FINAL DRAFT

FAMILY HEALTH MANUAL
A Life Course Approach
2018-2025

Ministry of Health, Wellness and the Environment
St. Vincent and the Grenadines

25 August 2017
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ACRONYMS AND ABBREVIATIONS

AIDS  Acquired Immune Deficiency Syndrome
ART  Antiretroviral Therapy
BCG  Bacillus Calmette-Guerin Vaccine
BMI  Body Mass Index
BUN  Blood Urea Nitrogen
CARICOM  Caribbean Community
CCH  Caribbean Cooperation in Health
CIN  Cervical Intraepithelial Neoplasia
COPD  Chronic Obstructive Pulmonary Disease
CTG  Cardiotocography
DT  Diphtheria and Tetanus Vaccine
Hb  Haemoglobin
HIV  Human Immunodeficiency Virus
HPV  Human Papillomavirus
IM  Intramuscular
IV  Intravenous
LAM  Lactation Amenorrhoea Method
LFT  Liver Function Test
LGA  Large for Gestation Age
LMP  Last Menstrual Period
MMR  Measles, Mumps, Rubella
MOHWE  Ministry of Health, Wellness, and the Environment
NST  Non-Stress Test
OPV  Oral Poliovirus Vaccine
ORF  Oral Rehydration Fluid
ORS  Oral Rehydration Salts
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>PAHO</td>
<td>Pan American Health Organization</td>
</tr>
<tr>
<td>PCR</td>
<td>Polymerase Chain Reaction</td>
</tr>
<tr>
<td>PDD</td>
<td>Pervasive Development Disorder</td>
</tr>
<tr>
<td>PE</td>
<td>Pre-eclampsia</td>
</tr>
<tr>
<td>PIH</td>
<td>Pregnancy-Induced Hypertension</td>
</tr>
<tr>
<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission</td>
</tr>
<tr>
<td>PT</td>
<td>Prothrombin Time</td>
</tr>
<tr>
<td>PTT</td>
<td>Partial Prothrombin Time</td>
</tr>
<tr>
<td>Rh</td>
<td>Rhesus</td>
</tr>
<tr>
<td>RPR</td>
<td>Rapid Plasma Reagin</td>
</tr>
<tr>
<td>SDG</td>
<td>United Nations 2030 Sustainable Development Goals</td>
</tr>
<tr>
<td>SGA</td>
<td>Small for Gestation Age</td>
</tr>
<tr>
<td>Td</td>
<td>Tetanus and Diphtheria Vaccine</td>
</tr>
<tr>
<td>TOPV</td>
<td>Trivalent Oral Polio Vaccine</td>
</tr>
<tr>
<td>VCT</td>
<td>Counselling and Testing</td>
</tr>
<tr>
<td>VDRL</td>
<td>Venereal Disease Research Laboratory</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
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# GLOSSARY OF TERMS

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<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Live Birth</td>
<td>Complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy which, after such separation, breathes or shows any evidence of life such as beating of the heart, pulsation of the umbilical cord, or definitive movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such birth is considered a live birth</td>
</tr>
<tr>
<td>Crude Birth Rate</td>
<td>Annual number of live births per 1,000 population</td>
</tr>
<tr>
<td>Foetal Death</td>
<td>A death prior to the complete expulsion or extraction from its mother of the product of irrespective of the duration of pregnancy</td>
</tr>
<tr>
<td>Crude Death Rate</td>
<td>Annual number of deaths per 1,000 population</td>
</tr>
<tr>
<td>Infant Mortality Rate</td>
<td>Number of deaths of children under one year of age per 1,000 live births</td>
</tr>
<tr>
<td>Neonatal Mortality Rate</td>
<td>Number of infant deaths occurring during the first 27 days of life per 1,000 live births</td>
</tr>
<tr>
<td>Perinatal Mortality Rate</td>
<td>Number of foetal deaths after 28 weeks of pregnancy plus the number of infant deaths occurring in the first 7 days of life per 1,000 live births</td>
</tr>
<tr>
<td>Maternal Mortality Rate</td>
<td>Number of deaths ascribed to maternal causes (pregnancy and childbirth) per 100,000 live births</td>
</tr>
<tr>
<td>First Trimester</td>
<td>First day of last menstrual to 12 weeks</td>
</tr>
<tr>
<td>Second Trimester</td>
<td>12 weeks to 26 weeks</td>
</tr>
<tr>
<td>Third Trimester</td>
<td>27 weeks to the birth of the foetus</td>
</tr>
<tr>
<td>Perinatal Period</td>
<td>From the 28&lt;sup&gt;th&lt;/sup&gt; week of gestation through to the first 7 days of life</td>
</tr>
<tr>
<td>Neonatal Period</td>
<td>28 days to 11 months of life</td>
</tr>
<tr>
<td>Gestational Age</td>
<td>Number of completed weeks which elapsed between the first day of the normal menstrual period and delivery of the foetus, regardless of whether the product of conception is live or still born</td>
</tr>
</tbody>
</table>
INTRODUCTION

PURPOSE OF MANUAL

Family Health is a strategic approach to ensuring universal health coverage for all members of the family across the life course—throughout gestation, childhood, adolescence and adulthood. Thus, the purpose of this Family Health Manual (Second Edition) is to serve as a reference guide for health practitioners in the provision of standardised and scientifically-sound health care to families throughout St. Vincent and the Grenadines.

This revised document builds on the successes, experiences, and lessons learned in implementing the first edition that was developed in June 2002. In addition, the document responds to new and emerging national family health priorities; while incorporating relevant regional and international goals, targets, protocols, and guidelines on family health.

It is intended that the Family Health Manual will be used by health practitioners such as medical doctors, nurse/midwives, family nurse practitioners, community health aides, nutritionists/dieticians, health promotion specialists, physical therapists, and other relevant categories of health and social workers operating at the primary, secondary and tertiary levels of the national health system.

POLICY FRAMEWORK

“Re-engineering Economic Growth: Improving the Quality of Life of all Vincentians” is the stated vision of the Government of St. Vincent and the Grenadines. One of the pillars of this development strategy is promoting self-care interventions and healthy lifestyle practices within the framework of increased human and social development. In this context, the policy orientation of the Ministry of Health, Wellness, and the Environment (MOHWE) is towards promoting family health as one of the building blocks of national development.

The policy orientation of the revised Family Health Manual is also influenced by recommendations and guidelines contained in key regional and international initiatives endorsed by the Government of St. Vincent and the Grenadines. Foremost among these initiatives are the Caribbean Charter for Health Promotion, Caribbean Cooperation in Health, PAHO/WHO Family Health Strategy (2015-2025), and the United Nations 2030 Sustainable Development Goals (SDG).

FAMILY HEALTH STRATEGY

2 Government of St. Vincent and the Grenadines. National Economic and Social Development Plan, 2013-2025, Section 1
The principles and practice of health promotion lie at the heart of the Family Health Strategy of the MOHWE. This health promotion approach accords highest priority to five established components of self-care and healthy lifestyle practices:

- Strengthening/formulating relevant public policies
- Reorienting/integrating health services
- Empowering communities to achieve well-being
- Increasing personal health skills
- Building alliances with key partners, including the media

Social determinants are responsible for most of the health inequities that occur in families. As such, the Family Health Strategy will provide a bridge between the efforts of the MOHWE and other sectors such as education, agriculture, and social and legal services in improving health outcomes for families. Accent will also be placed on strengthening public/private partnerships.

**PRIORITY AREAS**

This Family Health Manual will provide technical and professional guidance in the implementation of nine (9) broad and mutually reinforcing programmatic areas:

1) Maternal Health  
2) Child Health  
3) School and Adolescent Health  
4) Family Planning and Fertility  
5) Family Nutrition  
6) Women’s Health  
7) Men’s Health  
8) Health of Older Adults  
9) Mental Health

**PLANNING PROCESS**

A logical step-wise approach was utilised in the development of this Family Health Manual. The strategy embraced three mutually reinforcing components. At the outset, a Family Health Manual Planning Committee was established with responsibility for providing leadership, priority setting, and validation of all draft and final reports. The objective was to ensure that the MOHWE retained full ownership of the process and outputs. At another level, Technical Working Groups, corresponding to the priority areas, were organised to provide technical input and operational guidance.

