and clamping the umbilical cord with the neonate naked. Measurements are in grams.

The timeliness of the umbilical cord clamping affects neonatal weight. Early clamping of the cord, while it is still swollen and the placental side continues to pulse, prevents blood from flowing from the placenta to the newborn. The neonate's weight may be reduced by as much as 4% as compared to neonates in whom clamping was not performed early.

Length

Crown-to-feet length is measured with a pediometer, with the newborn lying flat on its back, one of its lower limbs stretched. It is measured in centimetres. (see figure below).

Figure B:
Technique for correct measurement of length in the newborn

Head Circumference

The occipitofrontal circumference (OFC) is measured over the most prominent part of the back of the head (occiput) and just above the eyebrows (supraorbital ridges). This is the largest circumference of the head. Measurement is in centimetres.

Weight For Gestational Age

At birth children should be classified as Appropriate, Small or Large for Gestational Age, based on their weight and GA.

Each infant's growth parameter (OFC, length and weight) should be plotted on a growth chart (see appendix 5)

a. **Small for GA newborns (SGA)** infants are < 10th percentile.
b. **Appropriate for GA (AGA)** infants are between the 10th-90th percentiles.
c. **Large for GA (LGA)** infants have birth weight > 90th percentile.

An infant who has any abnormal (too large or small) growth parameter should be referred to a physician

Calculation of Gestational age

Gestational age (GA) may be assessed using dates provided by early (1st trimester) ultrasound or calculation using the last day of the last menstrual period (LMP)

When the LMP is unknown and there are no previous ultrasound measurements of the foetal head or femur available, the head circumference may be taken as a basis for calculating GA as of that date.

A rule of thumb for the estimation of Gestational Age is to add 2 to the head circumference e.g.: the mean GA for newborns with a HC of 27cm is 29 weeks.

Before the development of foetal ultrasound assessment, Dubowitz and Ballard charts were used to estimate gestational age. These estimations vary broadly (±2 weeks), and the gaps are even greater in preterm infants and newborns with intrauterine growth restriction. Therefore, these methods are **not** recommended.

Physical Examination of the newborn

- Routine physical examination takes only a few minutes and should be carried out in all infants soon after birth, and again just before discharge from the hospital.
- Routine physical examination excludes obvious abnormalities and helps make possible an earlier diagnosis of many subtle conditions.
- While having a routine order of procedure in the examination of the infant makes less likely the omission of any essential part of the examination, your routine should be flexible. If the infant is quiet and relaxed when first approached, auscultation of heart and palpation of abdomen should precede more disturbing examinations such as those of the mouth and hips.

Any findings outside the range of normal should be discussed with the neonatal team.

NEWBORN EXAMINATION FORMAT	
Vital Signs	• Record respiratory rate, heart rate and temperature with infant quiet. • Count the respirations for a full minute. • Normal RR: 40-60/min • Normal HR 110-160/min **Refer to NNU for any persistently abnormal reading.**
General	• Describe resting posture (normally semiflexed), activity, any gross abnormality, colour (pink, central cyanosis or acrocyanosis, pale or mottled, jaundice) • Look for any dysmorphism **Refer to NNU for dysmorphism/congenital abnormality, cyanosis, pallor, jaundice**
Skin	• Texture, lanugo, vernix, meconium staining, icterus, haemangioma, nevi, rash, excoriation, petechiae, bruises **Refer to NNU for petechiae or excessive bruising, large birth marks, especially of face.**
Head	• Examine general shape, moulding, caput, • Cephalhaematoma: a fluctuant swelling limited to the sutures. No treatment is needed • Check for micro- or macrocephaly • Palpate the fontanelles: presence, size, flat/full • Exclude presence of a third fontanelle, craniotabes • Please note: a subgaleal haemorrhage presents as scalp swelling that crosses the suture lines and extends to the neck, ear or side of the face. These can be life threatening. **Refer to NNU for micro- or macrocephaly, bulging fontanelles, suspected subgaleal haemorrhage.**

Continues ›

NEWBORN EXAMINATION FORMAT	
Eyes	• Check the red reflex with an ophthalmoscope 15-20cm away from the eyes. If the pupil is white or there are black spots, refer to the NNU. • Check pupils equal and reactive to light • Look at the size of the eyes: e.g. microphthalmia. Very large eyes can mean congenital glaucoma • Note presence of epicanthal folds • Examine for subconjunctival haemorrhage, discharge. • Check Cornea and iris **Refer to NNU for white reflex, cataracts, profuse eye discharge**
Ears	• Cartilaginous development of the ear lobe, position of ears, shape of auricle (normal/abnormal), preauricular sinus or skin tags. External auditory canal patent **Refer to NNU for bilateral pre-auricular ear tags or sinuses**
Nose	• Check internal and external nares patent • Septum midline • Check for any drainage present **Refer to NNU for unilateral or bilateral anatomical obstruction of nasal passages**
Mouth	• Palate (intact, narrow or high arched), Epstein's pearls, mucosal cysts, teeth, tongue (size, position), frenulum, uvula. **Refer to NNU for cleft lip or palate**
Chin	• Micrognathia **Refer to NNU for any associated breathing or feeding difficulties**
Neck	• Trachea position. Masses (thyroid, sternocleidomastoid, etc.), cysts, sinus tracts, movement, nodes. **Refer to NNU for any masses/sinuses**
Chest Wall	• Check for symmetry. • Check Breast buds • Check Clavicles intact • Document Supernumerary nipples. **Refer to NNU for any clavicular fractures**
Lungs	• Check for retractions, flaring, grunting, tachypnoea, auscultation (rales, rhonchi, wheezes) **Refer to NNU for any respiratory distress**
Cardiovascular	• Check for rhythm, rate (tachycardia, bradycardia) • Listen for and document S1, S2 (amplitude equal? S2 split?) • Document any murmur (quality, intensity, duration, relation to cardiac cycle, radiation, location of maximum intensity) • Peripheral pulses - femoral, brachial, radial (amplitude, equality, simultaneous) • Peripheral perfusion (capillary filling time should be < 3 secs) **Refer to NNU for evaluation of a persistent murmur, abnormal HR, poor perfusion**

Continues ›

NEWBORN EXAMINATION FORMAT	
Abdomen	• Check shape, number of umbilical vessels, hernia/diastasis. • If palpable, note size and consistency of liver, spleen, kidney, or other masses. • Check for abdominal distension, masses, obvious malformations such as omphalocele and gastroschisis. **Refer to NNU for abdominal distension, organomegaly, obvious malformation e.g. gastroschisis.**
Genitalia	Male • Check penis for size/length, any curvature (chordee) • Check testicular descent and scrotal development • Check for inguinal hernias, hydrocele Female • Size of clitoris and labia, masses in labia, hymenal tags, discharges **Refer NNU for any suspected ambiguous genitalia, inguinal hernias, undescended testis**
Anus	• Patency, anal wink, abnormal stooling. **Refer NNU for imperforate anus, abnormal position of the anus, or failure to pass stool > 48 hours and poor anal tone.**
Extremities	• Document symmetry, ROM, abduction of hips • Number, shape, length of digits, length of nails • Ortolani and Barlow • Check for swellings (possible fractures) **Refer to NNU for suspected hip dislocation, club feet, fractures** Extra digits may be ligated in an outpatient setting once the pedicle (stalk) is narrow.
Spine	• Sinus tracts, sacral dimple, scoliosis, meningoceles **Refer to NNU for any abnormality of the spine**
Neurologic System	• Assess tone, alertness, irritability • Cry: character, intensity, frequency • Reflexes • Suck, grasp, Moro, rooting • Deep tendon reflexes : knees, triceps, biceps • Tremor or clonus present • Observe for asymmetry of movement of face or limbs **Refer to NNU for abnormal tone (hypo- or hypertonia), lethargy, weak cry, asymmetric reflexes, asymmetry of movement**

Stabilization and Transport of Neonate

The purpose of transferring critically sick neonates is to:

- Reduce mortality and morbidity
- Minimize sequelae to the greatest extent possible, using technically appropriate, optimal management.

Ideally, a high risk delivery should be anticipated and the infant transported "in utero."

When this is not possible, the neonate should be transferred by a specialized team equipped to deal with the infant's condition.

Before transfer of a sick infant, try to quickly address as many of the following as possible in your setting:

TABLE
STANDARDS AND PROCEDURES OF CLINIC VISITS

Sugar	▪ Document a blood glucose ▪ Initiate appropriate i.v. fluid therapy for sick neonates ▪ Manage hypoglycaemia with 2ml/kg D10% water ▪ Recheck blood glucose within 15-30 minutes of treatment for hypoglycaemia.
Temperature	▪ Document the infant's body temperature ▪ Ensure warmth prior to transfer: extra blankets, skin to skin swaddling on mother, food grade plastic bag or wrap etc.
Airway	▪ Evaluate for respiratory distress and central cyanosis. ▪ Check oxygen saturation where available. ▪ Provide respiratory support where appropriate e.g. nasal cannula oxygen.
Blood Pressure	▪ Evaluate for poor perfusion and shock by checking capillary refill over the sternum, or blood pressure if available. ▪ If capillary refill is >3 seconds, administer 10ml/kg 0.9% saline or Lactated Ringer's slowly over 1 hour. (This may be completed during transfer).
Labwork	▪ If there are risk factors for sepsis, draw blood for full blood count and blood culture if possible. ▪ Give initial ampicillin dose 100mg/kg and gentamicin 4mg/kg
Emotional support	▪ Recognise the family crisis created by a sick newborn ▪ Support the family as appropriate. ▪ Communicate frequently as to the plan for the infant.

It is important to note that **transfer of the infant should NOT be delayed** if there is difficulty in completing some of the tasks noted above. The priority is to rapidly and safely get the sick or unstable infant to the Princess Margaret Hospital.

**Table Modified from "The S.T.A.B.L.E. programme"

Checklist for postnatal ward

All areas must be completed before transfer:

- ☑ Infant has an identity band securely positioned and confirmed with mother.
- ☑ Infant clinically stable. (Normal respiratory rate, heart rate, tone and colour. No abnormalities identified on assessment)
- ☑ Infant has attempted breastfeeding and has bonded with mother.
- ☑ Baby has had weight, length and OFC done.
- ☑ Vitamin K administered.
- ☑ Prophylactic eye drops given.
- ☑ Cord blood taken (if mother Rhesus negative or O positive)
- ☑ Initial breastfeeding support: (Please see section on Breastfeeding)

8.2
MANAGEMENT OF THE NEWBORN IN HOSPITAL

8.2.1
NEWBORN MONITORING

The hospital stay of the mother and her healthy term newborn infant should be long enough to allow identification of early problems and to ensure that the family is able and prepared to care for the infant at home.

The length of stay should also accommodate the unique characteristics of each mother-infant pair, including the health of the mother, the health and stability of the infant, the ability and confidence of the mother to care for her infant, the adequacy of support systems at home, and access to appropriate follow-up care

Many cardiopulmonary problems related to the transition from an intrauterine to an extrauterine environment usually become apparent during the first 12 hours after birth. However, detection of significant jaundice, ductal-dependant cardiac lesions, gastrointestinal obstruction, and other problems may require a longer period of observation by skilled and experienced health care providers.

Below is the recommended format for daily care and monitoring of the well newborn

PRINCESS MARGARET HOSPITAL
NEWBORN DAILY CARE AND MONITORING NURSING FLOWSHEET

Name									
Admission Date				Discharge Date					
Admission Weight (g)				Discharge Weight (g)					
Date	Morning			Evening			Night		
Feeding (B or F)									
Passed urine (√ or X)									
Passed stool (√ or X)									
Jaundice (√ or X)									
Temperature									
Heart rate									
Respiratory rate									
Activity (Normal or Lethargic)									
Comment									

Any abnormalities should be discussed with the covering physician.

NEWBORN ASSESSMENT

Newborn Exam		Initial Exam Date	Discharge Exam Date
Maturity			
General appearance			
Facies			
Skull			
Palate			
External Ears			
Eyes			
Spine			
Hips			
Genitalia			
Orifices			
Limbs			
CVS:	H. S. & Murmurs		
	Femoral pulses		
	Cyanosis		
RR and Respiratory system			
Skin (Jaundice)			
Umbilical Cord			
Abdomen	Spleen		
	Kidneys		
	Liver		
CNS OFC			
Posture			
Fontnellae			
Cry			
Moro			
Grasp			
Tone			

☐ **Normal Newborn**

☐ **Risk Factors:**	☐ **Problems:**
	1
	2
	3
	4
☐ **Routine Newborn Care**	☐ **Refer NNU**
Doctor's Signature:	**Print Name**

NEWBORN DISCHARGE CHECKLIST
(Information can be filled in during hospitalization by doctor or nurse)

Infant assessment	**Maternal data**
☐ Discharge examination complete	☐ Maternal blood group
☐ Vital signs stable ≥ 12 hours:	☐ Maternal HIV
☐ RR < 60/min and no distress	☐ Maternal Hep B
☐ HR 100 – 160 /min	☐ GBS status
☐ Temp 36.5°C – 37.4°C (97.7°F-99.3°F)	☐ Maternal RPR
☐ Passed urine < 24h	**Counselling**
☐ Passed stool < 48h	☐ Breastfeeding technique and benefits for mother and infant
☐ Feeding assessment 2 feedings.	☐ Formula preparation (where needed)
Newborn screening	☐ Appropriate urination and stool frequency for infant
☐ Cord blood	☐ Bath demonstration
☐ Jaundice screen	☐ Cord care
☐ O_2 sat	☐ Care of genitalia
☐ Hearing screen	☐ No water needed
☐ Metabolic screen	☐ Common signs of illness and common infant problems
Psychosocial assessment	☐ Hand hygiene information
☐ Father visited	☐ SIDS prevention: Infant to sleep on back
☐ Adequate bonding mother	☐ Car seat information
☐ Able to care for infant	☐ Emergency services information
☐ Good family support	**Late preterm and low birth weight**
	☐ Accurate gestational age has been determined.
	☐ Feeding competency established
	☐ Adequate thermoregulation achieved
	☐ Early follow-up arranged especially to monitor feeding & weight gain
Follow up plan	
☐ Postnatal nurse informed	☐ Private Paediatrician
☐ District Health Centre	☐ PMH
☐ Polyclinic	☐ Other
Date of first appointment	
Doctor's Signature:	Print Name:

8.2.2
INTERVENTIONS TO ENCOURAGE SUCCESSFUL BREASTFEEDING

Breast milk completely meets an infant's nutritional needs and fluid requirements during the first six months of life. Water or other liquids are not needed to maintain good hydration, even in warm climates.

KNOWN BENEFITS OF EXCLUSIVE BREASTFEEDING

For the infant:	• Protects against disease. • Improves the immune system • Protects in the long term against obesity, diabetes, cancer, and high cholesterol
For the mother:	• Reduces the risk of postpartum haemorrhage. • Fosters uterine involution • Delays the return of menstruation which helps the mother prevent new pregnancies, and protects her against anaemia by conserving iron. • Reduces the risk of breast or ovarian cancer before menopause.
Psychological and developmental benefits:	• Fosters the mother-infant bond • Fosters optimal growth and development, including brain growth.
Economic benefits:	• Exclusive breastfeeding saves families the cost of buying breast milk substitutes, and reduces health care costs.
Environmental benefits:	• Exclusive breastfeeding conserves natural resources and reduces pollution.
Impact on mortality:	• 16% of neonatal deaths can be prevented if all newborns are exclusively breastfed from their first day of life, and 22% of neonates will be saved if breastfeeding begins in the first hour of life

DURING PREGNANCY

- All pregnant women and their support people as appropriate will be provided with information on breastfeeding and counselled on the benefits of breastfeeding, contraindications to breastfeeding, and risk of formula feeding.
- Mothers will be encouraged to exclusively breastfeed unless medically contraindicated.

FIRST HOUR AFTER BIRTH

- Initiating breastfeeding for the full-term newborn in the first hour of life reduces neonatal mortality.
- Early skin-to-skin contact has been shown to be associated with exclusive and continuing breastfeeding, as well as with positive physiological and behavioural characteristics in the mother and newborn.
- Breast milk should be the first thing that the newborn tries, and nothing (such as water or other liquids), should be given before breast milk.
- Place the newborn in skin-to-skin contact with its mother, and initiate breastfeeding within the first hour after delivery, whether the birth is vaginal or caesarean, unless medically contraindicated.
- Babies for whom an immediate paediatric assessment should take precedence over skin-to-skin contact include those who:
    - Are preterm ≤37 weeks
    - Exhibit respiratory distress or cyanosis
    - Have major congenital anomalies
    - Are born through meconium-stained amniotic fluid
    - Exhibit hypotonia or weak cry
    - Are at risk of sepsis (e.g. maternal chorioamnionitis)
    - Have evidence of perinatal depression (e.g., decreased muscle tone, apnoea, bradycardia).

Continues ›

FIRST DAY AFTER BIRTH

- Breastfeeding mother–infant pairs will be encouraged to remain together throughout their hospital stay including at night (rooming-in). Skin-to-skin contact will be encouraged as much as possible including at night (rooming-in).
- Parents will be taught that all breastfeeding infants should be put to breast at least 8-12 times per day, with some infants needing to be fed more frequently.
- Infant feeding cues (e.g., increased alertness or activity, mouthing, or rooting) will be used as indicators of the baby's readiness for feeding.
- Time limits for breastfeeding on each side will be avoided.
- Infants can be offered both breasts at each feeding but may be interested in feeding only on one side at a feeding at first.

DURING HOSPITALIZATION

- No supplemental water, glucose water, or formula will be given unless specifically ordered by a healthcare professional or by the mother's documented and informed request.
- Prior to non-medically indicated supplementation, mothers will be informed of the risks of supplementing.
- The supplement should be fed to the baby by cup if possible and will be no more than 10–15 mL (per feeding) in a term baby (during the first 1–2 days of life).
- Bottles will not be placed in or around the breastfeeding infant's bassinet.
- Pacifiers will not be given to normal full-term breastfeeding infants.
- Newborns undergoing painful procedures may be given a pacifier as a method of pain management during the procedure. The infant will not return to the mother with the pacifier.
- Encourage "pain-free newborn care," which may include breastfeeding during procedures.
- Routine blood glucose monitoring of full-term healthy appropriate-for-gestational-age infants is not indicated. Assessment for clinical signs of hypoglycaemia and dehydration will be ongoing.
- Antilactation drugs will not be given to any postpartum mother.
- Routine use of nipple creams, ointments, or other topical preparations will be avoided unless such therapy has been indicated for a dermatologic problem.
- Mothers with sore nipples will be observed for latch-on techniques and will be instructed to apply expressed colostrum or breastmilk to the areola/nipple after each feeding.
- Nipple shields or bottle nipples will not be routinely used to cover a mother's nipples, to treat latch-on problems, or to prevent or manage sore or cracked nipples or used when a mother has flat or inverted nipples. Nipple shields will be used only in conjunction with a lactation consultation and after other attempts to correct the difficulty have failed.
- After 24 hours of life, if the infant has not latched-on or fed effectively, the mother will be instructed to begin to massage her breasts and hand express colostrum into the baby's mouth during feeding attempts.
- Skin-to-skin contact will be encouraged.
- Parents will be instructed to watch closely for feeding cues and whenever these are observed to awaken and feed the infant.
- If the baby continues to feed poorly, hand expression by the mother or a double set-up electric breast pump will be initiated and maintained approximately every 3 hours or a minimum of eight times per day.
- Any expressed colostrum or mother's milk will be fed to the baby by an alternative method.
- The mother will be reminded that she may not obtain much milk or even any milk the first few times she expresses her breasts.
- Until the mother's milk is available, a collaborative decision should be made among the mother, nurse, and healthcare professional regarding the need to supplement the baby.
- Each day the responsible healthcare professional will be consulted regarding the volume and type of supplement.

EVALUATION OF INFANT DURING BREASTFEEDING

- If a baby urinates at least 6 times in 24 hours, its ingestion of breast milk is adequate. Otherwise, the number of feedings should be increased, or the breastfeeding technique being used should be evaluated.

Continues ›

NURSING RESPONSIBILITIES

- Breastfeeding assessment, teaching, and documentation will be done on each shift and whenever possible with each staff contact with the mother.
- Each feeding will be documented, including latch, position, and any problems encountered in the infant's medical record.
- For feedings not directly observed, maternal report may be used.
- Every shift, a direct observation of the baby's position and latch-on during feeding will be performed and documented.

TEACHING POINTS

Breastfeeding mothers will be instructed about:

a. Proper positioning and latch-on.
b. Nutritive suckling and swallowing.
c. Milk production and release.
d. Frequency of feeding/feeding cues.
e. Hand expression of breastmilk and use of a pump if indicated.
f. How to assess if infant is adequately nourished and
g. Reasons for contacting the healthcare professional.

These skills will be taught to primiparous and multiparous women, provided in written form and reviewed before the mother goes home.

SPECIAL SITUATIONS

Mothers who are separated from their sick or premature infants will be:

- Instructed on how to use skilled hand expression or the double set-up electric breast pump. Instructions will include expression at least eight times per day or approximately every 3 hours for 15 minutes (or until milk flow stops, whichever is greater) around the clock and the importance of not missing an expression session during the night.
- Encouraged to breastfeed on demand as soon as the infant's condition permits.
- Taught proper storage and labelling of human milk and
- Assisted in learning skilled hand expression or obtaining a double set-up electric breast pump prior to going home

CONTRAINDICATIONS TO BREASTFEEDING

- Mothers who are HIV positive
- Mothers currently using illicit drugs (e.g., cocaine, heroin) unless specifically approved by the infant's healthcare provider on a case-by-case basis.
- Mothers taking certain medications such as, such as radioactive isotopes, antimetabolites, cancer chemotherapy, some psychotropic medications, and a small number of other medications.
- Most prescribed and over-the-counter drugs are safe for the breastfeeding infant. Some medications may make it necessary to interrupt breastfeeding.
- Mothers with active, untreated tuberculosis. A mother can express her milk until she is no longer contagious, and the milk can be given by another care provider.
- Infants with galactosaemia
- Mothers with active herpetic lesions on the breast(s).Breastfeeding can be recommended on the unaffected breast.
- Mothers with onset of varicella within 5 days before or up to 48 hours after delivery, until she is no longer infectious.
- Mothers with human T-cell lymphotropic virus (HTLV) type I or type II

Clarify any unclear situations with the NNU team.

- When a circumstance is unclear, the benefits should be weighed against the risks and a decision made after discussion with the NNU team.
- When the risk is temporary, the mother should be taught methods to maintain her milk production.

Continues ›

FOLLOW-UP PLAN

- Prior to going home, mothers will be given the names and telephone numbers of community resources to contact for help with breastfeeding.
- All babies are to be seen by a healthcare professional for follow-up within the first few days postpartum.
- A formal evaluation of breastfeeding performance, a weight check, assessment of jaundice, and age-appropriate elimination will be assessed during visits.

CONFIRMATION OF MATERNAL EDUCATION

Before leaving the hospital breastfeeding mothers should be able to:

a. Position the baby correctly at the breast with no pain during the feeding
b. Latch the baby to breast properly
c. State when the baby is swallowing milk
d. State that the baby should be nursed a minimum of eight to 12 times a day until satiety, with some infants needing to be fed more frequently
e. State age-appropriate elimination patterns (at least six urinations per day and three to four stools per day by the fourth day of life)
f. List indications for calling a healthcare professional
g. Manually express milk from their breasts

8.3
UMBILICAL CORD CARE

Omphalitis can be a leading cause of neonatal sepsis or even mortality. The cord should be kept clean and dry. Immersion baths are not recommended until the cord has separated. The following preparations may be used for routine care of the cord:

- Alcohol
- Chlorhexidine (Hibitane)
- Triple stain (Tween 80, gentian violet, Proflavine sulfate)
- Povidone-iodine

Health care providers should explain the normal process of cord separation, including appearance and possible odour. The parents should be instructed to keep the umbilical cord open to the air for natural drying and to use only water at the base of the cord to remove any discharge that may develop. The umbilical cord separates from the abdomen on average 6 to 14 days after birth.

8.4
NEWBORN SCREENING

Newborn screening identifies conditions that can affect a child's long-term health or survival before the disease manifests itself. Early detection, diagnosis, and intervention can prevent death or disability and enable children to reach their full potential.

In Dominica, screening is recommended to detect:

- Jaundice (see section on Detection and management of neonatal jaundice)
- Hearing loss
- Sickle cell anaemia
- Critical congenital heart disease

8.4.1
NEWBORN HEARING SCREENING RECOMMENDATIONS

Significant hearing loss is one of the most common congenital abnormalities present at birth. Detection and appropriate intervention BEFORE 6 months is associated with a good outcome. Infants detected early and managed promptly develop normal speech and language comparable with their peers.

Long term consequences include:

- Impaired communication, social and emotional development, cognition and reading.
- Hearing impaired children frequently do not reach their full potential as adults, with lower educational and employment standards.

Rationale for universal hearing screening

- Using risk factors alone not sufficient in detecting all infants at risk, as up to 50% of infants with hearing loss have no known risk factors.
- Behavioural methods for detecting hearing loss (e.g. infant's response to sound) are very unreliable and are NOT recommended as a method of hearing screening.
- The average age of detection without screening is 14 months, resulting in late intervention with poor outcome.
- Universal hearing screening therefore is important.

Hearing screening milestones

By 1 month of age:

All infants should have a hearing screen. The screen may be performed by any person appropriately oriented in the basic technique of hearing screening, e.g. a designated hospital volunteer, nurse's aide, nurse, or physician.

By 3 months of age:

A comprehensive audiological evaluation should be performed in infants who failed the newborn screen by a team which includes a paediatrician, an audiologist and an Ear, Nose and Throat physician

By 6 months age:

Infants with confirmed hearing loss should receive appropriate intervention from health care and education professionals with expertise in hearing loss and deafness in infants and young children.

Newborn Hearing Screening Protocol

OAE = Otoacoustic emission

ABR = Auditory Brainstem Response

Methods of hearing screening

Otoacoustic emission (OAE)

OAE measurements are obtained from the ear canal by using a sensitive microphone within a probe that records cochlear responses to sound. OAEs reflect the status of the peripheral auditory system extending to the cochlear outer hair cells.

Automated Auditory Brainstem Response (AABR)

ABR measurements are obtained from surface electrodes that record signals generated in the cochlea, auditory nerve, and brainstem in response to sounds delivered via an earphone. Automated ABR measurements reflect the status of the peripheral auditory system, the eighth nerve, and the brainstem auditory pathway.

AT BIRTH	BEFORE **1 MONTH**	BEFORE **3 MONTHS**	BEFORE **6 MONTHS**
OAE to be done on every infant prior to discharge. Results to be sent to follow up provider. If pass, see below. If either ear "refer" (fail after 2 tests), proceed to next step.	Outpatient rescreening (OAE). Repeat screen results to be sent to follow up provider. If pass, see below. If refer proceed to next step.	Full paediatric audiologic examination. Full history and otoscopic examination. ABR and further testing of middle ear function etc. If pass, see below. If refer, evaluate for assisitive listening device and proceed to next step.	Full Medical evaluation to determine aetiology of hearing loss. Genertic assessment. Opthalmic examiniation. Ongoing audiology assessment. Developmental paediatrics.

PASS

If infant has passed the hearing screen:

Provide parents with information on hearing, speech and language development.

Provide ongoing developmental surveillance.

Refer all infants with risk factors for late onset hearing loss.

8.4.2
CRITICAL CONGENITAL HEART DISEASE (CCHD)

Rationale for screening

Critical congenital heart diseases (CCHDs) are those structural heart conditions which have significant morbidity and mortality associated with closing of the ductus arteriosus or other physiologic changes early in life. Babies with CCHDs usually require life-saving intervention during their first year.

Screening using pulse oximetry can identify those newborns with CCHD associated with hypoxia in the newborn period.

The seven main screening targets that are associated with hypoxia include:

1. D-transposition of the great arteries
2. Hypoplastic left heart syndrome
3. Pulmonary atresia (intact septum)
4. Total anomalous pulmonary venous connection
5. Tetralogy of Fallot
6. Tricuspid atresia
7. Truncus arteriosus.

