Disclaimer
These are general guidelines only and may not apply in the case of any particular individual patient. They should be applied bearing in mind the local situation. The health care worker should always use his/her clinical judgement and expertise.

Duality of Interest
No duality of interest was identified.
PREFACE

The Caribbean Public Health Agency (CARPHA) has proudly adopted the mandate of one of its predecessor regional health institutions, the Caribbean Health Research Council (CHRC) to facilitate evidenced-based practice through the development and promotion of clinical care guidelines. *Maternal Care in Pregnancy: Guidelines for the Caribbean* outlines standards for care that are expected to result in the reduction in pregnancy related morbidity and mortality in the Region. Its main objective is to provide an easy to read reference especially designed for the primary care practitioner. It is intended to specifically serve as a guide to facilitate effective first line actions and appropriate referrals.

CHRC had produced Clinical Guidelines for prevalent chronic diseases in the Caribbean since 1995. These addressed conditions such as Diabetes, Hypertension, Asthma and Depression. The Guidelines were also regularly revised to ensure that practitioners in the Caribbean remained up-to-date with current research findings and best practices.

It should be noted that CHRC was one of the five CARICOM Regional Health Institutions that were merged to form the Caribbean Public Health Agency. CARPHA became operational in January 2013 and, critically, all the CHRC core functions were subsumed including the development of clinical guidelines.

As was the case with the previous CHRC Clinical Guidelines, *Maternal Care in Pregnancy: Guidelines for the Caribbean* was developed taking into account the culture, economic situation and health care systems of the Caribbean while still ensuring that international best practices are applied to patient care.

CARPHA (CHRC) is pleased to have collaborated with the Faculty of Medical Sciences, The University of West Indies, St. Augustine in the development of these guidelines. Indeed, a similar partnership successfully developed the (2009) edition of *Managing Asthma in the Caribbean*.

The process for the development of the Guidelines was as follows:

- Professor Samuel Ramsewak volunteered to be the project team leader with overall responsibility for the development of the Guidelines. He convened and chaired an Expert Working Group, which prepared a draft.
- Before the document was finalized, an iterative process was implemented in which (multiple) successive drafts were disseminated to a wide cross-section of stakeholders for feedback and inputs. Stakeholders included the Chief Medical Officers from 19 Caribbean countries, regional health institutions, professional associations, senior and influential Caribbean health professionals, *inter alia*. After receiving feedback at each stage, the document was updated incorporating the suggested edits.
- The Guidelines were finalized when all stakeholders were satisfied with the eventual product.

We expect that the utilization of these clinical guidelines in the management of Maternal Care in Pregnancy by practitioners in the Caribbean would result in a significant decrease in adverse outcomes of pregnancies. The inclusive approach to its development would also facilitate widespread acceptance in both the public and private sectors.

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INTRODUCTION

Improvement of maternal health is one of the eight Millennium Development Goals adopted by the Member Countries of the United Nations in 2000. This is a clear indication of the importance afforded to maternal health as well as its role in the eradication of poverty. In particular, the lessening of maternal mortality, provision of skilled care during childbirth, access to antenatal care and strategies to increase contraceptive uptake were highlighted.

Data published by the World Health Organization (2012) indicated that maternal mortality (MMR) for the Caribbean decreased from 280 maternal deaths per 100,000 live births in 1990 to 190 deaths in 2010. This represents an overall decrease of 30% in mortality over the 20-year period. This decrease falls short of the target necessary to achieve the fifth Millennium Development Goal. The targets for the latter include a 75% reduction in maternal mortality as well as universal access to reproductive health by the year 2015.

It should be noted that several Caribbean countries were categorized as having a low MMR (<100) in 1990: Bahamas, Grenada, Jamaica, St. Lucia, St. Vincent & the Grenadines, Suriname, and Trinidad & Tobago. These countries, with the exception of Suriname and Jamaica, experienced a further decline in MMR by 2010. Also, Guyana and Barbados were classified as having moderate MMRs (100-299) in 1990. Barbados experienced a decrease and was considered to be “making progress” by 2010. However, Guyana’s MMR increased from 180 in 1990 to 280 (estimated) in 2010. Haiti was the only Caribbean country with a high MMR (≥300) in 1990. By 2010, Haiti was also classified as “making progress” over the 20 year period with annual declines as high as 5%.

There were few published reports of research studies conducted to determine the causes of maternal mortality for the Caribbean. McCaw-Binns and Lewis-Bell (2009) found that for the period 2001-2003, the leading causes of maternal mortality for Jamaica were gestational hypertension, thromboembolism, haemorrhage, HIV, abortions, cardiac disorders, sickle cell disease, obstetric trauma, ectopic pregnancy and diabetes mellitus. They identified the development of clinical guidelines to facilitate standardized management of the common complications as well as the implementation of maternal mortality surveillance systems as being vital to the lowering of mortality rates.

It is believed that approximately 95% of maternal mortality in the Caribbean can be prevented. More so, health care solutions to prevent and manage complications are available. Access to antenatal care in pregnancy, skilled care during childbirth and care and support in the weeks afterwards are all important aspects of maternal care. The prevention of unwanted and unplanned pregnancies were also identified as key factors to be considered as we work together to decrease maternal mortality in the Region.
OVERVIEW

The objective of Maternal Care in Pregnancy is to give adequate care to pregnant women to ensure as far as possible, a safe pregnancy and the birth of a healthy baby. Good antenatal care is to be preceded by effective pre-conception care, which includes advice in the following areas:

- Good nutrition, physical activity and dental care
- Vaccinations
- Readiness for sexual activity, including safe sexual practices
- Methods of contraception and provision of contraceptives
- Diagnosis of vaginal and pelvic infections, herpes and other STIs including HIV
- Pre-conception testing for genetic conditions
- Diagnosis of other medical co-morbidities (e.g. essential hypertension, diabetes mellitus, heart disease, sickle cell disease)
- Diagnosis and treatment of anaemia, fibroids and other common conditions
- Avoidance of smoking and use of alcohol and other recreational drugs
- Importance of early registration at clinic for antenatal care (after the second missed period)

Every pregnant woman should have:

- Antenatal care initiated by the 16th week of pregnancy.
- A minimum of four antenatal visits up to the 32nd week of pregnancy in uncomplicated pregnancies and a minimum of four additional visits up to term.
- A complete physical examination at the first visit and reassessment at the 36th week.
- Blood tests done for CBC, blood group & Rh factor, sickle cell, VDRL and HIV and random sugar at the first antenatal visit.
- Immunization status re Tetanus and Rubella assessed.

Minimum Equipment which must be made available for Clinic visits include:

- Weighing scale
- Height measure
- Sphygmomanometer and stethoscope
- Urinalysis set
- Measuring tape
- Fetal stethoscope, preferably hand-held electronic but alternative is the aural or Pinard’s
- Blood glucose meter
Section I: Antenatal Care

This is section covers the First Visit to the Clinic, High Risk Pregnancies, Subsequent Visits to the Clinic, Home Visits, Selection of Place of Confinement, Preparation for Confinement and Health Information for Pregnant Women
FIRST VISIT TO THE CLINIC

This visit should include:

• Registration of the client and advice on clinic procedures
• Location of any previous obstetric records
• History taking and screening by midwife to determine whether at high risk
• Thorough physical examination by nurse and/or doctor to rule out any previous or existing medical condition.
• Preparation of an antenatal home card to be kept safely, presented at every clinic visit and on admission to the place of delivery.
• Encouragement of keen participation and questions by male partner.

History Taking

• Determine date of last normal menstrual period (LMP), its accuracy and regularity of prior menstrual cycles; Calculate and record the estimated weeks of gestation and expected date of delivery (EDD) using Naegele’s Rule
• Past medical and surgical history e.g. asthma, sickle cell disease, hypertension, diabetes, heart disease, infertility, myomectomy, caesarean section
• Past obstetrical history to identify any previous complications of pregnancy (e.g. anaemia, spontaneous miscarriage or induced abortion, ectopic pregnancy, preterm labour, rhesus isoimmunization, post-partum haemorrhage, retained placenta, intra-uterine or neonatal demise, fetal anomaly)
• Family history e.g diabetes mellitus, hypertension, sickle cell anaemia, fetal anomaly
• Socioeconomic and drug history (e.g home amenities and support, cigarette smoking, alcohol, recreational drugs); Religion, in respect of blood transfusion acceptance, dietary restrictions
• Diet history including meal frequency and variety, food aversions and supplements
• Past gynaecological history (e.g menstrual history, contraceptive usage, Pap Smear history, fibroids)
• HIV status
Antenatal Care

• Establish immunization status:
  o An accurate record of tetanus immunization should be available.
  o Td vaccine should be administered after the first trimester.
  o A primary series is only started when there is no documentation and no history of immunization.
  o The first dose is given at 16-23 weeks; the second dose is given at 28-30 weeks.
  o Booster doses should be considered:
    • if there is a history of immunization but no records;
    • if the last immunization was given more than 10 years previously.

Physical Examination

Explain to the client the procedure for the physical examination and establish that the bladder is empty.