Careful attention was paid to the collection of sensitive quantitative and qualitative data through a comprehensive review of all relevant documents and administering of structured key stakeholder interviews. Data collected from all such sources were analysed and triangulated to ascertain validity. Preliminary and draft reports were reviewed by the Family Health Manual Planning Committee, Technical Working Groups, and stakeholders attending

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a national consultation prior to the production of the Final Draft Family Health Manual and Communication Plan.
SECTION 1: MATERNAL HEALTH

Maternal Health, otherwise referred to as Safe Motherhood, is concerned with protecting the well-being of women during pregnancy, childbirth, and the postpartum period. It requires the alignment of family health services with the needs of the pregnant woman, her partner, and family members; and delivered in a safe, dignified and confidential manner.

This Section of the Family Health Manual will provide guidance on the following components:

- Antenatal Care
- Intranatal Care
- Postnatal Care

GOAL

Promote safe motherhood by providing universal access to quality health care throughout pregnancy.

OBJECTIVES, INDICATORS, TARGETS

The objectives, key indicators and targets outlined below are designed to achieve universal health coverage among pregnant women. (See Table 1.1)

Table 1.1: Objectives, Key Indicators and Targets for Safe Motherhood

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be Achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Maintain highest standards antenatal care of pregnant women</td>
<td>No. of women registered at clinics before 12 weeks gestation</td>
<td>100% registration during first trimester of pregnancy</td>
</tr>
<tr>
<td></td>
<td>No. of clinic visits per mother during pregnancy</td>
<td>A minimum of six (6) visits during pregnancy</td>
</tr>
<tr>
<td></td>
<td>No. of pregnant women screened and treated, as appropriate, for anaemia, syphilis, and HIV</td>
<td>100% of women screened and appropriately treated for anaemia, syphilis, and HIV</td>
</tr>
<tr>
<td>2) Eliminate maternal deaths</td>
<td>No. of pregnant women attended at delivery by trained health professional</td>
<td>100% of pregnant attended at delivery by trained attendant</td>
</tr>
<tr>
<td></td>
<td>No. of maternal deaths occurring annually</td>
<td>Zero maternal deaths annually</td>
</tr>
</tbody>
</table>

STRATEGIES

- Provide universal access to antenatal, intranatal, and postnatal care for all mothers.
• Integrate primary and secondary health care services to ensure continuity of care.
• Health promotion/education on key issues regarding safe motherhood and parenting.
• Ensure privacy and confidentiality in the provision of clinical services.
• Early detection and appropriate referral of high-risk pregnancies.
• Encourage active involvement of male partners in activities related to safe motherhood.

### 1.1 ANTENATAL CARE

#### STANDARD PROCEDURES FOR ANTENATAL VISITS

Antenatal services delivered by health care providers will conform to established standards, protocols and guidelines that are summarised in Table 1.2 below.

**Table 1.2: Recommended Protocols and Procedures for Antenatal Visits**

<table>
<thead>
<tr>
<th>Visit</th>
<th>Gestation</th>
<th>Procedure</th>
<th>Health Education Topics</th>
</tr>
</thead>
</table>
| 1<sup>st</sup> | <12 weeks | - Registration  
- Confirm medical and obstetrical history  
- Perform physical examination  
- Arrange blood tests: Hb, syphilis, HIV, hepatitis B & C, blood group, Rh, sickle (if not previously done)  
- Administer immunization - 1<sup>st</sup> DT adult, or booster if immunization completed previously  
- Record weight, height and BMI | - Conception and reproduction  
- Signs and symptoms of pregnancy  
- Importance of clinic attendance  
- Minor ailments and abnormalities  
- Avoidance of un-prescribed medicine/drugs,  
- Healthy lifestyle (nutrition, safe sex, smoking, etc.)  
- Breastfeeding |
| 2<sup>nd</sup> | 16-20 weeks or 4 weeks after first visit | - Routine antenatal care (history, physical examination, BP, weight, uterine height, foetal heart and movements, oedema, urinalysis)  
- Medical and dental examination  
- Update antenatal record kept at clinic and by client | - Blood results  
- Nutrition  
- Breastfeeding  
- Delivery arrangements  
- Personal hygiene  
- Exercise  
- Danger signs in pregnancy  
- Preparation for delivery  
- Postpartum contraception |
| 3<sup>rd</sup> | 28 weeks | - Routine antenatal care  
- Immunisation as appropriate  
- Update antenatal record kept at clinic and by client | - Signs of labour (when to go to hospital or call the birth attendant)  
- Breastfeeding |
Considering the vital importance of gaining a comprehensive medical and obstetrical history and completing thorough physical examination in the antenatal care of clients, further details on undertaking these processes are provided below.

**Medical and Obstetrical History**
The Medical Officer or Nurse/Midwife attending the client should determine:
- Last menstrual period and calculate the estimated gestational age and the expected date of delivery
- Past obstetric history to determine any previous complications of pregnancy; as well as past medical, surgical, and gynaecological history
- Immunisation status
- Known allergies
- Family medical history
- Nutritional history
- Social history to assess socio-economic conditions, alcohol and tobacco use, substance abuse, psychological state, domestic abuse and violence
- Previous neonatal outcomes including ICU admission and death

<table>
<thead>
<tr>
<th>Week</th>
<th>Duration</th>
<th>Routine antenatal care</th>
<th>Postnatal care</th>
<th>Medical and Obstetrical History</th>
</tr>
</thead>
</table>
| 4th  | 32 weeks | - Routine antenatal care  
- Repeat Hb and screening for syphilis and HIV  
- Immunisation as appropriate  
- Update antenatal record kept at clinic and by client | - Signs of labour (when to go to hospital or call the birth attendant)  
- Breastfeeding  
- Postpartum contraception  
- Postpartum visit  
- Care of baby  
- Attendance at antenatal clinic | - Postpartum contraception  
- Postpartum visit  
- Care of baby  
- Attendance at antenatal clinic |
| 5th  | 36 weeks | - Routine antenatal care  
- Update antenatal record kept at clinic and by client | - Signs of labour (when to go to hospital or call the birth attendant)  
- Breastfeeding  
- Postpartum contraception  
- Postpartum visit  
- Care of baby  
- Attendance at antenatal clinic | - Postpartum contraception  
- Postpartum visit  
- Care of baby  
- Attendance at antenatal clinic |
| 6th  | 38 weeks | - Routine antenatal care  
- Update antenatal record kept at clinic and by client | - Postnatal care  
- Exercise  
- Contraception  
- Breastfeeding  
- Birth registration | - Postnatal care  
- Exercise  
- Contraception  
- Breastfeeding  
- Birth registration |
| 7th  | 41 weeks | - Routine antenatal care  
- Prepare antenatal record for hospital or other referral centres | - Post maturity | - Post maturity |
Physical Examination
The medical officer or nurse/midwife attending the client should:

- Counsel the client about the procedure for the physical examination and request her to empty her bladder
- Check and record:
  - Height and weight
  - Vital signs (blood pressure, pulse respiration)
  - Urinalysis (glucose and protein)
- Perform a complete physical examination with special attention paid to dentition, breast and nipples, previous scars, body art and piercings
- Palpate the abdomen and record:
  - Height of fundus and compare with gestational age
  - Foetal lie, position and presentation
  - Presence and rate of foetal heart sounds
  - Signs of multiple gestation
- Perform pelvic examination, if indicated, to:
  - Examine external genitalia for abnormal discharge, warts or other vulval lesions
  - Determine if any pelvic abnormalities are present

MANAGEMENT OF NORMAL PREGNANCIES
For women with normal pregnancies, re-visits to clinics should be scheduled as follows (Refer to Table 2.1):