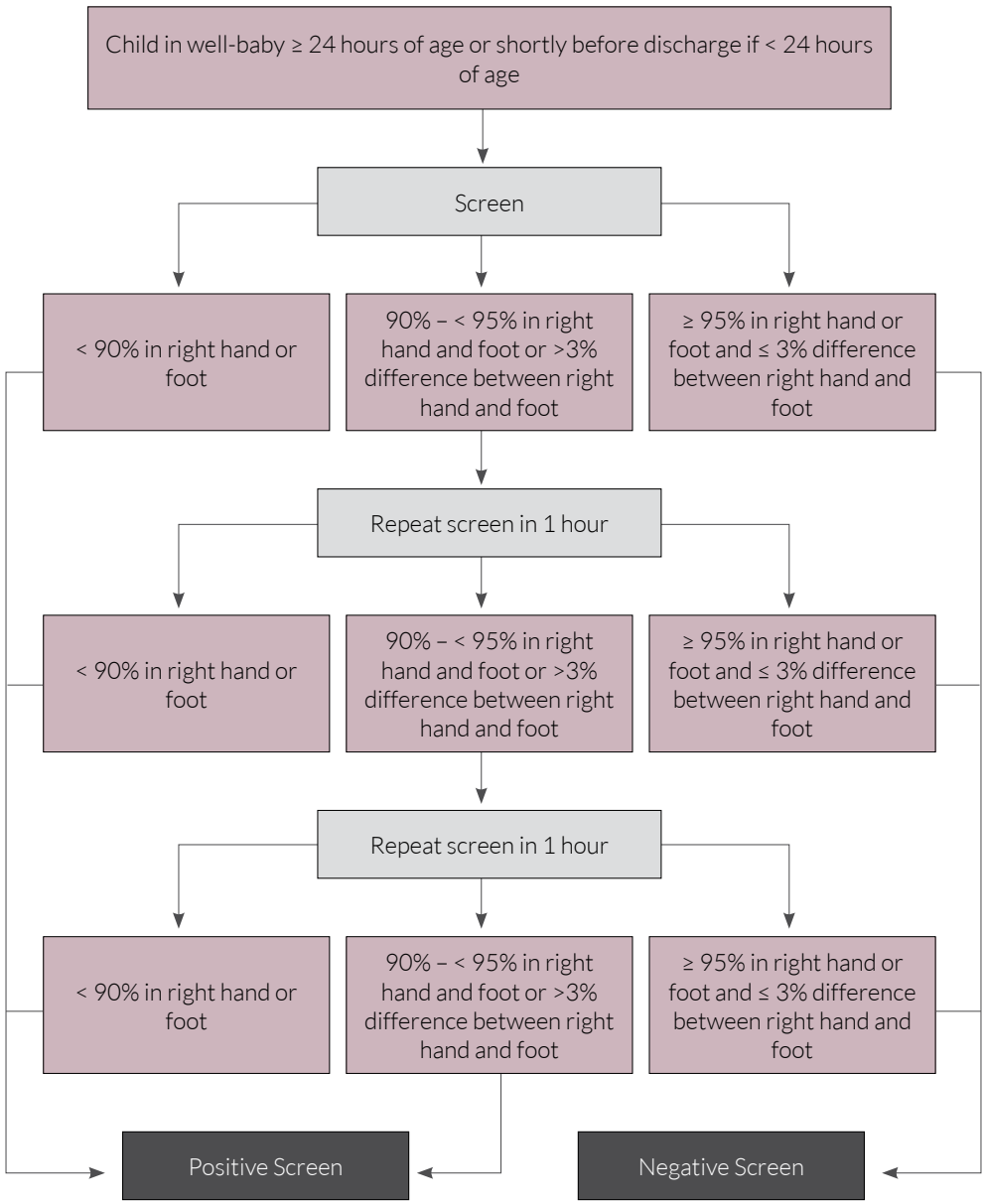
Other heart defects can be just as severe as the main screening targets and also require treatment soon after birth. However, pulse oximetry screening may not detect these heart defects as consistently as the seven disorders listed.

Once identified, babies with a CCHD can be seen by a cardiologist and can receive specialized care and treatment that can prevent disability and death early in life.

Screening protocol

1. Screening should conducted at 24-48 hours of life, or as close to discharge as possible if earlier discharge is planned.
   a. Screening < 24 hours can lead to false-positive results because the transition from foetal to neonatal circulation is incomplete.
   b. Screening > 48 hours can miss an opportunity for intervention before closing of the ductus arteriosus.
2. Screening is recommended in the right hand and 1 foot.
3. The pulse-oximetry measure is complete once there is an indication that the device is appropriately tracking the infant's pulse rate (e.g. stable waveform).

Pulse-oximetry monitoring protocol based on results from the right hand (RH) and either foot



A screen result would be considered positive if:

1. Any oxygen saturation measure is <90%
2. Oxygen saturation is <95% in both extremities on 3 measures, each separated by 1 hour
3. There is a >3% absolute difference in oxygen saturation between the right hand and foot on 3 measures, each separated by 1 hour.

Any screening that is ≥95% in either extremity with ≤3% difference in oxygen saturation between the upper and lower extremity would be considered a "pass" result, and screening would end.

Any abnormal pattern of low blood oxygen saturation requires a complete cardiac evaluation.

8.4.3
SICKLE CELL DISEASE AND ANAEMIA SCREENING

Rationale for screening

There is good evidence that early detection of sickle cell anaemia followed by prophylactic oral penicillin substantially reduces the risk of serious infections during the first few years of life.

Additional benefits result from pneumococcal conjugate vaccination and parental education about early warning signs of infection.

Screening protocol

Please see also the Follow-up section for routine care during the first year of life.

Screening for sickle cell disease is performed routinely at 6-9 months age on all infants.

For infants born and discharged routinely:

- Sickling/Hb is done by health care providers at the patient's Type I or Type III clinic or private physician.

For infants discharged from NNU:

- Low risk infants have Sickling/Hb done at Friday Neonatal follow-up clinic at PMH
- High risk patients have Sickling/Hb done at the Tuesday (Neonatologist) clinic at PMH.

8.5
SELECTED PROBLEMS IN THE NEWBORN PERIOD

8.5.1
MANAGEMENT OF JAUNDICE IN INFANTS BORN ≥ 35 WEEKS GESTATION

Bilirubin metabolism

After birth, bilirubin is formed from breakdown of heme from red cells producing unconjugated bilirubin that is fat soluble. The liver converts this bilirubin to a water-soluble, non-toxic conjugated form. From the liver, bilirubin is excreted into the bile and transported through the gut into the stool.

Under certain circumstances, bilirubin may accumulate and be toxic to the central nervous system possibly causing neurologic impairment in healthy term newborns.

In newborn infants, jaundice can be detected by blanching the skin with digital pressure, revealing the underlying colour of the skin and subcutaneous tissue. The assessment of jaundice must be performed in a well-lit room or, preferably, in daylight at a window. Jaundice is usually seen first in the face and progresses caudally to the trunk and extremities. Visual estimation of bilirubin levels from the degree of jaundice can lead to errors.

Bilirubin screening : Assessment of risk in well infants ≥ 35 weeks gestation

Before discharge, every newborn should be screened for the risk of developing severe hyperbilirubinaemia. Jaundice should be assessed whenever the infant's vital signs are measured but no less than every 8 to 12 hours. This approach will reduce the frequency of severe hyperbilirubinaemia and bilirubin encephalopathy (kernicterus).

Bilirubin screening protocol

Step 1: Identify the presence of any risk factors listed in the box below. The more risk factors present, the greater the risk of severe hyperbilirubinaemia.

Step 2: Measure the TcB or TSB of any icteric infant or infant ready for discharge.

Step 3: Plot the infant's serum bilirubin on the risk assessment nomogram by age (hrs).

Step 4: Identify the zone in which the value falls.

Step 5: Manage the infant according to the table below:

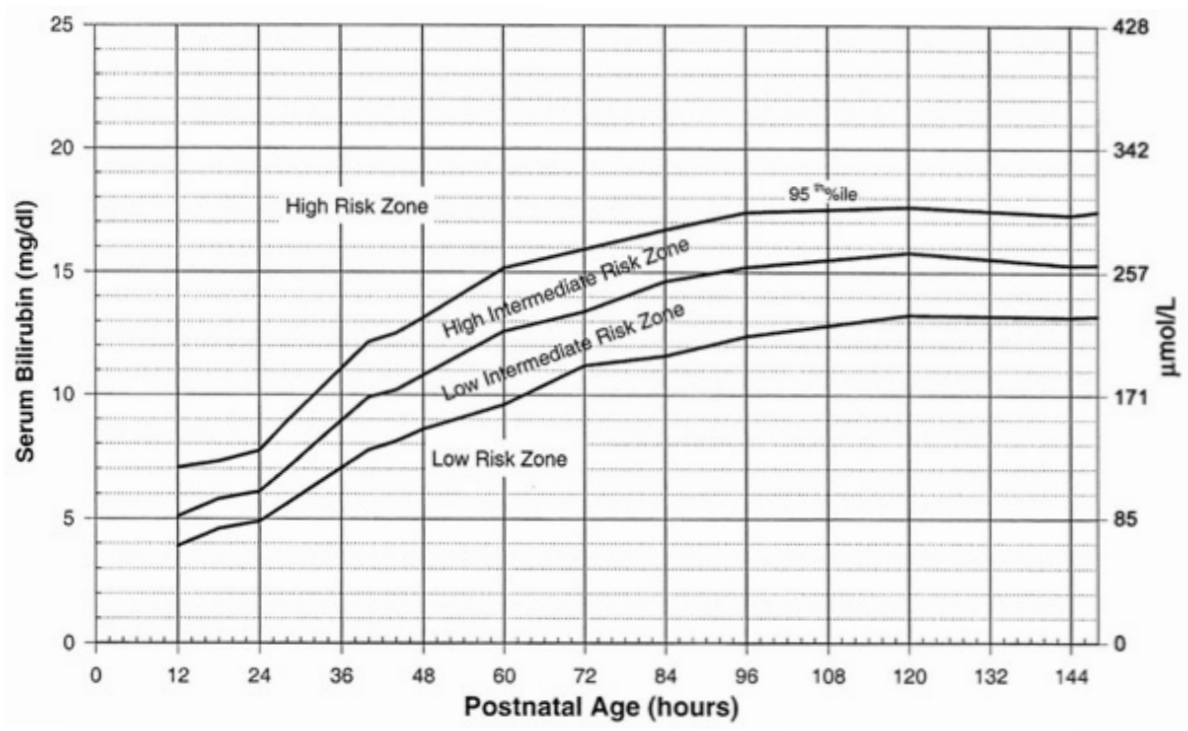
!

IMPORTANT RISK FACTORS FOR SEVERE HYPERBILIRUBINAEMIA

- Predischarge TSB or TcB measurement in the high-risk or high-intermediate–risk zone
- Gestational age < 38 weeks
- Exclusive breastfeeding, particularly if nursing is not going well and weight loss is excessive
- Jaundice observed in the first 24h
- Isoimmune or other hemolytic disease (eg, G6PD deficiency)
- Previous sibling with jaundice
- Cephalohaematoma or significant bruising
- East Asian race

RISK ZONES FOR SEVERE HYPERBILIRUBINAEMIA	
High risk zone	• Evaluate need for phototherapy (see fig X) • Repeat serum bilirubin in 4-24 hours • Maintain exclusive breastfeeding
High intermediate risk zone	• Evaluate need for phototherapy (see fig X) • For infants 35-37 wk or ≥ 38 weeks **with** risk factors, repeat bilirubin in 4-24 hrs • For infants ≥ 38 weeks **without** risk factors, repeat bilirubin in 2 days • If increase exceeds 0.20 mg/dL/ hour, start intensive phototherapy
Low intermediate risk zone	• If discharging < 72 hrs, followup in 2 days • For infants 35-37 wks **with** risk factors, check bilirubin level
Low risk zone	• Discharge; schedule clinical monitoring visit in 2 days

Risk assessment nomogram for severe hyperbilirubinaemia



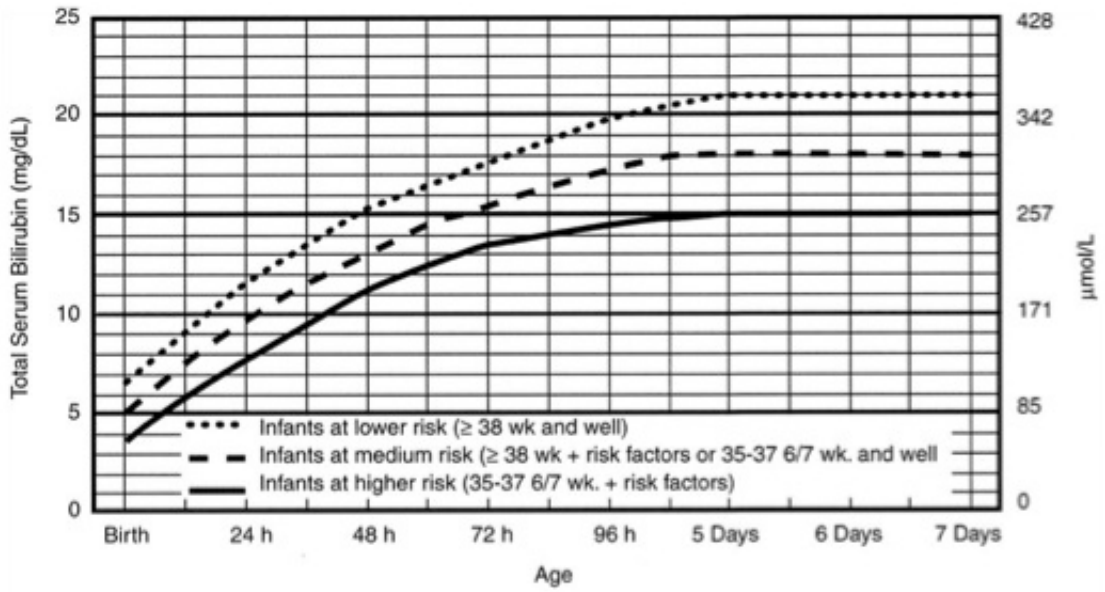
The nomogram is for designation of risk in well newborns at:

- ≥ 36 weeks gestational age with birth weight of ≥2000 g
- ≥35 weeks gestational age and birth weight of ≥2500 g

The serum bilirubin level should be obtained before discharge, and the zone in which the value falls predicts the likelihood of a subsequent bilirubin level exceeding the 95th percentile (high-risk zone).

LABORATORY EVALUATION OF THE JAUNDICED INFANT OF 35 OR MORE WEEKS GESTATION	
INDICATIONS	**ASSESSMENTS**
Jaundice in first 24 h	Measure TcB and/or TSB
Jaundice appears excessive for infant's age	Measure TcB and/or TSB
Infant receiving phototherapy or TSB rising rapidly (ie, crossing percentiles) and unexplained by history and physical examination	Blood type and Coombs' test, if not obtained with cord blood
	Complete blood count and smear
	Measure direct or conjugated bilirubin
	It is an option to perform reticulocyte count, G6PD, and $ETCO_2$ if available
	Repeat TSB in 4–24 h depending on infant's age and TSB level
TSB concentration approaching exchange levels or not responding to phototherapy	Perform reticulocyte count, G6PD, albumin, $ETCO_2$ if available
Elevated direct (or conjugated) bilirubin level	Do urinalysis and urine culture. Evaluate for sepsis if indicated by history and physical examination
Jaundice present at or beyond age 3 wk, or sick infant	Total and direct (or conjugated) bilirubin level
	If direct bilirubin elevated, evaluate for causes of cholestasis
	Assess for hypothyroidism or galactosaemia in the infant.

Guidelines for phototherapy in hospitalized infants ≥35 weeks' gestation.



- Use total bilirubin. Do not subtract direct reacting or conjugated bilirubin.
- Risk factors = isoimmune hemolytic disease, G6PD deficiency, asphyxia, significant lethargy, temperature instability, sepsis, acidosis, or albumin < 3.0g/dL (if measured)
- For well infants 35-37 6/7 wk can adjust TSB levels for intervention around the medium risk line. It is an option to intervene at lower TSB levels for infants closer to 35 wks and at higher TSB levels for those closer to 37 6/7 wk.
- It is an option to provide conventional phototherapy in hospital or at home at TSB levels 2-3 mg/dL (35-50mmol/L) below those shown but home phototherapy should not be used in any infant with risk factors.

Instructions:

1. For infants with high bilirubin levels, calculate the age in hours.
2. Note risk factors in the history:
   a. Isoimmmune haemolytic disease
   b. G6PD deficiency
   c. Asphyxia
   d. Significant lethargy
   e. Temperature instability
   f. Sepsis
   g. Acidosis
   h. Albumin < 3.0g/dl (if measured)
3. Carefully determine the risk level (high, medium, low) according to the information on the chart above.
4. Plot on the nomogram to determine need for phototherapy.
5. Use the chart to follow sequential bilirubin levels. Once the bilirubin level is below phototherapy range, discontinue the lights.
6. A follow-up bilirubin measurement within 24 hours is recommended

Please note: Because phototherapy "bleaches" the skin, TcB measurements in infants undergoing phototherapy are not reliable. Only serum bilirubin should be used.

8.5.2
GROUP B STREPTOCOCCUS RECOMMENDATIONS

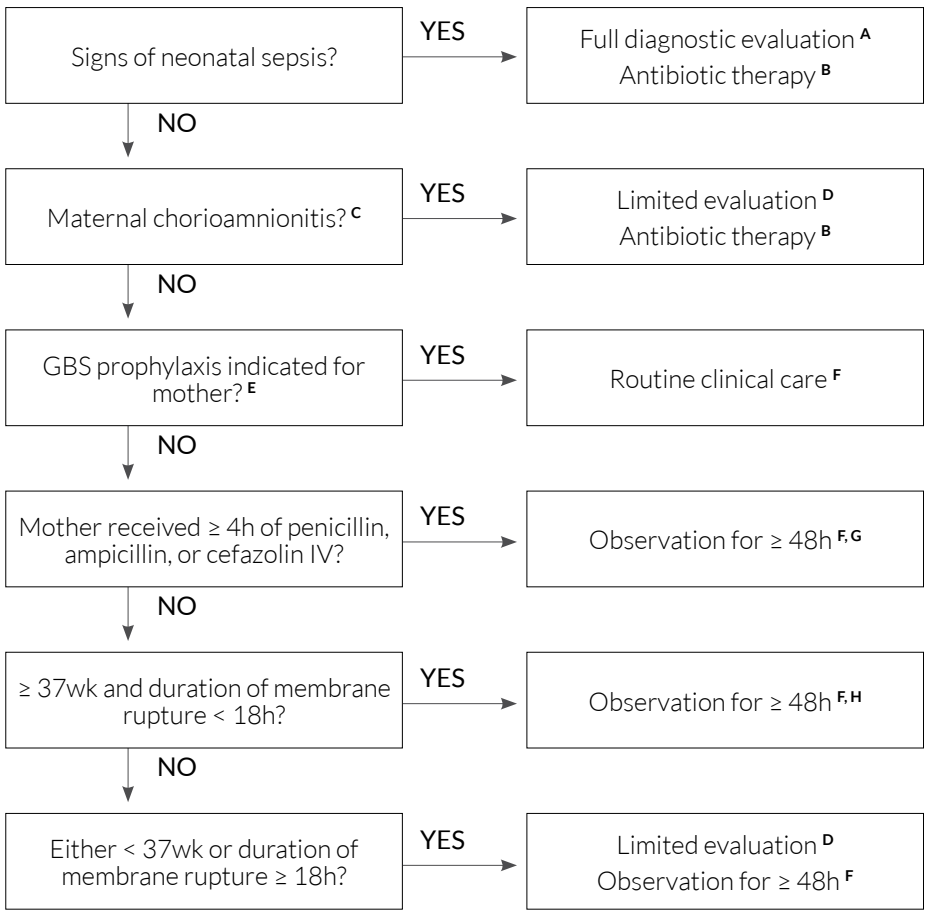
The bacterium Group B Streptococcus (GBS) is a leading infectious cause of early neonatal morbidity and mortality.

Maternal colonization with GBS in the genitourinary or gastrointestinal tracts is the primary risk factor for disease. Administering intravenous antibiotics during labour to women at risk for transmitting GBS to their newborns has been shown to prevent invasive disease in the first week of life (early-onset disease).

Universal screening of pregnant women at 35-37 weeks gestation best demonstrates which women are at risk for transmitting GBS to their newborns.

In those infants exposed to GBS during labour, manage according to the algorithm below:

ALGORITHM FOR THE PREVENTION OF EARLY-ONSET GBS INFECTION IN THE NEWBORN.



NOTES TO THE ALGORITHM FOR THE PREVENTION OF EARLY-ONSET GBS INFECTION IN THE NEWBORN.

a) Full diagnostic evaluation includes a blood culture; CBC count, including white blood cell differential and platelet counts; chest radiograph (if respiratory abnormalities are present); and lumbar puncture (if the patient is stable enough to tolerate procedure and sepsis is suspected).

b) Antibiotic therapy should be directed toward the most common causes of neonatal sepsis, including intravenous ampicillin for GBS and coverage for other organisms (including Escherichia coli and other Gram-negative pathogens) and should take into account local antibiotic-resistance patterns

c) Consultation with obstetric providers is important in determining the level of clinical suspicion for chorioamnionitis. Chorioamnionitis is diagnosed clinically, and some of the signs are nonspecific.

d) Limited evaluation includes blood culture (at birth) and CBC count with differential and platelets (at birth and/or at 6–12 hours of life).

e) GBS prophylaxis is indicated if 1 or more of the following is true:

e.1. Mother is GBS-positive within the preceding 5 weeks

e.2. GBS status is unknown and there are 1 or more intrapartum risk factors, including <37 weeks' gestation, rupture of membranes for ≥18 hours, or temperature of ≥100.4°F (38.0°C)

e.2. GBS status is unknown and there are 1 or more intrapartum risk factors, including <37 weeks' gestation, rupture of membranes for ≥18 hours, or temperature of ≥100.4°F (38.0°C)

e.3. GBS bacteriuria during current pregnancy or

e.4. History of a previous infant with GBS disease.

f) If signs of sepsis develop, a full diagnostic evaluation should be performed, and antibiotic therapy should be initiated.

g) If at ≥37 weeks' gestation, observation may occur at home after 24 hours if other discharge criteria have been met, there is ready access to medical care, and a person who is able to comply fully with instructions for home observation will be present. If any of these conditions is not met, the infant should be observed in the hospital for at least 48 hours and until discharge criteria have been achieved.

h) Some experts recommend a CBC count with differential and platelets at 6 to 12 hours of age.

i) The definition of adequate IAP has been clarified to be at least 4 hours of penicillin, ampicillin, or cefazolin. The initial intravenous dose of penicillin is 5 million units; for ampicillin and cefazolin, the initial dose is 2 g All other antibiotics, doses, or durations are considered inadequate for the purposes of neonatal management.

8.5.3
MANAGEMENT OF SUSPECTED SEPSIS

- All newborn infants with signs suggestive of sepsis should have a full diagnostic evaluation, including a lumbar puncture if the infant is stable enough to undergo the procedure
- These signs include, but are not limited to: lethargy, poor feeding, temperature instability, respiratory distress, vomiting
- 15% to 38% of infants with early-onset meningitis have sterile blood cultures, so evaluating the cerebrospinal fluid is required for optimal diagnostic sensitivity.
- If the care provider believes that a non-infectious condition is responsible for the infant's signs (e.g., transient tachypnoea of the newborn) and there are no maternal risk factors for sepsis in an otherwise well-appearing infant, the lumbar puncture can be deferred or eliminated.
- Empirical antimicrobial therapy, typically intravenous ampicillin and gentamicin then should be initiated promptly:

Gentamicin
4 mg/kg, q24hrly, IV or IM, for 7-10 days.

i) Once a day gentamicin regimen is superior to a multiple doses a day regimen in that it achieves higher peak levels while avoiding toxic trough levels

Ampicillin
100mg/kg/dose i.v. q12hrly for 7-10 days

8.5.4
FAILURE TO PASS URINE WITHIN 24 HOURS OF BIRTH

100% of all healthy infants, regardless of gestational age should void by 24 hours of life. Any infant who has failed to do so should be examined thoroughly and referred for prompt evaluation by Newborn services.

8.5.5
FAILURE TO PASS MECONIUM WITHIN 48 HOURS OF BIRTH

99% of healthy term infants pass a stool by 48 hours. Prematurity is however, associated with delayed passage of stool. After taking a thorough history and physical examination, the infant must be referred to Newborn services for further investigation.

8.5.6
MANAGEMENT OF THE HIV EXPOSED INFANT (HEI)***

The World Health Organization estimates the overall HIV/AIDS prevalence in the Caribbean to be the second highest in the world. By extension, there are a number of HIV infected mothers. Prevention of maternal to child transmission (PMTCT) of HIV is therefore important.

Infants of HIV-infected mothers are termed "HIV-Exposed Infants" (HEI) until their HIV status is definitively established. These infants require special treatment and testing.

***Information is based on the most recent draft of the OECS Guidelines for management of HIC (2012). The guidelines are not yet finalized.

Management of the HIV Exposed Infant after delivery

- Using gloves, bathe the infant as soon as possible with soap and water.
- Perform routine post-delivery care, including weighing, measuring of the infant Vitamin K prophylaxis and eye care. Cord blood samples for Blood Group should be collected as usual.
- Examination of the infant is performed as soon as possible.
- Confirm maternal history, including status of ARV prophylaxis and Hepatitis B status, as well as any maternal (opportunistic infections) OIs
- Avoid unnecessary invasive procedures.
- Ensure that the infant and mother receive ARV prophylaxis as outlined by protocol.
- Administer Hepatitis B vaccine and Immune globulin within 12-24hrs of age if mother Hepatitis B positive.

Nutrition of the HIV Exposed Infant

- Breastfeeding should be avoided as 15% of mother to child transmission occurs in this way.
- Breastfeeding by HIV-infected mothers is generally discouraged in Dominica given the relative availability of safe drinking water, infant formula, and the social acceptability of formula feeding.
- Confirm an individual feeding plan including formula choice, feed schedule and volumes.
- HIV-infected mothers should be counseled regarding the risk of HIV transmission to their infants via breastfeeding.

PMTCT for HIV-exposed infants

Infant PMTCT prophylaxis depends upon what the mother received for PMTCT

TABLE
PMTCT FOR HIV-EXPOSED INFANTS

Mother	Infant
A Infants of mothers who are on HAART	• The infant should receive daily AZT or NVP for six weeks after delivery.
B Infants of mothers who received single-dose AZT during pregnancy, with or without single-dose nevirapine at birth	• The infant should receive daily AZT or NVP for six weeks after delivery.
C Infants of mothers who received no antiretroviral prophylaxis during pregnancy or delivery	• The infant should receive zidovudine for 6 weeks plus three doses of nevirapine during the first 8 days of life. Dose 1: Give < 48 hours birth Dose 2: Give 48 hours after Dose 1 Dose 3: Give 96 hours after Dose 2 **Nevirapine (NVP) dose:** Birth weight > 2.0kg = 12mg Birth weight ≤2.0 kg = 8 mg

Refer to appendix U for more details.

Important notes:

- AZT and NVP are not likely to have any impact if not given within three days of birth
- The mother should be carefully assessed for indications for starting antiretroviral therapy, regardless of her infant feeding choice

HIV testing

- All HIV-Exposed Infants (HEI) should be tested for HIV using specialized HIV DNA or RNA tests.
- Traditional HIV antibody testing is not accurate in this age group, since any HIV antibodies in infants could simply represent maternal HIV antibodies that crossed the placenta; instead, dried blood spot (DBS) testing is indicated.
- The specimens for DBS should be collected at 4-6 weeks of life.
- A small sample of blood is collected on special filter paper; typically from a heel prick (phlebotomy is not required).
- The blood dries on the filter paper and is sent to the Ladymeade Reference Unit (LRU) in Barbados for HIV DNA testing; results are typically available within 3-4 weeks.

Pneumocystis Jiroveci Prophylaxis

All HEIs should receive daily co-trimoxazole starting at four to six weeks of age and continued until HIV infection is ruled out.