General Physical Examination

Check and record

• Height and Weight
• Body Mass Index (BMI) = \[\text{Weight (kg)} \div \text{Height}^2 \text{ (m)}\]
• Vital Signs: Blood pressure, pulse, respiration, temperature

Examine

• Head - Scalp, eyes (anaemia, jaundice), mouth (teeth, gums), neck (thyroid gland and lymph nodes)
• Chest - Heart, lungs, breasts and spine
• Abdomen - Previous scars, masses
• Extremities - Pallor, varicosities, ulcers

Abdomen

Assess and record:

• Height of fundus (compare with gestational age)
• Fetal lie, position and presentation (if pregnancy is in advanced stage)
• Fetal heart sounds, rate and regularity

Note: Fetal heart sounds are usually heard from around the 22nd - 24th week of pregnancy using a Pinard’s but much earlier (about 12-14 weeks) using a hand-held Doppler device.
Pelvic Examination during First Trimester

To be done by the midwife, or the doctor:

• To examine external genitalia for discharge, warts and other vulval lesions
• To determine any abnormalities of the pelvic organs
• To determine the uterine size

Laboratory Investigations

Blood

• Complete Blood Count (CBC) to determine haemoglobin, red cell population, volume and colour, white cell count, platelets
• Group and Rh factor. If the woman is Rh negative, the spouse’s group and Rh factor
• Blood Sugar (random or 1h after 50 gm glucose)

Indications for Blood Sugar Estimation

○ Obesity: BMI > 30
○ Strong family history of diabetes.
○ At least two (2) episodes of glycosuria.
○ A history of premature birth, stillbirth or neonatal death.
○ A history of previous babies weighing 4kg or more.

• VDRL on first visit; if positive repeat after 4 weeks
• Sickle Cell test, if positive send for Hb electrophoresis (spouse should be screened if patient has trait, with appropriate counselling).
• HIV
  ○ Counseling and HIV testing - on first visit and repeat test at 32 weeks (if HIV negative). If HIV positive, repeat 4 weeks later.

Urine

• for sugar, albumin, acetone, blood

Stool

• for ova, cysts and parasites in cases of clients who are anaemic

Anti-helminthic treatment

An appropriate anti-helminthic, after the first trimester:

○ Mebendazole 500 mg single dose or 100 mg twice daily for 3 days
○ Albendazole 400 mg single dose
**Antenatal Care**

**Anaemia**

**Classification of Anaemia during Pregnancy**

Evaluate red cell indices and look for hypochromia (low MCHC) and microcytosis (low MCV) which would indicate iron-deficiency anaemia.

- Normal Hb: 11g/dl or higher
- Mild to moderate anaemia: 7.0 to 10.9 g/dl
- Severe anaemia: < 7 g/dl

**Use of Iron and Folic Acid Supplementation**

Dietary supplementation should ideally commence pre-conception, but certainly upon diagnosis of pregnancy and should continue throughout the pregnancy and for at least 6 weeks postpartum. The following guidelines are useful:

- Hb 11 grams and above: 60 mg iron daily, 400 ug folic acid daily (1 tablet)
- Hb 7 -10.99 grams: 60 mg iron daily, 400 ug folic acid daily (1 tablet) and refer patient to physician/haematologist
- Hb < 7 grams: Refer patient to physician/haematologist
  - <28 weeks and asymptomatic: 120 mg iron daily plus 400ug folic acid daily.
  - 28-40 weeks, asymptomatic: 120 mg iron daily plus 400ug folic acid daily or Intramuscular iron.
  - >34 weeks, symptomatic: Refer to hospital for IV iron or blood transfusion.

**Education**

Every visit should be an opportunity for discussion and relevant counseling of the mother or couple. Breast-feeding and birth-spacing should be emphasized. Recommend exclusive breastfeeding to age 6 months and continued breastfeeding to 2 years and beyond. At the first visit the client should be made familiar with clinic procedures and about proper nutrition during pregnancy, the need to avoid alcohol and cigarette smoking and other harmful substances. The client should also be educated on the minor conditions in pregnancy and how to prevent and manage them.
HIGH RISK PREGNANCIES

During the first and subsequent visits the midwife/doctor should try to determine high risk factors and make timely referral.

**Definition:** *Any pregnancy that is deemed to impose an increased risk to the life or health of the mother or fetus or both during pregnancy.*

**Identification of High Risk Pregnancy**

The criteria for classification as ‘high risk’ pregnancy are as follows:

- Patients with significant medical conditions such as
  - Hypertension
  - Heart Disease
  - Diabetes
  - Anaemia (including sickle cell anaemia, thalassaemia)
  - Respiratory Disease (e.g. asthma, chronic bronchitis)
  - Epilepsy
  - Thyroid Disease
  - HIV/AIDS

- History of obstetric complications in a previous pregnancy:
  - Recurrent miscarriages or pre-term births less than 37 weeks
  - Recurrent pre-eclampsia
  - Caesarean Section, myomectomy or hysterotomy
  - Stillbirth or neonatal death
  - Post-partum hemorrhage
  - Fetal congenital abnormality

- Obstetric complications in present pregnancy:
  - Teenage primipara (16 years and under)
  - Older primipara (over 35 years)
  - Grand multipara (more than 5 pregnancies over 28 weeks gestation)
  - Uterine size inconsistent with period of gestation
Antenatal Care

- Antepartum haemorrhage
- Malpresentation e.g. breech; unstable lie
- Multiple pregnancy
- Difficulty with palpation of fetal parts, e.g. due to polyhydramnios
- Other pelvic mass detected
- Blood group Rhesus negative
- Post-dates

- History of substance abuse
- History of postnatal blues, depression or psychosis
- Dietary, religious or cultural practices which might adversely affect health status.

Management of ‘High Risk’ Pregnancies

Once a pregnant woman has been identified to be at special risk she should be referred to the Medical Officer to develop a plan of management and to determine the time of referral to hospital.

**Indications for Referral to Maternity or other Hospital during Pregnancy**

- All ‘high risk’ pregnancies
- Severe hyperemesis gravidarum
- Severe abdominal pain
- Elevated Blood Pressure with diastolic ≥ 90mm Hg
- Abnormal blood glucose/diabetes
- Other medical comorbidity, e.g. HIV, heart disease, sickle cell disease
- Bleeding/spotting from genital tract
- Excessive weight gain e.g. ≥ 1 lb (0.5 kg) per week
- Urinary tract infections – pyelonephritis
- Excessive amniotic fluid (polyhydramnios)
- Prelabour rupture of membranes (rupture of membranes before the onset of regular contractions)
- Fetal heart beat not detected
- Reduced fetal movements, < 10, over 24 hours
SUBSEQUENT VISITS

Frequency of visits

• For a woman with an uncomplicated pregnancy, revisits are suggested as follows:
  o every 4 weeks until 28 weeks;
  o every 2 weeks until 36 weeks;
  o every week from 36 weeks up to delivery.

• For ‘high risk’ pregnancies, frequency will be determined by the attendant (nurse-midwife, doctor).

Management of Subsequent Visits

• Take history in order to elicit any change since last visit. Specifically ask about coping with pregnancy, headaches, breast symptoms, swollen extremities, urinary and bowel symptoms, vaginal discharge, fetal movements
• Test urine, measure weight and blood pressure
• Perform abdominal examination and record Fundal height, Fetal lie, Presentation
• Record Fetal Heart Rate (with Doppler from 14 weeks)
• Continue antenatal education
• Measure blood hemoglobin every 4 weeks or at least at weeks 28, 32 and 36

At 32-36 weeks
  o Repeat CBC
  o Conduct physical examination
  o Primipara to have a doctor’s assessment
  o Repeat V.D.R.L. and HIV (if negative at the first visit)
  o Write referral to hospital stating all relevant information
  o Consider repeat ultrasound

At 38 weeks
  o Finalize arrangements for delivery
  o Discuss onset of labour
  o Discuss breast-feeding, post-partum care and future contraception.

If the client has not delivered by 40 weeks, a doctor’s evaluation is needed.
HOME VISITS

Indications for Home Visits
Home visits should be made in the following instances:
- Routinely to all antenatal mothers at least once during pregnancy
- As necessary in ‘high risk’ cases
- In cases where there is a need to assess suitability of the home conditions, including general cleanliness, sanitization, water and food supply and storage, etc
- In any case where the client fails to keep clinic appointments.

SELECTION OF PLACE OF CONFINEMENT

Home Delivery will be considered in the following circumstances:
- Normal pregnancy – not classified as high risk
- 2nd to 5th pregnancy
- Normal past obstetrical history
- Normal progress of present pregnancy
- Suitable home conditions
- Midwife available for home confinement
- Client’s wish, provided that other criteria are satisfied, will be booked by the District Health Visitor for home delivery.

Delivery at Maternity Units/District Health Facilities/Hospitals will be considered in the following circumstances:
- Normal pregnancy- not classified as “high risk”
- 2nd to 5th pregnancy
- Normal past obstetric history
- Normal progress of present pregnancy
- Client’s wish
- Unsuitable home conditions
Delivery at Maternity/General/County Hospital will be selected in the following circumstances:

- All ‘high risk’ pregnancies
- Client’s desire

ONSET OF LABOUR

Evidence of any of the following may indicate onset of labour and should alert client to seek professional advice:

- Regular painful contractions – 1:15 or more frequently (this may be preceded by a ‘show’ of mucus and blood and associated with back pain)
- Loss of liquor – rupture of membranes
- Vaginal bleeding

PREPARATIONS FOR CONFINEMENT

Preparation for confinement includes the securing of items for the mother and baby. A list of these items is presented in the Appendix.

For domiciliary cases:

- Give instructions for the preparation of the room for delivery e.g. boiling of water, arrangement of furniture.
- Advise mother to notify midwife at onset of labor.

HEALTH INFORMATION FOR PREGNANT WOMEN

Counselling

- Patient must be given individual counseling at every prenatal visit, on the deviations from norms which may occur, so that they can seek early care if there are problems.
- At the first visit, clients should be made familiar with the clinic procedures.
- Sessions on breastfeeding should be carried out including the uniqueness of breast milk and the benefits of exclusive breastfeeding
General Education
- Reason for attendance and importance of clinic visits
- Body changes that take place during pregnancy
- Maintenance of good physical and mental health.
- Information on antenatal and postnatal home visits.
- Information on sex during pregnancy.