- Monthly until 28 weeks gestation
- The fortnightly until 36 weeks gestation
- Then weekly until delivery

Management should include:
- Measure and record weight, vital signs, and urinalysis
- Review history and physical examination and record any changes since last visit
- Record fundal height, foetal lie, and presentation
- Record foetal heart rate
- Antenatal education (including childbirth preparation)
- Refer client for ultrasound, as appropriate

At 32-36 weeks:
- Repeat Hb and HIV test
- Assessment by medical officer or nurse/midwife to verify suitability for vaginal delivery
- Summarise antenatal record in a referral to appropriate hospital for delivery which should include:
- LMP
- PDD
- Parity
- Any complications during pregnancy
- Any significant medical or surgical history
- Known allergies
- Blood and ultrasound reports

- Finalise arrangements for delivery
- Discuss preparations for labour and birth
- Reinforce health education messages about breast feeding, care of the new-born, postpartum care, and family planning

**MANAGEMENT OF HIGH-RISK PREGNANCIES**

Any pregnancy that imposes an increased risk to the health or life of the mother and/or foetus is defined as a high-risk pregnancy. Clients should be evaluated for high-risk factors on every clinic visit and referred for specialist care in a timely manner, as appropriate.

The **criteria for classification** as high-risk pregnancy are as follows:

a) Patients with significant medical problems, e.g.:
   - Hypertension and pre-eclampsia
   - Diabetes mellitus
   - Iron deficiency anaemia and haemoglobinopathies
   - Sexually Transmitted Infections (e.g. HIV and HPV)
   - Cardiac disease
   - Pulmonary disease (e.g. asthma, COPD)
   - Renal disease
   - Autoimmune disease
   - Epilepsy
   - Thyroid disease

b) Obstetric complications in a previous pregnancy, e.g.:
   - Recurrent miscarriages
   - Pre-term births
   - Pre-eclampsia, gestational diabetes
   - Previous caesarean section, myomectomy or hysterotomy
   - Still birth
   - Neonatal complications (Group B streptococcal infections, small or large for gestational age, neonatal death, congenital abnormality

c) Obstetric complications in a present pregnancy, e.g.:
   - Maternal age (less than 16 years or more than 35 years)
   - Grand multipara (more than 5 pregnancies over 28 weeks gestation)
   - Uterine size inconsistent with period of gestation
   - Antepartum haemorrhage
   - Mal-presentation over 36 weeks: breach, unstable lie, transverse lie
• Multiple pregnancy
• Difficulty with palpation of foetal parts
• Detection of another foetal mass
• Rhesus incompatibility
• Post-dates (>40 weeks gestation)

d) Patients with psycho-social problems, e.g.:
• Prior psychiatric disorders
• Prior postpartum depression or psychoses
• Substance abusers

Once a pregnant woman has been classified as “high-risk”, she should be referred immediately to the Obstetrician for further management. In such cases, clients should be counselled about the reason for referral.

**MANAGEMENT OF MINOR DISORDERS IN PREGNANCY**

The health staff should be equipped to deal with instances of minor disorders experienced during pregnancy. The most common minor disorders with recommended actions are outlined in **Table 1.3**.

**Table 1.3: Minor Disorders of Pregnancy and Recommended Actions**

<table>
<thead>
<tr>
<th>Minor Disorders</th>
<th>Recommended Actions</th>
</tr>
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<tbody>
<tr>
<td>Morning sickness</td>
<td>- A light sweet meal before retiring – e.g. glass of milk with sugar and biscuits</td>
</tr>
<tr>
<td></td>
<td>- Dry toast or biscuit before getting out of bed in the morning</td>
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<tr>
<td></td>
<td>- Small quantities of light foods at frequent intervals</td>
</tr>
<tr>
<td></td>
<td>- Avoid fatty and highly-seasoned foods</td>
</tr>
<tr>
<td>Heartburn</td>
<td>- Avoid foods known by the patient to cause discomfort</td>
</tr>
<tr>
<td></td>
<td>- Avoid fatty and highly seasoned foods</td>
</tr>
<tr>
<td></td>
<td>- Take some form of antacid, e.g. Magnesium Trisilicate(½ oz.) after meal</td>
</tr>
<tr>
<td>Vomiting</td>
<td>- Gravol tablets (one three times daily)</td>
</tr>
<tr>
<td>Constipation</td>
<td>- Correct with diet – fluids, high-fibre fruits, and vegetables.</td>
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<tr>
<td></td>
<td>- Moderate and regular exercise.</td>
</tr>
<tr>
<td></td>
<td>- Practice good toilet habits</td>
</tr>
<tr>
<td>Backache</td>
<td>- Rest as much as possible during the day.</td>
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<td></td>
<td>- Lie on a comfortable bed with a firm mattress, or with back on floor with pillows under legs, or on side with pillows between legs</td>
</tr>
<tr>
<td></td>
<td>- Wear comfortable and well-fitting shoes</td>
</tr>
<tr>
<td></td>
<td>- If persistent, refer to Medical Officer</td>
</tr>
<tr>
<td>Varicose veins</td>
<td>- No tight bands or garters around the waist or legs to impede circulation</td>
</tr>
<tr>
<td></td>
<td>- Support stockings/panty hose may be used</td>
</tr>
<tr>
<td>Persistent leg cramps</td>
<td>- Apply warm compresses</td>
</tr>
<tr>
<td></td>
<td>- Elevate legs and do gentle massage/exercise</td>
</tr>
</tbody>
</table>
- Refer to Medical Officer if persistent

Haemorrhoids
- Avoid constipation.
- Apply hot compresses then soothing haemorrhoidal ointment/cream in mild cases
- Refer to Medical Officer if not relieved by above treatment or if bleeding

Itching of the skin
- Assess for underlying cause
- Sponge skin with a solution of bicarbonate of soda: 1 teaspoonful to 1 pint of water.
- Apply calamine lotion or cold cream
- Refer to Medical Officer to exclude conditions such as obstetric cholestasis

Pruritus Vulvae
- Check for vaginal discharge.
- Advise good personal hygiene.
- Refer patient to doctor for treatment if condition persists

**MANAGEMENT OF SEVERE DISORDERS OF PREGNANCY**

1. **Anaemia in pregnancy**

**Classification of anaemia in pregnancy:**

| Normal Hb | 11.0 g/dl or higher |
| Mild to moderate anaemia | 7.0 to 10.9 g/dl |
| Severe anaemia | < 7.0 g/dl |

**Use of Iron and Folic Acid Supplementation** in pregnant women

Client should be given the following:

| Hb 11.0 g/dl and above | Consider 60 mg iron daily, 400 µg folic acid daily |
| Hb 7.0 – 10.9 g/dl | 60 mg iron daily, 400 µg folic acid daily |
| Hb<7.0 g/dl | Refer patient to specialist; investigate cause |

**Iron deficiency**

Client should be given the following:

| Less than 28 weeks and asymptomatic | 120 mg iron daily, plus 400 µg folic acid daily |
| 28 weeks to 33 weeks and asymptomatic | 120 mg iron daily, plus 400 µg folic acid daily or parenteral iron |
| More than 34 weeks, or symptomatic | Refer to hospital for parenteral iron or blood transfusion |

2. **Bleeding in pregnancy**

Bleeding in early pregnancy may be due to:

- Threatened miscarriage
  Before 12 weeks of gestation if bleeding is mild, recommend bed rest with follow up
  After 12 weeks, admit patient to hospital
• Incomplete miscarriage
  - Admit to hospital for evacuation of retained products of conception and start antibiotics
• Ectopic pregnancy
  - Rule out by transvaginal ultrasound on all patients bleeding and pregnant.
  - Admit urgently to hospital for management. Septic miscarriage
  - Admit for intravenous antibiotics and evacuation of retained products of conception
• Cervical erosion/polyps
  - Rule out by gentle speculum examination and treat and reassure patient
• Vaginal varicosities
  - Pregnancy can sometimes cause varicose veins to develop in the vulvar area that can burst and cause bleeding

Bleeding in late pregnancy may be due to ante-partum haemorrhage resulting from:
  • Abruptio placenta
    In this condition, the placenta becomes partially detached from the uterus causing potentially severe bleeding. Beyond 34 weeks of pregnancy and heavy bleeding, the baby should be delivered as an emergency. Less than 34 weeks, if NST is satisfactory, admit to hospital, give dexamethasone, do daily non-stress tests, and deliver at 34-36 weeks
  • Placenta praevia
    In this condition, the placenta is abnormally located near or over the cervix. Routine ultrasound scan will identify these patients and avoid unnecessary examinations and exacerbation of haemorrhage. Preservation of the pregnancy past 34 weeks and delivery by caesarian section will reduce maternal morbidity and mortality.