Co-trimoxazole dosing options include:

- TMP-SMX 5mg/kg/day of the TMP component bid for 7 days Or
- TMP-SMX 5mg/kg/day of the TMP component bid 3 times a week on alternate days (e.g.Monday-Wednesday-Friday)

Immunization precaution*

The BCG vaccine normally given at 6 weeks should be deferred until the results of dried blood spot testing reveal the HIV status of the child.

Prior to Discharge of the HIV exposed infant from Hospital

- Infants should be reviewed prior to discharge by a paediatrician or the most senior available clinician.
- Infants should be docketed and clinic follow-up ensured.
- Mothers should be taught how to administer ARV prophylaxis to their infants.
- Any issues that may prevent adherence to ARVs or to prophylactic medications should be investigated and addressed.
- A supply of replacement feeds should be provided to mothers and a date for an appointment with the nutritionist established.

Follow-Up in One to Two Weeks of the HIV exposed child

- Routine physical examination of infants should be performed, including growth parameters.
- Adherence to ARV prophylaxis should be ensured.
- Any evidence of side effects of ARV prophylaxis should be monitored.
- Mothers should be advised to continue formula feeds and ensure hygienic preparation of same.
- Any concerns of the parents should be accessed and addressed.

Follow-Up at Six Weeks to Two Months of the HIV exposed child

- Routine physical examination of infants should be performed.
- Growth and development should be assessed.
- ARV prophylaxis should be discontinued.
- TMP-SMX prophylaxis should be commenced, using one of the dosing options outlined on page _. TMP-SMX prophylaxis should be continued until it is established that the child is HIV-negative.
- Iron and vitamin supplementation should also be commenced.
- Blood samples for HIV dried blood spot (DBS) PCR testing should be drawn.
- Blood samples for other tests should be drawn, e.g. CBC and differential, TORCH screen, VDRL, and Hepatitis BsAg and HTLV-1 serology, as appropriate.
- Vaccination with pentavalent (DPT, Hib, and Hepatitis B (HBV)) and polio should be started. IPV is preferred, but if IPV is not available, OPV may be administered to asymptomatic infants.
- Continuation of formula feeds should be advised.
- Any medical problems should be treated.
- Any concerns of the parents should be accessed and addressed.

8.5.7 OPHTHALMIA NEONATORUM (NEONATAL CONJUNCTIVITIS)

This is a conjunctivitis occurring during the first month of life. Before the use of topical prophylaxis, ophthalmia neonatorum was a devastating disease associated with high morbidity such as blindness.

Infections can be acquired from:

- Vaginal microorganisms during birth
- Hand-to-eye contamination from hospital workers.

An infection from the birth canal is usually associated with a vaginal delivery, but it can also occur after a caesarean delivery if the amniotic membranes rupture before delivery.

Infectious causes of neonatal conjunctivitis usually develop at least 48 hours after birth. Such causes include Chlamydia trachomatis, Neisseria gonorrhoeae, Group B Streptococcus, Staphylococcus aureus, Escherichia coli, Haemophilus influenzae, and herpes simplex virus (HSV) type 2. The cause of the conjunctivitis can often be determined by the time of onset of the conjunctivitis.

Clinical presentation: see table below for details

- Gonococcal and chlamydial conjunctivitis usually have the most severe presentation with profuse, purulent eye discharge.
- Neonatal conjunctivitis due to other microbial agents is usually milder.
- If there is any doubt, consult a physician or the NNU team.

CAUSES OF NEONATAL CONJUNCTIVITIS

Cause	Time of Onset	Presentation	Conjunctival Scraping	Treatment
Neisseria Gonorrhea	2 to 4 days	Lid swelling, purulent discharge; corneal involvement can lead to corneal ulcer and perforation	Gram-negative intracellular diplococci and culture	Topical erythromycin and IV ceftriaxone; treat even if asymptomatic
Chlamydia	4 to 10 days	Variable severity of lid swelling and serous or purulent discharge	Giemsa stain, basophilic, cytoplasmic inclusion bodies, positive direct immunofluorescent assay and culture	Initial IV erythromycin, then 50 mg/kg/day by mouth for 14 days; treat even if asymptomatic
Haemophilus	5 to 10 days	Serous or serosanguineous discharge, hemorrhagic conjunctivitis common; lid swelling with petechiae and bluish lid skin indicate preseptal cellulitis	Gram-negative Coccobacillus and culture	Topical trimethoprim-polymyxin B eyedrops and IV cefotaxime
Other Bacteria (Staphylococci, Streptococci)	4 to 7 days	Purulent discharge, with or without lid swelling	Gram-positive for specific bacteria and culture	Topical erythromycin or trimethoprim–polymyxin B eyedrops, or moxifloxacin
Silver Nitrate Toxicity	Within 24 hr	Watery discharge	Negative gram-negative Giemsa; few PMN	None needed
Herpes Simplex Virus Type 2	6 days to 2 wks	Usually unilateral, serous discharge with keratitis, positive corneal staining	Gram stain, multinucleated giant cells, Papanicolaou-stained intranuclear inclusion bodies, and herpes culture	Topical trifluorothymidine (Viroptic) and IV acyclovir

DIFFERENTIAL DIAGNOSIS OF RED TEARY EYES IN NEWBORNS

Congenital herpes keratitis

Congenital glaucoma

- Congenital glaucoma is characterized by clear tears, large cornea, and corneal oedema

Dacryocystitis

- Dacryocystitis is an infection of the nasolacrimal sac that causes swelling in the medial canthal area of the lower lid, and it should be distinguished from conjunctivitis.

EVALUATION

Infant should be discussed/examined by the physician attached to the Health Centre

Perform red reflex test and general eye exam

Discuss more severe cases e.g. significant purulent discharge or worsening discharge with the NNU

Obtain conjunctival scrapings and test by Gram stain, Giemsa stain, and direct immunofluorescent assay for Chlamydia, as advised.

Perform conjunctival culture on blood agar, chocolate agar, and Thayer-Martin agar as advised

Virus culture should be considered, especially if only one eye is affected.

THERAPY

Initiate initial therapy (before laboratory results) with erythromycin topical ointment and intravenous cefotaxime.

The therapy of ophthalmia neonatorum is Ceftriaxone 50 mg/Kg (not exceeding 125 mg) administered IV or IM in a single dose.

For chlamydial conjunctivitis: Erythromycin base or ethylsuccinate 50 mg/kg/day orally divided into 4 doses daily for 14 days

Consider trifluorothymidine and intravenous acyclovir if herpes is suspected.

Provide organism-specific treatment after test results come back.

8.5.8
CONGENITAL SYPHILIS

Congenital syphilis occurs after infection of the placenta in pregnant women who have secondary syphilis that subsequently spreads haematogenously to the foetus. Transmission can occur at any stage of pregnancy.

Congenital syphilis is divided classically into early and late disease. Early congenital syphilis manifests in the first 2 postnatal years. Clinical signs that appear beyond this time are classified as late syphilis.

Approximately 30% to 40% of foetuses that have congenital syphilis are stillborn, and approximately 75% of liveborn infants are asymptomatic at birth. Most affected children develop symptoms between the 3rd – 14th weeks after birth, and the wide spectrum of symptoms often makes the diagnosis difficult.

Maternal antibodies are transferred passively via the placenta, making distinction between mother's and infant's antibodies difficult. However, if the neonatal antibody titres are > than four times those of the mother, it is unlikely that they were transferred passively.

Infection acquired by the mother later in pregnancy results in transfer of infection to the foetus before antibodies can be made and low antibody titres in the neonate.

Algorithm for evaluation and treatment of infants born to mothers with reactive serologic tests for syphilis.

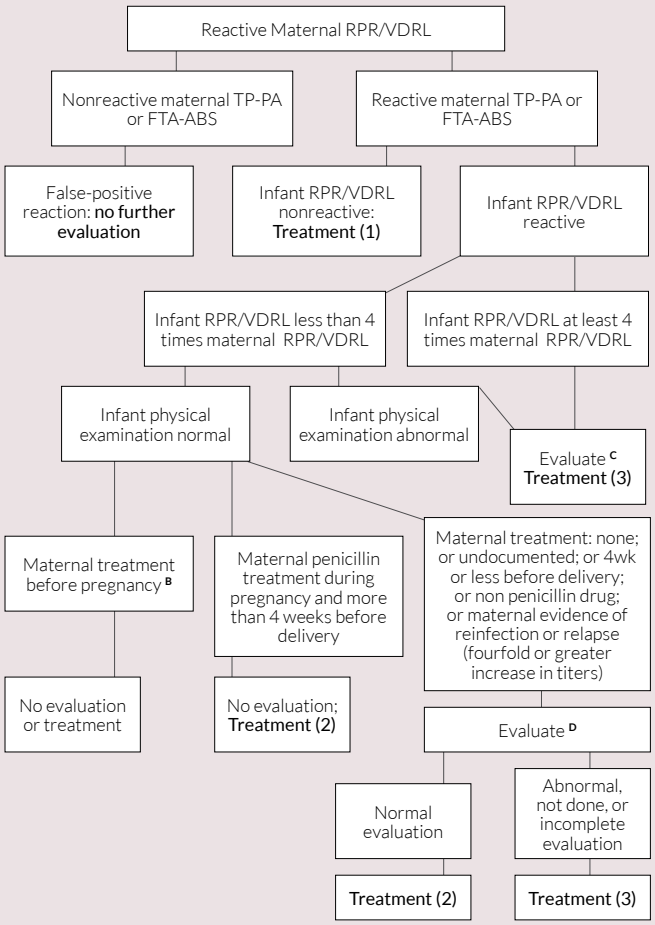
RPR	Rapid Plasma Reagin test
VDRL	Venereal Disease Research Laboratory (test)
TP-PA	Treponema pallidum particle agglutination test
FTA-ABS	Fluorescent treponema antibody absorption test

Special Note:
Women who maintain a VDRL titre 1:2 or less (RPR 1:4 or less) beyond 1 year after successful treatment are considered serofast

Physical Examination:
See notes below for guidance

Evaluation:
See below for details

Treatment:
(1), (2), (3) see below for details.



PHYSICAL EXAMINATION FOR EARLY CONGENITAL SYPHILIS (SEE ALGORITHM FOR REFERENCE)	
System	Clinical manifestations
General	IUGR, jaundice (syphilitic hepatitis), oedema (nephrotic syndrome)
Skin	Condyloma lata Pink macular rash proceeding to coppery brown with desquamation Vesiculobullous eruption of palms and soles (Pemphigus syphiliticus)
Neurological	Pseudoparalysis, hydrocephalus, seizures, meningitis, sensorineural deafness
EENT	Snuffles (syphilitic rhinitis), choroiditis
Haematological	Coombs-negative haemolytic anaemia, ↑ or ↓ WBC count ↓ Platelets.
Abdomen	Hepato- or hepatosplenomegaly,,
Musculoskeletal	Osteochondritis, diaphyseal periostitis in long bones

Evaluation of the child with suspected congenital syphilis

(See algorithm for reference)

Evaluate infant with:

- Complete blood count, cerebrospinal fluid examination, quantitative VDRL testing, and long-bone radiographs.
- Additional testing if infection strongly suspected: ophthalmologic examination, neuroimaging, auditory brainstem response, and liver function testing.
- Human immunodeficiency virus testing should be considered.

Treatment

(See algorithm for reference to the scenarios below)

1) If the mother has had:
   i) No treatment, undocumented treatment, treatment ≤ 4 weeks s before delivery or evidence of reinfection or relapse (4 fold or greater increase in titres)

AND

   ii) The infant's physical examination is normal
   iii) THEN treat infant with a single intramuscular (IM) injection of benzathine penicillin (50, 000 U/kg).
   iv) If these criteria are not met, no treatment is required. In both scenarios, no additional evaluation is needed.
2) Benzathine penicillin G, 50,000U/kg, IM x 1 dose.
3) Aqueous penicillin G, 50,000U/kg, IV every 12 hours (1 week of age or younger), every 8 hours (older than 1 week), or Procaine penicillin G 50,000U/kg IM single daily dose x 10 days.

8.5.9
HEPATITIS B RECOMMENDATIONS

Hepatitis B virus (HBV) may be transmitted vertically from mothers with acute hepatitis during pregnancy or with the hepatitis B surface antigen (HBsAg) carrier state. The risk of an infant with perinatal exposure is 70% to 90%.

HEPATITIS B IMMUNOPROPHYLAXIS PLAN BY INFANT BIRTH WEIGHT

Maternal Status	Birth weight ≥ 2000g	Birth weight < 2000g
HBsAg Positive	■ Hepatitis B vaccine + HBIG within 12 hrs of birth ■ Continue vaccine series beginning at 1-2 months age according to schedule ■ Immunize with 4 vaccine doses, do not count birth dose as part of vaccination series ■ Check anti-HBs and HBsAg after completion of vaccination series at age 9-18 months	■ Hepatitis B vaccine + HBIG within 12 hrs of birth ■ Continue vaccine series beginning at 1-2 months age according to schedule ■ Immunize with 4 vaccine doses, do not count birth dose as part of vaccination series
HBsAg status Unknown	■ Test mother for HBsAg immediately after admission ■ Hepatitis B vaccine within 12 hrs of birth ■ Administer HBIG within 7 days if mother is + or remains unknown ■ Continue vaccination series beginning 1-2 months	■ Test mother for HBsAg immediately after admission ■ Hepatitis B vaccine within 12 hrs of birth ■ Administer HBIG if mother is + or unknown within 12 hrs birth ■ Continue vaccination series beginning 1-2 months

- Give Hepatitis B Immune Globulin (HBIG) 0.5 mL IM and Hepatitis B vaccine IM as a one-time order.
- Give with separate syringes at separate sites according to current dosage guidelines.

Breastfeeding and hepatitis B positive mothers.

With appropriate treatment, including HBIG, breastfeeding of babies born to HBsAg-positive mothers poses no additional risk to the infant.

HEPATITIS B VACCINATION SCHEDULE FOR INFANTS BY MATERNAL HEPATITIS B SURFACE ANTIGEN

	Hepatitis B vaccine only		Hepatitis B (dose 1) + combination vaccine follow-up	
Maternal HBsAg status	Dose	Age	Dose	Age
Positive	1	< 12 hrs age	1	< 12 hrs age
	HBIG	< 12 hrs age	HBIG	< 12 hrs age
	2	1-2 mo	2	2 mo
	3	6 mo	3	4 mo
			4	6 mo
Unknown	1	< 12 hrs age	1	< 12 hrs age
	2	1-2 mo	2	2 mo
	3	6 mo	3	4 mo
			4	6 mo

8.5.10
TUBERCULOSIS

Newborns of PPD-positive Mothers:

These guidelines pertain only to term, healthy newborns.

1) Mothers who have been screened (by history, prenatal records, and CXR) by the OB service and deemed non-infectious are allowed contact with their infants.

2) Mothers with documentation of adequate management for TB disease or infection (prenatal records or medical records) and found to be non-infectious are not separated from their infants.

3) All household contacts and family members who visit the nursery should be screened adequately (history of cough, night sweats, or weight loss) for historical evidence of past or present tuberculosis. Those visitors who are found to be symptomatic (possibly contagious) must wear isolation attire.

4) Household contacts and family members with symptoms suggestive of TB infection or disease should be referred to a TB or pulmonary specialist for further follow-up.

5) When the mother is found to be non-infectious and the newborn is ready for discharge. Discharge is not delayed pending screening of household contacts and family members.

8.6
SPECIAL PROCEDURES FOR THE PRETERM OR LOW BIRTH WEIGHT INFANT

Late preterm infants

- Infants born at 34 through 36 weeks' gestation (239–259 days since the first day of the last menstrual period) should be referred to as "late preterm."
- Late-preterm infants are physiologically immature and have limited compensatory responses to the extrauterine environment compared with term infants.

Late-preterm infants are at a greater risk of morbidity and mortality than are term infants. They are more likely to be:

1. Diagnosed with temperature instability, hypoglycemia, respiratory distress, apnea, jaundice, or feeding difficulties.
2. Re-hospitalized for jaundice, feeding difficulties, dehydration, and suspected sepsis.

Kangaroo care

Position: skin-to-skin contact 24 hours a day 7 days a week on the chest of the mother (or another family member).

Exclusive breastfeeding should be provided where possible.

Skin-to-skin contact and breastfeeding start as soon as possible in the hospital, and the newborn is to be kept in skin-to-skin contact at home with its mother/caregiver 24 hours a day.

Surfactant administration

Surfactant replacement, given as prophylaxis or rescue treatment, reduces the incidence and severity of respiratory distress syndrome, air leaks, and mortality in preterm infants with surfactant deficiency.

1. Prophylactic surfactant administration to infants of less than 30 weeks' gestation with a low rate of exposure to antenatal steroids reduces mortality, the frequency and severity of respiratory distress syndrome, air leaks, and the combined outcome of bronchopulmonary dysplasia and death.
2. Early rescue surfactant (<2 hours from birth) given to infants of less than 30 weeks' gestation with a low rate of exposure to antenatal steroids reduces the frequency of adverse respiratory outcomes compared with later rescue surfactant.

Surfactant should be given to infants with respiratory distress syndrome as soon as possible after intubation irrespective of exposure to antenatal steroids or gestational age.

Prophylactic surfactant replacement should be considered for extremely preterm infants at high risk of respiratory distress syndrome, especially infants who have not been exposed to antenatal steroids. In this case, surfactant is given after initial resuscitation but within 10 to 30 minutes after birth

Rescue surfactant may be considered for infants with hypoxic respiratory failure attributable to secondary surfactant deficiency (eg, meconium aspiration syndrome, sepsis/pneumonia, and pulmonary hemorrhage).

Retinopathy of prematurity screening

Retinopathy of prematurity (ROP) is a disorder of the developing retina of low birth weight preterm infants that potentially leads to blindness in a small but significant percentage of those infants. In almost all term infants, the retina and retinal vasculature is fully developed, and ROP cannot occur. In preterm infants, the development of the retina is incomplete, with the degree of immaturity of the retina depending mainly on the degree of prematurity at birth.

Infants at risk

1. Infants born ≤1500 g or gestational age of 30 weeks or less (as defined by the attending neonatologist)
2. Selected infants with:
   a. a birth weight 1500 - 2000 g or gestational age of >30 weeks with an unstable clinical course e.g. those requiring cardiorespiratory support and who are believed by their attending paediatrician or neonatologist to be at high risk for ROP.

TIMING OF FIRST EYE EXAMINATION BASED ON GESTATIONAL AGE AT BIRTH

Gestational age at birth	Age at Initial Examination (weeks)	
	Postmenstrual	Chronologic
22	31	9
23	31	8
24	31	7
25	31	6
26	31	5
27	31	4
28	32	4
29	33	4
30	34	4
Older gestational age, High-risk factors		4

All infants considered to be at risk of ROP must be referred for assessment by Ophthalmologists trained in ROP screening at the appropriate time based on the table above.

8.7
MANAGEMENT OF THE NEWBORN AS AN OUTPATIENT

8.7.1
FOLLOW-UP OF THE WELL INFANT UP TO 1 MONTH

All healthy, singleton newborns between 38 and 42 weeks' gestation whose birthweight is appropriate for gestational age and who are discharged in fewer than 48 hours must have a follow-up appointment within 48 hours of discharge by a postnatal nurse from their district or private physician.

FOLLOW-UP CHECKLIST: FORMAT OF EXAMINATION

	Evaluation
General health	Ask mother about any concerns Weigh infant Check & document vital signs Assess general health, hydration Document presence of jaundice Perform complete physical examination on baby
Development (age 1 month)	Check at age 1 month if baby smiles
Nutrition	Review feeding pattern and technique Observe breastfeeding technique Ask about baby's urine and stool patterns
Umbilical cord stump	Examine and clean umbilical cord Counsel re: cord care
Bonding	Assess baby and mother interaction
Outstanding results	Follow-up any outstanding test results
Safety	Reinforce correct sleep position (back only) Reinforce child safety seat information
Parental well-being	Check mother's dietary intake Assess for parental well-being including postpartum depression in the mother
Confirmation of follow-up Plan	Explain plan for follow-up visits Remind of immunization schedule Remind how to seek emergency care
Education	Reinforce breastfeeding advice (if breastfeeding) Reinforce hygiene practices Educate re: newborn danger signs

8.7.2
COUNSELLING

Prevent of Sudden Infant Death Syndrome (SIDS)

Recommendation:

Put the newborn to sleep FACE UP.

Sudden infant death occurs in healthy children during sleep, in the absence of any acute conditions accounting for it. Its frequency ranges from 1 to 2 children every one thousand live births.

Several countries adopting this practice have seen a reduction in the frequency of sudden death by 50%.

Address reduction of risk factors:

- Ban smoking in home.
- Avoid excessive clothing and excessively warm room temperature.
- Soft surfaces, such as pillows, soft mattresses or sheepskin should not be placed under infants.
- Use a firm mattress and one or two thin blankets.
- Tell parents not to let their baby sleep on the couch
- Advocate maternal breastfeeding
- Pacifiers appear to provide some protection, and although this concept is not universally accepted, at least there is enough evidence not to discourage its use if parents request the health team's opinion.

The back to sleep recommendation can cause head flattening/asymmetry. The following reduce this risk:

- Encourage "tummy time" when the infant is awake and observed. This will also enhance motor development.
- Avoid having the infant spend excessive time in car-seat carriers and "bouncers," in which pressure is applied to the occiput. Upright "cuddle time" should be encouraged.
- Alter the supine head position during sleep. Place the infant to sleep with the head to one side for a week and then changing to the other and periodically changing the orientation of the infant to outside activity (e.g., the door of the room).
- Consideration should be given to early referral of infants with plagiocephaly when it is evident that conservative measures have been ineffective. In some cases, orthotic devices may help avoid the need for surgery.

8.7.3
FOLLOW-UP OF THE SICK INFANT

See Appendix 6: a,b,c

NEONATAL APPENDIX 1
RISK FACTORS ASSOCIATED WITH NEED FOR NEONATAL RESUSCITATION

Additional personnel and preparations may be needed for these deliveries.

ANTEPARTUM FACTORS	
Maternal diabetes	Post-term gestation
Gestational hypertension or preeclampsia	Multiple gestation
Chronic hypertension	Size/dates discrepancy
Foetal anaemia or isoimmunization	Drug therapy such as magnesium
Previous foetal or neonatal death	Adrenergic agonists
Bleeding in 2nd or 3rd trimester	Maternal substance abuse
Maternal infection	Foetal malformation or anomalies
Polyhydramnios	Diminished foetal activity
Oligohydramnios	No prenatal care
Premature rupture of membranes	Maternal; age >35 years or < 16 years
Foetal hydrops	Maternal disease e.g. cardiac, renal, thyroid, pulmonary, neurologic

INTRAPARTUM FACTORS	
Emergency caesarean section	Type 2 or 3 foetal heart rate patterns
Forceps or vacuum assisted delivery	Use of general anaesthesia
Breech or other abnormal presentation	Uterine tachysystole with foetal heart rate changes
Premature labour	Narcotics administered within 4 hours of labour
Precipitous labour	Meconium-stained amniotic fluid
Chorioamnionitis	Prolapsed cord
Prolonged rupture of membranes ≥ 18 hours	Abruptio placentae
Prolonged labour > 24 hours	Placenta praevia
Macrosomia	Significant intrapartum bleeding

NEONATAL APPENDIX 2
NEONATAL RESUSCITATION SUPPLIES & EQUIPMENT

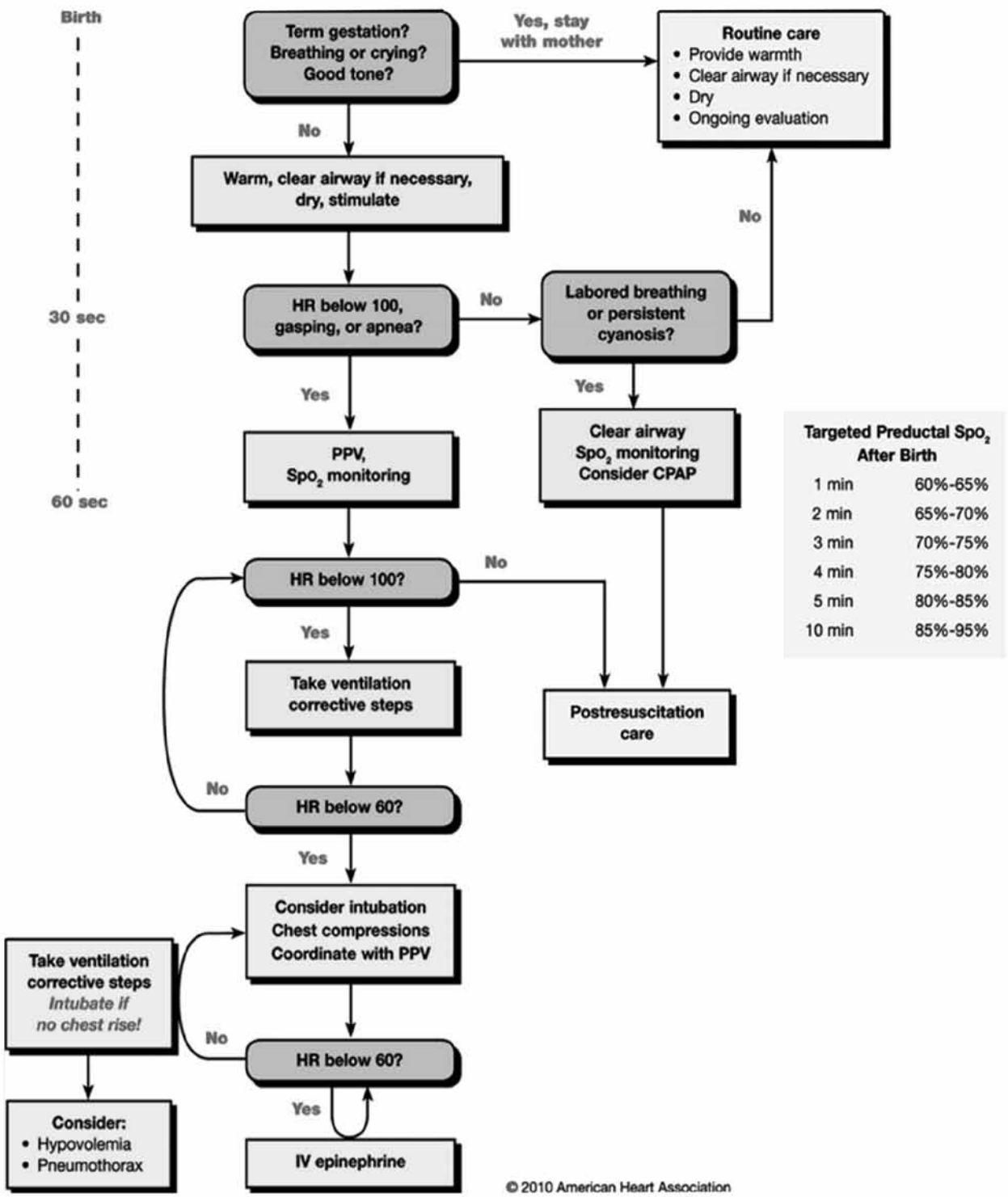
NEONATAL RESUSCITATION SUPPLIES AND EQUIPMENT	
Suction Equipment	Bulb syringe Mechanical suction and tubing Suction catheters, 5F or 6F, 8F, and 10F or 12F 8F feeding tube and 20-mL syringe Meconium aspiration device
Bag-and-Mask Equipment	Oxygen with flowmeter (flow rate up to 10 L/min) and tubing (including portable oxygen cylinders) Neonatal resuscitation bag with a pressure-release valve or pressure manometer (the bag must be capable of delivering 90% to 100% oxygen) Face masks, newborn and premature sizes (masks with cushioned rim preferred)
Intubation Equipment	Laryngoscope with straight blades, No. 00 (very preterm) 0 (preterm) and No. 1 (term) Extra bulbs and batteries for laryngoscope Tracheal tubes, 2.5, 3.0, 3.5, and 4.0 mm ID Stylet (optional) Scissors Tape or securing device for tracheal tube Alcohol sponges CO2 detector (optional) Laryngeal mask airway (optional)
Medications	Epinephrine 1:10 000 (0.1 mg/mL)—3-mL or 10-mL ampoules Isotonic crystalloid (0.9% or Ringer's lactate) 100 or 250 mL Sodium bicarbonate 4.2% (5 mEq/10 mL) 10-mL amp0ules Naloxone hydrochloride 0.4 mg/mL—1-mL ampoules; or 1.0 mg/mL—2-mL amp0ules 0.9% saline, 30 mL Dextrose 10%, 250 mL Normal saline "fish" or "bullet" (optional) Feeding tube, 5F (optional)
Umbilical Vessel Catheterization Supplies	Sterile gloves Scalpel or scissors Povidone-iodine solution Umbilical tape Umbilical catheters, 3.5F, 5F Three-way stopcock Syringes, 1, 3, 5, 10, 20, and 50 mL Needles, 25-, 21-, and 18-gauge or puncture device for needleless system
Miscellaneous	Gloves and appropriate personal protection Radiant warmer or other heat source Firm, padded resuscitation surface Clock (timer optional) Warmed linens Stethoscope Tape, 1/2 or 3/4 inch Cardiac monitor and electrodes and/or pulse oximeter with probe (optional for delivery room) Oropharyngeal airways 0, 00, 000 sizes or 30-, 40- and 50-m lengths Plastic wrap or 1-gallon food grade plastic bags