Diet in Pregnancy and Lactation
- Need for foods rich in iron and vitamin C
- Need for a balanced diet comprising a variety of foods from the six food groups
- Need to increase energy intake
- Vegetarian mothers to be advised accordingly, especially regarding Vitamin B12 deficiency
- Clients should be given literature on the role of nutrition to ensure proper development of the foetus
- Consequences of poor diet include increased risk of anemia, maternal complications and death in the mother; as well as increased risk of foetal, neonatal and infant death, intrauterine growth retardation, and birth defects

Hygiene and General Advice
- General care with emphasis on teeth, breast care
- Advice on clothing e.g. supportive brassiere
- Advice on wearing comfortable shoes
- Emphasis on cleanliness of the environment
- Importance of physical activity - both pre and postnatal.

Preparation for Delivery
- Requirements for delivery
- Signs and symptoms of labour
- When to go to hospital etc.
Breastfeeding
• How breastfeeding works
• Preparation for breastfeeding and breast care includes building confidence and giving support
• Emphasise benefits
• Duration of breastfeeding (encourage exclusive on demand breastfeeding for 6 months and continued to 2 years and beyond)
• Informed choice on breastfeeding for the HIV positive mother (see section on HIV/AIDS)
• Any situations in which breastfeeding may be difficult to achieve or may be contraindicated
• Positioning the baby to the breast
• Expressing breast milk, its proper storage and its safe preparation

Care of Baby
• Advice on cleaning and bathing of baby
• Clothing for baby
• Sleeping position and arrangements
• Skin care including the diaper area.
• Immunizations for baby

Registration of Births
• Advise on local laws for registration of births

Attendance at Child Health Clinic
• All mothers and their infants should visit the clinic within two weeks after delivery or earlier if they have any problems.

Family Planning and Contraceptive Care
• Discuss reasons / benefits and commonly used methods
• Advise where services are available
Post-Natal Care and Follow-up

- Reasons for post-natal care
- Need for post-natal physical activity
- Times when and where services are available
- Pap Smear
- Emphasize the maintenance of breastfeeding and advise on weaning, complementary feeding and initiation of immunization.
Section II: Management of Disorders and Special Situations
MINOR DISORDERS - ADVICE

Morning Sickness and Heartburn
• Eat a light sweet meal before getting out of bed e.g. glass of milk with sugar and biscuits.
• Have several smaller meals rather than large meals
• Avoid fatty and highly seasoned foods.

Constipation
• Correct with diet (adequate intake of fluids i.e. 8-10 cups per day, high fiber diet, increase intake of fruits, vegetables) and regular physical activity
• Laxatives should be considered only if dietary measures fail
• If due to side effects of iron supplements, consider reducing the dosage
• Try to establish regular toilet routine

Backache
• Rest when possible during the day
• Walking, physical activity, wear flat shoes
• Lie on a comfortable bed with a firm mattress or on the floor on the back with pillows under legs or on the side with pillows between legs
• See physiotherapist or doctor, if backache persists

Varicose Veins
• No tight bands or garters around the waist or leg which may impede the circulation. A support panty hose may be used.

Haemorrhoids
• Avoid constipation
• Apply cold compresses, then soothing haemorrhoidal ointment/cream in mild cases
  Refer to doctor if there is bleeding which is not relieved by the above treatment.
• Follow-up at six weeks postpartum visit - refer if necessary.

Itching Skin
• Sponge the skin with a solution of bicarbonate of soda, 2 teaspoonfuls to 1 litre of water
• Apply calamine lotion, zinc cream
• If a rash or ‘blebs’ on the skin, seek medical advice

Personal and Genital Hygiene
• Check for abnormal vaginal discharge
• Advise on good personal hygiene
Management of Disorders and Special Situations

- Test urine for sugar and proteinuria
- Advise against douching

**Leg Cramps**
- Apply warm compresses
- Elevate legs and do gentle massage/physical activity
- Increase milk intake (calcium)

**Monilia (Thrush)**
This usually presents with a thick, white, itchy discharge – usually odourless. It is common in pregnancy and is more common in diabetics.
- Apply appropriate anti-fungal treatment in consultation with the doctor
- Cool underwear
- Vinegar washes

**Trichomoniasis**
This usually presents with a watery, greenish, itchy discharge.
- Appropriate anti-protozoal treatment e.g. Metronidazole (do not use before 2nd trimester).
- It is important to also treat partner, in consultation with the doctor.

**SEVERE DISORDERS**

**Bleeding**
Bleeding in *early pregnancy* can be due to
- Threatened miscarriage
- Ectopic pregnancy
- Septic miscarriage
- Cervical erosion/polyps

Bleeding in *late pregnancy* (Antepartum haemorrhage) may be due to:
- Abruptio placenta
- Placenta previa
- Localized lesions (vagina, cervix, uterus)
Pregnancy Induced Hypertension (PIH) / Pre-Eclampsia / Eclampsia

Pregnancy Induced Hypertension (PIH) is defined as the development of hypertension with proteinuria or oedema after the 20th week of pregnancy, without any other known etiology. PIH is also known as pre-eclampsia and gestational hypertension. PIH can be mild or severe depending on the level of hypertension. Eclampsia is coma or seizures occurring in the same period in a patient with PIH.

Mild Pre-Eclampsia

In this state, the blood pressure is between 130/90 mm/Hg - <160/110 mm/Hg. The proteinuria measures <5g/24 hr or < 0.3 g/dL or + on routine urine testing.

Management of this patient also depends on the gestation age of the fetus. Where the gestational age is 36 weeks or more, delivery should be considered. At a gestational age less than 36 weeks, delivery may be delayed in order to achieve fetal maturation.

Management of this condition includes:

- **Bed Rest** - If patient can have bed rest at home she can be treated as an outpatient. Note that such patients should also have facilities to monitor the blood pressure; otherwise it may be safer to admit them in hospital. This mode of management may be considered for patients where the blood pressure is marginally elevated and with minimal edema and proteinuria.

- **Use of Drugs** - A sedative is not usually necessary. The patient can be advised to lie on the left side. Restriction of salt intake has been found to be unnecessary. Diuretics are contraindicated. The patient should be reviewed weekly. If the blood pressure does not return to normal, the patient should be referred to the obstetric team to be evaluated for the initiation of anti-hypertensive therapy.

- **Delivery** - Delivery should be effected by the 37th week. If there are signs of fetal compromise, assess the patient and expedite delivery. The pregnancy should not be allowed to go beyond dates, that is, expected date of delivery even if the BP has normalized.

- **Diet** – Sodium restriction or supplementation usually has no place in the management of preeclampsia

**Remember:** Normalization of the blood pressure may be an indication that fetal demise is imminent.
Severe Pre-Eclampsia

- In this state, the blood pressure is >160/110 mm/Hg. Proteinuria is >5g/24 hours (urine albumin shows ++ or more). These patients may also have epigastric pain, central nervous system disorders (visual disturbance, headache) and oliguria. Such patients can also be classified as having Impending Eclampsia.

- Patients should be admitted to hospital immediately. Ideally, patients with severe pre-eclampsia should be delivered immediately regardless of the fetal age, as the risk of serious maternal morbidity is high. In a tertiary hospital setting, expectant management can be considered in some cases for a short period, in order to stabilize the clinical situation and possibly to achieve better fetal pulmonary maturity.

Eclampsia

Eclampsia is said to occur when a patient with PIH/Pre-eclampsia experiences epileptic fits or convulsions, which are typically of the “grand mal” type. This is a very serious complication which can occur during pregnancy, labour and within the first week post partum. The condition may be associated with prodromal features such as headaches, visual disturbances (blurred vision, flashing lights), epigastric pain (from liver capsule oedema) and generalized oedema, especially relevant in non-dependent areas such as the face and lumbosacral areas. The principles of managing such patients are clear airway, control/prevent convulsions, control extreme hypertension and expedite delivery. The patient must be delivered immediately.

Emergency Procedures

- Maintain a clear airway through proper positioning of the patient and suctioning of any mucous or vomit

- Catheterize patient and record urinary output and colour; test for proteinuria, set up IV infusion 500 ml Ringer’s lactate

- Take blood for CBC, group and cross-matching, BUN, creatinine, serum electrolytes, PT/PTT, platelet count, liver enzymes

Treatment of Fits/Prevention of Further Convulsions

- Administer magnesium sulphate as indicated for pre-eclampsia. If not available use diazepam IV-10 mg IM/IV stat (caution as per eclampsia)

- Diazepam 40 mg in 500 ml, 5% Dextrose to run at 20-40 drops per minute.
Treatment of Hypertension

• Hydralazine is the drug of choice if BP diastolic >110 mmHg and above
• Hydralazine 10 mg IV stat; repeat in 30 minutes if diastolic BP 110 or above.

Management of Labour and Delivery

• The mode and timing of the delivery depend on the clinical condition of the mother, fetus and the state of the cervix.

• Vaginal delivery should be the goal if conditions are suitable; otherwise Caesarean Section after the BP is stabilized and favourable anaesthetic assessment.

Intrapartum

• During labour, blood pressure should be monitored ½ to 1 hourly until delivery
• Anticonvulsants are used during labour
• The second stage should be assisted by means of forceps or vacuum extraction

Post-partum Care

• The patient should be closely monitored in the post-partum period; as convulsions can occur after delivery; thus anticonvulsive treatment should be continued.

• All “high risk” women must be monitored closely after delivery until discharged from the institution.

• All women should have their blood pressure recorded immediately or shortly after delivery and every 4 hours until discharge.

• Patients who have PIH should be managed by specialist teams and discharged when vital signs return to normal, with appropriate follow-up.

• Women who had severe pre-eclampsia and eclampsia should be seen at home within one week and at post-natal clinic after 2 to 4 weeks and have their blood pressure recorded.