3. Hypertension in Pregnancy

Gestational hypertension or Pregnancy Induced Hypertension (PIH) is defined as the development of hypertension (≥ 140/90 mmHg) after the 20th week of pregnancy, without proteinuria or any other known aetiology. Pre-eclampsia (PE) is defined as the development of hypertension and significant proteinuria. Eclampsia is the presence of seizures, usually occurring with preceding PIH or PE.

The management of PE may be divided into:
  a) Mild Pre-Eclampsia:
    Is defined as blood pressure between 140/90 mmHg to 160/110 mmHg. The proteinuria is between 300 mg to <5 g/24 hour urine. The proteinuria is one + on routine urine testing.
    This condition can only be definitely treated by delivery of the foetus. Management of this patient also depends on the gestational age of the foetus. Where the gestational age is 36 weeks or more, delivery should be considered. At gestational age of less that 36 completed weeks, delivery may not be the first option.
Management of this condition includes:

- **Bed rest.** If the patient can have best rest at home, she may be treated as an outpatient. Note that such patients should also have facilities to monitor their blood pressure; otherwise it may be safer to admit them to hospital. This mode of management should be selected for patients where the blood pressure is elevated with minimal oedema and proteinuria. Frequent visits to the Medical Doctor, Nurse/Midwife or hospital for blood tests and foetal monitoring will still be required.

- **Use of drugs.** There is no need for anti-hypertensive drugs. Lowering of blood pressure in these cases can compromise the uteroplacental perfusion. Sedatives are not necessary if the patient can have bed rest without them. The patient should be advised to lie on the left side. Restriction of salt is unnecessary and could be harmful. Diuretics are contra-indicated.

- **Delivery.** Delivery is advised at 37 weeks gestation to improve maternal and foetal outcome. If there are signs of foetal 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 blood pressure has normalised. Note that the normalisation of blood pressure may be an indication that foetal demise is imminent.

b) **Severe Pre-Eclampsia:**
Is defined as as blood pressure > 160/110 mmHg with proteinuria (greater than 2 + on urinalysis or greater than 3g/24 hour urine). These patients may also have epigastric pain, neurological symptoms (e.g. visual disturbances, headache) and oliguria. These patients are diagnosed as impending eclampsia and should be delivered immediately once the woman’s condition has been stabilised.
Such patients should be admitted to hospital immediately. Ideally, delivery should be expedited in patients with severe pre-eclampsia regardless of foetal age since the risk of maternal morbidity and mortality is high. In situations where specialist management exists, expectant management can be done in selected cases for a short period of time.
All cases of severe pre-eclampsia must be managed actively. This may be done using a range of medication and techniques that are administered under strict conditions.

c) **Eclampsia:**
Is defined as a new onset of grand mal seizures in a patient with pre-eclampsia. The principles of management include maintaining a clear airway, controlling/preventing convulsions, controlling hypertension and and expediting delivery. The patient should be delivered immediately.

**Emergency procedures:**
- Maintain a clear airway through proper positioning of the patient and suctioning of any secretions or vomit
• Catheterise patient and record urinary output, note colour and test for proteinuria, set up IV Infusion 500 ml Ringer’s lactate, etc
• Take blood for Hb, grouping, BUN, creatinine, PT/PTT, platelet count, LFTs, serum electrolyte

**Management of labour and delivery**

The mode and timing of the delivery depends on the clinical condition of the mother, foetus, and state of the uterus.

**Intra-partum Care**

- During labour, blood pressure should be monitored hourly until delivery
- Continue treatment with magnesium sulphate
- Avoid prolonged pushing in the second stage
- Consider epidural analgesia

**Post-partum Care**

- The patient should be closely monitored as convulsions can occur after delivery; thus anti-convulsive treatment should be continued after the last seizure or delivery
- The patient should be managed by a specialist and discharged when vital signs return to normal
- Women who had severe pre-eclampsia and eclampsia should be seen at post-natal clinic after 2 to 4 weeks and blood pressure recorded
- Patients who had severe pre-eclampsia and eclampsia should be advised on contraception and the risk of recurrence in future pregnancies

### 4. Previous Caesarean Section

Pregnant women with previous caesarean section may be offered Vaginal Birth after Caesarean (VBAC) or Elective Repeat Caesarean Section (ERCS). The risk of uterine rupture with VBAC is 22-74/10,000.

Indications of uterine rupture are:

- Abnormal polymerase chain reaction (CTG)
- Acute onset scar tenderness
- Severe constant abdominal pain
- Abnormal vaginal bleeding or haematuria
- Maternal tachycardia, hypotension or shock
- Loss of station of the presenting part
- Chest pain or shoulder tip pain
- Cessation of previously efficient uterine activity

**RAPID ASSESSMENT OF EMERGENCIES**

Emergencies often occur during pregnancy and the postpartum period, and require rapid assessment and action to reduce risk of maternal morbidity and mortality. Table 1.4 provides guidelines for rapid assessment of emergencies in pregnancy.
### Table 1.4: Guidelines for Rapid assessment of Emergencies in Pregnancy

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Danger Signs</th>
<th>Consider</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway and Breathing</td>
<td>LOOK FOR:</td>
<td>• Severe anaemia</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td></td>
<td>• Cyanosis (blueness)</td>
<td>• Heart failure</td>
<td>Give oxygen if available</td>
</tr>
<tr>
<td></td>
<td>• Respiratory distress</td>
<td>• Pneumonia</td>
<td></td>
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<tr>
<td></td>
<td>• Shortness of breath, chest pain</td>
<td>• Asthma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXAMINE:</td>
<td>• Pulmonary embolism</td>
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</tr>
<tr>
<td></td>
<td>• Skin: pallor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lungs: wheezing or rales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Severe anaemia</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Heart failure</td>
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<td></td>
<td>• Pneumonia</td>
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<td></td>
<td>• Asthma</td>
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<tr>
<td></td>
<td>• Pulmonary embolism</td>
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<td></td>
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<tr>
<td></td>
<td>Refer to hospital</td>
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<td></td>
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<tr>
<td></td>
<td>Give oxygen if available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circulation (signs of shock)</td>
<td>EXAMINE:</td>
<td>Shock</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td></td>
<td>• Skin: cool and clammy</td>
<td></td>
<td>Start IV</td>
</tr>
<tr>
<td></td>
<td>• Pulse: fast (110 or more) and weak</td>
<td></td>
<td>Give oxygen if available</td>
</tr>
<tr>
<td></td>
<td>• Blood pressure: low (systolic less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>90 mm Hg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shock</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refer to hospital</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Start IV</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Give oxygen if available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal bleeding (early or late pregnancy or after childbirth)</td>
<td>ASK IF:</td>
<td>• Abortion</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td></td>
<td>• Pregnant, length of gestation</td>
<td>• Ectopic pregnancy</td>
<td>Start administering Intravenous fluids</td>
</tr>
<tr>
<td></td>
<td>• Recently given birth</td>
<td>• Molar pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Placenta delivered</td>
<td>• Abruptio placenta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXAMINE:</td>
<td>• Ruptured uterus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• vulva: amount of bleeding, placenta retained, obvious tears</td>
<td>• Placenta praevia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• uterus: atony bladder: full (Do not do a vaginal exam at this stage)</td>
<td>• Atonic uterus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Abortion</td>
<td>• Tears of cervix and vagina</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ectopic pregnancy</td>
<td>• Retained placenta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Molar pregnancy</td>
<td>• Inverted uterus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Abruptio placenta</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ruptured uterus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Placenta praevia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Atonic uterus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tears of cervix and vagina</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Retained placenta</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inverted uterus</td>
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<td></td>
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<tr>
<td></td>
<td>Refer to hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unconscious or convulsing</td>
<td>ASK IF:</td>
<td>• Eclampsia</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td></td>
<td>• Pregnant, length of gestation</td>
<td>• Epilepsy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXAMINE:</td>
<td></td>
<td>See management of severe pre- eclampsia/ eclampsia</td>
</tr>
<tr>
<td></td>
<td>• Blood pressure: high (diastolic 90 mm Hg or more)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Temperature: 38°C or more</td>
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</tbody>
</table>

**PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV**

All pregnant women should be encouraged to learn about their HIV status, as well as that of their sexual partners. High viral loads during pregnancy pose the greatest risk of HIV transmission from mother to the unborn baby. Thus, Prevention of Mother-to-Child
Transmission (PMTCT) provides an opportunity for avoiding paediatric HIV infections, as well as identifying HIV-infected family members.

**Operational Guidelines**

HIV testing and counselling in pregnancy should be guided by the following:

- All women presenting to health facilities for antenatal care at any gestational age should be offered confidential counselling and opt-out testing for HIV at the first visit.
- HIV testing should be repeated in the third trimester for all women whose first antenatal test was performed before 28 weeks gestation.
- Women who decline HIV testing at the first antenatal visit should be provided with follow-up counselling at subsequent visits, and HIV testing again offered.
- Women presenting in labour without documented HIV testing should have opt-out testing done urgently.
- Postnatal HIV counselling and testing should be offered to all women with unknown HIV status.

**Pregnant Women Who Test HIV-Positive**

The following actions should apply for women who have tested positive for HIV:

- Preliminary and on-going counselling should be provided to the woman and her partner on the implications of a positive HIV test.
- Pregnant women who have tested positive should be referred to the medical officer/specialist for further counselling and initiation of ARV prophylaxis.
- Information, education and counselling on breastfeeding should be introduced and maintained throughout the pregnancy.
- Wraparound services such as nutrition and contraceptive services should be emphasised.
- HIV positive pregnant women should be referred to other relevant support services and agencies.

**Follow-up of HIV-Positive Pregnant Women**

- Follow-up of HIV-positive pregnant women must be done with utmost sensitivity and confidentiality.
- All health providers involved in delivering services must work closely to ensure continuity of care. Such providers may include the district nurse, public health nurse, medical officer/specialist, family nurse practitioner, and labour ward staff.
- Clinic appointments should be monthly until 28 weeks; then every two weeks until 36 weeks; then every week until the baby is born; or as advised.
- HIV-positive women who miss their antenatal appointments should be followed-up at home or work, as appropriate.
• Advise on importance of healthy nutrition and avoidance of tobacco, alcohol, and non-preservation drug use.
• Refer HIV-positive pregnant women for clinical and medical assessment if there is evidence of fever, loss of weight, loss of appetite, weakness, night sweats, and persistent coughing.

**CRITERIA FOR SELECTION OF PLACE OF CONFINEMENT**

All deliveries should be supervised by a trained birth attendant in an appropriate health facility or at home, if home delivery is approved. Home delivery may be considered under the following circumstances:

- Normal pregnancy – not classified as high-risk.
- 2nd to 5th pregnancy.
- Normal past obstetric history
- Normal progress of present pregnancy.
- Suitable home conditions.
- Midwife available for home confinement.
- Client’s wish provided that other criteria are satisfied.

**Preparation for Confinement**

**Articles for mother**
- Clean linen – towels, sheets and pillow cases (for home)
- Clean night dresses and dressing gowns
- Supporting nursing brassiere
- Three packets of sanitary pads
- Personal toiletries

**Articles for Baby**
- 2 sets of clean baby clothes
- Plain soap and soap dish
- Towels, face cloth
- Napkins
- One small packet of cotton wool
- Basket, crib or cot (for home)
- Set of cot sheets
- Soft hair brush and comb
- Petroleum jelly

For domiciliary cases, give instructions on preparation of room for delivery, e.g. availability of boiling water, arrangement of furniture; and advise mother to notify nurse/midwife at onset of labour. **Table 1.5** provides a checklist for home delivery.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Available</th>
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</table>

**Table 1.5: Checklist for Home Delivery**
<table>
<thead>
<tr>
<th>Accessible location</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of emergency transportation</td>
<td>✓</td>
</tr>
<tr>
<td>Adequate space for delivery</td>
<td>✓</td>
</tr>
<tr>
<td>Suitable protection (plastic) for mattress</td>
<td>✓</td>
</tr>
<tr>
<td>Adequate baby clothing</td>
<td>✓</td>
</tr>
<tr>
<td>Facilities to prepare boiling water</td>
<td>✓</td>
</tr>
<tr>
<td>Availability of sanitary facilities –toilet, water, lighting</td>
<td>✓</td>
</tr>
<tr>
<td>Knowledge by mother on when to advise Nurse/Midwife of onset of labour:</td>
<td>✓</td>
</tr>
<tr>
<td>• Regular contractions</td>
<td></td>
</tr>
<tr>
<td>• Loss of fluid/show</td>
<td></td>
</tr>
<tr>
<td>• Pain in Back or lower abdomen</td>
<td></td>
</tr>
<tr>
<td>Availability of support from other family members</td>
<td>✓</td>
</tr>
</tbody>
</table>

HEALTH EDUCATION DURING PREGNANCY

Health education is a cornerstone of safe motherhood. Every antenatal client should be exposed to appropriate health information from the very first visit to the clinic to the last visit (See Table 2.2). The primary responsibility for providing such information rests with the Medical Officer and Nurse/Midwife, although other professionals such as health educators and nutritionists may also be invited to participate.

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 coitus during pregnancy.

Diet in Pregnancy
- Need to eat right kinds of food – iron rich diet.
- Need for a balanced food intake.
- Avoid high sugar intake and “energy” drinks.
- Avoid excessive vitamin usage, especially vitamin A.
- Increase calcium intake.
- Vegetarian mothers to be advised accordingly.
- Clients should be given health literature on nutrition.
Breastfeeding
- Preparation for breastfeeding.
- Benefits of breastfeeding.
- Breast care during feeding.
- Duration of breastfeeding (exclusive breastfeeding for 6 months).
- Informed choice on breastfeeding for the HIV positive mother.

Consequences of not having a Balanced Diet
- Feeling of tiredness and being “run-down”.
- Inadequate weight gain.
- Excessive weight gain, obesity, and gestational diabetes mellitus.
- Low birth-weight baby.

General Hygiene/Care
- Care of the body with emphasis on teeth and breast care.
- Importance of regular exercise (both prenatal and postnatal).
- Advice on clothing, e.g. supportive brassiere, and use of comfortable shoes.
- Emphasis on cleanliness of the environment.

Care of the Baby
- Cleaning and bathing of baby.
- Clothing for baby.
- Sleeping position and arrangements.
- Skin care, including diaper area.

Post-natal Care and Follow-up
- All mothers and their infants should visit the clinic within two weeks of delivery.
- Times when and where services are available.
- Need for post-natal exercise.

Family Planning and Contraception
- Reasons for family planning.
- Contraceptive methods.
- Places where services are available.

Registration of Births
- All births must be registered within three (3) months of delivery.
- If the mother were married to the baby’s father at the time of the birth, the mother may register the birth without the father being present.
- If the mother and father were not married at the time of the birth, the father’s details can only be entered in the register if both parents attend together to register the birth. If the father’s details are not entered at the time of registration, it may be possible for this to be done later.
• A legal guardian or other person present at the time of birth may also register the birth.