NEONATAL APPENDIX 3
NEONATAL RESUSCITATION PROGRAM®
QUICK PRE-RESUSCITATION CHECKLIST

Warm	Preheat warmer Towels or blankets
Clear Airway	Bulb syringe 10F or 12F suction catheter attached to wall suction set at 80-100mmHg Meconium aspirator
Auscultate	Stethoscope
Oxygenate	Method to give free flow oxygen (mask, tubing, or flow inflating bag) Oxygen & air source set to 5-10L/min Oxygen Blender Pulse oximeter probe Pulse oximeter
Ventilate	Positive pressure ventilation (PPV) device with preterm and term sized masks PPV device connected to air/oxygen source (blender) 8F feeding tube and 20-ml syringe
Intubate	Laryngoscope Size 00, 0 and 1 blades with bright light Endotracheal tubes, sizes 2.5-4.0 Stylets Endtidal CO2 detector (optional) Laryngeal mask airway (optional) size 1 and 5-ml syringe
Medicate	Access to 1:10,000 epinephrine and normal saline Supplies for administering meds and placement of UVC line Documentation supplies
Thermoregulate	Plastic bag or plastic wrap Transport incubator
Other	

NEONATAL APPENDIX 4
NRP RESUSCITATION ALGORITHM

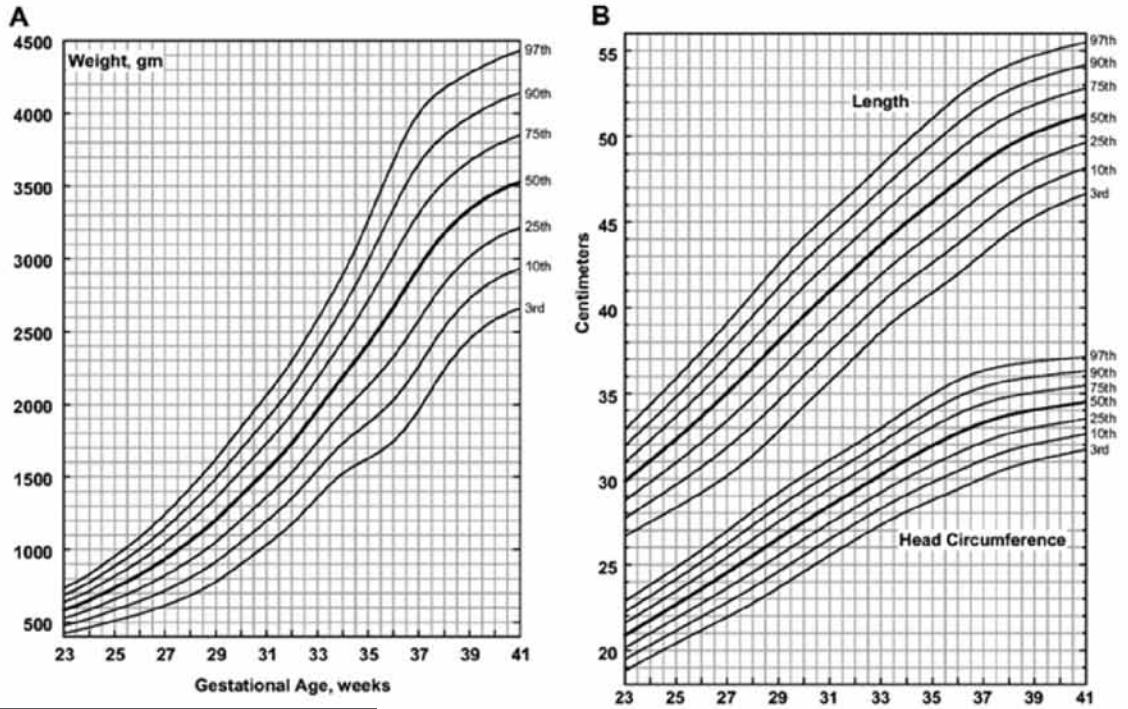
The flow diagram below summarizes the important steps in neonatal resuscitation.
(Taken from the Neonatal Resuscitation Textbook, 6th edition)



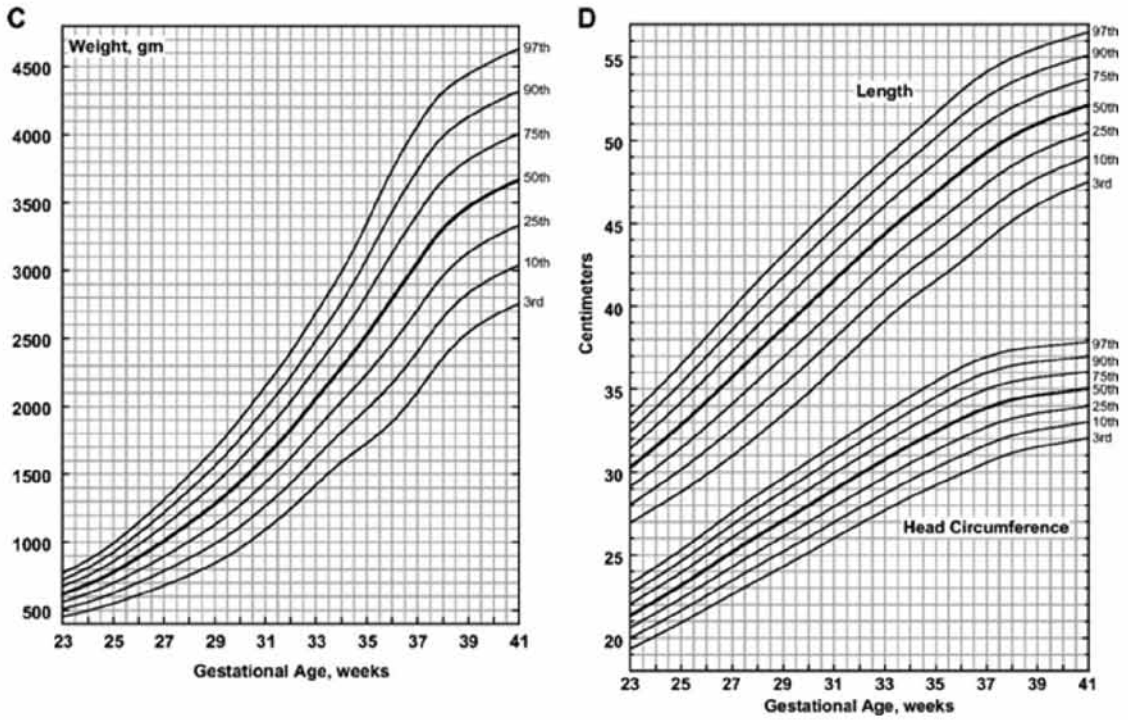
NEONATAL APPENDIX 5

INTRAUTERINE GROWTH CURVES AAP PERINATAL SECTION (OLSEN 2010)

Girls' weight, length and OFC



Boys' weight, length and OFC



NEONATAL APPENDIX 6 A)
ASSESS, CLASSIFY AND TREAT THE SICK YOUNG INFANT UP TO AGE 2 MONTHS

Do a rapid appraisal of all waiting infants.
Use all boxes that match the infant's symptoms and problems to classify the illness.

SIGNS	CLASSIFY AS	TREATMENT
ANY ONE of the following signs:	**Very Severe**	• Give First dose of antibiotics (ampicillin & gentamicin i.m) • Treat to prevent low blood sugar • Refer urgently to Princess Margaret Hospital • Advise Mother on how to keep infant warm on the way to the hospital
Not feeding well		
Convulsions		
Fast Breathing (RR > 60/min)		
Severe chest indrawing		
Fever ≥ 37.5°c*		
Low body temperature ≤35.5°c*		
Movement only when stimulated or no movement at all		
Umbilicus red or draining pus	**Local Bacterial Infection**	• Give an appropriate oral antibiotic • Teach mother to treat local infections at home • Advise mother to give home care for the young infant • Follow-up in 2 days
Skin pustules		
None of the signs of very severe disease or local bacterial infection	**Severe Disease or Local Bacterial Infection unlikely**	• Advise mother to give home care for the young infant

*Axillary temperature used. For rectal temperature add 0.5°c

NEONATAL APPENDIX 6 B)
TREAT THE YOUNG INFANT:
VERY SEVERE AND LOCAL BACTERIAL INFECTION

TREATING THE YOUNG INFANT		
Give first dose of antibiotics	Gentamicin 4mg/kg V or IM stat	
	Ampicillin 100mg/kg V or IM stat	
Treat the young infant to prevent hypoglycaemia	If the infant is able to breastfeed:	Ask the mother to breastfeed the infant
	If the infant is not able to breastfeed but is able to swallow:	Give 10m//kg of expressed breast milk or sugar water (To make: dissolve 4 level teaspoons sugar (20g) in 200ml clean water)
	If the infant is not able to swallow:	Give 10m//kg of expressed breast milk or sugar water via nasogastric tube
Teach the mother how to keep the infant warm on the way to Princess Margaret Hospital	Provide skin to skin contact OR	
	Keep the infant swaddled all the time. Dress with extra clothing, blanket, hat, socks etc.	

GIVE AN APPROPRIATE ANTIBIOTIC FOR LOCAL INFECTION TWICE DAILY FOR 5 DAYS		
Age or Weight	Co-trimoxazole syrup* 40mg TMP + 200mg sulfamethoxazole	Amoxicillin syrup 125mg in 5ml
Birth up to 1 month (< 4kg)	**1.25ml**	**2.5ml**
1-2 months (4 to < 6kg)	**2.5ml**	**5.0ml**

*Avoid Co-trimoxazole in infants who are less than 1 month of age who are jaundiced or premature.

NEONATAL APPENDIX 6 C)
TREATING LOCAL INFECTIONS AT HOME

Teach the mother how to treat local infections at home

- Explain how the treatment is given
- Watch as she gives the first treatment in clinic
- Tell her to return to the clinic if the infection worsens.

To treat skin pustules or umbilical infection

The mother should do the treatment twice daily for 5 days:

- Wash hands
- Gently wash off pus and crusts with soap and water
- Dry the area
- Paint the skin with topical antibiotic ointment or full strength gentian violet (0.5%)
- Paint the umbilicus with gentian violet
- Wash hands again.

NEONATAL APPENDIX 7
RECOMMENDED INDICATORS FOR NEONATAL HEALTH CARE

PERINATAL MORTALITY RATE	
Calculation	Foetal deaths ≥28/40 + infant deaths ≤ 7 days No. of live births + No. foetal deaths of > 28/40
Data source	• NNU logbook • Medical records • Hospital Information Unit (HIU) • Labour Unit logbook (abortion & stillbirth)
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician or obstetrician
Target & year	Reduce 20% 2015 Reduce 40% 2019

NEONATAL MORTALITY RATE	
Calculation	Total neonatal deaths < 28 days X 1000 Live Births
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Reduce from 23.4/1000 in 2011 to 7/1000 in 2019

EARLY NEONATAL MORTALITY RATE	
Calculation	Early neonatal deaths < 7 days x 1000 Live births
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Reduce 20% 2015 Reduce 40% 2019

NEONATAL APPENDIX 7
RECOMMENDED INDICATORS FOR NEONATAL HEALTH CARE

NEONATAL DEATHS DUE TO SEPSIS	
Calculation	**Track absolute numbers of infants**
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Reduce from 7 per year (2012) to 1 per year by 2019

NEONATAL DEATHS BY CAUSE	
Calculation	**Classify deaths according to Pattinson adaptation of Aberdeen classification***
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Determine main categories of cause of death, analyse trends and set targets

*Pattinson adaptation of Aberdeen classification

- Immaturity-related
- Infection (involving sepsis, pneumonia or meningitis)
- Other
- Birth asphyxia or hypoxia
- Congenital abnormality
- Cause undetermined due to insufficient information

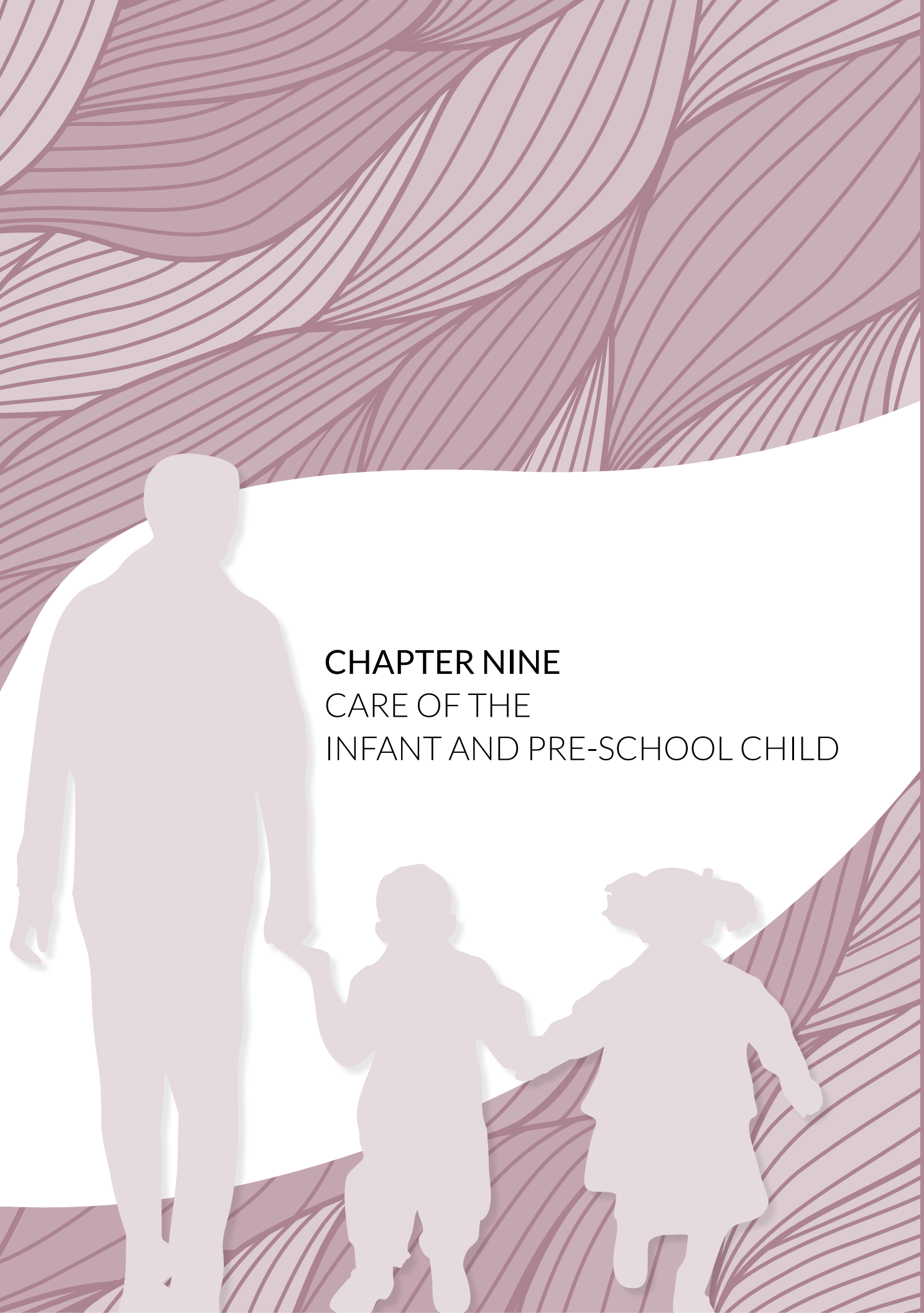
NEONATAL DEATHS BY GESTATIONAL AGE	
Calculation	**Classify deaths according to gestational age categories**
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Determine main categories of cause of death, analyse trends and set targets

NEONATAL APPENDIX 7
RECOMMENDED INDICATORS FOR NEONATAL HEALTH CARE

NEONATAL DEATHS BY BIRTH WEIGHT	
Calculation	**Classify deaths according to birth weight categories**
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Determine main categories of cause of death, analyse trends and set targets

PREMATURITY RATE	
Calculation	**# of births <37/40 x1000 Total births**
Data source	• NNU logbook • Death certificate book • Medical records • HIU
Collection & analysis	Designated physician/ nurse/clerk on a monthly AND annual basis
Responsible reporter	NICU physician
Target & year	Use information to determine if a relationship exists between prematurity and neonatal deaths in Dominica

CHAPTER NINE
CARE OF THE INFANT AND PRE-SCHOOL CHILD



CHAPTER 9
CARE OF THE INFANT AND PRE-SCHOOL CHILD

The main visits of the child to the Health Facility should include:

- History of illness, injuries, hospital admissions, vaccination status, general nutrition, behavior and developmental milestones of the child.
- Physical assessment (weight, height, head circumference, Body Mass Index where appropriate), skin, head, neck, eyes, ears, heart, lungs, abdomen, genitalia, neuro-muscular status.
- Assessment of the child's nutritional status.
- Conclusion assessment for risk factors should consider physical health, motor development, speech/language, social/development, cognitive development and behavior.

TABLE 9.1
SCHEDULE OF VISITS TO THE CHILD HEALTH CLINIC

Age	Frequency	No. of Visits
3-5 days	Weekly	Four (4)
1, 2, 4 & 6 months	Monthly	Two (2)
9, 12, 15 & 18 months	Every 2 months	Four (4)
24, 30 & 36 months	Every 3 months	Four (4)
4 years	Annually up to 21 years	one (1)

9.1
SIX WEEKS DEVELOPMENT SCREENING

Developmental screening should begin at six (6) weeks. However premature infants must have their age corrected (e.g. 32/40 premature baby must be screened at 6+8 = 14 weeks of age). At this visit review the maternal history and neonatal assessment on Child Health Record.

Steps in the Six week development assessment:

Observe the mother's handling, rapport and response with infant.

Famous Five Questions:

Smiles when you smile?
Answers coos
Startles to loud noise?
Listens when you speak?
Follows your face when you move?

Physical Assessment

- Invite and observe mother completely stripping infant (in good light).
- Observe infant's posture (extending limbs now) and movements.
- Try to confirm vision (following and smiling) and
- Hearing (listening to your voice, cooing or finally observe eye closure to your clap if suspicious.
- Examine tone and head control, hands, feet, joint mobility, abduction of hip, genitalia, skin, eyes, and palate.
- Check Babinski, moro, stepping, startle, gallant, rooting, and sucking reflexes.

Referrals

- Congenital abnormalities
- Jaundice that is persistent or increasing
- Fever
- Persistent twitching or convulsion
- Poor sucking or other serious feeding problems
- Failure to thrive or failure to achieve expected weight gain
- Persistent vomiting
- Pallor
- Respiratory distress – persistent rapid or difficult breathing
- Cyanosis
- Rigidity
- Persistent irritability

Record carefully on Health Passport the following:

	Aprox.	Expected Gain
Weight	5 kg	1.5 kg
Length	55 cm	5cm
Head Circumference	38 cm	3cm

REFERRALS

If any inconsistencies are identified after assessment a follow up appointment must be given or referred to the appropriate level of care; DMO, FNP or Paediatrician

TABLE 9.2
STANDARDS AND PROCEDURES OF CLINIC VISITS

Complete History and Demographic data	▪ Admission: registration number, name, age, and other relevant data as listed on child health record. ▪ Family history ▪ Socio-economic history ▪ Religion ▪ Birth history ▪ Health problems ▪ Feeding ▪ Immunization ▪ Milestones (developmental achievements)
Physical Examination	Assess General Appearance ▪ Colour ▪ Muscle tone ▪ Nutritional status ▪ Alertness ▪ Reflexes (only in children 0-3 months) ▪ Weight, height and head circumference

TABLE 9.3
ASSESS THE FOLLOWING DURING PHYSICAL EXAM

Head	Abnormal size and shape, bulging or depression of fontanelle, ability to hold up head
Eyes	Conjunctivitis, discharge, squint/strabismus, pallor, ptosis, jaundice, nystagmus
Ears	Abnormalities(e.g. low set, imperforation, sinus, bat ears) discharge, tenderness
Nose	Discharge, blockage, odour
Mouth/Tongue	Pallor, thrush, abnormalities (especially hare lip, cleft Palate)
Chest	Rapid breathing, grunting, sternal retraction, abnormal shape
Heart	Murmurs
Breast	Engorgement (**NB DO NOT SQUEEZE**), Erythema
Abdomen	Distention, masses, hernia
Umbilicus	Infection, hernia
Skin	Loss of luster, turgor, rashes, birth marks, mottling
Spine	Abnormal curvature, tumors, dimples, sinuses, tuft of hair
Extremities	Lack of movement, symmetry, pain, extra digits, club feet, toe walking etc
Genitalia	**Male** – Undescended testicles, hypospadias, epispadias, phimosis
	Female – Fusion of labia minora, Imperforated hymen, discharge, ambiguous genitalia
Anus	Imperforation

9.1.1 LABORATORY INVESTIGATION

Laboratory Investigations are conducted as necessary, however Haemoglobin level and screening for sickle cell disease (sickle solubility) should be performed at 6-8 months. Group and Rh should be done at this time if not done previously.

9.1.2 COUNSELLING AND HEALTH EDUCATION

Mothers should be given information and demonstrations as indicated on:

- Breast Feeding
- Immunization
- Nutrition
- Developmental Milestones
- Stimulation Activities
- Family Planning

9.2
CLINIC VISITS

TABLE 9.4
SUBSEQUENT CLINIC VISITS SHOULD INCLUDE THE FOLLOWING

History	General progress since last visit with special attention to: ■ Diet and eating habits ■ Developmental Milestones ■ Abnormal or unusual behavior ■ Illness and Management ■ History of Allergies(to food or medicines)
Examination	■ General appearance ■ Weight and height/length ■ Head circumference (every three months up to two years) ■ Full physical exam as outlined on previous page (Table 10.3) ■ Skin condition ■ Growth and development (check milestone) ■ Screen for vision and hearing
Observe for Signs of	■ Malnutrition ■ Dehydration ■ Poor Hygiene ■ Illness/Infection ■ Emotional Disorder ■ Mental Retardation ■ Laboratory Investigation as indicated
Counseling and Health Education	Focus on: ■ Promotion and maintenance of breast feeding ■ Advise on infant feeding, weaning diets, economical foods ■ Activities that stimulate development ■ Immunization ■ Child Care ■ Dental Hygiene ■ Accident Prevention ■ Family Planning (Refer to Maternal Health Section)

9.2.1
EARLY STIMULATION ACTIVITIES

All children need care, support and appropriate developmental activities to help them grow and learn.

INFANTS
BIRTH TO 18 MONTHS

- Gently hold, stroke and talk to your baby during feeding and when cared for by you.
- Smile as you look into babies face, gently talking to him/her making eye contact
- Expose to bright, coloured, musical mobiles and soft, brightly coloured toys that make gentle sounds
- Encourage movements of limbs (kicking, grasping)
- Give clean toys-rattle, squeaky. Place on tummy to encourage movement of waving
- Introduce to various types of soothing music
- Read to your baby, picture books (not much writing)
- Explain what you are doing during the day as you bathe, change and feed baby
- Take the baby outside, point out things in the environment – a dog, flower, car, etc
- Place a bright happy picture of people and animals at eye level
- Create a clean, safe place for baby to crawl, creep or walk, with toys within easy reach
- (all toys must be clean, non toxic and with no removable parts
- Play peek -a –boo, make animal sounds, imitate your baby's sounds, point out body parts and say the name –eyes, mouth etc.

TODDLERS
18 MONTHS TO 3 YEARS

- Continue the activities in infancy and make adjustments to babies developmental needs
- Read short stories from books with clear, bright pictures
- Give blocks to stack and play dough to make shapes, soap bubbles to blow, puzzles with large pieces
- Play peek-a-boo
- Give paper and large crayons to encourage scribbling
- Provide a large, safe areas for running, jumping and playing
- Hold stimulating conservation with your toddler
- Take the toddler to safe, child friendly and positively stimulating activities
- Begin teaching good habits saying thank you and please etc

PRE SCHOOL CHILD
3 TO 5 YEARS

- Continue the above activities and make adjustments in keeping with the pre-school child's developmental needs
- Give toys like blocks, Lego and puzzles
- Provide clothing, unbreakable, washable dolls and toys for pretend play
- Provide balls, crayons, water paint, soap bubbles, play dough, colouring books, tricycle
- Read picture books and point out words and pictures, encouraging questions and discuss the story
- Encourage their participation in hygiene routines- brushing teeth, washing and drying hands.

Developmental screening is important to monitor the child's developmental milestones. Stimulation activities as outlined in the preceeding section is beneficial to children achieving appropriate milestones.

TABLE 9.5

DEVELOPMENTAL SCREENING CHECK LIST

Tick in box if milestone has been achieved. Any abnormalities detected should be referred to a Medical Practitioner/ Pediatrician/Public Health Nurse/Family Nurse Practitioner

O = Observed H = History * = Unable to Perform

Age (Months)	Gross Motor		Age Done	Fine Motor & Vision		Age Done	Hearing & Specch		Age Done	Social Behaviour & Play		Age Done
<2	Kicks legs when lying on back	O H *		Open hands	O H *		Make sound other than crying	O H *		Smiles in response	O H *	
2	Raises head up when lying face down	O H *		Follows objects side to side with gaze	O H *		Child turns reacts to sound 6" away at ear level	O H *		Gazes at your face when lying face up	O H *	
4	Hold head up briefly when held in a sitting position	O H *		Hold objects briefly	O H *		Coos, gurgles and squeals	O H *		Responds to your smile and talk	O H *	
6	Rolls over when lying face up Bears weight on feet when hand under arm	O H * O H *		Reaches out to grasp objects Put in mouth	O H * O H *		Child turns head towards sounds on both sides	O H *		Brings object to own mouth	O H *	
9	Sits without support Crawls on hands and knees	O H * O H *		Transfers object from hand to hand	O H *		Makes two syllable sounds (like mama, dada etc)	O H *		Finger feeds self	O H *	
12	Stands alone Walks with support (cruising)	O H * O H *		Points with index finger Picks up small objects between thumb and forefinger	O H * O H *		Babbles Speaks 3 words	O H * O H *		Waves 'bye bye' Drinks from cup	O H * O H *	
15	Walks without support	O H *		Places objects in a cup	O H *		Speaks one word (other than mama dada)	O H *		Shows shoes	O H *	
18	Climbs onto chairs	O H *		Points to eyes, nose and mouth	O H *		Speaks three words (other than mama, dada) with meaning	O H *		Takes off shoes and socks	O H *	
24	Runs Kicks ball	O H * O H *		Builds a three block tower Copies vertical line	O H * O H *		Says own name Speaks 2 or 3 word phrase	O H * O H *		Takes off clothes Show or tell what he or she wants	O H * O H *	
36	Jumps with both feet off the ground	O H *		Scribbles using finger instead of fist Holds pencil in writing position	O H * O H *		Names a friend Points at and names 6 body parts	O H * O H *		Dresses self but cannot do buttons Washes and dries hands	O H * O H *	
48	Stands on one foot and balances self Throws ball over head	O H * O H *		Copies circle and cross Buttons and unbuttons clothing	O H * O H *		Listens attentively and obeys multiple instructions Counts up to 10	O H * O H *		Shares, follows rules and takes turns when playing	O H *	

9.2.2
INFANT AND YOUNG CHILD FEEDING

The Convention on the Rights of the Child states that every child has a right to good nutrition. According to WHO, undernutrition is associated with disease burden in over one third of children under 5 years old. The common consequences of poor feeding and repeated infections are stunted growth, low weight for height and overweight children. WHO further states that "the first two years of a child's life are particularly important, as optimal nutrition during this period will lead to reduced morbidity and mortality, to reduced risk of chronic diseases and to overall better development". Improving nutrition in newborn, infant and young children is essential for proper health, growth and development and can save lives.