• Patients who had severe pre-eclampsia and eclampsia should be advised on contraception and future pregnancies.

Guidelines for Secondary Prevention of PIH

Preconception counseling is ideally provided for women known to have hypertension to achieve best control before conception. This advice should also be given at postpartum or family planning clinics.
Management of Disorders and Special Situations

- Pregnant women should be advised to start prenatal clinic after missing their second menses
- All women should have their blood pressure recorded on every antenatal clinic visit
- All women should have their urine tested for protein every visit
- All women detected to have an increase of their blood pressure by 30 mmHg of systolic and or 15 mmHg diastolic from their baseline blood pressure, or those found to have blood pressure 130/90 mmHg or above should be flagged. (The presence of protein in Mid-Stream Urine (MSU) is significant)
- All women found to have proteinuria, should have urine microscopy to exclude urinary tract infection. If found to be hypertensive, the patient should be treated for PIH
- All patients with hypertension, proteinuria and edema should be referred to an obstetrician.

Diabetes

The term ‘gestational diabetes’ defines women with onset or first recognition of abnormal glucose tolerance during pregnancy. Gestational diabetes affects between 2 and 10 percent of women during pregnancy.

Pregnancy is characterized by insulin resistance and hyperinsulinemia, which may predispose some women to develop diabetes. The resistance stems from placental secretion of diabetogenic hormones (including growth hormone, placental lactogen, and progesterone) as well as increased maternal adipose deposition, decreased physical activity and increased caloric intake.

It is important to recognize and treat gestational diabetes as soon as possible to minimize the risk of adverse outcomes and complications in the baby.

Adverse outcomes include:
- Preeclampsia
- Polyhydramnios
- Fetal macrosomia
- Fetal organomegaly (hepatomegaly, cardiomegaly)
- Birth trauma
- Operative delivery
- Perinatal mortality
- Neonatal respiratory problems and metabolic complications (e.g. hypoglycemia, hyperbilirubinemia, hypocalcemia)

If abnormally high blood sugar levels are present during organogenesis because of overt (also termed pre-gestational) diabetes, there is an increased risk of miscarriage and congenital anomalies.
There are also potential long-term consequences to the infant, such as development of obesity and diabetes during childhood, impaired fine and gross motor functions, and higher rates of inattention and/or hyperactivity.

Preconception

Women with pre-gestational diabetes mellitus will benefit from counseling and information sharing on the importance of a planned pregnancy and health professionals should work closely with them to optimize health status prior to conception.

Their evaluation should include information on:

- the duration and type of diabetes,
- history of acute complications (infections, ketoacidosis, severe hypoglycemia)
- chronic complications (retinopathy, nephropathy, neuropathy, hypertension, cardiovascular disease)
- current and past glucose control
- physical activity
- diet
- gynaecologic and obstetric history

It is useful to involve a diabetes educator and a registered dietitian and to include the woman’s partner or other members of her family.

Glycemic control plays an important role in reducing the frequency of fetal and neonatal complications.

To be most effective, glycemic control needs to be achieved pre-conceptionally. Therefore, a major goal of preconception care of women with diabetes is to evaluate glycemic control and recommend adjustments in diet, medications, and lifestyle, as needed, to achieve euglycemia (levels within the normal range).

Haemoglobin A1c: A pre-pregnancy target of <7 percent is recommended

Glycosylated haemoglobin (A1c) values, which reflect the average blood glucose concentration over the previous 8 to 12 weeks, are useful in evaluating a woman’s glycemic control before conception and throughout pregnancy.

Folic Acid Supplementation

Supplementation with a minimum of 0.4 to 0.8 mg of folic acid, with higher doses (4 mg) if there are additional risk factors for neural tube defects (NTDs). Such increased risk occurs if there was an affected baby in a previous pregnancy; a family history of NTD; diabetes and/or obesity.
Antenatal Care

Antenatal appointments for women with diabetes should consider routine antenatal care as well as care specifically for diabetes management.

Care should be hospital based and ideally provided by a multidisciplinary team which would include a nurse, obstetrician and dietitian, and depending upon availability, a diabetes educator, a perinatologist, an internist and an endocrinologist.

The key elements in management of pregnancies complicated by diabetes are:

1) Achieving and maintaining excellent glycemic control
2) Screening, monitoring, and intervention for maternal medical complications (eg, retinopathy, nephropathy, hypertension, cardiovascular disease, ketoacidosis, thyroid disease)
3) Monitoring of, and intervention for, fetal and obstetrical complications (eg, congenital anomalies, preeclampsia, macrosomia)

Achieving and Maintaining Excellent Glycemic Control

This involves diet, physical activity, patient education, and, if necessary, pharmaceutical medical therapies should be used.

Diet and Physical Activity

• The cornerstone of care of a pregnancy that is complicated by diabetes is proper diet. Elements of dietary therapy include management of the quantity and quality of nutrient intake.

• Physical activity is another key component in diabetic care; cardiovascular physical activity reduces insulin resistance.

• The physiologic constraints of pregnancy should be taken into consideration when counseling women about physical activity and in clinics which offer physical activity classes, physician access should be available.

• The supine position should be avoided since vena cava compression by the gravid uterus may occur and activities which require a great deal of balance must be avoided (to prevent injuries from falls).

Glucose Monitoring

• Women with gestational diabetes should measure their blood glucose concentration two to four times daily, fasting and one or two hours after the start (‘first bite’) of each meal, to determine whether hyperglycemia severe enough to increase fetal risk is occurring.
Results should be recorded in a glucose log, along with dietary information to be shared with healthcare providers.

<table>
<thead>
<tr>
<th>Target Levels for blood glucose concentration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting</td>
</tr>
<tr>
<td>One-hour postprandial</td>
</tr>
<tr>
<td>Two-hour postprandial</td>
</tr>
</tbody>
</table>

Screening test for diabetes in pregnancy: the most commonly performed screening test is the O’Sullivan’s test, which is positive if the blood glucose level exceeds 140mg/dL (7.8 mmol/L), 1 hour after 50gm glucose oral intake.

A positive test should lead to a formal glucose tolerance test.

Medical Therapy

- If normoglycemia cannot be achieved and maintained by physical activity and nutritional interventions, then anti-hyperglycemic agents should be initiated.
- There are two options in pregnant patients who require medical therapy aimed at controlling blood glucose: insulin and selected oral anti-hyperglycemic agents.

Screening, Monitoring, and Intervention for Maternal Medical Complications

Routine Screening

Routine prenatal laboratory evaluations are performed. Urinalysis and culture for assessment of asymptomatic bacteriuria are important because of a 3-5 fold increased risk in diabetic women.

Screen for End Organ Damage

Women with diabetes should undergo medical review and be screened for end organ damage (if this has not been undertaken pre-conceptually) e.g. assess renal function and assess eyes for proliferative retinopathy etc. The following tests are recommended to identify these associated complications:

- 24-hour urine collection for protein and creatinine clearance
- Serum creatinine
- 12-lead ECG
- Ophthalmologic examination (if not done within the last 12 months).
- Thyroid function tests (particularly if type 1 diabetes)
Management of Disorders and Special Situations

Ongoing Education
The value of ongoing education during subsequent visits cannot be overstated. Improved patient knowledge and understanding leads to greater compliance with the treatment program. Each clinic visit should be viewed as an educational opportunity.

Blood Pressure and Urinalysis
• These should be assessed at each visit.
• Women with diabetes probably have an increased risk of pregnancy-induced hypertension, so close monitoring of the blood pressure is recommended.

Monitoring of and Intervention for Fetal and Obstetrical Complications

Sonography
• Women should be offered the routine first-trimester scan (11–14 weeks of gestation) to confirm dates and viability.
• Detailed ‘anomaly’ scan at 20 weeks’ gestation.
• Ultrasound at 36 weeks’ gestation to assess macrosomia, polyhydramnios and fetal biophysical profile.

Non-Stress Testing/Biophysical Profile
• Antenatal testing twice weekly, usually initiated at about 32 weeks of gestation.
• It is generally recommended that women who require insulin or an oral anti-hyperglycemic agent to maintain euglycemia are managed the same way as women with pre-gestational diabetes.
• Women who are euglycemic with diet and physical activity alone and who have no other pregnancy complications (eg, no macrosomia, preeclampsia, growth restriction, polyhydramnios or oligohydramnios) do not appear to be at increased risk of stillbirth.
• Therefore, for women with impeccable glucose control, antepartum fetal surveillance with nonstress testing or biophysical profile scoring is not required.

Elective Delivery
When blood sugar levels are close to normal during pregnancy and there are no other complications, the ideal time to deliver is at 38 weeks’ gestation. In certain instances, the woman can be allowed to continue up to 40 weeks of pregnancy, but she should not be allowed to go post dates.

If spontaneous labour has not occurred, then labour should be induced, providing that there are no contraindications to a vaginal birth.
Postpartum

After delivery, most women with gestational diabetes will experience normal blood sugar levels and they do not require further medical treatment with insulin or oral agents. Most women can return to their pre-pregnancy diet, and they should be encouraged to breastfeed. If the blood sugar level is normal after delivery, it is important to test for type 2 diabetes at six weeks postpartum. Testing usually includes a two-hour glucose tolerance test.

Risk for Gestational Diabetes

One-third to two-thirds of women who have gestational diabetes in one pregnancy will have it again in a later pregnancy.

Risk of Type 2 Diabetes

Women with gestational diabetes have an increased risk of developing type 2 diabetes later in life, especially if the woman has other risk factors (eg, obesity, family history of type 2 diabetes). The risk of developing type 2 diabetes is greatly affected by body weight. Women who are obese have a 50 to 75 percent risk of type 2 diabetes, while women who are a normal weight have a less-than-25 percent risk.