### 1.2 INTRANATAL CARE

**STANDARD PROCEDURES FOR INTRANATAL CARE**

1. Every pregnant woman must have access to a safe delivery and adequate intranatal services, including emergency services, must be available to meet the needs of the mother, unborn child, and family.
2. All deliveries must be attended by trained health personnel and be subject to appropriate clinical monitoring.
3. All high-risk patients should be delivered in hospitals that are equipped with resources adequate for the required levels of care.
4. For women in labour and are HIV-positive, the following conditions should be observed:
   - Universal precautions for all procedures.
   - There is no need for isolation.
   - Inducement of labour contraindicated.
   - Amniotic membranes should not be ruptured.
   - Routine episiotomy should be avoided.
   - Consider vaginal cleansing after membrane has ruptured.
   - Manage according to clinical guidelines set for HIV.
5. Referral mechanism should be established to cater for any obstetrical emergency that may arise.
6. Transportation must be available for emergency situations.

**MANAGEMENT OF NORMAL LABOUR**

a) **Diagnosis of Onset of Labour**
   Evidence of any of the following may indicate onset of labour and the patient should promptly seek professional advice:
   - Regular painful contractions (2 contractions every 10 minutes or more frequently).
   - Abnormal loss of fluid per vagina.
b) **First Stage of Labour**

Step 1: Assess general condition and ensure that patient is in labour.
- Review notes to identify any significant points.
- Conduct 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, foetal lie, and presentation
  - Auscultate and document foetal heart rate and regularity
  - Monitor contractions
  - Do a vaginal examination to make sure assessment of the pelvis and record findings on a partogram

Step 2: Shave the lower vulval area in anticipation of an episiotomy.

Step 3: Administer enema except where contraindicated, e.g., P.V. bleeding, meconium-stained liquor.

Step 4: Keep accurate and timely records.

**Progress Charting**
- Palpate uterine contractions noting their strength, frequency and variation.
- Auscultate the foetal heart and record the rate every 15 minutes in low-risk women. Document the foetal heart rate before, during, and after contractions. If any concerns, begin cardiotocographic monitoring.
- Check and record temperature, pulse, respiration, and blood pressure hourly.
- Test urine for acetone, sugar, and albumin.
- Do vaginal examination every 4 hours or more often if the clinical situation warrants, to assess the progress of labour.
- Observe any discharge from the vulva, colour of liquor, and type of discharge, e.g. mucopurulent.
- Observe for signs of foetal and/or maternal distress, e.g. meconium-stained liquor, maternal fever, tachycardia, dehydration.

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

**Signs of Foetal Distress**
• Foetal heart rate (bradycardia) less than 110 beats/minute, or tachycardia more than 160 beats/minute, decelerations.
• Meconium-stained liquor in a cephalic presentation.

**Signs of Maternal Distress**

• Tachycardia (pulse rate >100 beats/minute)
• Pyrexia (two readings >37.5°C or one reading ≥37.5°C)
• Hypo or hypertension
• Vomiting
• Decrease urine output
• Ketonuria
• Marked restlessness or anxiety
• Sign of dehydration

**Indications for Referral to Medical Officer during First Stage Labour**

• Maternal distress
• Foetal distress
• Very strong uterine contractions
• Mal-presentation
• Prolapse of umbilical cord
• Prolonged first stage
  - 10 hours or more in multipara
  - 12 hours or more in primigravida
• Prolonged rupture of membranes
• Pre-labour rupture of membranes
• Vaginal bleeding

c) **Second Stage of Labour**

The attendant should do the following:

1) Ensure that the delivery room is well prepared and ready.
2) Check contents of delivery pack:
   - 1 Large Bowl
   - 1 Kidney Dish
   - 2 Gallipots
   - 1 Placenta Dish
   - 2 Swab Holders
   - 2 Spencer Wells Forceps
   - Cord Scissors
   - Episiotomy Scissors
   - 3 Dressing Towels
   - 1 Gown
   - Gloves
3) Prepare for episiotomy if indicated.
4) Prepare to receive baby.
5) Neonatal resuscitation equipment should be available at all delivery centres.
6) Maintain clear airway by suction if necessary, as soon as head is delivered.
7) Have oxygen ready to use.
8) Prepare oxytocic drug – Syntometrine 0.5 mg or Syntocinon 5-10 units (for patients with elevated blood pressure).
9) Upon delivery of the anterior shoulder, administer oxytocic drug IM.
10) Keep alert for obstetric emergencies such as post-partum haemorrhage.
11) If neonate does not require resuscitative measures, ensure that the mother sees the infant and identifies the sex of the infant, then place an identification tag on the infant's limb.
12) Allow skin to skin contact and encourage initiation of breastfeeding within one hour of life.

Indications for Referral to Medical Officer During Second Stage Labour
- Abnormal bleeding.
- Loss of foetal heart-beat.
- Foetal bradycardia and decelerations.
- Abnormal pattern of uterine contractions.
- Lack of progress or descent of presenting parts.
- Prolapse of the chord.
- Fresh meconium-stained liquor.
- Shoulder dystocia.
- Any condition that may arise suddenly and which the Nurse/Midwife is unable to handle.

d) Third Stage Labour
1) Watch for signs of placental separation.
2) Assist mother to expel placenta. Exert gentle traction on the cord as the placenta is expelled.
3) Inspect placenta and membranes for completeness.
4) Measure or estimate and record blood loss.
5) Inspect vagina for lacerations.
6) Repair episiotomy or lacerations.
7) Clean perineum.

Indications for Referral to Medical Officer/Team during Third Stage Labour
- Retained or incomplete placenta membranes.
- Haemorrhage from uterus or lacerations.
- Maternal Shock.
- Severe lacerations or extended episiotomy.
- Elevated blood pressure ((over 140/90 mmHg).
- Temperature ≥ 38°C).
• Respiratory distress in the new-born.

e) **Post-Partum Observation and Care**

Observe and record for one (1) hour after delivery the following:

- Patient’s general condition.
- Vital signs – temperature, pulse, respiration, and blood pressure.
- Amount and colour of vaginal 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.
- Sub-involution of the uterus and tenderness.
- Pain developing in pre-existing varicose veins.
- Calf tenderness and/or swelling.
- Shortness of breath and/or chest pain.
- Behaviour changes in the mother.
- Mastitis
- Urinary problems, e.g. incontinence.

**WHO RECOMMENDED PARTOGRAPH**

**Importance of the Partograph**

The partograph is a graphical presentation of the progress of labour, and foetal and maternal condition during labour. (See Figure 1.1) It is the best tool to detect whether labour is progressing normally or abnormally, and provide early warning of signs of foetal distress or if the mother’s vital signs deviate from the normal range. There are two key definitions in using the partograph:

a) **A multigravida** is a woman who has been pregnant at least once before the current pregnancy.

b) **A multipara** is a woman who has previously given birth to live babies at least twice before.