Guidelines for feeding are outlined in Table 10.6.

RECOMMENDATIONS

For safe food preparation and hygiene to prevent illness:

- Wash hands before preparing food, before feeding the baby, after changing baby's diaper and after using the latrine or toilet.
- Obtain clean water for drinking and store in clean, covered containers.
- Wash child's feeding utensils thoroughly with soap and water or boil them.
- Keep food surfaces clean by using soap or detergent to clean after each use.

TABLE 9.6
GUIDELINES FOR INFANT AND YOUNG CHILD FEEDING

Child's Age	Type of Foods	How Much & How Often
Birth to 6 months	**Practice exclusive breastfeeding*** (Breast milk alone). Do not give him other foods or fluids. Breast milk quenches your baby's thirst and satisfies his/her hunger. Exclusive breastfeeding protects your baby against diarrhea and other infectious diseases. **NB: Infants of HIV positive mothers are not to breastfeed. Supplemental feeding is provided.** ▪ Current recommendations advise from supplimentation from 4 months of age (1mg/1kg/1 day) ▪ If mother is known to be Fe deficient baby may be supplemented with Iron at same dose earlier. Hemoglobin and Iron levels may be required.	**Breastfeed as often as your baby wants, day and night. (At least 8 times in 24 hours.)** Breastfeed when your baby shows signs of hunger: beginning to fuss, sucking fingers, or moving his lips.
6-8 months	**Continue breastfeeding*** **Start other foods.** Give soft, thick porridge made with milk to be fed with a spoon. Also offer well-mashed family foods. Mix a staple food (e.g. rice, bread, yam, green banana/fig, breadfruit) with other foods such as an animal food (meat, fish chicken, milk), dark green leafy and yellow vegetables, peas and beans, and fats and oils. Offer small pieces of fruits too.	Breastfeed as often as baby wants, day and night. Start with **2-3 tablespoonfuls of other foods 2 times a day**, increase gradually to ½ cup**.
9-11 months	**Continue breastfeeding*** **Continue feeding a variety of foods.** Give thick porridge and finely chopped or mashed family foods. Give **foods high in iron** like dark green leafy vegetables, meat, peas and beans. Also offer foods that your child can pick up and chew such as fruits cut in pieces eg bananas. **Avoid foods that can cause choking** (nuts, raw carrots). **NB: Use eggs with caution from 10-12 months, cooked egg yolk is preferred, cooked egg white with caution.**	Increase gradually to **½ bowl** of other foods** at meals 3 to 4 times a day. Add **1 to 2 snacks** between meals.
12-24 months (1-2 years)	**Continue breastfeeding*** **Continue feeding a variety of foods.** Give thick porridge and chopped family foods. Give foods high in iron like dark green leafy vegetables, meat, peas and beans. **Let your child try to feed him or herself but give help.**	Increase gradually to a **¾ to full bowl**** of other foods at meals 3 to 4 times a day. Add **1 to 2 snacks** between meals.
2-5 years	**Give a mixture of family foods at meal times and healthy snacks between meals.** Give foods high in iron like dark green leafy vegetables, meats, peas and beans. **Offer full cream milk daily.** Supervise your child at mealtime, encourage him or her to eat and give help.	**Give 3 to 4 meals a day, 1 bowl** and 1 to 2 snacks daily.** Gradually increase the amount and the variety of foods at meals as baby gets older.
	* If your child is not breastfed, ask the health worker for advice on feeding. ** A cup/bowl is 250 ml	

9.3
IMMUNIZATION

According to WHO "immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease. Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and vaccination does not require any major lifestyle Change"

The Ministry of Health has a robust immunization programme in place called the **Expanded Programme on Immunization (EPI).** This programme has a Manager to oversee it.

TABLE 9.7
IMMUNIZATION SCHEDULE

Type of Vaccine	Initial Dose			Booster	
	1st	2nd	3rd	1st	2nd
BCG, Hepatitis B if required	0 months				
DPT/HepB/Hib	2 months	4 months	6 months		3 years
Oral Polio Vaccine	2 months	4 months	6 months	18 months	3 years
Hep B	2 months	4 months	6 months		
Hib	2 months	4 months	6 months	18 months	
IPV	2 months	4 months	6 months		
DTaP/Hib/IPV	2 months	4 months	6 months	18 months	
PCV13	2 months	4 months	6 months	12 months	
MMR	12 months				
Varicella	12 months	4-6 years			
Rotavirus	2 months	4 months	6 months		
Hep A	12 months	18-23 months			
HPV	16 Years				

TABLE 9.8

IMMUNIZATION SCHEDULE FOR HIV-INFECTED CHILDREN AGED 0-18 YEARS

(Adapted from: MMWR September 4, 2009/Vol. 58/Rr-11, and WHO Vaccine Schedule for the Americas – Updated October 3, 2011)

Type of Vaccine	Dosage						Notes
	1st	2nd	3rd	4th	5th	Booster	
Hepatitis B	At Birth	1-2 months	6-18 months				Permissible to administer 4 doses of HepB when combination vaccines are administered after birth dose
Diphtheria, Tetanus, Pertussis (DTP)	2 months	4 months	6 months	15-18 months	4-6 years	14-16 years*	Minimum age: 6wks; fourth dose may be administered as early as 12mos, provided at least 6mos have elapsed since third dose. Give Td 10 yrs after last dose of DTP. *1 booster dose of Tetanus & Diphtheria Toxoids (Td) at 14-16yrs
Haemophilus Influenza Type B	2 months	4 months	6 months	12-15 months			Minimum age 6 wks
Pneumococcal Conjugate Vaccine (PCV)	2 months	4 months	6 months	12-15 months			Children aged 2 years and older also should receive PPSV 2 or more months after their last PCV dose, then another dose of PPSV 5 years later PPSV = Pneumococcal Polysaccharide Vaccine
Inactivated Poliovirus	2 months	4 months	6-18 months	4-6 years			Oral Polio Vaccine **should not** be administered to HIV exposed or infected children.
Influenza	Yearly from 6 months						Only trivalent inactivated vaccine (TIV) should be used for HIV-infected children (minimum age 6 mths)
Measles, Mumps, Rubella	12 months	5 years	15 years				Do not administer to severely immunosupressed children (CD4+ age specific T-lymphocyte percentage < 15%)
Meningococcal	11-18 years	11-18 years					Adolescents 11 through 18 years should receive a 2-dose primary series with at least 8 weeks between doses.

9.4 REFERRALS

Appropriate referrals are made to the different categories of health care providers for additional services required not only for children with abnormalities but well children as well.

Dental

Oral care is very important so routine referrals for dental health is recommended. Every child should have a first dental check at 2 to 2 and half years and continue to have dental check-ups annually.

Conditions requiring referral to the dental clinic:

- Delayed Eruption Age (9 months and older)
- Premature Eruption (before 4 months old)
- Premature Loss of Teeth (before 4 years old)
- Crooked Teeth/ Crowded Teeth
- Abnormal Bite
- Cleft Lip
- Cleft Palate
- Early Childhood Tooth Decay
- Severe Gum Bleeding or Swelling

TABLE 9.9
REFERRALS TO HEALTH CARE PROVIDER

Referral to	Conditions
CHN	Children whose weight curve falls below -2 and above +2, Z score lines for additional counseling and investigation of the home.
DMO/FNP	▪ Children whose weight falls below -2 and above +2, Z score lines and or has complications e.g. diarrhea ▪ Respiratory infection ▪ Suspected asthma, bronchitis or pneumonia ▪ Gastroenteritis ▪ Infection of the eye, ear, nose, throat and umbilicus ▪ Prematurity especially a birth weight below 4lbs ▪ A history of fits or convulsions ▪ Communicable diseases ▪ Infected wounds Non urgent cases needing further investigation and management should be referred by the DMO to the PDPD or Pediatric Unit.
Pediatrician PMH	Cases of severe malnutrition and acute emergencies may be referred directly from the nurse /midwife or the CHN to the DMO who then refers to the paediatric department PMH.

9.5
HIGH RISK CHILDREN

While all children will receive the level of attention and care they deserve at the clinic, special emphasis will be placed on the identification and management of those children considered to be in the "**high risk**", category:

- Child with low birth weight (less than 2.5kg)
- Child with a low apgar score (under 7)
- Child of a young mother (especially under 16 years)
- Child whose mother has died
- First child of a mother age 35 and over
- Child of a multiple pregnancy
- Child under 2 years whose mother is pregnant
- Child with a birth injury or deformity
- Child whose siblings have been malnourished or have died
- Child whose weight is unsatisfactory for height and age.
- Child who is anemic
- Child who has had a serious illness (e.g. Meningitis, Pneumonia)
- Child whose mother is HIV positive
- Special Needs (children who are differently abled)
- Infants born of mothers with pre-eclampsia
- Infants born to mothers with Sickle Cell Disease
- Infants born with major congenital abnormalities
- Infant with respiratory distress
- Infants born to parents who are drug abusers, alcoholics etc
- Infants and children with HIV and AIDS.

TAKE NOTE

- Determine whether the child falls into one of the high risk categories listed and develop a plan of action.
- High risk children may require more frequent home visits, and closer surveillance by the health staff for some time.
- Appropriate referrals should be made for specific conditions.
- Non-attendance at the Child Health Clinic should be followed up as soon as possible by a visit to the home by the district nurse.

9.6 INITIAL MANAGEMENT OF INFANTS AND CHILDREN NEWLY DIAGNOSED WITH HIV

The first steps in managing an infant or child newly diagnosed with HIV include:

1. Performing a thorough history and physical examination, in order to:

- Identify any current or past complications of HIV disease (such as Opportunistic Infections/Diseases), in order to establish the child's WHO Clinical Stage of HIV disease (Table 1). Children diagnosed with Opportunistic Infections should start treatment for the OI immediately; for most OI's, antiretroviral therapy should be started shortly thereafter.
- Identify co-morbid acute and chronic diseases/conditions that will need to be managed along with the HIV;
- Assess the child's development according to height, weight, and Tanner staging charts, as well as developmental milestones;
- Identify partners who should be notified and tested for HIV.

2. Arranging appropriate laboratory investigations, in order to:

a. Establish the patient's degree of immunodeficiency;
b. Screen for Renal, Hepatic, or Hematologic disorders;
c. Screen for other sexually transmitted infections (STIs), where indicated;
d. Screen for tuberculosis infection and/or disease.

3. Assessment of the psychological state of the child and caregiver(s).

As many individuals experience severe emotional distress upon learning that they are infected with HIV, intensive counseling and/or referral for psychiatric care may be warranted.

4. Initiation of appropriate chemoprophylaxis against Opportunistic Infections

Opportunistic Infections (such as Pneumocystic pneumonia, pneumococcal pneumonia, etc.) where indicated. Refer to [section on Pediatric OI Prophylaxis] for more details regarding indications, dosing, and precautions.

5. Assessment of patient's eligibility for antiretroviral therapy (ART)

As described in [section on Pediatric ART]. Briefly, any infant or child less than 24 months of age should be started on ART, regardless of clinical and immunologic status; for older children, ART eligibility depends upon his or her clinical stage of disease and CD4 count/ percentage. Patients and their caregivers who are eligible for ART should be scheduled for intensive adherence counseling as part of preparation for starting ART.

6. Close follow-up

With a clinician experienced in the care and treatment of paediatric HIV should be arranged. Measures should be implemented to ensure that the patient is not lost to follow-up.

9.6.1
ROUTINE CLINICAL AND LABORATORY MONITORING

- Baseline haemoglobin level (and white cell count, if available) should be determined at initiation of ART.
- For infants and children, measure haemoglobin at week 8 after initiation of AZT-containing regimens or more frequently if symptoms indicate.
- Growth, development and nutrition should be monitored monthly.
- Laboratory monitoring for toxicity should be symptom directed.

9.6.2
CD4 MONITORING

- CD4 should be measured at the time of diagnosis of HIV infection, and every 3-4 months thereafter.
- Monitor with increasing frequency as CD4 count approaches the threshold for starting ART.
- Measure CD4 if new clinical staging events develop, including growth faltering and neuro-developmental delay.
- Where capacity for CD4 measurement is limited, target the use of CD4 monitoring to assess the significance of clinical events.

9.6.3
VIRAL LOAD MONITORING

- Viral Load determination is desirable, but not essential, prior to initiating ART.
- Viral load should be measured every 6 months after initiation of ART
- Viral load monitoring is useful for detection of virologic failure (which occurs before immunologic and clinical failure).

Management of Children with HIV and AIDS (See Appendix)

CHAPTER TEN
SCHOOL HEALTH

The School Health Programme is geared towards screening of all primary school entrants and leavers for the early detection and prompt management of health problems.

CHAPTER 10
SCHOOL HEALTH

An effective school health programme can be one of the most cost effective investments a nation can make to simultaneously improve education and health. WHO promotes school health programmes as a strategic means for the early identification of health risks among children and youth and to collaborate with the education sector in efforts to change the educational, social, economic and political conditions that affect risk.

The School Health Programme is geared towards screening of all primary school entrants and leavers for the early detection and prompt management of health problems.

Goal: To encourage and maintain positive health behaviours and outcomes

School Health Programmes must encompass the following areas:

- Healthy and safe environment
  – sound physical structures and environment, safe water and sanitation.
- Health Education including skill training
  – reproductive health, tobacco, alcohol and drug use, life skills programmes.
- Monitoring growth, health and development offering of health services
  (primary health care level, counseling) referrals to other services
- Sports and recreational skills and facilities

Components of the School health Programme

- Physical examinations and screening for early detection and prompt and appropriate management of health problems.
- Control of communicable diseases and immunization as indicated.
- Health and Family Life Education including nutrition, substance abuse, sexually transmitted infections and physical education.
- Dental care with the focus on prevention and early intervention.
- Environmental Health.
- Non Communicable Diseases.
- Management of common health problems.
- Identification and referrals for behavioural and emotional disorders.
- Appropriate referrals.

10.1 STANDARDS AND PROCEDURES

All students in the target groups (Pre-school, Grade K and Grade 6) are examined and screened once during the school year.

Booster and catch-up vaccines are administered as required.

Pre-Schoolers – 3-5years.

Primary School Child – 5-12 years

TAKE NOTE

- Findings are recorded on school health forms and on the child's health records.
- Children with abnormal findings should be referred to the DMO for management or referral to the Paediatrician if required.
- Children can attend district clinics for illness or injury and Treatment/ referral.

10.1.1 PHYSICAL EXAMINATION

Physical examination is carried out in Grade K and again in Grade 6, before leaving for Secondary school.

Physical Examination includes:

- Weight
- Height
- BMI
- General appearance
  - **Mucous membranes:** colour, cyanosis, hydration
  - **Skin**: rashes, infections, parasites
  - **Eyes:** note any abnormality, squint, infection, visual acuity
  - **Ears:** note any discharge,
  - **Nose:** note any discharge, nose bleeds
  - **Oral cavity:** Dental caries, gum infection
  - **Cardiovascular System:** check pulse for rate, rhythm and murmurs.
  - **Respiratory System:** rate, wheezing or other, stridor
  - **Musculo-Skeletal:** symmetry of limbs, gait, spinal or joint deformity, range of movement, Scoliosis screening
  - **Genitalia:** Undescended Testes, Phimosis, Hypopodias, Hydrocoeles, Hernias, Genital Lesions (bruising, erythema, lacerations) hymenal examinations (measure Hymenal Orifices, observe contour) Vaginal lesions and discharge, examine anus
  - **Secondary sexual characteristics:** observe for precocious puberty before eight in girls and before nine in boys
  - **Vision testing**
  - **Hearing screening**

10.1.2
NUTRITION

The nutritional status of the child 3-5 years will be assessed and recorded in the "**Child's Health Record**" and in the Nutritional Status Forms as follows:

- Weight /Age which will indicate whether the child is underweight or severely underweight.
- Weight / Height which will indicate whether the child is obese, overweight, thin/wasted, very thin or severely wasted.
- Height /Age which will indicate whether the child is stunted or severely stunted.
- Input in the PTA on health and nutrition matters, and the importance of daily exercise
- Guidance on preparation/choosing of nutritious snacks
- Assess for anemia and helminthic infestation

Nutritional Education includes:

- Choosing a balanced diet/meal
- Snacks, low in sugar, salt and fat, increase intake of fruits and vegetables
- Eat what we grow concept; encourage school gardens
- Vendors must be guided by school meals policy
- Liaise with the school feeding personnel.

10.1.2
EMOTIONAL HEALTH

In collaboration with teachers, identify children who are at risk for problems affecting emotional and mental health including child and substance abuse and refer to appropriate agency or school guidance counselor.

10.2
CONTROL OF COMMUNICABLE DISEASES AND IMMUNIZATION

- The child should be fully immunized against Diphtheria, Tetanus, Pertussis, Hib. HepB, Polio, Tuberculosis, Measles, Mumps and Rubella before school entry at five years of age.
- Booster doses are given according to the immunization schedule.

10.3
HEALTH AND FAMILY LIFE EDUCATION

The following topics should receive emphasis during the educational session for the school child:

- Personal hygiene
- Drug abuse (non-prescription and prescription) including alcohol and tobacco
- Physical change associated with growth and development.
- Nutrition and physical activity
- Accident prevention
- Roles, responsibilities and relationships
- Child Abuse
- Environmental sanitation
- Dental health
- Human sexuality including STIs and AIDS education
- Values clarification
- Conflict Management.

10.4
CONTROL OF THE SCHOOL ENVIRONMENT

- Adequate sanitary facilities should be provided and properly maintained
- Classrooms should be well ventilated and lighting should be adequate
- A safe water supply should be provided
- School Vendors/lunch attendants must be certified and must follow the guidelines of the school meals policy
- Proper containers for disposal of refuse should be available and collected or removed regularly
- Inspection of school environment for safety should be enforced
- School gardens should be encouraged.

10.5
SCHOOL HEALTH VISIT RECORD

See Appendix V.

CHAPTER ELEVEN
ADOLESCENT HEALTH

Many serious diseases in adulthood have their roots in adolescence. For example, tobacco use, sexually transmitted infections including HIV, poor eating and exercise habits, lead to illness or premature death later in life.

CHAPTER 11
ADOLESCENT HEALTH

According to WHO adolescents are young people between the ages of 10 and 19 years and are often thought of as a healthy group. Nevertheless, many adolescents do die prematurely due to accidents, suicide, violence, pregnancy related complications and other illnesses that are either preventable or treatable. Many more suffer chronic ill-health and disability. In addition, many serious diseases in adulthood have their roots in adolescence. For example, tobacco use, sexually transmitted infections including HIV, poor eating and exercise habits, lead to illness or premature death later in life.

During these times, youths undergo profound changes in their physical, psychological, emotional, spiritual and social life. Adolescents are particularly prone to risk-taking and experimentation as they learn to manage cost, new capabilities and greater freedom. These behaviors are often a normal part of establishing identity and independence, but they can also lead to negative and potentially serious health consequences.

Programming for adolescents' health and development should include prevention strategies and focus on the needs of all young people by maintaining and strengthening their emotional, social and physical well-being. Special efforts may be necessary to reach vulnerable adolescents.

In order to deliver comprehensive programmes for adolescents a situational analysis and needs assessment survey should be conducted taking into consideration the difference between boys and girls.

One consequence of the power imbalance between males and females is in sexual relationships where more often than not the first sexual encounter for a young girl is more often coerced or violent. Boys must be equipped to reject machoism and girls must be empowered so as not to succumb to peer pressure and to make independent wise choices. Parents and communities must provide the balance needed for both sexes.

Interventions must begin early and be adapted to age and developmental phases. Programme must include services for young people with disabilities.

Objectives of the Programme should include:

- Promote positive attitudes towards healthy living
- Promote and maintain good health
- Detect and manage physical and mental problem early
- Reduce teenage pregnancies
- Refer identified problems to appropriate agencies

Components

Physical Examination and Screening is necessary for Health and Family Life Education with emphasis on:

- Nutrition
- Prevention of substance abuse
- Oral Health
- Mental Health
- Immunization
- Counseling (values clarification and conflict management
- Sexuality/Reproductive health and sexually transmitted infections
- Skills training, career development and recreational activities.

WHO also stipulates that growth and development are continuous processes that young people undergo as they strive to meet their basic need for security, love and belonging. The process, articulated as outcome of adolescent development, can be summarized as follows:

- Self-worth
- Safety and security
- Belonging and membership
- Intimate relationship
- Mastery of age-appropriate skills
- Responsibility and autonomy
- Spirituality

To achieve these outcomes, young people should attempt to develop the skills that will allow them to function within, and contribute to, the communities and societies in which they live. The goals of this process can be categorized as follows:

- Physical health and development
- Intellectual development
- Vocational health and employability
- Civic and social health
- Cultural health
- Emotional health
- Moral development

The attainment of such goals is a natural part of adolescence.

11.1 PROMOTING A SAFE AND SUPPORTIVE ENVIRONMENT

A safe and supportive environment motivates young people to make healthy choices. "Safe" in this context refers to absence of trauma, excessive stress, violence and abuse. "Supportive" is a positive environment that has close relationships with family, other adults (including teachers, youth and religious leaders) and peers.

Five aspects of the social environment that impacts adolescents are:

- **Relationships with family and other people** – interventions to help with communication of parents and young people, skills training, information on adolescent development
- **Social norms and cultural practices** – Some areas of adolescent health are controversial so interventions are needed. Sexuality, drug use
- **Mass media and entertainment** – These greatly influence adolescents and can be used to address social environment important to adolescent health and development
- **Availability of vital opportunities and commodities**
- **Policy and legislation.**

Generic approaches that have been useful in influencing these involve mechanisms to:

- Inform, raise awarenes, advocate and mobilize
- Provide training
- Make room for healthy adolescent development – securing safe places for schools, recreational activities and training
- Mediate – may be necessary for policy, cultural practices vs. health issues, content for health education curricula.

Additionally an Adolescent Health Programme must consider the following:

- Communicating health information
- Involvement of young people into the programming and interventions
- Youth friendly spaces
- Linking various sectors
- Partnerships for complimentary actions between govt, NGO and private sector
- Respect for culture and cultural diversity
- Peer to peer education
- Strengthening programme management
- Use of the media and entertainment
- Workplace interventions
- Health promoting functions of the family –
- Intervention settings – home, school, health centres/facilities, workplace, street/ on the block, community organizations, residential centres (eg orphanages). Media/ entertainment, political/legislative settings

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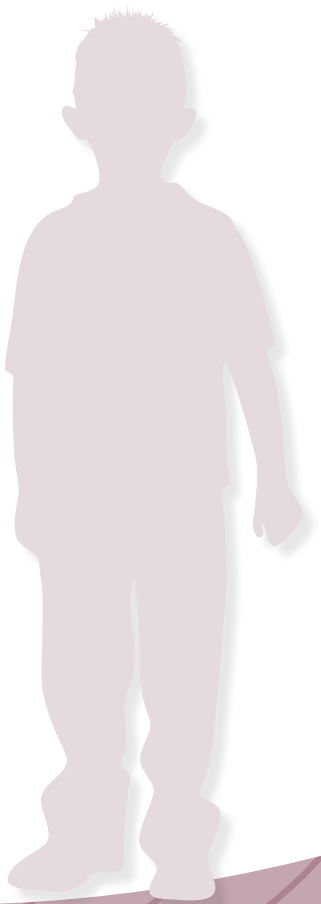
TAKE NOTE

There are no clinics held specifically for adolescents but services designed for teenagers thirteen to seventeen years within and outside the formal education system are offered as integration into the MCH programs



CHAPTER TWELVE
CHILD ABUSE

Increase Community awareness and education about child abuse including strategies for prevention and intervention.

CHAPTER 12
CHILD ABUSE

Child abuse is a serious public health problem with high morbidity and mortality; worldwide, 155,000 deaths occur annually in children as a result of abuse or neglect. Preventing recurrent abuse or recognising early abuse is difficult but essential if long-term effects are to be limited. Although victims of child abuse have higher emergency department use than the general paediatric population, child abuse unfortunately often remains unrecognised in the emergency department.

Goal: Increase community awareness and education about child abuse including strategies for prevention, intervention.

Objectives:

1. Disseminate resource information and educational materials.
2. Provide regular updates of community programmes via the media.
3. Provide community trainings related to child abuse and prevention.
4. Promote Child Abuse Prevention Awareness Month (April).
5. Distribute information on legislation and other issues that affect the lives of children and their families in Dominica.

12.1
CHILD SEXUAL ABUSE PROTOCOL

- Child will usually be accompanied by parent, guardian, teacher, social worker, or Police. If not accompanied by Police, please request that this is done or call the Police.
- Get history from Police, child (victim) or adult accompanying child. Please record the name and relation of the historian.
- Do necessary examination to identify evidence of ancillary injuries but do not proceed with a vaginal examination; document findings.
- Refer all female patients older than 14 years to the Gynaecologist on call. It is recommended that the Gynaecologist be called and informed. It may be necessary to advise in relevant cases that no showering or cleaning of genitalia be done before assessment by the Gynaecologist. Refer male/female patients who have been sodomized to the General Surgeon for evaluation.
- If the child is a female and less than fourteen years old, the child should be referred to the Paediatrician who may then request the involvement of the Gynaecologist on call. The Paediatrician should also refer to the General Surgeon any male/female child under fourteen years of age who has been sodomized.
- All samples of relevant specimen collected must be handed over to the investigating Police Officer (with identification) who must sign relevant document indicating receipt of those specimens. The Medical Officer should record the name, rank and number of the Police Officer.
- If upon assessment the child is noted to be in acute psychologic distress, the Psychiatrist should be called. In any other case, the child should be referred to the Psychiatric Unit for urgent psychological assessment.

12.2
REPORTS OF CHILD ABUSE

TABLE 13.1

MINSTRY OF HEALTH GUIDELINES – REPORTS OF CHILD ABUSE

In order to minimize examination and interviews and to preserve important evidence, the following procedures must be followed in all cases of suspected child abuse.

Step		Procedure	Further Comments/Notes
1		Signs of abuse noticed	Indicator checklist will be circulated
2		**Report to:** Nurse in Charge / DMO / FNP / Doctor in Charge / Departmental Nurse	This applies to case reported at District level or at the Hospital
3	a	Nurse in Charge / DMO / FNP **Report to:** Doctor in Charge / Departmental Nurse and Police **before the medical examination**	This ensures total child abuse protocol is followed i.e. swabs, recording for court evidence and photographs.
	b	In cases of sexual abuse, Private Medical Practitioners should report to Police	
4		Nurse in Charge **reports to:** Departmental Nurse / DMO / FNP / CHN for information and accountability	They will inform Matron/Senior CHN who will **keep a written register**
5	a	**Police will arrange a medical examination** with parents / close relatives	It is important that information from the parents/ relatives is clearly communicated to Police to assist the investigation
	b	In cases of incest, and where parents hinder investigation consent of a close relative should be sought, **and if not available consent should be dispensed of**	
6		Suspected cases identified during school health screening programmes should be **reported to Police by the DMO**	
7		Police will liaise with Welfare Division	**The Welfare of the child must be paramount**
8		**For court purposes,** during the absence of the reporting Medical Officer, the responsibility for reporting should be taken by the Chief Medical Officer / Hospital Medical Director	

TAKE NOTE

The police officer who accompanies the child will need to be physically present at the Medical examination, but does not have to be behind the screen to witness the actual examination. In cases where parents/relatives refuse to have child medically examined, the police should immediately be informed.