It is recommended that all women with a history of gestational diabetes have testing for type 2 diabetes at least every three years after their pregnancy. Women who have gestational diabetes after age 45 should have testing once per year.

Contraception

Women with a history of gestational diabetes have no limitations to the type of contraception after pregnancy.

Sickle Cell Disease

Sickle cell disease (SCD) is the most common inherited condition worldwide. Haemoglobin (Hb) transports oxygen from the lungs to the tissues and carbon dioxide back to the lungs for expiration.

Variations of haemoglobin (HbS and HbC), when exposed to low oxygen levels, tend to stick together to form long fibers which may distort the red cell from a round free flowing shape into a sickle shape. These abnormal cells block and sludge the vessels where they are rapidly destroyed, leading to a myriad of complications.

In patients with HbSS, red cell destruction results in haemolytic anaemia and together with occlusion in the small blood vessels, causes most of the clinical features of SCD, including acute painful crises, stroke, pulmonary hypertension, renal dysfunction, retinal disease, leg ulcers, cholelithiasis and avascular bone necrosis.
Management of Disorders and Special Situations

Women with HbSC experience fewer adverse outcomes, but there is still evidence of an increased incidence of painful crises during pregnancy and fetal growth restriction.

Haemoglobin S, when combined with normal haemoglobin (A), is known as sickle trait (HbAS). It is asymptomatic except for a possible increased risk of urinary tract infections and microscopic haematuria. Although outcomes among women with HbSC are better than in women with HbSS, some do have serious, unpredictable complications, and women with HbSC should therefore be monitored in the same way as those with HbSS.

Preconception

- **Haemoglobin Status of Partner** - Women and men with SCD should be encouraged to have the status of their partner tested by haemoglobin electrophoresis before they embark on pregnancy. This information is useful in counseling couples and advising them of the reproductive risks.

- **Folic Acid Supplementation** - Folic acid (4 mg) should be given once daily both pre-conceptually and throughout pregnancy.

Antenatal Care

- **Hospital based antenatal care** – Care should be hospital based and with facilities for multidisciplinary consultation.

- **Screening for end organ damage** - Women with SCD should undergo medical review by the haematologist and be screened for end organ damage – e.g. assess renal function, pulmonary hypertension (echocardiography), iron stores with ferretin levels, and the eyes for proliferative retinopathy etc.

- **Hydration** - Women with SCD should aim to avoid precipitating factors of sickle cell crises such as exposure to extreme temperatures, dehydration, over-exertion, stress and hypoxia. Persistent vomiting can lead to dehydration and precipitation of a sickle cell crisis.

- **Early intervention** - Women with SCD who become unwell should have sickle cell crisis excluded as a matter of urgency. Pregnant women presenting with acute painful crisis should be rapidly assessed by the multidisciplinary team and appropriate management instituted.

- **Caution with iron supplementation** – Anemia associated with SCD should not routinely be treated with iron supplementation. Iron supplementation should be given only if there is laboratory evidence of iron deficiency (low ferritin levels)
• **Blood pressure and urinalysis** - Women with SCD should be evaluated carefully for the onset of pregnancy-induced hypertension. Monitoring for an increase in blood pressure and the presence of proteinuria are essential at each visit. Women with SCD often have a low blood pressure, so an upward trend in blood pressure, even if modest, should be carefully considered.

• **Low-dose aspirin** - Women with SCD should be considered for low-dose aspirin 75 mg once daily from 12 weeks of gestation in an effort to reduce the risk of developing pre-eclampsia.

• **Midstream urine (MSU) for culture** should be performed monthly.

• **Sonography - risk of fetal growth restriction**:  
  - Routine first-trimester scan (11–14 weeks gestation) to confirm dates and viability.  
  - Detailed anomaly scan at 20 weeks of gestation.  
  - In addition, serial fetal biometry scans (growth scans) every 4 weeks from 24 weeks gestation to allow early detection of fetal growth restriction and hence aid appropriate timing of delivery to reduce perinatal mortality and morbidity.

### Admission to Hospital and Delivery

• Women with SCD should be advised to give birth in hospitals that are able to manage both the complications of SCD and high-risk pregnancies. SCD should not in itself be considered a contraindication to vaginal delivery.

• **Thromboprophylaxis** - Should be given to women admitted to hospital. Women with SCD should be advised to receive prophylactic low-molecular-weight heparin during antenatal hospital admissions. The use of graduated compression stockings is also appropriate.

• **Fluids and Oxygen** - The requirement for fluids and oxygen should be assessed and should be administered if required. Fluids can be given orally and this is the preferred route when strict fluid balance is not ensured.

• **Elective Delivery** - Women with SCD who have a normally growing fetus should be offered elective birth through induction of labour, or by elective caesarean section if indicated, after 38 weeks’ gestation.

• **Pain relief in labour** - Women in labour should have the benefit of effective and adequate pain relief. Regional analgesia is recommended for caesarean section.

• **IV Access should be maintained and blood cross-matched for delivery.**

• **Relevant Multidisciplinary Team** - senior midwife in charge, senior obstetrician, anaesthetist and haematologist should be informed as soon as labour is confirmed.
**Management of Disorders and Special Situations**

- **Temperature Regulation and Hydration** – Particularly if the room is air-conditioned, the woman should be kept warm and given adequate fluids (by I.V. route if necessary) during labour.

- **Intrapartum Fetal Monitoring** - Continuous intrapartum electronic fetal heart rate monitoring is recommended owing to the increased risk of fetal distress because of placental insufficiency.

**Postpartum**

- **Early testing for SCD in the infant** - where the baby is at high risk of SCD (i.e. the partner is a carrier or affected), early testing for SCD should be performed.

- **Maintain maternal oxygen saturation above 94%**

- **Adequate hydration**

- **Thromboprophylaxis** - Low-molecular-weight heparin should be administered while in hospital and 7 days post-discharge following vaginal delivery or for a period of 6 weeks following caesarean section.

- **Care and Vigilance** - The same level of care and vigilance should be maintained as has been described for antenatal care, since acute crisis and other complications of SCD remain a risk during the puerperium.

- **Discuss contraception** especially if the risk of an affected fetus is high, as in the case of the male partner also HbSS or HbSC since in these cases, the risk is 100%. All common options are available, including barrier methods, hormonal methods, the intrauterine contraceptive device and surgical methods (tubal ligation and vasectomy).

**HIV**

Because of the threat which Acquired Immune Deficiency Syndrome (AIDS) poses to the health of women and children, health care workers must be vigilant, so as to identify women and children who may possibly be infected with HIV and implement prevention and/or supportive measures.

Provider initiated testing and counselling (PITC) is practiced in the Caribbean and all pregnant women are offered HIV testing.

Women should be encouraged to disclose their HIV status to their partner and should be given appropriate support. It is also recommended that HIV infected women with existing children of unknown HIV status should have them tested for HIV. The partners of HIV positive women should also be offered HIV testing.
All women testing HIV negative at booking should have access to information about safe sex and high risk scenarios for HIV transmission. Repeat testing should be available at any time during pregnancy. Nurses and doctors managing women during antenatal care should ensure that the HIV result is clearly documented.

While pregnancy is not significantly affected by HIV, there are some adverse pregnancy outcomes that appear to be associated with HIV infection, including:

- Spontaneous miscarriage
- Stillbirth
- Perinatal mortality
- IUGR (intrauterine growth retardation)
- Low birth weight
- Preterm delivery
- Chorioamnionitis

Potential routes of vertical transmission from mother to child include:

- **In utero (high risk period)**
  - Transplacental passage in utero
  - Invasive procedures done during pregnancy
  - Infections such as chorioamnionitis

- **During delivery**
  - Ascending infection
  - Breaks in the skin of the baby and thus the direct exposure to infected blood
  - Ingesting maternal blood

- **Postpartum**
  - Breast milk (depends on the presence and duration of breastfeeding and anti-retroviral treatment).

**Antenatal Care**

All pregnant women who are HIV positive should be referred promptly for assessment and for their pregnancy to be managed by a multidisciplinary team including (as a minimum) an HIV physician, obstetrician, specialist midwife, health advisor and paediatrician.

Women who are HIV positive should be screened for genital infections at booking (or after multidisciplinary team referral, if diagnosed HIV positive in pregnancy) and those taking Highly Active Antiretroviral Therapy (HAART) at the time of booking should be screened for gestational diabetes.
Management of Disorders and Special Situations

Women should also be counseled on condom use during the pregnancy to prevent re-infection and increased viral load.

Nutrition Care
Persons living with HIV (PLHIV) have higher nutrient requirements than HIV negative individuals. It is important to increase energy intake by 10-100 % based on the physiological need and health status of the individual. Pregnant PLHIV should ingest an additional 6g protein per day as well as a multi-vitamin/mineral supplement daily, in addition to calcium and iron supplements, as needed.

Highly Active Antiretroviral Therapy (HAART)
The WHO (2013) recommendation is that all pregnant HIV-infected women receive a combination triple antiretroviral (ART) drug regimen, regardless of CD4 T count, to prevent perinatal transmission. ART prophylaxis should be started from as early as 14 weeks of gestation or as soon as possible thereafter if women present later in pregnancy, in labour or at delivery.

Delivery Care
Women who are HIV positive should be counseled about the increased risk of preterm delivery associated with HAART. Invasive procedures such as fetal blood sampling and fetal scalp electrodes are contraindicated. If labour progress is normal, amniotomy should be avoided unless delivery is imminent. For augmentation of labour, amniotomy and use of oxytocin may be considered. Rupture of membranes should not exceed 4 hours and should be done when the cervix is 6 cms dilated for augmentation of labour. If instrumental delivery is indicated, do lower segment Caesarean section (LSCS). The baby’s nose and mouth should be suctioned at the perineum and the baby washed as soon as possible with soap and water to remove maternal blood and secretions.