**Using the Partograph**

The list of sequential steps should be followed in ensuring the effective use of the partograph:

- In the identification section at the top, record the following:
  - Name and age of mother
  - “Gravida” and “para” status
  - Registration/identification number
  - Date and time of first attendance at delivery
  - Time when the foetal membranes ruptured
On the back of the partograph, also record information such as:
- Woman’s past obstetric history
- Past and present medical history
- Any findings from a physical examination
- Any interventions you initiate (including medications, delivery notes, and referral)

- Immediately below the patient’s identification details, record the **Foetal Heart Rate** initially, and then every 30 minutes thereafter. The scale for foetal heart rate covers the range from 80 to 200 beats per minute
- There are two rows close together below the foetal heart rate. The first of these rows is labelled **Liquor** – which is the medical term for the amniotic fluid. If the foetal membranes have ruptured, record the colour of the fluid initially and every 4 hours thereafter
- The row below ‘Liquor’ is labelled **Moulding**. This is the extent to which the bones of the foetal skull are overlapping each other as the baby’s head is forced down the birth canal. The degree of moulding should be assessed initially and every 4 hours thereafter
- Below ‘Moulding’ there is an area of the partograph labelled **Cervix (Plot X)** for recording **cervical dilatation**, that is, the diameter of the mother’s cervix. This area of the partograph is also where you record **Descent of Head (Plot O)**, which is how far down the birth canal the baby’s head has progressed. Record these measurements as either X or O, initially and every 4 hours. There are two rows at the bottom of this section of the partograph to write the number of hours since monitoring the labour began and the time on the clock.
- The next section of the partograph is for recording **Contractions per 10 mins** initially and then every 30 minutes
- The two rows below that are for recording administration of **Oxytocin** during labour and the amount given. Administration is decided upon by the doctor although the attending Nurse/Midwife may be trained to give oxytocin after the baby has been born if there is a risk of postpartum haemorrhage
- The next area is labelled **Drugs given and IV fluids** given to the mother
- Near the bottom of the partograph is where the mother’s vital signs are recorded. The chart is labelled **Pulse and BP** (blood pressure) with a possible range from 60 to 180. Below that is where the mother’s **Temp °C** (temperature) is recorded
- The characteristics of the mother’s **Urine: protein, acetone, volume** are recorded at the very bottom

**Colour of the Amniotic Fluid**
If the amniotic fluid has fresh bright red blood in it, this is a warning sign that the mother may be haemorrhaging internally. If it has dark green meconium (the baby’s first stool) in it, this is a sign of foetal distress.
Figure 1.1: WHO Recommended Partograph
MANAGEMENT OF COMPLICATIONS OF LABOUR

Post-Partum Haemorrhage (PPH)
This condition is defined by bleeding after delivery and involves blood loss of 500ml or more during or after the third stage of labour. Certain patients are at higher risk for PPH and include:

- High parity
- Uterine Fibroids
- Ante-partum haemorrhage
- Prolonged labour
- Prolonged use of oxytocin
- Previous PPH
- Obesity (BMI > 35)
- Anaemia (Hb<9g/dl)
- Pre-eclampsia
- Foetal macrosomia
- Multiple pregnancy
- Polyhydramnios
- Retained placenta
- Abruptio placentae
- Operative delivery
- Blood coagulation disorders

Patients with conditions as listed above should be subjected to the following precautionary measures before delivery:

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

Primary PPH is bleeding after delivery and is defined as blood loss of ≥ 500 ml from the genital tract within 24 hours of the birth of the baby.

Actions Required

- SHOUT FOR HELP. Urgently mobilise all available resources. Call the doctor.
- Make rapid evaluation of the general condition of the woman including vital signs (airway, breathing, circulation, pulse, blood pressure, temperature).
- If shock is suspected, begin treatment immediately.
- Level bed if head elevated.
- Administer oxygen at 10-15 litres/per minute via facemask.
- Insert two large-bore (14 Gauge) IV cannulae and take blood for coagulation screening, urea, electrolytes, and cross-matching (4 units).
- 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 bolus oxytocin 10 units IM/IV or carbetocin 100 microgram IM/IV (long acting).
- Give IV bolus of 500 ml Ringers Lactate solution.
- Catheterise 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.

**Uterus Soft**
The uterus should be massaged to expel blood clots. Steps include:
- 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.

**If bleeding continues,** apply bimanual uterine compression. The procedures for doing this are:
- Wear sterile or clean gloves.
- Introduce the right hand into the vagina, clench fist with back of the hand directed posteriorly, and the knuckles on 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 the bleeding stops, that is, no bleeding if the compression is released.
- If bleeding persists, apply aortic compression and transfuse blood as soon as it becomes available.
- Transfer patient to operating theatre for possible surgical management.

**Application of aortic compression** must be done by suitably trained staff. If heavy postpartum bleeding persists despite uterine massage, oxytocin/ergometrine treatment, and removal of the placenta, the following procedures should apply:
- Feel for femoral pulse.
- Apply pressure above the umbilicus to stop bleeding. Apply sufficient pressure until femoral pulse is not felt.
- After finding the correct site, an assistant or relative should be shown how to apply pressure, if necessary.
- Continue applying pressure until bleeding stops.

**Placenta and fragments** may be removed manually by suitably trained staff if:
- Placenta is not expelled one hour after the delivery of the baby, OR
- Heavy bleeding continues despite massage and administering of oxytocin, and the placenta cannot be delivered by controlled cord traction, or if the placenta is incomplete and bleeding continues.
1.3 POSTNATAL CARE

POSTNATAL HOME VISITS

The recommended schedule of postnatal home visits based on place of delivery is as follows:

<table>
<thead>
<tr>
<th>Place of Delivery</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>Days 1, 3, 6 and 9</td>
</tr>
<tr>
<td>Maternity Centre</td>
<td>Days 6 and 9</td>
</tr>
<tr>
<td>Hospital</td>
<td>During the first week</td>
</tr>
</tbody>
</table>

REQUIRED POSTNATAL EXAMINATIONS/ACTIONS

Postnatal examinations are normally carried out by nurse/midwives and medical officers, although family nurse practitioners may also play a role. The required actions by period and place of delivery are shown at Table 1.6.

Table 1.6: Required Postnatal Examinations by Place of Delivery

<table>
<thead>
<tr>
<th>Day</th>
<th>Place of Delivery</th>
<th>Required Examinations/Actions</th>
<th>Mother</th>
<th>Baby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Home</td>
<td>• Breasts</td>
<td>• Vital signs</td>
<td>• Vital signs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Vital signs</td>
<td>• Cord</td>
<td>• Cord</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lochia</td>
<td>• Passage of meconium</td>
<td>• Passage of meconium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bowel action</td>
<td>• Reflexes</td>
<td>• Reflexes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Colour of skin and eyes (for jaundice)</td>
<td>• Colour of skin and eyes (for jaundice)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Breastfeeding</td>
<td>• Breastfeeding</td>
</tr>
</tbody>
</table>
|          |                   |                              | • Birth injury/congenital
                                          |   abnormalities                     |
| Day 3    | Home/Hospital     | • Vital signs                 | • As above                       | • As above                                |
|          |                   | • Breastfeeding               | • Demonstrate bathing of baby    | • Demonstrate bathing of baby             |
|          |                   | • Lochia                      |                                  |                                          |
|          |                   | • Fundal height               |                                  |                                          |
|          |                   | • Bowel action                |                                  |                                          |
| Days 6 & 9| Home/Health Centre/Hospital | In addition to Day 3 activity: | In addition to Day 3 activity: |                                          |
|          |                   | • Social readjustment         | • General appearance            |                                          |
|          |                   | • Family planning             | • Baby’s accommodation           |                                          |
Indications for referral of the mother to the hospital are:
- Persistent hypertension (diastolic BP > 90mm Hg)
- Retained placenta
- Puerperal pyrexia/sepsis
- Puerperal psychosis/depression
- Severe anaemia (palmar and conjunctival pallor and/or Hb < 7g/L)
- Shortness of breath
- Chest pain

SIX WEEK POSTNATAL CHECK FOR MOTHER

1) General Physical Examination
   - Record weight and vital signs
   - Examine breast noting condition of nipples
   - Look for evidence of lactation
   - Examine abdomen noting striae, masses, muscle tone

2) Vaginal Examination
   - Ensure that the client’s bladder is empty
   - Assess state of evolution of the uterus

3) Speculum Examination
   - Vagina – check to see that tears have healed and that there are no complications of episiotomy repair
   - Inspect the cervix under good light and note any abnormalities
   - Ensure that any tears have healed satisfactorily
   - Take a Pap test, if indicated

4) Rectal Examination
   - Assess anal sphincter muscle
   - Note any rectal abnormalities

5) Laboratory Tests
   - Blood - haemoglobin (if indicated)
   - Urine – albumin, sugar, acetone

6) Counsel Client on:
   - Breastfeeding alone (without supplementation) for the first six (6) months
   - Care of the baby
   - Immunisation of the child
• Maternal nutrition
• Family planning
  - Benefits of adequate child spacing
  - Regulation of number of pregnancies
  - Available family planning methods

INDICATIONS FOR REFERRAL TO MEDICAL OFFICER/SPECIALIST

Mother
• Mastitis
• Persistent hypertension (diastolic BP >90mm Hg)
• Severe anaemia (palmar and conjunctival pallor and/or Hb<7g/L)
• Persistent vaginal discharge
• Persistent temperatures over 101°F
• Mental disorder (e.g. postpartum depression or psychosis)
• Complications of episiotomies/tears

Infant
• HIV-positive mother
• Respiratory distress (respiratory rate <30 or >60/min, and check for chest indrawing)
• Congenital abnormalities
• Persistent jaundice
• Fever or unstable body temperatures (<36°C or >38°C)
• Infections (including eye and umbilicus)
• Tremors/convulsion
• Failure to gain weight or serious problems with feeding
• Persistent vomiting or abdominal distension
• Pallor

MANAGEMENT OF COMMON MATERNAL DISORDERS

Table 1.7 below summarises some of the common maternal problems and actions that may be taken to alleviate pain and suffering.