12.3
ROLES AND RESPONSIBILITIES OF HEALTH CARE PROFESSIONALS

- Identify and report suspected cases of child abuse and neglect to the Welfare Division and police
- Provide diagnostic and treatment services (medical and psychiatric) for maltreatment of children and their families
- Provide consultation to the Welfare Division regarding the medical aspects of child abuse and neglect
- Serve on the multidisciplinary case consultation team
- Provide expert testimony in child protection judicial proceedings
- Provide education for parents regarding the needs, care and treatment of children
- Identify and provide support for families at risk of child abuse and neglect
- Develop and conduct primary prevention programmes
- Provide training for medical and non-medical professionals regarding the medical aspects of child abuse and neglect.

APPENDICES

APPENDIX A
ORIGINAL TARGETS AND INDICATORS FOR THE MATERNAL AND CHILD HEALTH SERVICES

APPENDIX A (1)
MATERNAL CARE

COVERAGE OF SERVICE INDICATORS

The following are the targets for the period ending 2015.

- Antenatal care is initiated for all pregnant women by the 12th week of pregnancy.
- Attain coverage of 90% of all pregnant women with a minimum of 7 antenatal visits.
- 100% of all deliveries are attended by trained personnel.
- Attain coverage of 100% for post natal care.
- All women with complications during pregnancy or with known health risks receive the level of care commensurate with their particular condition.
- Attain 80% coverage of the pregnant mothers with Diphtheria Tetanus Toxoid.
- Identify and manage high risk pregnancies promptly.
- Maintain accurate records for all pregnant women and a standard referral system from district to hospital and vice-versa.
- Provide information on availability of family planning services.
- Antenatal care is initiated for all pregnant women as soon as she misses a period to rule out abnormalities in pregnancy like ectopic pregnancy; blighted ovum and possible cervical incompetence.
- Antenatal care service care available to all pregnant women and provide adequate health protection during antenatal period.
- Antenatal care is initiated early

HEALTH BEHAVIOUR & MORBIDITY INDICATORS

- 50% of babies are breast fed exclusively for at least six months.
- 90% of pregnant mothers reach labour with a Haemoglobin value of not less that 11.0g%.
- Incidence of Pre-eclampsia reduced by 50%.
- Incidence of prematurity reduced by 50%.
- Early identification and prompt treatment of diabetic pregnant women .

MORTALITY INDICATORS

- Reduce maternal mortality to zero percent annually.

APPENDIX A
ORIGINAL TARGETS AND INDICATORS FOR THE MATERNAL AND CHILD HEALTH SERVICES

APPENDIX A (2)
CHILD CARE

STANDARDS

- Attain coverage of 90% of all children under one year with a minimum of five visits.
- Attain coverage of 90% for children 1-3 years with a minimum of two visits.
- Attain coverage of 70% for children 4-5 years with a minimum of one visit.

APPENDIX A (3)
INDICATORS

MORBIDITY INDICATORS

- In children under two years of age:
- Reduce the prevalence of under nutrition by 30%.
- Reduce the prevalence of obesity by 50%.
- Reduce the number of hospital admissions for gastroenteritis by 50%-
- Maintain immunization coverage of over 95% for all antigens

MORTALITY INDICATORS

- Reduce neonatal mortality by 50%.
- Reduce post neonatal mortality by 50%.
- Reduce child mortality (1-5years) by 60%.

APPENDIX B
CRITERIA FOR REFERRAL TO HIGH RISK CLINIC

General

- Height of less than 151 cm
- Obesity- BMI - >30Kg/m2

Gravidity

- First pregnancy occurring at 18 years of age or younger
- First pregnancy occurring 30 years of age or older (or younger after surgery for infertility)
- Multigravida (five or more previous pregnancies)

HISTORY			INDEX PREGNANCY
Medical	Gynaecological	Past Obstetric	
• Heart Disease/ Psychiatric Illnesses • Diabetes • Sickle Cell Anaemia & Hemoglobinopathics • Asthma • Hypertension • Renal Diseases • Tuberculosis • Collagen Vascular Diseases eg.rheumatoid arthritis, SLE • Thyrotoxicosis • Multiple Sclerosis • Epilepsy • HIV infection • Other serious medical illnesses	• Fibroids • Previous vaginal surgery • Previous myomectomy • Recurrent abortions • Congenital abnormalities of vagina and uterus • History of infertility	• Previous Caesarean Section • Previous preterm delivery • Previous forceps/ vacuum delivery • Pre-eclampsia/ eclampsia • Previous large baby – excess 4kg • Previous still births • Retained placenta • Post-partum hemorrhage • Ectopic pregnancy • Previous poor perinatal outcome	• Recurring urinary tract infection • Medical complications occurring in pregnancy. • Hypertensive disorder of pregnancy; (PIH) • Pregnancies progressing beyond 41 weeks • Small for gestational age • Suspected cephalo – pelvic disproportion • Multiple gestation • Unstable lie and polyhydramnios • Abnormal presentation • Rhesus iso immunization • Ante partum hemorrhage • Placenta Praevia • Large for gestational age • Pregestational & Gestational diabetes • Polyhydramnios/oligohydramnious • Chronic Hypertension • Excessive Weight (more than 4.4lbs in a month) • Onemia with Wb< 10gldl • Any unusual signs and symptoms inducing fetal or maternal compromise

APPENDIX C
CRITERIA FOR REFERRAL TO MATERNITY UNIT

Standards and Procedures for High Risk Pregnancies Referrals

Antenatal	Intra-natal	Post natal	Emergency
• Preterm labour • Acute abdominal pain • Preterm rupture of membranes • Decreased foetal movement • Pyelonephritis • Complicated Fibroids • Antipartum hemorrhage • Preeclampsia • Hyperemesis Gravidarum (excessive vomiting with ??? and weight loss) • Sickle Cell Crisis	• Dysfunctional labour Foetal distress • Hypertensive disorders of pregnancy • Preterm labour • Premature ruptured membranes • Intra-partum haemorrhage • Abnormal presentation • Prolonged second stage • Retained placenta • Polyhydramnios or Oligohydramnios • Eclampsia	• Post natal haemorrhage • Deep venous thrombosis • Low birth weight infant Preterm • Small for gestational age • Respiratory distress • Neonatal sepsis • Neonatal jaundice • Neonatal seizures • IDM - Infant of diabetic mother • Lung abnormalities • Low Apgar score • Asphyxia • Poor socioeconomic conditions	• Refer directly to the Maternity Unit or Dawbiney Ward, Princess Margaret Hospital • Use the patients' notes and emergency referral forms • Signs of shock or dehydration – take appropriate blood tests • Then the midwife should set up an intravenous infusion e.g. Ringer's Lactate, prior to transporting the patient to the hospital • Inform the hospital of the patient's imminent arrival • Retained placenta, Ergometrine 0.5 mg (IM)/oxytocin 10iu(IV) should be administered before transporting the patient, whether there is external bleeding or not. • A further injection of ergometrine 0.5mg may be necessary on the way to the hospital if the fundal height and or pulse rate increases or significant fall in blood pressure.

APPENDIX D
SEVERE PRE-ECLAMPSIA/ ECLAMPSIA

Pre-eclampsia is a hypertensive disorder of pregnancy occurring after 20 weeks gestation. It is diagnosed by the presence of hypertension and proteinuria.

Severe Pre-eclampsia is:

- BP >160/110 with proteinuria.
- BP >140/90, with signs and/or symptoms of impending eclampsia.

MANAGEMENT

- Nurse on Labour ward & Delivery Suite in dark room
- Put patient in left lateral position with airway secured. Oxygen should be administered as needed
- IV access with 18 gauge brannula: and hydrate (normal Saline or Lactated Ringer's.
- Blood sample taken simultaneously for: CBC, PTT, PT, Group & X-match 2 units, LFT'S, (including Serum Proteins and Bilirubin) U&E, Uric acid send to Lab immediately
- Catheterise Patient
- Inform Medical Officer on duty
- If in district inform Hospital Staff of Patient's arrival
- If in Hospital inform Doctor on duty and necessary medical staff

APPENDIX E
MANAGEMENT OF THE DIABETIC PATIENT IN LABOUR

Introduction

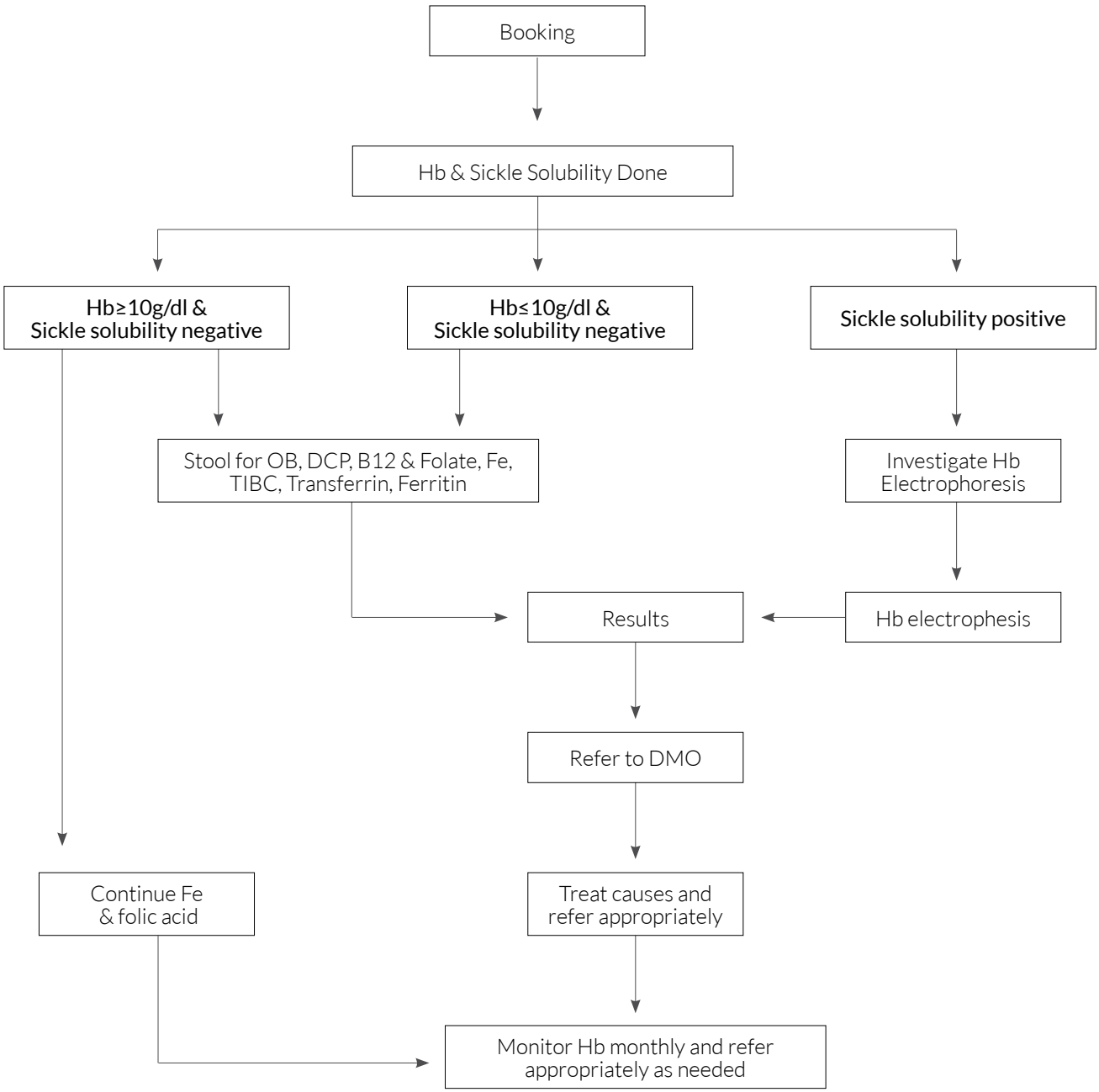
Neonatal hypoglycaemia is related directly to maternal glucose levels during labour as well as to the degree of prenatal metabolic control. It is therefore important to maintain maternal plasma glucose levels between 3-10 mmol/L during labour.

Gestational Diabetics Management

- Diet Controlled
  - Glucometer assessment of the capillary blood sugar should be performed 4 hourly.
  - If the level exceeds 10 mmol/L, manage the patient as though she were an insulin dependent diabetic.
- Patients requiring insulin in pregnancy:
  - These patients should be managed the same as insulin dependent diabetics.
- After delivery
  - Insulin should be discontinued and capillary blood testing stopped.
  - FBS & 2-hour PP is taken before discharge.
  - If normal, i.e. FBS 8.0mmol/L and 2 hr 11.0 mmol/L, no further follow-up is necessary
  - If abnormal, this should be repeated 6 weeks after delivery.

APPENDIX F
ANAEMIA IN PREGNANCY

Algorithm of guidelines for Anaemia control and treatment at Antenatal clinics



APPENDIX G
MEASUREMENTS TO BE TAKEN AND RECORDED DURING LABOUR

Cervical Dilation:	This must be checked and recorded in centimeters. This is the most reliable means of assessing progress of labour in the first stage
Vaginal Examinations:	This should be done under aseptic conditions every four hours: but more frequently if abnormal labour is suspected.
Descent of The Head:	This is measured in (i) fifths palpable above the pelvic brim and also (ii) the relationship of the presenting part of the foetus to the ischial spines. N.B. If there is caput or molding the latter may give an inaccurate assessment of descent. Both methods of assessing descent must be used in any labour
Contractions:	Measure frequency, strengths and duration of uterine contractions over 10 minute periods every half hour; measure and record the duration of uterine contractions in seconds. N.B. o Duration of effective contractions differ markedly between different labouring women. o The frequency of uterine contractions does not correlate well with cervical dilation. o The frequency of contractions should not be used as a criterion of progress in labour. o The intensity of uterine contractions as done by manual palpation is subjective and can be a source of error and confusion if it is used to assess adequate or lack of progress. o Established labour contractions will occur at frequency of 3 to 4 contractions in 10 minutes, with average duration of 45 to 75 seconds. o Monitor closely for uterine hyperactivity and take appropriate action.
Foetal Heart Rate:	This must be measured every 30mins in first stage and every 5 mins in the second stage of labour Since. the second stage of labour is the most stressful stage for the foetus, more intensive observation of foetal conditions is appropriate and necessary.
Membrane Rupture and Amniotic Fluid:	1) Note the time of membrane rupture. 2) Nature of Amniotic Fluid (colour, consistency, odor) Premature rupture (rupture prior to the onset of contractions) is indicative of an ill part. Ensure no malposition/malpresentation and cord prolapse.

APPENDIX H
SHOULDER DYSTOCIA

Shoulder Dystocia

The failure of the shoulders to deliver spontaneously after delivery of the head.

The following manoeuvres must be carried out when shoulder dystocia occurs.

- Call for assistance
- Administer oxygen to mother
- Generous episcotomy

  ↓
- Hyperflexion at the hips

  ↓
- Suprapubic pressure

  ↓
- Delivery of Posterior shoulder with downward traction

  ↓
- If this fails, deliver Anterior shoulder via the corkscrew maneuver

  ↓
- If this fails, fracture the clavicle

APPENDIX I
CORD PROLAPSE

Cord Prolapse

Descent of the umbilical cord into the vagina ahead of the fetal pole after rupture of the membranes, and is diagnosed on vaginal exam, when the cord is palpated.

The following manoeuvres must be performed when Cord Prolapse is diagnosed.

- Do not remove examining hand from vaginal vault
- Call for assistance
- Without removing examining hand place patient in the knee to chest position
- If cord is exposed (out of vagina) cover with warm, sterile , moist, gauze swab
- Organise for immediate delivery via C-Section

APPENDIX J
POSTPARTUM HEMORRHAGE (PPH)

Postpartum Hemorrhage (PPH) is defined as blood loss at >1000ml at C-Section, 500ml at vaginal delivery or, less if the patient is hemodynamically unstable.

NB: This appendix deals with the management of Postpartum hommrrhage after vaginal delivery.

Take the following steps:

- Ensure no Retained Products of Conception (RPOC) –If present, evacuate the uterus
- Determine the presence of uterine atony; if present:
  - Massage uterus
  - Ensure adequate oxytocin infusion
  - Administer repeated dose of ergometrine I.V
  - Intrauterine injection of 15- methyl PGF_{x2} (Carboprost/Hemabate)
  - Administer 800-1000mg of misoprostal rectally
  - Uterine tamponade & exploratory laparotomy
- Ensure no lacerations of genital tract (cervix, vaginal vault, vulva perimium)

NB: Ensure no vault hematoma.

NB: Irrespective of underlying cause, when all interventions have failed, exploratory laparotomy ± hysterectomy should be considered.

- Once PPH is suspected / diagnosed ensure
  - Intravenous access with large bore I.V canula and appropriate volume resuscitation
  - Send CBC, PT, PTT, INR Type and cross match for at least 4 units of PRBC's and 4 units of FFP

APPENDIX K
DEPRESSION

Postpartum Depression

Postnatal Depression can be a scary thing for new moms, especially when they do not know exactly why they are experiencing these feelings.

According to the Post Natal Depression Support Association (PNDSA), new moms can expect to be tired, short of sleep, and may feel as if their lives are chaotic. It's normal to feel somewhat anxious and incompetent, but as the weeks pass, a mom should start to feel as if she is coping more and more.

However this is not always the case. Sometimes those blues won't go away and as the days turn into weeks and months, she slowly gets sucked into a downward spiral of depression and anxiety.

Postnatal Depression

Postnatal Depression is an emotional, or mood disorder that occurs after the birth of a baby. There are three types of Postnatal Depression

1. "Baby Blues'. According to PNDSA, about 75% of all new mothers experience Postpartum Blues. The symptoms usually occur on about the third or fourth days after the birth and include

a. Tearfulness
b. Mood changes,
c. Irritability
d. Agitation, and
e. Aleep disturbance.

The "Baby Blues' is simply a biological response to the changes of hormonal levels associated with childbirth and are completely natural. The "Baby Blues" does not last long, and after several days a new mom should be feeling better.

2. Postnatal or Postpartum Psychosis.
PNDSA explains that this is a serious illness that develops suddenly soon after the birth and symptoms may include:

a. Hallucinations,
b. Delusions,
c. Severe insomnia,
d. Extreme anxiety,
e. Suicidal and homicidal thinking, and
f. Generally a loss of contact with reality. Fortunately this is a very rare illness with only 1 or 2 per 1000 woman reportedly developing it.

Mothers who develop postnatal psychosis need immediate and urgent medical attention that could involve being hospitalized for the protection of the mother and those around her. With correct treatment, the mother will recover.

3. Full-blown Postnatal Depression.
According to PNDSA, between 15 and 30 percent of all mothers in all circumstances will have this condition. It can develop immediately after the birth, or at any time in the first year after childbirth. PNDSA states that this condition is not "just hormonal". Symptoms vary, but include:

a. Unexplained feelings of sadness,
b. Feeling trapped and frustrated,
c. Feeling overwhelmed, incompetent and helpless,
d. Feeling out of control,
e. Feeling disconnected from the baby,
f. Feeling numb,
g. Feeling unbearably anxious, panicky and scared,
h. Major changes in eating and sleeping patterns,
i. Feelings of loss of joy and motivation, and
j. The experience of intrusive thoughts, and suicidal and homicidal ideas.

The good news is that Postnatal Depression is very treatable with appropriate medication, support, counselling and psychotherapy.

NB: PP is far less common than postpartum depression which affects 10%–13% of new mothers, and the maternity blues, which affects 50%–75% of postpartum women.

APPENDIX L
POSTPARTUM PSYCHOSIS (PP)

Postpartum Psychosis occurs in 1–2/1000 childbearing women within the first 2–4 weeks after delivery. The mean age of onset in PP is 26.3 years, which is a time when most women are having their first or second child. Compared with women with chronic mental illness, patients with PP usually have attained higher functional levels before the onset of illness. The rapid and accurate diagnosis of postpartum psychosis is essential to expedite appropriate treatment and to allow for quick, full recovery, prevention of future episodes, and reduction of risk to the mother and her children and family.

The onset of PP is rapid, as early as 2–3 days after childbirth, the patient develops:

- paranoid,
- grandiose,
- or bizarre delusions,
- mood swings, confused thinking, and
- grossly disorganized behaviour that represent a dramatic change from her previous functioning.

However, the combination of frank psychosis and lapsed insight and judgment in PP can lead to devastating consequences in which the safety and well-being of the affected mother and her offspring are jeopardized.

Therefore, it is critical to quickly identify and treat the symptomatic patient.

CLINICAL ASPECTS OF PP

Clinical features

- odd affect,
- withdrawn,
- distracted by auditory hallucinations,
- incompetent,
- confused,
- catatonic; or alternatively, elated, labile, rambling in speech, agitated or excessively active."

Women with childbearing-related onset of psychosis frequently experienced cognitive disorganization and unusual psychotic symptoms. These were often mood-incongruent delusions of reference, persecution, jealousy, and grandiosity, along with visual, tactile, or olfactory hallucinations that suggest an organic syndrome.

TREATMENT OF PP

Psych education and psychotherapy

Once the diagnosis has been established, the physician should:

- Educate the patient and her family about the illness
- Rule out organic causes,
- Initiate pharmacotherapy and supportive therapy, and
- Repeatedly assess the patient's function and safety status.

Informing patients and their families about the symptoms, treatments, expected outcomes and strategies to prevent recurrence of PP. The process of psychoeducation is essential. It will enhance the therapeutic alliance; furthermore, it will strengthen the patient's decision-making process about treatment and her feelings of self-efficacy and mastery over symptoms.

NB: A careful discharge plan must be developed before the patient leaves the hospital, along with closely spaced out-patient follow-up visits, is advisable for the first several weeks after discharge.

APPENDIX M
CHILD ABUSE ALERT

Checklist for those in contact with children

Behaviour Changes

- Starts wetting bed
- Have nightmares
- Be fearful of people/places/punishment
- Become more clinging or withdrawn
- Burst into tears, become extremely irritable
- Try to be overly good
- Become bad tempered/full of rage at everyone
- Compulsively harsh
- Have physical illness – stomach aches, headache pains?
- Become withdrawn
- Feel suicidal
- Regress to younger behaviours such as thumb sucking or talking out and playing with long discarded comfort toys or stuffed animals
- Having eating problems
- Re-enact abuse on object or with other children or adults
- Panic if you try undressing them
- Changes in relationship with significant adults

Physical Signs

- Bruises – including bite marks, pinch marks, finger marks or marks from an object such as a belt
- "Black eyes"
- Fractures and internal injuries without appropriate accidental history
- Sore or scars from cigarettes or iron burns
- Bruising or cuts around mouth – face slapping
- Vomiting and weight loss
- Developmental delay

  Physical
  - Walking, coordination talking

  Emotional
  - Making relationships, playing, showing or receiving affection

  Intellectual
  - Reading, writing, understanding instructions
- Neglected appearance – dirty or sick
- Blood stained clothing- especially underwear
- Genital Infections

DANGER SIGNALS

- Inconsistent story
- Story contradicted by injuries
- Delay in seeking medical help
- Child or parent reluctant to give information
- Step-parent in the home
- Parent has psychiatric, alcohol/drug abuse history
- Stress – financial, unemployment, emotional immaturity, isolation, single parent
- Unrealistic expectation of the child
- Apathy or depression in the parent
- Child has special needs – disability
- A pattern of seeking medical attention from different people/centres

APPENDIX N
CHILD ABUSE REGISTER

The register is a **CONFIDENTIAL** record of reported cases of child abuse. The purpose of the Register is to help "safeguard children at risk" and record information such as:

- Child's name, sex, date of birth, school, and address.

The Register is kept centrally at the Social Welfare Division and is managed and administered by the Coordinator, Child Abuse Prevention Programme.

SPECIAL REGISTER

Inclusion on this Register of any child's name is evidence of grave professional concern and regular monitoring of the case will take place.

AUTOMATIC REGISTRATION of the child's name will only take place when majority of members in a case conference agree and if there is conclusive evidence of abuse.

Once a child's name is placed on the Register an inter-agency child protection plan must be formulated and a key worker appointed with responsibility for implementing this plan. The purpose of registration is to provide a record of all children who are currently the subject of an inter-agency protection plan and to ensure that the plans are formally reviewed. A child protection review must be held at least once every six months. A child's name should only be removed from the special register when it is agreed unanimously at the review that an inter-agency protection plan is no longer necessary to protect the child.

Entries into the Special Register will include:

- Name and sex of child
- Nature of abuse
- Details of offender
- Action taken
- Key worker
- Other relevant information.

APPENDIX O
WELFARE DIVISION GUIDELINES FOR DEALING WITH REPORTS OF CHID ABUSE

- Report received by officer from members of public, agencies, etc.
- Officer records report on Child Abuse Incident Form
- Matter reported and discussed with Chief Welfare Officer/Assistant Chief Welfare Officer and entered in Intake Register. **(within one (1) day)**
- Case referred to Coordinator, Child Abuse prevention Programme by Chief Welfare Officer/ Assistant Chief Welfare Officer and Incident Form submitted to Coordinator, for entry in Child Abuse Register.
- Coordinator of Child Abuse Prevention Programme immediately refers report of sexual and physical abuse to Health Department and or police. **(within one (1) day)**
- Coordinator Child Abuse Prevention Unit Programme should hold discussions with police to determine appropriate course of action. In absence of Coordinator, the Chief Welfare Officer/ Assistant will hold such discussions. **(Within two (2) weeks)**
- Based on urgency, Chief Welfare Officer/Assistant immediately assigns an officer to investigate. **(Within two (2) days)**
- Officer assigned to investigate presents written report to Chief Welfare Officer. **(Within two (2) weeks)**
- Chief Welfare Officer submits report to Permanent Secretary for information. **(within three (3) weeks)**
- District Welfare Officer maintains case responsibility according to specific guidelines set out by the Division. **(Within one (1) month)**
- Coordinator, Child Abuse Prevention Programme liaise with police on outcome of all referred cases. **(within one (1) month)**
- Case conference to be convened as appropriate for case management at Divisional and District level. **(Within one (1) month)**

APPENDIX P
BREASTFEEDING GUIDELINES / RECOMMENDATIONS

- All mothers should be emotionally and physically prepared to begin exclusive breast feeding
- Breastfeeding should begin within half an hour of birth.
- Caesarean section babies must be put to the breast as soon as mother is awake.
- Mothers especially those of premature babies are to be shown how to manually-express breast milk
- Newborns especially premature babies that are unable to suckle should be spoon/cup fed with expressed breast milk
- Breast milk substitutes are given only if medically recommended, and mother should be given reason for its use.
- Rooming-in must be encouraged as much as possible.
- Breast feeding education must be an integral part of ante-natal care.
- Babies should be exclusively breast fed for six months
- Babies should continue to breastfeed for up to two years or beyond, with increasing amounts of complementary foods and cup-fed liquids from six months.

Ten Steps to Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Source: Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services, a joint WHO/UNICEF statement published by the World Health Organization.

APPENDIX P CONT'D
BREASTFEEDING GUIDELINES / RECOMMENDATIONS

SUCKLING AND ATTACHMENT

- Wash hands before attending to baby
- Hold the baby close to and facing the mother's breast with head on the forearm.
- Tease the baby's mouth with nipple/teat until baby's mouth is wide opened then quickly place the breast into baby's mouth.
- The baby needs a large mouthful of breast in order to remove milk effectively
- The baby suckles in a cycle of suck/ swallow/breathe
- The nipple, areola, and breast tissue form a teat, within the baby's mouth. The baby's mouth cups along the side of the teat, and a wave of compression moves along the tongue towards the back of the mouth
- The baby swallows when the back of his mouth is full of milk
- Avoid use of artificial teats as they can cause nipple confusion for the baby.

HELPING MOTHER WITH BREASTFEEDING

- Keep baby and mother together from birth
- Offer help with breastfeeding within thirty minutes of delivery
- Help them learn how to respond to their babies' needs
- If the baby seem too sleepy to feed, wait 15-30 minutes and try again
- Encourage feeding on demand
- f there is nipple pain during breastfeeds, do the following:

  apply downward pressure on the baby's chin with thumb or place index finger into baby's mouth and gently open mouth.

  gently remove breast from baby's mouth

  Recommence breastfeeding using guidelines above.