Postpartum
Women who are HIV positive were advised to avoid breastfeeding. However, current WHO guidelines enable HIV-infected mothers to exclusively breast feed for 6 months and continue during complementary feeding at least until 12 months with very little risk of HIV transmission. This is the case when antiretroviral treatment is given either to breastfeeding mothers, or as prophylaxis given to infants until 6 weeks after breastfeeding has been discontinued.

WHO (2013) guidelines also recommend that the ART treatment should continue postpartum. Three prophylactic options are offered Option A (through 7 days postpartum), Option B (until one week after cessation of all breastfeeding) and Option B+ (treatment continued for life).
The women should also receive guidance about contraception in the immediate postpartum period. Yearly cervical cytology screening is recommended for all women with HIV, because of the association of HIV, immune-suppression and cervical neoplasia.

Anti-retroviral therapy for the baby should be commenced as soon as possible after birth and certainly within 4 hours. Treatment should continue daily for 4 weeks if the mother had received ART for 4 or more weeks; or for 6 weeks if she recived ART for less than 4 weeks. Infants of mothers on ART who are breastfeeding should receive ART for 6 weeks. These children should be tested at 4-6 weeks and 4-5 months of age. If all these tests are negative and the baby is not being breastfed, the parents can be informed that the child is not HIV-infected.

A confirmatory ELISA test is recommended at 12-18 months of age.

OTHER SEXUALLY TRANSMITTED INFECTIONS (STIS)

There are various types of STIs that could occur during pregnancy and can have detrimental effects on the fetus if left untreated. These include:

Gonorrhoea

Gonorrhoea is a common sexually transmitted disease caused by the bacterial organism, *Neisseria gonorrhoea*. It affects both sexes especially the younger adult population. In males, a purulent discharge from the urethra is the most obvious symptom and is accompanied by burning on micturition. The discharge appears 2 to 7 days after exposure to an infected person.

In females, symptoms may go unnoticed. The infection may ascend to affect the fallopian tubes causing salpingitis or even tubo-ovarian abscesses. The changes that occur in the fallopian tubes increase the possibility of the woman having an ectopic pregnancy and may also lead to infertility. Other sequelae are chronic pelvic abdominal pain and recurrent menstrual irregularity.

*N. gonorrhoea* may also be transmitted from mother to neonate while it traverses the birth canal. In the neonate this produces a gonococcal conjunctivitis characterized by severe eyelid oedema and abundant purulent discharge, which may spurt from the eyes when the eyelids are separated. This appears 2-5 days after birth. The newborn should be hospitalized and treated to prevent secretions from adhering. Topical antimicrobial preparations alone are not sufficient. The diagnosis is confirmed when a gram stain and culture are taken of the discharge (eye swab). Routine use of 1 % silver nitrate drops instilled into each eye after delivery is recommended for prevention of neonatal gonococcal conjunctivitis.
Chlamydia

*Chlamydia trachoma* is becoming increasingly recognized as the cause of many human infections. Its serotypes cause among other diseases lymphogranuloma venereum, genital infections and conjunctivitis. Genital infections are not always clinically apparent. The manifestations are almost indistinguishable from those of gonorrhoea and both infections may co-exist. In males, the main symptom is urethritis and in females a muco-purulent cervicitis. Complications can result in infertility in both males and females. The infection can be passed on to infants during childbirth. Silver nitrate is not an effective prophylaxis measure against the conjunctivitis of chlamydia.

**Treatment**
Tetracycline or erythromycin ointments can be used topically. Oral therapy is preferable as the neonate can develop Chlamydia pneumonia. Erythromycin suspension is given for 10-14 days.

Syphilis

Syphilis is caused by a spirochete, which is a delicate spiral micro-organism called *Treponema pallidum*. The infection may be transmitted from one sexual partner to another and from a pregnant woman to her unborn child.

The disease develops in several stages if untreated:

**Stage 1 or Primary Syphilis**
Painless ulcer called chancre appears on the site of invasion (usually penis or vagina) within 4 weeks of infection. After 4 to 8 weeks the chancre usually heals even if no treatment is given.

**Stage 2 or Secondary Syphilis**
Six (6) to 12 weeks after infection rashes appear about the body including the palms of the hands and the sole of the feet. This is accompanied by enlarge lymph nodes and mild constitutional symptoms of malaise, anorexia, easy fatigability, etc. The lesions may persist for months. In untreated patients they frequently heal but fresh ones may appear within weeks or months. In a few patients the hair may fall out in patches.

**Latent Stage**
One (1) to 2 years after infection all symptoms may disappear. This stage may last for a few years.
Stage 3 or Tertiary Syphilis
About 1/3 of all untreated patients will progress to this stage which affects:
- Skin, bones and internal organs
- Cardiovascular system
- Nervous system.

Congenital Syphilis
A pregnant woman who has untreated primary or secondary syphilis may infect her fetus. Infection hardly occurs before the eighteenth week of pregnancy and treatment of the mother during the first 4 months of pregnancy virtually eliminates the risk of congenital syphilis. Untreated maternal infection may result in prematurity, stillbirth, neonatal death and early or late congenital syphilis.

*Early Congenital Syphilis:* Symptoms appear before the child is 2 years old. Vesicular and bullous skin lesions appear about the body including on the palms and soles, blood stained nasal discharge causing snuffles, generalized lymphadenopathy, failure to thrive, enlarged liver and spleen and osteochondritis with characteristics changes in the bones.

*Late Congenital Syphilis:* This comprises of symptoms that occur after 2 years of life and is likened to tertiary syphilis in adults. Periostitis and osteochondritis result in anterior bowing of the tibia. Widely spaced, tapered incisors with a central notch are called Hutchinson’s teeth. This finding along with nerve deafness and interstitial keratitis comprise the Hutchinson triad. Diagnosis is often made on the result of the VDRL test, but it should be noted that this test may give false positive results and that there are more specific tests. A reactive VDRL in a newborn may be due to the passive transfer of maternal antibodies across the placenta and a rising titer will indicate the presence of the disease.

Management
The management of maternal syphilis and children with congenital syphilis is described in the PAHO (2011) publication.

*Counselling:* The client with a sexually transmitted infection should be counselled and informed about the particular infection.

*Contact Tracing:* A careful history should be taken and efforts should be made to identify the sexual partners. They should also undergo testing and treated if necessary.

*Treatment:* The drug of choice for syphilis is Benzathine Penicillin G. Patients sensitive to penicillin may be treated with Erythromycin or Tetracycline but the latter is contraindicated in pregnant women.

The client should be treated adequately and advised to take the full course of medications to prevent drug resistance. The partner (s) should also be treated.
Contraceptives: The clients should be advised on the role of condoms in reducing the incidence of STIs. He/she should also be advised to always use a condom to reduce the risk of being infected again.
Section III: Intranatal Care

The objectives of intranatal care include:

- Thorough asepsis
- Safe delivery with minimum injury to the infant and mother
- Readiness to deal with complications such as prolonged labour, antepartum haemorrhage, convulsions, malpresentations, cord prolapse, etc.
- Care of the baby at delivery- resuscitation, care of cord, care of eyes, etc.
MANAGEMENT OF NORMAL LABOUR

First Stage of Labour

- Assess general condition and ensure that client is in labour
- Review notes to identify any significant points in the history
- Conduct a routine examination
  - Do a general examination and assess the emotional status of the client.
  - Test urine
  - Take temperature, pulse, respiration and blood pressure
  - Palpate the abdomen to assess fundal height, lie and presentation of fetus.
  - Monitor contractions
  - Do a vaginal examination and make an assessment of the pelvis.
- Administer enema except where contraindicated e.g. P.V. bleeding, meconium stained liquor.
- Keep accurate and up to date records.

Progress Charting (Use Partogram)

- Palpate uterine contractions noting their strength, frequency and duration.
- Auscultate and document the fetal heart every 30 minutes.
- Check and record temperature, pulse, respiration and blood pressure hourly.
- Test urine for acetone, sugar and albumin.
- Do vaginal examination every 3-4 hours, or more often, if the clinical situation warrants it to assess descent of presenting part.
- Observe any discharge from the vagina, colour of liquor and type of discharge e.g. mucopurulent.
- Observe for signs of fetal and/or maternal distress e.g. meconium stained liquor, maternal fever, tachycardia, dehydration.

Additional Care During First Stage of Labour

- Relieve pain and discomfort
- Provide emotional support
- Assist client to control pain through non-drug approaches.
- Encourage ambulation until the later stages of labour.
- Maintain adequate nutrition, especially hydration and energy level.
**Intranatal Care**

**Signs of Fetal Distress**
- Fetal heart rate - Slow (less than 110 beats per minute (bpm)) or rapid (more than 160 bpm).
- Meconium stained liquor in a cephalic presentation.
- Excessive fetal movements.

**Signs of Maternal Distress**
- Rising pulse rate ≥100 bpm
- Vomiting
- Scanty, concentrated urine, acetone in urine
- Ketone smell of breath
- Increase in temperature >37.4°C or 99.4°F
- Marked restlessness or anxiety
- Dry lips and tongue - dehydration

**Indications for Referral to Medical Officer during First Stage of Labour**
- Maternal distress
- Fetal distress
- Very strong uterine contractions with no progress
- Malpresentation
- Prolapse of umbilical cord
- Prolonged first stage
  - 10 hours or more in multipara
  - 12 hours or more in primigravida
- Prolonged rupture of membranes (over 24hrs)
- Vaginal bleeding
Second Stage of Labour

The attendant should do the following:

• Ensure that the delivery room is readied.
• Check the contents of the delivery pack.

Delivery Pack

o 1 Large bowl
o 1 Kidney dish
o 2 Gallipots
o 1 Placenta dish
o 2 Swab holders
o 2 Spencer Wells forceps
o Cord scissors
o Episiotomy scissors
o 3 Dressing towels
o 1 Gown
o Gloves

• Prepare for episiotomy if indicated
• Prepare to receive baby
• Maintain clear airway by suction if necessary as soon as head is delivered
• Have oxygen ready for use
• Prepare drugs - syntometrine 1 ampoule (or syntocinon 5-10 units for clients with elevated blood pressure); lignocaine 1 % and 2%
• Conduct delivery in approved manner, giving oxytocic drug I.M. upon delivery of anterior shoulder.
• Keep alert for obstetric emergencies such as post partum haemorrhage
• Ensure that mother sees and holds the infant, identifies the gender of the infant; then place an identification tag on the infant’s limb.
• Put infant to breast with skin to skin contact; allow to suckle as long as the infant wants.

Indications for Referral to Medical Officer during 2nd State of Labour

• Abnormal bleeding
• Loss of / irregularity of fetal heart beat
• Abnormal contractile pattern of uterus
• Lack of progress or descent of presenting part
Intranatal Care

- Prolapse of the cord
- Fresh meconium-stained liquor
- Shoulder dystocia
- Any condition which may arise suddenly and which the nurse or midwife is unable to manage

Third Stage of Labour

- Watch for signs of placental separation
- Assist mother to expel placenta. Exert gentle traction on the cord as the placenta is delivered.
- Inspect placenta and membranes for completeness.
- Measure or estimate and record blood loss.
- Inspect vagina and cervix for lacerations.
- Repair episiotomy or lacerations.
- Clean perineum

Indication for Referral to Medical Officer during 3rd Stage of Labour

- Retained or incomplete placenta or membranes
- Haemorrhage from uterus or lacerations
- Maternal shock
- Severe lacerations or extended episiotomy
- Elevated blood pressure (over 130/90 mm of Hg)
- Temperature above 37°C or 99.4°F
- Respiratory distress in the newborn

Post-Partum Observation and Care

Observe and record for one hour after delivery the following:

- Client’s general condition
- Vital signs temperature, pulse, respiration and blood pressure
- Amount and colour of vaginal blood loss
- Height of fundus, state of contraction
Indications for Referral to Medical Officer
Any abnormality detected during the puerperium should be reported to the Medical Officer. These include:

- Pyrexia 99.4°F or 38°C and over after the first 24 hours.
- Offensive lochia.
- Persistent red lochia.
- Subinvolution of the uterus and tenderness.
- Pain developing in pre-existing varicose veins.
- Increase in blood pressure
- Behavioral changes in the mother.
- Mastitis
- Urinary problems - incontinence.

Empty Bladder
If bladder is distended and the woman is unable to pass urine:

- Encourage the woman to urinate
- If she is unable to urinate, catheterize the bladder:
  o Wash hands
  o Clean urethral area with antiseptic
  o Put on clean gloves
  o Spread labia, clean area again
  o Insert urinary catheter
  o Measure urine and record amount
  o Remove catheter

POST PARTUM HAEMORRHAGE
Post Partum Haemorrhage is bleeding after delivery and is defined as a blood loss of 500 ml or more during or after the third stage of labour.

The main cause is uterine atony (lax uterus), which may be due to:

- Multiple-pregnancy / grand-multiparity
- Polyhydramnios
- Fetal macrosomia
- Placenta abruption
Patients with the conditions listed above should have the following done before delivery:

- Hb grouping and cross matching
- Setting up an intravenous infusion.

**Management**

**General Management in the Health Facility/Hospital**

- SHOUT FOR HELP. Urgently mobilize all available personnel
- Make a rapid evaluation of the general condition of the woman including vital signs (pulse, blood pressure, respiration, temperature)
- If shock is suspected, immediately begin treatment
- Massage the uterus to expel blood and blood clots. Blood clots trapped in the uterus will inhibit effective uterine contractions and cause more bleeding.
- Give oxytocin 10 units IM.
- Start an IV 500 ml Ringers Lactate solution
- Take blood for Hb grouping and cross matching
- Catheterize the bladder
- Check to see if the placenta has been expelled and examine the placenta to be certain it is complete
- Examine the cervix, vagina and perineum for tears
- Call the doctor

**Uterus soft – Massage Uterus and Expel Clots**

- Place cupped palm on uterine fundus and feel for state of contraction.
- Massage fundus in a circular motion with cupped palm until uterus is well contracted. When well contracted, place fingers behind fundus and push down in one swift action to expel clots.
- Collect blood in a container placed close to the vulva. Measure or estimate blood loss, and record.

**Bleeding Continues – Apply Bimanual Uterine Compression**

(This can be done by doctor or midwife)

- Wear sterile or clean gloves
- Introduce the right hand into the vagina, clenched fist, with the back of the hand directed posteriorly and the knuckles in the anterior fornix.
• Place the other hand on the abdomen behind the uterus and squeeze the uterus firmly between the two hands

• Continue compression until bleeding stops (no bleeding if the compression is released)

• If bleeding persists, apply aortic compression; transfuse blood as soon as it becomes available

**Apply Aortic Compression**

If heavy postpartum bleeding persists despite uterine massage, oxytocin/ergometrine treatment and removal of placenta:

• Feel for femoral pulse

• Apply pressure above the umbilicus to stop bleeding. Apply sufficient pressure until femoral pulse is not felt

• After finding correct site, show assistant or relative how to apply pressure, if necessary

• Continue pressure until bleeding stops. If bleeding persists, keep applying pressure while transporting woman to hospital.

**Drug Treatment**

**Oxytocin doses for heavy bleeding:**

<table>
<thead>
<tr>
<th>Initial dose</th>
<th>Continuing dose</th>
<th>Maximum dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM/IV: 10 IU</td>
<td>IM/IV: repeat 10 IU after 20 minutes if heavy bleeding persists</td>
<td>Not more than 3 litres of IV fluids containing oxytocin</td>
</tr>
<tr>
<td>IV infusion: 20 IU in 1 litre at 60 drops/min</td>
<td>IV infusion: 20 IU in 1 litre at 30 drops/min</td>
<td></td>
</tr>
</tbody>
</table>

Give ergometrine or carbetocin (Duratocin®) - If heavy bleeding in the postpartum (after oxytocin).

• DO NOT give ergometrine if eclampsia, pre-eclampsia or hypertension. Syntocinon or carbetocin can be used in these situations.

• Carbetocin is a long-acting oxytocin which has the advantage of a single I.V bolus of 100mcg. The need for monitoring of an oxytocin infusion or an additional bolus dose is not necessary. Only occasionally would an additional syntocinon dose be needed.
**Ergometrine doses for PPH**

<table>
<thead>
<tr>
<th>Initial dose</th>
<th>Continuing dose</th>
<th>Maximum dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM/IV: 0.2 mg slowly</td>
<td>IM: repeat 0.2 mg IM after 15 minutes if heavy bleeding persists</td>
<td>Not more than 5 doses (total 1.0 mg)</td>
</tr>
</tbody>
</table>

**Remove Placenta and Fragments Manually**

*(This can be done by skilled, trained staff)*

- If placenta is not delivered 1 hour after delivery of the baby, OR
- If heavy vaginal bleeding continues despite massage and oxytocin and placenta cannot be delivered by controlled cord traction or if placenta is incomplete and bleeding continues.

**Preparation**

- Explain to the woman the need for manual removal of the placenta and obtain her consent.
- Insert an IV line. If bleeding, give fluids rapidly. If not bleeding, give fluids slowly.
- Assist woman to get onto her back.
- Give diazepam 10 mgs IM/IV.
- Clean vulva and perineal area.
- Ensure the bladder is empty. Catheterize if necessary.

**Technique**

- With the left hand, hold the umbilical cord with the clamp. Then pull the cord gently until it is horizontal.
- Insert right hand into the vagina and up into the uterus.
- Leave the cord and hold the fundus with the left hand in order to support the fundus of the uterus and to provide counter-traction during removal.
- Move the fingers of the right hand sideways until edge of the placenta is located.
- Detach the placenta from the implantation site by keeping the fingers tightly together and using the edge of the hand to gradually make a space between the placenta and the uterine wall.
- Proceed gradually all around the placental bed until the whole placenta is detached from the uterine wall.
- Withdraw the right hand from the uterus gradually, bringing the placenta with it.
• Explore the inside of the uterine cavity to ensure all placental tissue has been removed.
• With the left hand, provide counter-traction to the fundus through the abdomen by pushing it in the opposite direction of the hand that is being withdrawn. This prevents inversion of the uterus.
• Examine the uterine surface of the placenta to ensure that lobes and membranes are complete. If any placental lobe or tissue fragments are missing, explore again the uterine cavity to remove them.

If hours or days have passed since delivery, or if the placenta is retained due to constriction ring or closed cervix, it may not be possible to put the hand into the uterus. DO NOT persist. Refer urgently to hospital.

If the placenta does not separate from the uterine surface by gentle sideways movement of the fingertips at the line of cleavage, suspect placenta accreta. DO NOT persist in efforts to remove placenta. Refer urgently to hospital.

After Manual Removal of the Placenta

• Repeat oxytocin 10 IU IM/IV
• Massage the fundus of the uterus to encourage a tonic uterine contraction.
• Give ampicillin 2 grams IV/IM as indicated by the physician.
• If fever is 38.5°C, foul-smelling lochia or history of rupture of membranes for 6 or more hours, give gentamicin 80 mg IM.
• If bleeding stops:
  o Give fluids slowly for at least 1 hour after removal of placenta.
• If heavy bleeding continues:
  o Give ergometrine 0.2 mg IM stat
  o Give 20 IU oxytocin in a litre of IV fluid at 20 drops per minute.
  o In addition, infuse IV fluids to resuscitate as needed.
• Feel continuously whether uterus is well contracted (hard and round). If not, massage and repeat oxytocin 10 IU IM/IV.