!

NB: For breastfeeding problems and management refer to breastfeeding Manual.

For additional information refer to the breast feeding manual

APPENDIX Q
FAMILY PLANNING

Family planning is an important component of the Maternal and Child Health program. It empowers women and their families to make informed choices regarding the spacing and number of children. This in turn influences positively the quality of their existence especially among poorly marginalized women at high risk of birth complications.

It plays a significant role in the lives of the individual woman and her family in that it may influence the quality of their existence and it may be of even greater importance in cases of high risk. The Dominica Planned Parenthood and other private agencies provide Family Planning services.

Available contraceptive methods

PERMANENT		TEMPORARY		
Male	Female	Barrier	Hormonal	Natural Methods
Vasectomy	Bilateral Tubal Ligation	Male Condoms	Combined oral contraceptive	Rhythm Method / Fertility Awareness Based Method (FAB)
		Female Condoms	Combined injectable contraceptive	Lactation - Amenorrhea method (LAM)
		Spermicide	Progesterone only pills	Coitus Interruptus
		Intrauterine Contraceptive device	Progesterone only injectables	Abstinence
		Diaphragm		

APPENDIX Q
FAMILY PLANNING CONTINUED

Guidelines for use of Combined Hormonal Contraceptives

See Tables below.

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

TYPE OF CONTRACEPTIVE		
CONDITION	**CATEGORY** I = initiation C = continuation	**CLARIFICATIONS/ EVIDENCE**
CONDITION	Condition classified from 1 to 4 The categories for fertility awareness-based methods and surgical sterilization are described at the beginning of the relevant section.	Clarifications and evidence regarding the classification

NA denotes a condition for which a category was not given by the Working Group but for which clarifications have been provided.

1	A condition for which there is no restriction for the use of the contraceptive method
2	A condition where the advantages of using the method generally outweigh the theoretical or proven risks
3	A condition where the theoretical or proven risks usually outweigh the advantages of using the method
4	A condition which represents an unacceptable health risk if the contraceptive method is used

CATEGORY	WITH CLINICAL JUDGEMENT	WITH LIMITED CLINICAL JUDGEMENT
1	Use method in any circumstances	**Yes** (Use the method)
2	Generally use the method	
3	Use of method not usually recommended unless other more appropriate methods are not available or not acceptable	**No** (Do not use the method)
4	Method not to be used	

APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 1/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

COC: Combined Oral Contraceptive

CIC: Combined Injectable Contraceptive

P: Combined Contraceptive Patch

R: Combined Contraceptive vaginal ring

POP: Progesterone only Contraceptive

DMPA: Depot-medroxyprogesterone acetate

NET-EN: Norethisterone enanthate

LNG/ETG: Levonorgestrel and etonogestrel implants

Cu-IND: Copper IUD

LNG-IUD: Levonorgestrel IUD

CONDITION	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD	LNG-IUD
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable								
PERSONAL CHARACTERISTICS AND REPRODUCTIVE HISTORY								
PREGNANCY	NA†	NA†	NA†	NA†	NA†	NA†	4†	4†
AGE	Menarche to <40=1 ≥40=2	Menarche to <40=1 ≥40=2		Menarche to <18=1 18-45=1 >45=1	Menarche to <18=2 18-45=1 >45=2	Menarche to <18=1 18-45=1 >45=1	Menarche to <20=2 ≥20=1	Menarche to <20=2 ≥20=1
PARITY								
a) Nulliparous	1	1	1	1	1	1	2	2
b) Parous	1	1	1	1	1	1	1	1
BREASTFEEDING								
a) < 6 weeks postpartum	4	4	4	3†	3†	3†		
b) 6 weeks to < 6 months (primarily breastfeeding)	3	3	3	1	1	1		
c) ≥ 6 months postpartum	2	2	2	1	1	1		
POSTPARTUM (non-breastfeeding women)								
a) < 21 days				1	1	1		
(i) without other risk factors for VTE	3†	3†	3†					
(ii) with other risk factors for VTE	3/4†	3/4†	3/4†					
b) ≥ 21 days				1	1	1		
(i) without other risk factors for VTE	2†	2†	2†					
(ii) with other risk factors for VTE	2/3†	2/3†	2/3†					
c) > 42 days	1	1	1	1	1	1		
POSTPARTUM (breastfeeding or non-breastfeeding women, including after caesarean section)								
a) < 48 hours including insertion immediately after delivery of the placenta							1	1=not BF 3=BF
b) ≥ 48 hours to <4 weeks							3	3
c) ≥ 4 weeks							1	1
d) Puerperal sepsis							4	4
POST-ABORTION								
a) First trimester	1†	1†	1†	1†	1†	1†	1†	1†
b) Second trimester	1	1	1	1	1	1	2	2
c) Immediate post-septic abortion	1	1	1	1	1	1	4	4
PAST ECTOPIC PREGNANCY	1	1	1	2	1	1	1	1

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APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 2/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

COC:
Combined Oral Contraceptive

CIC:
Combined Injectable Contraceptive

P:
Combined Contraceptive Patch

R:
Combined Contraceptive vaginal ring

POP:
Progesterone only Contraceptive

DMPA:
Depot-medroxyprogesterone acetate

NET-EN:
Norethisterone enanthate

LNG/ETG:
Levonorgestrel and etonogestrel implants

Cu-IND:
Copper IUD

LNG-IUD:
Levonorgestrel IUD

CONDITION	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD	LNG-IUD
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable								
HISTORY OF PELVIC SURGERY (see postpartum, including caesarean section)	1	1	1	1	1	1	1	1
SMOKING								
a) Age < 35 years	2	2	2	1	1	1	1	1
b) Age ≥ 35 years								
(i) <15 cigarettes/day	3	2	3	1	1	1	1	1
(ii) ≥15 cigarettes/day	4	3	4	1	1	1	1	1
OBESITY	2	2	2	1	1	1	1	1
a) ≥ 30 kg/m^2 BMI								
b) Menarche to < 18 years and ≥ 30 kg/m^2 BMI	2	2	2	1	DMPA=2 NET-EN=1†	1	1	1
BLOOD PRESSURE MEASUREMENT UNAVAILABLE	NA†	NA†	NA†	NA†	NA†	NA†	NA†	NA†
CARDIOVASCULAR DISEASE								
MULTIPLE RISK FACTORS FOR ARTERIAL CARDIOVASCULAR DISEASE (such as older age, smoking, diabetes and hypertension)	3/4†	3/4†	3/4†	2†	3†	2†	1	2
HYPERTENSION								
a) History of hypertension where blood pressure CANNOT be evaluated (including hypertension during pregnancy)	3†	3†	3†	2†	2†	2†	1	2
b) Adequately controlled hypertension, where blood pressure CAN be evaluated	3†	3†	3†	1†	2†	1†	1	1
c) Elevated blood pressure levels (properly taken measurements)								
(i) systolic 140-159 or diastolic 90-99 mm Hg	3	3	3	1	2	1	1	1
(ii) systolic ≥160 or diastolic ≥100 mm Hg	4	4	4	2	3	2	1	2
d) Vascular disease	4	4	4	2	3	2	1	2
HISTORY OF HIGH BLOOD PRESSURE DURING PREGNANCY (where current blood pressure is measurable and normal)	2	2	2	1	1	1	1	1

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APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 3/6

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Cu-IND: Copper IUD

LNG-IUD: Levonorgestrel IUD

CONDITION	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD	LNG-IUD
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable								
DEEP VENOUS THROMBOSIS (DVT)/PULMONARY EMBOLISM (PE)								
a) History of DVT/PE	4	4	4	2	2	2	1	2
b) Acute DVT/PE	4	4	4	3	3	3	1	3
c) DVT/PE and established on anticoagulant therapy	4	4	4	2	2	2	1	2
d) Family history (first-degree relatives)	2	2	2	1	1	1	1	1
e) Major surgery								
(i) with prolonged immobilization	4	4	4	2	2	2	1	2
(ii) without prolonged immobilization	2	2	2	1	1	1	1	1
f) Minor surgery without immobilization	1	1	1	1	1	1	1	1
KNOWN THROMBOGENIC MUTATIONS (e.g. factor V Leiden; prothrombin mutation; protein S, protein C and antithrombin deficiencies)	4†	4†	4†	2†	2†	2†	1†	2†
SUPERFICIAL VENOUS THROMBOSIS								
a) Varicose veins	1	1	1	1	1	1	1	1
b) Superficial thrombophlebitis	2	2	2	1	1	1	1	1
CURRENT AND HISTORY OF ISCHAEMIC HEART DISEASE	4	4	4	I: 2 / C: 3	3	I: 2 / C: 3	1	I: 2 / C: 3
STROKE (history of cerebrovascular accident)	4	4	4	I: 2 / C: 3	3	I: 2 / C: 3	1	2
KNOWN HYPERLIPIDAEMIAS	2/3†	2/3†	2/3†	2†	2†	2†	1†	2†
VALVULAR HEART DISEASE								
a) Uncomplicated	2	2	2	1	1	1	1	1
b) Complicated (pulmonary hypertension, risk of atrial fibrillation, history of subacute bacterial endocarditis)	4	4	4	1	1	1	2†	2†
RHEUMATIC DISEASES								
SYSTEMIC LUPUS ERYTHEMATOSUS					I: 3 / C: 3		I: 1 / C: 1	
a) Positive (or unknown) antiphospholipid antibodies	4	4	4	3		3		3
b) Severe thrombocytopenia	2	2	2	2	3 / 2	2	3† / 2†	2†
c) Immunosuppressive treatment	2	2	2	2	2 / 2	2	2 / 1	2
d) None of the above	2	2	2	2	2 / 2	2	1 / 1	2

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APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 4/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

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POP: Progesterone only Contraceptive

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LNG/ETG: Levonorgestrel and etonogestrel implants

Cu-IND: Copper IUD

LNG-IUD: Levonorgestrel IUD

CONDITION	COC		CIC		P/R		POP		DMPA NET-EN		LNG/ ETG Implants		Cu-IUD		LNG-IUD	
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable																
NEUROLOGIC CONDITIONS																
HEADACHES	I	C	I	C	I	C	I	C	I	C	I	C			I	C
a) Non-migrainous (mild or severe)	1†	2†	1†	2†	1†	2†	1†	1†	1†	1†	1†	1†	1†		1†	1†
b) Migraine																
(i) without aura																
Age < 35 years	2†	3†	2†	3†	2†	3†	1†	2†	2†	2†	2†	2†	1†		2†	2†
Age ≥ 35 years	3†	4†	3†	4†	3†	4†	1†	2†	2†	2†	2†	2†	1†		2†	2†
(ii) with aura (at any age)	4†	4†	4†	4†	4†	4†	2†	3†	2†	3†	2†	3†	1†		2†	3†
EPILEPSY	1†		1†		1†		1†		1†		1†		1		1	
If on treatment, see DRUG INTERACTIONS section																
DEPRESSIVE DISORDERS																
DEPRESSIVE DISORDERS	1†		1†		1†		1†		1†		1†		1†		1†	
REPRODUCTIVE TRACT INFECTIONS AND DISORDERS																
VAGINAL BLEEDING PATTERNS															I	C
a) Irregular pattern without heavy bleeding	1		1		1		2		2		2		1		1	1
b) Heavy or prolonged bleeding (includes regular and irregular patterns)	1†		1†		1†		2†		2†		2†		2†		1†	2†
UNEXPLAINED VAGINAL BLEEDING (suspicious for serious condition)													I	C	I	C
Before evaluation	2†		2†		2†		2†		3†		3†		4†	2†	4†	2†
ENDOMETRIOSIS	1		1		1		1		1		1		2		1	
BENIGN OVARIAN TUMOURS (including cysts)	1		1		1		1		1		1		1		1	
SEVERE DYSMENORRHOEA	1		1		1		1		1		1		2		1	
GESTATIONAL TROPHOBLASTIC DISEASE																
a) Decreasing or undetectable β-hCG levels	1		1		1		1		1		1		3		3	
b) Persistently elevated β-hCG levels or malignant disease	1		1		1		1		1		1		4		4	
CERVICAL ECTROPION	1		1		1		1		1		1		1		1	
CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN)	2		2		2		1		2		2		1		2	
CERVICAL CANCER (awaiting treatment)	2		2		2		1		2		2		I 4	C 2	I 4	C 2

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APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 5/6

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CONDITION	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD		LNG-IUD	
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable										
BREAST DISEASE										
a) Undiagnosed mass	2†	2†	2†	2†	2†	2†	1		2	
b) Benign breast disease	1	1	1	1	1	1	1		1	
c) Family history of cancer	1	1	1	1	1	1	1		1	
d) Breast cancer										
(i) current	4	4	4	4	4	4	1		4	
(ii) past and no evidence of current disease for 5 years	3	3	3	3	3	3	1		3	
ENDOMETRIAL CANCER							I	C	I	C
	1	1	1	1	1	1	4	2	4	2
OVARIAN CANCER							I	C	I	C
	1	1	1	1	1	1	3	2	3	2
UTERINE FIBROIDS										
a) Without distortion of the uterine cavity	1	1	1	1	1	1	1		1	
b) With distortion of the uterine cavity	1	1	1	1	1	1	4		4	
ANATOMICAL ABNORMALITIES										
a) That distort the uterine cavity							4		4	
b) That do not distort the uterine cavity							2		2	
PELVIC INFLAMMATORY DISEASE (PID)										
a) Past PID (assuming no current risk factors of STIs)							I	C	I	C
(i) with subsequent pregnancy	1	1	1	1	1	1	1	1	1	1
ii) without subsequent pregnancy	1	1	1	1	1	1	2	2	2	2
b) PID – current	1	1	1	1	1	1	4	2†	4	2†
STIs							I	C	I	C
a) Current purulent cervicitis or chlamydial infection or gonorrhoea	1	1	1	1	1	1	4	2†	4	2†
b) Other STIs (excluding HIV and hepatitis)	1	1	1	1	1	1	2	2	2	2
c) Vaginitis (including trichomonas vaginalis and bacterial vaginosis)	1	1	1	1	1	1	2	2	2	2
d) Increased risk of STIs	1	1	1	1	1	1	2/3†	2	2/3†	2

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APPENDIX Q
FAMILY PLANNING CONTINUED

Summary Tables 6/6

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Cu-IND: Copper IUD

LNG-IUD: Levonorgestrel IUD

CONDITION	COC	CIC	P/R	POP	DMPA NET-EN	LNG/ ETG Implants	Cu-IUD		LNG-IUD	
I = initiation, C = continuation, BF = breastfeeding, NA = not applicable										
HIV/AIDS										
							I	C	I	C
HIGH RISK OF HIV	1	1	1	1	1	1	2	2	2	2
HIV-INFECTED	1	1	1	1	1	1	2	2	2	2
AIDS	1†	1†	1†	1†	1†	1†	3	2†	3	2†
Clinically well on ARV therapy	If on treatment, see DRUG INTERACTIONS section						2	2	2	2
OTHER INFECTIONS										
SCHISTOSOMIASIS										
a) Uncomplicated	1	1	1	1	1	1	1		1	
b) Fibrosis of the liver	1	1	1	1	1	1	1		1	
TUBERCULOSIS							I	C	I	C
a) Non-pelvic	1†	1†	1†	1†	1†	1†	1	1	1	1
b) Known pelvic	1†	1†	1†	1	1	1	4	3	4	3
	If on treatment, see DRUG INTERACTIONS section									
MALARIA	1	1	1	1	1	1	1		1	
ENDOCRINE CONDITIONS										
DIABETES										
a) History of gestational disease	1	1	1	1	1	1	1		1	
b) Non-vascular disease										
(i) non-insulin dependent	2	2	2	2	2	2	1		2	
(ii) insulin dependent	2	2	2	2	2	2	1		2	
c) Nephropathy/ retinopathy/ neuropathy	3/4†	3/4†	3/4†	2	3	2	1		2	
d) Other vascular disease or diabetes of > 20 years' duration	3/4†	3/4†	3/4†	2	3	2	1		2	
THYROID DISORDERS										
a) Simple goitre	1	1	1	1	1	1	1		1	
b) Hyperthyroid	1	1	1	1	1	1	1		1	
c) Hypothyroid	1	1	1	1	1	1	1		1	
GASTROINTESTINAL CONDITIONS										
GALL BLADDER DISEASE										
a) Symptomatic										
(i) treated by cholecystectomy	2	2	2	2	2	2	1		2	
(ii) medically treated	3	2	3	2	2	2	1		2	
(iii) current	3	2	3	2	2	2	1		2	
b) Asymptomatic	2	2	2	2	2	2	1		2	
HISTORY OF CHOLESTASIS										
a) Pregnancy related	2	2	2	1	1	1	1		1	
b) Past-COC related	3	2	3	2	2	2	1		2	
VIRAL HEPATITIS	I	C	I	C	I	C				
a) Acute or flare	3/4†	2	3	2	3/4†	2	1		1	
b) Carrier	1	1	1	1	1	1	1		1	
c) Chronic	1	1	1	1	1	1	1		1	

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APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 1/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms		**S** = spermicide		**D** = diaphragm (with spermicide), cervical cap
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
PERSONAL CHARACTERISTICS AND REPRODUCTIVE HISTORY				
PREGNANCY	NA	NA	NA	NA = not applicable **Clarification**: None of these methods are relevant for contraception during known pregnancy. However, for women who continue to be at risk of STI/HIV during pregnancy, the correct and consistent use of condoms is recommended.
AGE				
a) Menarche to < 40 years	1	1	1	
b) ≥ 40 years	1	1	1	
PARITY				
a) Nulliparous	1	1	1	
b) Parous	1	1	2	**Clarification**: There is a higher risk of cervical cap failure in parous women than in nulliparous women.
POSTPARTUM				
a) < 6 weeks postpartum	1	1	NA	**Clarification**: The diaphragm and cap are unsuitable until uterine involution is complete.
b) ≥ 6 weeks postpartum	1	1	1	
POST-ABORTION				
a) First trimester	1	1	1	
b) Second trimester	1	1	1	**Clarification**: The diaphragm and cap are unsuitable until 6 weeks after second-trimester abortion.
c) Immediate post-septic abortion	1	1	1	
PAST ECTOPIC PREGNANCY	1	1	1	
HISTORY OF PELVIC SURGERY	1	1	1	
SMOKING				
a) Age < 35 years	1	1	1	
b) Age ≥ 35 years				
(i) <15 cigarettes/day	1	1	1	
ii) ≥15 cigarettes/day	1	1	1	
OBESITY*				
a) ≥ 30 kg/m^2 BMI	1	1	1	
b) Menarche to < 18 years and ≥ 30 kg/m^2 BMI	1	1	1	
BLOOD PRESSURE MEASUREMENT UNAVAILABLE	NA	NA	NA	**Clarification**: While a blood pressure measurement may be appropriate for good preventive health care, it is not required for safe and effective barrier method use. Women should not be denied the use of barrier methods simply because their blood pressure cannot be measured.

APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 2/6

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If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms **S** = spermicide **D** = diaphragm (with spermicide), cervical cap				
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
CARDIOVASCULAR DISEASE				
MULTIPLE RISK FACTORS FOR ARTERIAL CARDIOVASCULAR DISEASE (such as older age, smoking, diabetes and hypertension)	1	1	1	
HYPERTENSION				
a) History of hypertension, where blood pressure CANNOT be evaluated (including hypertension in pregnancy)	1	1	1	
b) Adequately controlled hypertension, where blood pressure CAN be evaluated	1	1	1	
c) Elevated blood pressure levels (properly taken measurements)				
(i) systolic 140-159 or diastolic 90-99 mm Hg	1	1	1	
(ii) systolic ≥160 or diastolic ≥100 mm Hg	1	1	1	
d) Vascular disease	1	1	1	
HISTORY OF HIGH BLOOD PRESSURE DURING PREGNANCY (where current blood pressure is measurable and normal)	1	1	1	
DEEP VENOUS THROMBOSIS (DVT)/ PULMONARY EMBOLISM (PE)				
a) History of DVT/PE	1	1	1	
b) Acute DVT/PE	1	1	1	
c) DVT/PE and established on anticoagulant therapy	1	1	1	
d) Family history (first-degree relatives)	1	1	1	
e) Major surgery				
(i) with prolonged immobilization	1	1	1	
(ii) without prolonged immobilization	1	1	1	
f) Minor surgery without immobilization	1	1	1	

APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 3/6

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CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms		**S** = spermicide		**D** = diaphragm (with spermicide), cervical cap
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
KNOWN THROMBOGENIC MUTATIONS (e.g., factor V Leiden; prothrombin mutation; protein S, protein C, and antithrombin deficiencies)	1	1	1	**Clarification**: Routine screening is not appropriate because of the rarity of the conditions and the high cost of screening.
SUPERFICIAL VENOUS THROMBOSIS				
a) Varicose veins	1	1	1	
b) Superficial thrombophlebitis	1	1	1	
CURRENT AND HISTORY OF ISCHAEMIC HEART DISEASE	1	1	1	
STROKE (history of cerebrovascular accident)	1	1	1	
KNOWN HYPERLIPIDAEMIAS	1	1	1	**Clarification**: Routine screening is not appropriate because of the rarity of the conditions and the high cost of screening.
VALVULAR HEART DISEASE*				
a) Uncomplicated	1	1	1	
b) Complicated (pulmonary hypertension, risk of atrial fibrillation, history of subacute bacterial endocarditis)	1	1	2	
RHEUMATIC DISEASES				
SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)				
a) Positive (or unknown) antiphospholipid antibodies	1	1	1	
b) Severe thrombocytopenia	1	1	1	
c) Immunosuppressive treatment	1	1	1	
d) None of the above	1	1	1	
NEUROLOGIC CONDITIONS				
HEADACHES				
a) Non-migrainous (mild or severe)	1	1	1	
b) Migraine				
(i) without aura				
Age < 35 years	1	1	1	
Age ≥ 35 years	1	1	1	
(ii) with aura, at any age	1	1	1	
EPILEPSY	1	1	1	
DEPRESSIVE DISORDERS				
DEPRESSIVE DISORDERS	1	1	1	

APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 4/6

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If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms **S** = spermicide **D** = diaphragm (with spermicide), cervical cap				
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
REPRODUCTIVE TRACT INFECTIONS AND DISORDERS				
UNEXPLAINED VAGINAL BLEEDING (suspicious for serious condition) Before evaluation	1	1	1	**Clarification**: If pregnancy or an underlying pathological condition (such as pelvic malignancy) is suspected, it must be evaluated and the category adjusted after evaluation.
ENDOMETRIOSIS	1	1	1	
BENIGN OVARIAN TUMOURS (including cysts)	1	1	1	
SEVERE DYSMENORRHOEA	1	1	1	
GESTATIONAL TROPHOBLASTIC DISEASE				
a) Decreasing or undetectable β-hCG levels	1	1	1	
b) Persistently elevated β-hCG levels or malignant disease	1	1	1	
CERVICAL ECTROPION	1	1	1	
CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN)	1	1	1	**Clarification**: The cap should not be used. There is no restriction for diaphragm use.
CERVICAL CANCER* (awaiting treatment)	1	2	1	**Clarification**: The cap should not be used. There is no restriction for diaphragm use.
BREAST DISEASE				
a) Undiagnosed mass	1	1	1	
b) Benign breast disease	1	1	1	
c) Family history of cancer	1	1	1	
d) Breast cancer				
(i) current	1	1	1	
(ii) past and no evidence of current disease for 5 years	1	1	1	
ENDOMETRIAL CANCER	1	1	1	
OVARIAN CANCER	1	1	1	
UTERINE FIBROIDS				
a) Without distortion of the uterine cavity	1	1	1	
b) With distortion of the uterine cavity	1	1	1	
ANATOMICAL ABNORMALITIES	1	1	NA	**Clarification**: The diaphragm cannot be used in certain cases of prolapse. Cap use is not appropriate for a client with a markedly distorted cervical anatomy.

APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 5/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms		**S** = spermicide		**D** = diaphragm (with spermicide), cervical cap
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
PELVIC INFLAMMATORY DISEASE (PID)				
a) Past PID (assuming no current risk factors for STIs)				
(i) with subsequent pregnancy	1	1	1	
(ii) without subsequent pregnancy	1	1	1	
b) PID - current	1	1	1	
STIs				
a) Current purulent cervicitis or chlamydial infection or gonorrhoea	1	1	1	
b) Other STIs (excluding HIV and hepatitis)	1	1	1	
c) Vaginitis (including trichomonas vaginalis and bacterial vaginosis)	1	1	1	
d) Increased risk of STIs	1	1	1	
HIV/AIDS				
HIGH RISK OF HIV*	1	4	4	**Evidence:** Repeated and high-dose use of the spermicide nonoxynol-9 was associated with increased risk of genital lesions, which may increase the risk of acquiring HIV infection.(1)
HIV-INFECTED*	1	3	3	
AIDS*	1	3	3	
OTHER INFECTIONS				
SCHISTOSOMIASIS				
a) Uncomplicated	1	1	1	
b) Fibrosis of the liver	1	1	1	
TUBERCULOSIS				
a) Non-pelvic	1	1	1	
a) Pelvic	1	1	1	
MALARIA	1	1	1	
HISTORY OF TOXIC SHOCK SYNDROME*	1	1	3	
URINARY TRACT INFECTION*	1	1	2	

APPENDIX Q
FAMILY PLANNING CONTINUED

Barrier Methods 6/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY I = initiation, C = continuation			CLARIFICATIONS/EVIDENCE
	C	S	D	
C = male latex condoms, male polyurethane condoms, female condoms		**S** = spermicide		**D** = diaphragm (with spermicide), cervical cap
Women with conditions which make pregnancy an unacceptable risk should be advised that barrier methods for pregnancy prevention may not be appropriate for those who cannot use them consistently and correctly because of their relatively higher typical-use failure rates.				
ENDOCRINE CONDITIONS				
DIABETES				
a) History of gestational disease	1	1	1	
b) Non-vascular disease				
(i) non-insulin dependent	1	1	1	
(ii) insulin dependent	1	1	1	
c) Nephropathy/retinopathy/ neuropathy	1	1	1	
d) Other vascular disease or diabetes of > 20 years' duration	1	1	1	
THYROID DISORDERS				
a) Simple goitre	1	1	1	
b) Hyperthyroid	1	1	1	
c) Hypothyroid	1	1	1	
GASTROINTESTINAL CONDITIONS				
GALL BLADDER DISEASE				
a) Symptomatic				
(i) treated by cholecystectomy	1	1	1	
(ii) medically treated	1	1	1	
(iii) current	1	1	1	
b) Asymptomatic	1	1	1	
HISTORY OF CHOLESTASIS				
a) Pregnancy-related	1	1	1	
b) Past-COC related	1	1	1	
VIRAL HEPATITIS				
a) Acute or flare	1	1	1	
b) Carrier	1	1	1	
c) Chronic	1	1	1	
CIRRHOSIS				
a) Mild (compensated)	1	1	1	
b) Severe (decompensated)	1	1	1	
LIVER TUMOURS				
a) Benign				
(i) Focal nodular hyperplasia	1	1	1	
(ii) Hepatocellular adenoma	1	1	1	
b) Malignant (hepatoma)	1	1	1	

APPENDIX Q
FAMILY PLANNING CONTINUED

FAB Methods 1/2

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

FERTILITY AWARENESS-BASED METHODS (FAB)

Fertility awareness-based (FAB) methods of family planning involve identification of the fertile days of the menstrual cycle, whether by observing fertility signs such as cervical secretions and basal body temperature, or by monitoring cycle days. FAB methods can be used in combination with abstinence or barrier methods during the fertile time. If barrier methods are used, refer to the section on barrier methods (BARR).

There are no medical conditions that become worse because of use of FAB methods. In general, these methods can be provided without concern for health effects to people who choose them. However, there are a number of conditions that make their use more complex. The existence of these conditions suggests that (1) use of these methods should be delayed until the condition is corrected or resolved, or (2) they will require special counselling, and a more highly trained provider is generally necessary to ensure correct use.