Note:
If there is postpartum haemorrhage after the placenta is delivered and the woman is on an oxytocin infusion, continue infusion for at least one hour.
Repair the Tear or Episiotomy

- Examine the tear and determine the degree
  - If the tear is small and involves only vaginal mucosa and connective tissues and underlying muscles (first or second degree tear). If the tear is not bleeding, leave the wound open.
  - If the tear is long and deep through the perineum and involves the anal sphincter and rectal mucosa (third and fourth degree tear). Cover it with a clean pad and refer the woman urgently to hospital.

- If first or second degrees tear and heavy bleeding persists after applying pressure over the wound:
  - Suture the tear or refer for suturing if no one is available with suturing skills
  - Suture the tear using universal precautions, aseptic technique and sterile equipment
  - Use a needle holder and a 21 gauge, 4 cm, curved needle
  - Use absorbable suture material
  - Make sure that the apex of the tear is reached before you begin suturing
  - Ensure that edges of the tear match up well

DO NOT suture if more than 12 hours since delivery but refer the patient to hospital.
The newborn infant should be given to the mother within an hour after birth so that the process of mother-infant bonding and lactation can be established early.
IMMEDIATE CARE OF THE NEONATE

The newborn infant should be given to the mother within an hour after birth so that the process of mother-infant bonding and lactation can be established early.

Unnecessary separation of mother and infant should always be avoided. Rooming in should be part of hospital policy as it enables a mother to respond to her baby and feed him on demand. This helps bonding and breastfeeding. The midwife should do the following on delivery of the infant:

- Note time of birth
- Clamp, ligate and cut umbilical cord
- Ensure a clear airway
- Determine Apgar score – (scores of seven (7) or less at 1 minute and 5 minutes indicate need for resuscitation and medical attention)
- Dry and keep infant warm
- Swab eyes with sterile swabs.
- Give vitamin K (1mg intramuscularly) immediately after birth.
- Weigh baby
- Help the mother to initiate breastfeeding

NEW BORN

Examination at Birth

It is important that the newborn be carefully examined as soon as possible after birth, primarily for the detection of any life threatening abnormalities, evidence of trauma, and for evaluating the infant’s ability to adjust to extra uterine life.

This includes:

- Note the general appearance
- Record – weight, crown-heel length, head circumference
- Examine the newborn along the cephalo-caudal route looking especially for the following abnormalities:
| **Head** | Circumference more than or less than the normal range (34-35 cm), Caput and Moulding, Cephalhaematoma (blood collection under the scalp) |
| **Face** | Abnormal facial appearance e.g. features of Down syndrome |
| **Skin Colour** | Cyanosis, jaundice, birth marks, petechiae |
| **Posture** | Abnormal movement, flaccid or spastic muscle tone |
| **Fontanelles** | Abnormal size, tension or width of sutures |
| **Eyes** | Haemorrhages, cataracts (congenital), discharge |
| **Mouth** | Cleft palate, asymmetry of mandible |
| **Neck** | Sterno-mastoid swelling, goitre, brachial fistula |
| **Chest** | Abnormal respiratory movement and rate, costal recession, asymmetry, grunting on auscultation, abnormal breath sounds, irregular heart sounds, displaced apex beat, position of maximal heart sounds |
| **Abdomen** | Distention, umbilical abnormalities |
| **External Genitalia** | Undescended testes, hydrocoele, hypospadias, intersex conditions |
| **Anus** | Imperforate and/or displaced anus |
| **Hips and Limbs** | Congenital dislocation of the hips, subluxation of the joints, club feet, asymmetry of limbs |
| **Spine** | Spina bifida, asymmetry, scoliosis, sacro-coccygeal tumour, midline sinuses etc |
SUBSEQUENT CARE OF THE NEWBORN

Environment

• Keep the baby in a clean, safe environment. Keep the infant warm.

Prevention of Infection

• Wash hands before and after handling baby.
• Commence vaccination with BCG and Hepatitis B, if mother was positive for Hepatitis B surface antigen

Observe the Following Daily

• Skin for infection
• Eyes and skin for jaundice and infection
• Stools

NOTE that in breast fed infants, stools may be frequent (after every feed) and loose. Foul smelling, watery, bloody stools are abnormal.

Feeding

• Remind the mother about the key infant feeding areas covered during the antenatal period
• Continue to build confidence and provide support to the mother as needed
• Where there are medical reasons to warrant alternative feeding, the mother (and father) should be instructed on how to prepare and administer alternative feed safely. This should be done privately and away from the general ward area.

Ensure that before a woman leaves the hospital facility she can demonstrate the following:

• How to bathe the baby
• How to clean the cord
• How to wash hands
• How to care the nipples
• How to position baby at the breast
• How to recognize that baby is attached well
• How to express breast milk by hand
• How to cup feed safely

Frequency of Visits by Nursing Personnel

• Visit the mother and baby once every other day for at least three visits. Visit more often as required. Visit at the time convenient to both mother and mid-wife.
Recordkeeping

- Keep records of observations made.

Nutritional Needs of the Neonate

- Breast milk is recommended. Put baby to breast as soon as possible after delivery – within one hour. There is no need to give water or glucose feeds before the baby is breastfed.

- Give expressed breast milk to babies who are unable to suckle the breast. Do not give artificial milk if breast milk is available and is not contraindicated.

- Bottle feeding should be discouraged.

Indication for referrals of Neonates to Medical Officer/Hospital

- Birth weight <2.5kg or >4.2kg.
- Birth Asphyxia. Apgar score 7 or less in 5 minutes.
- Respiratory distress, cyanosis.
- Jaundice or pallor of mucous membranes.
- Born to mother with history of previous children with jaundice requiring exchange transfusion or phototherapy.
- Congenital malformation e.g. meningomyelocele.
- Poor feeding or lethargy.
- Vomiting, excessive mucus.
- Abdominal distension.
- Born to a diabetic mother.
- Born to a Rhesus negative mother.
- Born to a mother VDRL or HIV positive.
- Born to a mother with sickle cell disease.
- Born to a mother with fever during labour, foul smelling liquor.
- Born to mother with rupture of membranes longer than 24 hours.

Each child should have a referral form with assessment, history, care given, history of feeding, passage of stools, etc. A blood sample (clotted specimen) of the mother should also accompany child.
Referral to Social Worker

Neonates born to mothers with the following problems should be referred:

- Mother with a psychiatric history
- Mother who is an alcoholic and/or other drug addict
- Mother less than seventeen years old
- Evidence of poor socioeconomic circumstances, which may inhibit proper diet and hygiene
- Suspicion of domestic abuse
Section V: Postnatal Care

The postnatal period is defined as the time from childbirth up to six (6) weeks after delivery. This period, particularly the first ten days, is the most vulnerable for the infant.
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*It should be noted that CARPHA is in the process of developing clinical guidelines for neonatal care.*

**General Objectives of Postnatal Care**

- To promote and maintain the health and welfare of the mother and child during the postnatal period
- To promote aspects of family life education.

**Norms**

- Every mother should stay at least 24-48 hours in hospital after delivery.
- Mothers who live in areas that are considered inaccessible, because of a hilly and rugged terrain, should remain in hospital for at least three (3) days after delivery.
- All mothers should be given a six (6) weeks appointment for a postnatal examination at the Health Centre in her district. A Day 6 appointment may be necessary for high risk mothers and neonates.
- All mothers leaving place of delivery should be given the particulars of the infant’s birth, for reference and for use at postnatal clinics in the community.
- All infants whether born in hospital or at home will receive at least one visit during the first two weeks of life (or an appointment to attend Clinic during that time).
- Every mother will be offered MMR vaccine, and have it administered if required.
- Every infant will be given an appointment to clinic within 4-6 weeks after birth.
- Every mother will be offered an appointment to Family Planning Clinic 6 weeks after delivery.
- Every mother will be given advice on appropriate infant feeding
- Every mother will be given advice concerning her nutrition
- Infants will commence vaccination

**Preliminary Post-Natal Check (At Home)**

**Mother**

- Ask mother about coping skills and general health including any fever after her discharge
- Check for engorged breasts
Postnatal Care

- Encourage breastfeeding and address any problems that may compromise her determination to breastfeed
- Reinforce that it is possible for a mother to continue to breastfeed even if she has to go back to work
- Enquire about care of episiotomy or vaginal laceration
- Discuss diet, hygiene, breast care, cord care, etc

Infant

- Ask about general health indices – activity levels, irritability, feeding pattern, vomiting, urine and stools
- Check state of cord
- Look for jaundice
- Test reflexes
- Look for abnormalities
- Emphasise that should the mother or child develop any problem prior to the regular 6 week appointment, then an earlier visit to the clinic or a doctor is required and would be welcomed.
References


References


World Health Organization. Use of Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants. Programmatic Update. Geneva: WHO (Switzerland); 2012 April

Appendix
PREPARATIONS FOR CONFINEMENT

Articles for Mother
- night dresses and dressing gown
- firm brassiere and other underwear
- toiletries (soap, toothpaste and toothbrush, deodorant, talc powder)
- sanitary pads
- washrag/face cloth/towel
- petroleum jelly

Articles for Baby
- 2 sets of clean baby clothes
- plain toilet soap and soap dish
- towels, face cloth
- napkins/diapers
- one small packet of cotton wool
- basket, crib or cot – for home
- one piece of rubber, plastic or oil cloth adequate for protecting the mattress
- set of cot sheets
- soft hairbrush and comb
- powder, petroleum jelly