Definitions

SYM	Symptoms-based methods	FAB methods based on observation of fertility signs (e.g. cervical secretions, basal body temperature) such as the Cervical Mucus Method, the Symptothermal Method, and the Two Day Method.
CAL	Calendar-based methods	FAB methods based on calendar calculations such as the Calendar Rhythm Method and the Standard Days Method.
A	Accept	There is no medical reason to deny the particular FAB method to a woman in this circumstance.
C	Caution	The method is normally provided in a routine setting, but with extra preparation and precautions. For FAB methods, this usually means that special counselling may be needed to ensure correct use of the method by a woman in this circumstance.
D	Delay	Use of this method should be delayed until the condition is evaluated or corrected. Alternative temporary methods of contraception should be offered.
NA	Not applicable	

APPENDIX Q
FAMILY PLANNING CONTINUED

FAB Methods 2/2

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

FERTILITY AWARENESS-BASED METHODS

Fertility awareness-based methods do not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY		CLARIFICATIONS/EVIDENCE
	SYM	CAL	
PERSONAL CHARACTERISTICS AND REPRODUCTIVE HISTORY			
Women with conditions which make pregnancy an unacceptable risk should be advised that fertility awareness-based methods for pregnancy prevention may not be appropriate for them because of their relatively-higher typical-use failure rates.			
PREGNANCY	NA	NA	**Clarification**: Fertility awareness-based methods are not relevant during pregnancy.
LIFE STAGE			**Clarification**: Menstrual irregularities are common in post-menarche and peri-menopause and may complicate the use of fertility awareness-based methods
a) Post-menarche	C	C	
b) Peri-menopause	C	C	
BREASTFEEDING*			
a) < 6 weeks postpartum	D	D	
b) ≥ 6 weeks	C	D	
c) After menses begin	C	C	
POSTPARTUM* (in non-breastfeeding women)			
a) < 4 weeks	D	D	
b) ≥ 4 weeks	A	D	
POST-ABORTION*	C	D	
REPRODUCTIVE TRACT INFECTIONS AND DISORDERS			
IRREGULAR VAGINAL BLEEDING*	D	D	
VAGINAL DISCHARGE*	D	A	
OTHER			
USE OF DRUGS THAT AFFECT CYCLE REGULARITY, HORMONES AND/OR FERTILITY SIGNS*	C/D	C/D	
DISEASES THAT ELEVATE BODY TEMPERATURE*			
a) Chronic diseases	C	A	
b) Acute diseases	D	A	

APPENDIX Q
FAMILY PLANNING CONTINUED

LAM Methods 1/2

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

LACTATIONAL AMENORRHOEA METHOD (LAM)

The lactational amenorrhoea method does not protect against STI/HIV. If there is a risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms should be recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

Women with conditions that make pregnancy an unacceptable risk should be advised that the lactational amenorrhoea method may not be appropriate for them because of its relatively higher typical-use failure rates.

The Bellagio Consensus provided the scientific basis for defining the conditions under which breastfeeding can be used safely and effectively for birth-spacing purposes, and programmatic guidelines were developed for the use of lactational amenorrhoea in family planning. These guidelines include the following three criteria, all of which must be met to ensure adequate protection from an unplanned pregnancy: (1) amenorrhoea; (2) fully or nearly fully breastfeeding; and (3) less than six months postpartum.

The main indications for breastfeeding remain the need to provide an ideal food for the infant and to protect it against disease. There are no medical conditions in which the use of lactational amenorrhoea is restricted and there is no documented evidence of its negative impact on maternal health. However, certain conditions or obstacles which affect breastfeeding may also affect the duration of amenorrhoea, making this a less useful choice for family planning purposes. These include:

HIV INFECTION

Breastfeeding should be promoted, protected, and supported in all populations, for all women who are HIV-negative or of unknown HIV status. A woman infected with HIV, however, can transmit the virus to her child through breastfeeding. Yet breastfeeding, and especially early and exclusive breastfeeding, is one of the most critical factors for improving child survival. Breastfeeding also confers many other benefits in addition to reducing the risk of death.

There is now strong evidence that giving antiretroviral drugs (ARVs) to either the HIV-infected mother or HIV-exposed infant or both can significantly reduce the risk of transmitting HIV through breastfeeding (http://www.who.int/hiv/topics/mtct). This transforms the landscape in which decision should be made by national health authorities and individual mothers. In the presence of ARVs, either lifelong antiretroviral therapy to the mother or other ARV interventions to the mother or infant, the infant can receive all the benefits of breastfeeding with little risk of becoming HIV infected. In some well-resourced countries with low infant and child mortality rates, avoidance of all breastfeeding will still be appropriate.

HIV-infected mothers should receive the appropriate ARV interventions and should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life. Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided. When mothers decide to stop breastfeeding, they should stop gradually within one month and infants should be provided with safe and adequate replacement feeds to enable normal growth and development.

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:

a. safe water and sanitation are assured at the household level and in the community, **and,**

b. the mother, or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant, **and,**

c. the mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition, **and,**

d. the mother or caregiver can, in the first six months, exclusively give infant formula milk, **and,**

e. the family is supportive of this practice, **and,**

f. the mother or caregiver can access health care that offers comprehensive child health services.

If infants and young children are known to be HIV infected, mothers are strongly encouraged to exclusively breastfeed for the first 6 months of life and continue breastfeeding as per the recommendations

APPENDIX Q
FAMILY PLANNING CONTINUED

LAM Methods 2/2

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

for the general population, that is up to two years or beyond.

Women who are HIV infected should receive skilled counselling to help them. They should also have access to follow-up care and support, including family planning and nutritional support.

MEDICATION USED DURING BREASTFEEDING

In order to protect infant health, breastfeeding is not recommended for women using such drugs as: antimetabolites, bromocriptine, certain anticoagulants, corticosteroids (high doses), ciclosporin, ergotamine, lithium, mood-altering drugs, radioactive drugs and reserpine.

CONDITIONS AFFECTING THE NEWBORN

Congenital deformities of the mouth, jaw or palate; newborns who are small-for-date or premature and needing intensive neonatal care; and certain metabolic disorders of the infant can all make breastfeeding difficult.

APPENDIX Q
FAMILY PLANNING CONTINUED

Coitus Interruptus Methods

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

COITUS INTERRUPTUS (CI)

Coitus interruptus does not protect against STI/HIV. If there is a risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms should be recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

Women with conditions that make pregnancy an unacceptable risk should be advised that coitus interruptus may not be appropriate for them because of its relatively higher typical-use failure rates.

Coitus interruptus (CI), also known as withdrawal, is a traditional family planning method in which the man completely removes his penis from the vagina, and away from the external genitalia of the female partner, before he ejaculates. CI prevents sperm from entering the woman's vagina, thereby preventing contact between spermatozoa and the ovum.

This method may be appropriate for couples:

- who are highly motivated and able to use this method effectively;
- with religious or philosophical reasons for not using other methods of contraception;
- who need contraception immediately and have entered into a sexual act without alternative methods available;
- who need a temporary method while awaiting the start of another method;
- who have intercourse infrequently.

Some benefits of CI are that the method, if used correctly, does not affect breastfeeding and is always available for primary use or use as a back-up method. In addition, CI involves no economic cost or use of chemicals. There are no health risks associated directly with CI. Men and women who are at high risk of STI/HIV infection should use a condom with each act of intercourse.

CI is unforgiving of incorrect use, and its effectiveness depends on the willingness and ability of the couple to use withdrawal with every act of intercourse.

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

SURGICAL STERILIZATION PROCEDURES (STER)

Given that sterilization is a surgical procedure that is intended to be permanent, special care must be taken to assure that every client makes a voluntary informed choice of the method. Particular attention must be given in the case of young people, nulliparous women, men who have not yet been fathers, and clients with mental health problems, including depressive conditions. All clients should be carefully counselled about the intended permanence of sterilization and the availability of alternative, long-term, highly effective methods. This is of extra concern for young people. The national laws and existing norms for the delivery of sterilization procedures must be considered in the decision process.

Transcervical methods of female sterilization are not addressed in these recommendations.

There is no medical condition that would absolutely restrict a person's eligibility for sterilization, although some conditions and circumstances will require that certain precautions are taken, including those where the recommendation is C (caution), D (delay), or S (special). For some of these conditions and circumstances, the theoretical or proven risks may outweigh the advantages of undergoing sterilization, particularly female sterilization. Where the risks of sterilization outweigh the benefits, long-term, highly effective contraceptive methods are a preferable alternative. Decisions in this regard will have to be made on an individual basis, considering the risks and benefits of sterilization versus the risks of pregnancy, and the availability and acceptability of highly effective, alternative methods.

The following classification of conditions into the four different categories is based on an in-depth review of the epidemiological and clinical evidence relevant to medical eligibility. Sterilization procedures should only be performed by well-trained providers in appropriate clinical settings using proper equipment and supplies. Appropriate service delivery guidelines, including infection-prevention protocols, should be followed to maximize client safety.

DEFINITIONS

A	Accept	There is no medical reason to deny sterilization to a person with this condition.
C	Caution	The procedure is normally conducted in a routine setting, but with extra preparation and precautions.
D	Delay	The procedure is delayed until the condition is evaluated and/or corrected. Alternative temporary methods of contraception should be provided.
S	Special	The procedure should be undertaken in a setting with an experienced surgeon and staff, equipment needed to provide general anaesthesia, and other back-up medical support. For these conditions, the capacity to decide on the most appropriate procedure and anaesthesia regimen is also needed. Alternative temporary methods of contraception should be provided, if referral is required or there is otherwise any delay.

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 1/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

FEMALE SURGICAL STERILIZATION

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
PERSONAL CHARACTERISTICS AND REPRODUCTIVE HISTORY		
PREGNANCY	D	
YOUNG AGE	C	**Clarification**: Young women, like all women, should be counselled about the permanency of sterilization and the availability of alternative, long-term, highly effective methods. **Evidence**: Studies show that up to 20% of women sterilized at a young age later regret this decision, and that young age is one of the strongest predictors of regret (including request for referral information and obtaining reversal) that can be identified before sterilization.(1-19)
PARITY*		
a) Nulliparous	A	
b) Parous	A	
BREASTFEEDING	A	
POSTPARTUM*		
a) < 7 days	A	
7 to < 42 days	D	
≥ 42 days	A	
b) Pre-eclampsia/eclampsia		
(i) mild pre-eclampsia	A	
(ii) severe pre-eclampsia/ eclampsia	D	
c) Prolonged rupture of membranes, 24 hours or more	D	
d) Puerperal sepsis, intrapartum or puerperal fever	D	
e) Severe antepartum or postpartum haemorrhage	D	
f) Severe trauma to the genital tract (cervical or vaginal tear at time of delivery)	D	
g) Uterine rupture or perforation	S	**Clarification**: If exploratory surgery or laparoscopy is conducted and the patient is stable, repair of the problem and tubal sterilization may be performed concurrently if no additional risk is involved.
POST-ABORTION*		
a) Uncomplicated	A	
b) Post-abortal sepsis or fever	D	
c) Severe post-abortal haemorrhage	D	
d) Severe trauma to the genital tract (cervical or vaginal tear at time of abortion)	D	
e) Uterine perforation	S	**Clarification**: If exploratory surgery or laparoscopy is conducted, repair of the problem and tubal sterilization may be performed concurrently if no additional risk is involved.
f) Acute haematometra	D	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 2/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
PAST ECTOPIC PREGNANCY	A	
SMOKING		
a) Age < 35 years	A	
b) Age ≥ 35 years		
(i) < 15 cigarettes/day	A	
ii) ≥ 15 cigarettes/day	A	
OBESITY		**Clarification**: The procedure may be more difficult. There is an increased risk of wound infection and disruption. Obese women may have limited respiratory function and may be more likely to require general anaesthesia. **Evidence**: Women who were obese were more likely to have complications when undergoing sterilization.(20-23)
a) ≥ 30 kg/m^2 BMI	C	
b) Menarche to < 18 years and ≥ 30 kg/m^2 BMI	C	
CARDIOVASCULAR DISEASE		
MULTIPLE RISK FACTORS FOR ARTERIAL CARDIOVASCULAR DISEASE* (such as older age, smoking, diabetes and hypertension)	S	
HYPERTENSION For all categories of hypertension, classifications are based on the assumption that no other risk factors for cardiovascular disease exist. When multiple risk factors do exist, the risk of cardiovascular disease may increase substantially. A single reading of blood pressure level is not sufficient to classify a woman as hypertensive.		
a) Hypertension: adequately controlled	C	
b) Elevated blood pressure levels (properly taken measurements)		**Clarification**: Elevated blood pressure should be controlled before surgery. There are increased anaesthesia-related risks and an increased risk of cardiac arrhythmia with uncontrolled hypertension. Careful monitoring of blood pressure intra-operatively is particularly necessary in this situation.
(i) systolic 140-159 or diastolic 90-99 mm Hg	C	
(ii) systolic ≥160 or diastolic ≥100 mm Hg	S	
c) Vascular disease	S	
HISTORY OF HIGH BLOOD PRESSURE DURING PREGNANCY (where current blood pressure is measurable and normal)	A	
DEEP VENOUS THROMBOSIS (DVT)/ PULMONARY EMBOLISM (PE)		**Clarification**: To reduce the risk of DVT/PE, early ambulation is recommended.
a) History of DVT/PE	A	
b) Acute DVT/PE	D	
c) DVT/PE and established on anticoagulant therapy	S	
d) Family history (first-degree relatives)	A	
e) Major surgery		
(i) with prolonged immobilization	D	
(ii) without prolonged immobilization	A	
f) Minor surgery without immobilization	A	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 3/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
KNOWN THROMBOGENIC MUTATIONS (e.g., factor V Leiden; prothrombin mutation; protein S, protein C, and antithrombin deficiencies)	A	**Clarification**: Routine screening is not appropriate because of the rarity of the conditions and the high cost of screening.
SUPERFICIAL VENOUS THROMBOSIS		
a) Varicose veins	A	
b) Superficial thrombophlebitis	A	
CURRENT AND HISTORY OF ISCHAEMIC HEART DISEASE*		
a) Current ischaemic heart disease	D	
b) History of ischaemic heart disease	C	
STROKE (history of cerebrovascular accident)	C	
KNOWN HYPERLIPIDAEMIAS	A	**Clarification**: Routine screening is not appropriate because of the rarity of the conditions and the high cost of screening.
VALVULAR HEART DISEASE		
a) Uncomplicated	C	**Clarification**: The woman requires prophylactic antibiotics.
b) Complicated (pulmonary hypertension, risk of atrial fibrillation, history of subacute bacterial endocarditis)	S	**Clarification**: The woman is at high risk for complications associated with anaesthesia and surgery. If the woman has atrial fibrillation that has not been successfully managed or current subacute bacterial endocarditis, the procedure should be delayed.
RHEUMATIC DISEASES		
SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) People with SLE are at increased risk of ischaemic heart disease, stroke and venous thromboembolism. Categories assigned to such conditions in the MEC should be the same for women with SLE who present with these conditions. For all categories of SLE, classifications are based on the assumption that no other risk factors for cardiovascular disease are present; these classifications must be modified in the presence of such risk factors. Available evidence indicates that many women with SLE can be considered good candidates for most contraceptive methods, including hormonal contraceptives.(112-130)		
a) Positive (or unknown) antiphospholipid antibodies	S	
b) Severe thrombocytopenia	S	
c) Immunosuppressive treatment	S	
d) None of the above	C	
NEUROLOGIC CONDITIONS		
HEADACHES		
a) Non-migrainous (mild or severe)	A	
b) Migraine		
(i) without aura		
Age < 35 years	A	
Age ≥ 35 years	A	
(ii) with aura, at any age	A	
EPILEPSY	C	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 4/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
DEPRESSIVE DISORDERS		
DEPRESSIVE DISORDERS	C	
REPRODUCTIVE TRACT INFECTIONS AND DISORDERS		
VAGINAL BLEEDING PATTERNS		
a) Irregular pattern without heavy bleeding	A	
b) Heavy or prolonged bleeding (includes regular and irregular patterns)	A	
UNEXPLAINED VAGINAL BLEEDING (suspicious for serious condition)		**Clarification**: The condition must be evaluated before the procedure is performed
Before evaluation	D	
ENDOMETRIOSIS	S	
BENIGN OVARIAN TUMOURS (including cysts)	A	
SEVERE DYSMENORRHOEA	A	
GESTATIONAL TROPHOBLASTIC DISEASE		
a) Decreasing or undetectable β-hCG levels	A	
b) Persistently elevated β-hCG levels or malignant disease	D	
CERVICAL ECTROPION	A	
CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN)	A	
CERVICAL CANCER* (awaiting treatment)	D	
BREAST DISEASE		
a) Undiagnosed mass	A	
b) Benign breast disease	A	
c) Family history of cancer	A	
d) Breast cancer		
(i) current	C	
(ii) past and no evidence of current disease for 5 years	A	
ENDOMETRIAL CANCER*	D	
OVARIAN CANCER*	D	
UTERINE FIBROIDS*		
a) Without distortion of the uterine cavity	C	
b) With distortion of the uterine cavity	C	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 5/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
PELVIC INFLAMMATORY DISEASE (PID)*		
a) Past PID (assuming no current risk factors for STIs)		**Clarification**: A careful pelvic examination must be performed to rule out recurrent or persistent infection and to determine the mobility of the uterus.
(i) with subsequent pregnancy	A	
(ii) without subsequent pregnancy	C	
b) PID - current	D	
STIs*		
a) Current purulent cervicitis or chlamydial infection or gonorrhoea	D	**Clarification**: If no symptoms persist following treatment, sterilization may be performed.
b) Other STIs (excluding HIV and hepatitis)	A	
c) Vaginitis (including trichomonas vaginalis and bacterial vaginosis)	A	
d) Increased risk of STIs	A	
HIV/AIDS		
HIGH RISK OF HIV	A	**Clarification**: No routine screening is needed. Appropriate infection prevention procedures, including universal precautions, must be carefully observed with all surgical procedures. The use of condoms is recommended following sterilization.
HIV-INFECTED	A	**Clarification**: No routine screening is needed. Appropriate infection prevention procedures, including universal precautions, must be carefully observed with all surgical procedures. The use of condoms is recommended following sterilization.
AIDS	S	**Clarification**: The presence of an AIDS-related illness may require that the procedure be delayed.
OTHER INFECTIONS		
SCHISTOSOMIASIS		
a) Uncomplicated	A	
b) Fibrosis of the liver (if severe, see cirrhosis)	C	**Clarification**: Liver function may need to be evaluated.
TUBERCULOSIS		
a) Non-pelvic	A	
b) Pelvic	S	
MALARIA	A	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (female) 6/6

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
ENDOCRINE CONDITIONS		
DIABETES*		**Clarification:** If blood glucose is not well controlled, referral to a higher-level facility is recommended.
a) History of gestational disease	A	
b) Non-vascular disease		**Clarification:** There is a possible decrease in healing and an increased risk of wound infection. Use of prophylactic antibiotics is recommended.
(i) non-insulin dependent	C	
(ii) insulin dependent	C	**Evidence**: Diabetic women were more likely to have complications when undergoing sterilization.(22)
c) Nephropathy/retinopathy/ neuropathy	S	
d) Other vascular disease or diabetes of > 20 years' duration	S	
THYROID DISORDERS*		
a) Simple goitre	A	
b) Hyperthyroid	S	
c) Hypothyroid	C	
GASTROINTESTINAL CONDITIONS		
GALL BLADDER DISEASE		
a) Symptomatic		
(i) treated by cholecystectomy	A	
(ii) medically treated	A	
(iii) current	D	
b) Asymptomatic	A	
HISTORY OF CHOLESTASIS		
a) Pregnancy related	A	
b) Past-COC related	A	
VIRAL HEPATITIS*		**Clarification:** Appropriate infection-prevention procedures, including universal precautions, must be carefully observed with all surgical procedures.
a) Acute or flare	D	
b) Carrier	A	
c) Chronic	A	
CIRRHOSIS		**Clarification:** Liver function and clotting might be altered. Liver function should be evaluated.
a) Mild (compensated)	A	
b) Severe (decompensated)	S	
LIVER TUMOURS		**Clarification:** Liver function and clotting might be altered. Liver function should be evaluated.
a) Benign		
(i) Focal nodular hyperplasia	A	
(ii) Hepatocellular adenoma	C	
b) Malignant (hepatoma)	C	

APPENDIX Q
FAMILY PLANNING CONTINUED

Surgical Sterilisation (male)

Taken from Medical Eligibility for Contraceptive Use. (Fourth edition, 2009 A WHO Family Planning Cornerstone.) www.who..int

MALE SURGICAL STERILIZATION

Sterilization does not protect against STI/HIV. If there is risk of STI/HIV (including during pregnancy or postpartum), the correct and consistent use of condoms is recommended, either alone or with another contraceptive method. Male latex condoms are proven to protect against STI/HIV.

CONDITION * additional comments at end of table	CATEGORY **A** = accept **C** = caution **D** = delay **S** = special	CLARIFICATIONS/EVIDENCE
PERSONAL CHARACTERISTICS AND REPRODUCTIVE HISTORY		
YOUNG AGE	C	**Clarification**: Young men, like all men, should be counselled about the permanency of sterilization and the availability of alternative, long-term, highly effective methods. **Evidence**: Men who underwent vasectomy at young ages were more likely to have the procedure reversed than those who underwent vasectomy at older ages.(18)
DEPRESSIVE DISORDERS		
DEPRESSIVE DISORDERS	C	
HIV/AIDS		
HIGH RISK OF HIV	A	**Clarification**: No routine screening is needed. Appropriate infection-prevention procedures, including universal precautions, must be carefully observed with all surgical procedures. The use of condoms is recommended following sterilization.
HIV-INFECTED	A	**Clarification**: No routine screening is needed. Appropriate infection-prevention procedures, including universal precautions, must be carefully observed with all surgical procedures. The use of condoms is recommended following sterilization.
AIDS On ARV therapy	S	**Clarification**: The presence of an AIDS-related illness may require that the procedure be delayed.
ENDOCRINE CONDITIONS		
DIABETES*	C	**Clarification:** If blood glucose is not well controlled, referral to a higher-level facility is recommended.
ANAEMIAS		
SICKLE CELL DISEASE	A	
OTHER CONDITIONS RELEVANT ONLY FOR MALE SURGICAL STERILIZATION		
LOCAL INFECTION*		
a) Scrotal skin infection	D	
b) Active STI	D	
c) Balanitis	D	
d) Epididymitis or orchitis	D	
COAGULATION DISORDERS*	S	
PREVIOUS SCROTAL INJURY	C	
SYSTEMIC INFECTION OR GASTROENTERITIS*	D	
LARGE VARICOCELE*	C	
LARGE HYDROCELE*	C	
FILIARIASIS; ELEPHANTIASIS*	D	
INTRASCROTAL MASS*	D	
CRYPTORCHIDISM	C	
INGUINAL HERNIA*	S	

APPENDIX Q
FAMILY PLANNING CONTINUED

PROCEDURE FOR FAMILY PLANNING

First Visit

1. History - medical, social, gynaecological, obstetric
2. Complete physical examination
3. Blood pressure
4. Hb if indicated
5. STI screen if indicated
6. Offer testing and counseling for HIV
7. Pap Smear
8. Assistance in selection of method
9. Provision of method
10. Teaching and counseling
11. Referrals as necessary
12. Appointment for next visit
13. Clients should be taught how to perform self breast examination at initial visit

!

Referrals

Should there be any worsening of side effects or development of any of the contraindications, the client should be referred immediately to the District Medical officer/Family Nurse Practitioner.

Refer to the Gynecologist:

- Those who wish to change from one to another or change from temporary to permanent

Re-visit

- Weight, blood pressure at every visit
- Referrals made or problems identified previously should be reviewed
- Pap smear and physical assessment must be done yearly
- At subsequent visits clients should be allowed to demonstrate breast self-examination.

Those with IUCD assess for:

3. infection (vaginal discharge, pain)
4. Partial extrusion of device
5. Complete extrusion of device
6. Inability to see thread of IUCD

   Those on injectables, inquire / assess for intractable bleeding

A person who wishes to discontinue a method and who is still at risk of becoming pregnant should be counseled and encouraged to choose another method. Emphasis on risk/ complications should be stressed during counseling session.

Discontinuation of all temporary methods should be made only when another pregnancy is desired and after sterilization has been done.

IMPORTANT CONSIDERATIONS

Persons on temporary method who wish to discontinue method should seek professional help. To improve continuation rate of any temporary method of contraception (except the IUCD), all users should be strongly advised not to stop the method on their own but return to the clinic for counseling.

Appointments given should be convenient and appropriate in order to reduce the number of defaulters and drop-outs.

The importance of defaulter tracing cannot be over-emphasized.

APPENDIX R
LIST OF IMMUNZATION GIVEN

BCG	• Protects against TB of the lungs, Meningitis and severe forms of TB. Given at Birth.
DPT or DTaP	• Protects against Diphtheria, Pertussis (whooping cough) and Tetanus. • Shots given at 2 months, 4months and 6 moths, booster shots, given at 18 months and 4½-6 years.
TOPV: Protects against Polio	• Trivalent Oral Vaccine protects against Polio • Given at the same time as DPT or DTaP
IPV (Not given routinely)	• Injectable Polio Vaccine protects against Polio.
MMR	• Protects against Haemophilus "B" influenza which cause meningitis. 4 doses given at 2, 4, 6 and 18 months.
Hep B	• Protects against Hepatitis b infection. 3 doses given at 2, 4, and 6 months.
PCV	• Protects against Pnemococcal infection, meningitis, pneumonia and bacteremia. 4 doses given at 2,4, 6, and 12 months
DT	• Protects against Diphtheria and Tetanus. Given instead of DTP at 18 months, 3 years and 10-12 years.
VARICELLA	• Protects against Chicken Pox. 2 doses given at 1 year, and between 4 to 6 years.

APPENDIX S
CLASSIFICATION OF PAEDIATRIC HIV/AIDS

HIV-infected infants and children in the OECS should be staged using the WHO Paediatric HIV disease classification system:

Stage 1	Asymptomatic Persistent generalize lymphadenopathy
Stage 2	Unexplained persistent hepatosplenomegaluy Papular pruritic eruptions Extensive wart virus infection Etensive molluscum contagiosum Recurrent oral ulcerations Unexplained persistent parotic enlargement Lineal gingival erythema Herpes Zoster Recurrent or chronic upper respiratory tract infections(otitis media, otorrhoea, sinusitis, tonsillitis) Fungal nail infections
Stage 3	Unexplained moderate malnutrition not adequately responding to standard therapy Unexplained persistent diarrhoea(14 days or more) Unexplained persistent fever (above 37.5 degrees C, intermittent or constant, for linger than one month Persistent oral Candidiasis (after first 6 weeks of life) Oral hairy leuloplakia Acute necrotisingulcerative gingivitis/periodontitis, Lymph node TB Pulmonary TB Severe recurrent bacterial pneumonia Symptomatic lymphoid interstitial pneumonitis Chronic HIV-associated lung disease including bronchiectasis Unexplained anaemia (<8.0 g/dl), neutropenia (or chronic thrombocytopenia
Stage 4	Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy Pneumocystis pneumonia Recurrent severe bacterial infections(e.g.empyema, pyomyositis, bone or joint infection, meningitis but excluding pneumonia) Extrapulmonary TB Kaposis sarcoma Oesophageal candidiasis (or candiadiasis oftrachea, bronchi or lungs) Central nervous system toxoplasmosis(after the neonatial period) HIV encephalopathy Cytomegalovirus(CMV) infection, retinitis or CMV infection affecting another organ, with onset at age more than 1 month Extrapulmonary cryptococcossis including minigitis Disseminated endemic, mycosis(extra pulmonary histoplasmosis, coccidiodomycosis, penicillosis) Chronic isosporiasis Disseminated non-tubrculous mycobacterial infection Cerebral or B cell non-Hodgkin lymphoma Progressive multifocal leukoencephalopathy HIV-associated cardiomyopathy or nephropathy

MATERNAL AND CHILD HEALTH **MANUAL**

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