Table 1.7: Common Maternal Disorders and Remedial Actions

<table>
<thead>
<tr>
<th>DISORDER</th>
<th>ACTIONS TO BE TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>Instructions</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Engorged Breast</td>
<td>• Advise mother to express a small amount of breast milk before and empty breast after feeding</td>
</tr>
<tr>
<td></td>
<td>• Nurse infant for up to 15 minutes on each breast</td>
</tr>
<tr>
<td></td>
<td>• Bathe breast with warm water</td>
</tr>
<tr>
<td></td>
<td>• Use breast pump where available</td>
</tr>
<tr>
<td></td>
<td>• For persistent and painful engorgement, refer to Medical Officer</td>
</tr>
<tr>
<td></td>
<td>• For HIV-positive mothers, who choose not to breastfeed, do not express milk. Give analgesics and use a warm compress to relieve hardness followed by a cold compress to relieve the discomfort. Give good support.</td>
</tr>
<tr>
<td></td>
<td>• Try to avoid lactation suppression drugs, although they may become necessary</td>
</tr>
<tr>
<td>Cracked Nipples</td>
<td>• Keep nipples clean and dry</td>
</tr>
<tr>
<td></td>
<td>• Paint nipples with Gentian Violet or Tincture Benzoin Co</td>
</tr>
<tr>
<td></td>
<td>• Express breastmilk and feed the infant by cup and spoon if nipples are too sore</td>
</tr>
<tr>
<td>Lacerations/ Episiotomies</td>
<td>• Wash vulval area daily with warm solution of Savlon and clean with cotton</td>
</tr>
<tr>
<td></td>
<td>• Sitz baths are indicated</td>
</tr>
<tr>
<td>Persistent Vaginal Bleeding</td>
<td>• Ascertain the amount of bleeding</td>
</tr>
<tr>
<td></td>
<td>• Do pelvic examination to check the source of bleeding and consistency of uterus</td>
</tr>
<tr>
<td></td>
<td>• For heavy and persistent bleeding, refer to Medical Officer</td>
</tr>
<tr>
<td>Constipation</td>
<td>• Correct with diet – fluids, high-fibre fruits, and vegetables.</td>
</tr>
<tr>
<td></td>
<td>• Exercise</td>
</tr>
<tr>
<td></td>
<td>• Good toilet habits.</td>
</tr>
</tbody>
</table>
The first five years of a child's life are fundamentally important. They form the bedrock for future growth, development, and enhanced health outcomes in later life. Access to quality health and social services during this period of life is therefore a primary consideration. This Section provides guidelines for providing health and social care to children in the following age groups:
- Infancy – up to one (1) year of age
  - Neonatal period – first 28 days of life
  - Post neonatal period – 28th day to one year (1) year of life
- Pre-school age (1-4 years)

**GOAL**
Holistic development of infants and young children through the promotion of health and wellness within the family.

**OBJECTIVES, KEY INDICATORS, TARGETS**
Table 2.1 below provides a summary of the objectives, key indicators and targets that relate to the delivery of child health services.

**Table 2.1: Objectives, Key Indicators and Targets for Child Health**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be Achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Reduce perinatal and neonatal mortality rates</td>
<td>No. of perinatal deaths per 1000 live births</td>
<td>Death rate of &lt; 5 per 1000 live births</td>
</tr>
<tr>
<td></td>
<td>No. of neonatal deaths per 1000 live births</td>
<td>Death rate of &lt; 6 per 1000 live births</td>
</tr>
<tr>
<td>2) Maintain optimum levels of immunisation among infants and young children</td>
<td>% immunisation for common childhood illnesses</td>
<td>100% immunisation among infants and young children</td>
</tr>
<tr>
<td>3) Increase the level of exclusive breastfeeding among new mothers</td>
<td>No. of infants who are exclusively breastfed</td>
<td>At least 80% of infants breastfed exclusively</td>
</tr>
</tbody>
</table>

**STRATEGIES**
- Application of primary health care principles, including a fully integrated referral system.
- Team approach to delivery of child care services.
- Structured provision of services according to age groups.
• Health promotion, education and counselling for parents (mothers and fathers).

2.1 NEONATAL CARE

IMMEDIATE CARE OF THE NEONATE

The immediate postnatal period is one of the most critical for newborn and maternal survival. Doctors or nurses attending newborns should perform the following functions:

• At birth of the head, wipe the face, clear the mouth, then suction the nose with bulb suction.
• Dry the infant and wrap in a clean, dry and warm cloth.
• Give the mother to the infant within the first hour after birth, unless medical intervention is necessary for the mother or baby, to aid in mother-child bonding and establishment of lactation.
• If the mother is HIV positive, she can also be given the baby to hold to the chest to ensure bonding.

Other essential functions that should be undertaken, usually by the attending nurse/midwife, are as follows:

• Note time of birth.
• Ensure respirations are established/determine Apgar score.
• Clamp, ligate, and cut umbilical cord.
• Put baby on mother’s chest and maintain warmth.
• Ensure the mother sees the infant and identifies the sex.
• Place an identification tag on the infant’s ankle or wrist.
• Record weight, crown-heel length, head and chest circumference.
• Put infant to the breast to suckle if mother is HIV negative.
• Administer Vitamin K injection.
• Give ART if indicated.

Determination of the Apgar Score

Determining the Apgar score is one of the essential to be undertaken at birth. If the score is less than seven (7) at one (1) minute and five (5) minute intervals, this will indicate the need for active resuscitation and medical attention. The Apgar scoring system is defined at Table 2.2.

Table 2.2 Apgar Scoring System

<table>
<thead>
<tr>
<th>Sign</th>
<th>Sign Scoring System</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Appearance (colour)</td>
</tr>
<tr>
<td>P</td>
<td>Pulse (heart rate)</td>
</tr>
<tr>
<td>0</td>
<td>Blue, pale</td>
</tr>
<tr>
<td>1</td>
<td>Tongue pink, extremities blue</td>
</tr>
<tr>
<td>2</td>
<td>Completely pink</td>
</tr>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Slow (below)</td>
</tr>
<tr>
<td>2</td>
<td>Over 100</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>G</strong></td>
<td>Grimace (reflex)</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>Activity (tone)</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td>Respiratory Effort</td>
</tr>
</tbody>
</table>

**Examination at Birth**

As a routine function, the newborn should be examined along the Cephalo-caudal route looking especially for the following abnormalities as set out in Table 2.3:

**Table 2.3: Examination of the Newborn along Cephalo-caudal Route**

<table>
<thead>
<tr>
<th>Part of Body</th>
<th>Normal</th>
<th>Unusual/abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integument (General appearance and texture)</td>
<td>Smooth, pink, with good turgor</td>
<td>Thick, leathery and cracked with general peeling (post-maturity)</td>
</tr>
<tr>
<td></td>
<td>Superficial peeling after first 24 hours, vernix absent or only in creases</td>
<td>Peeling (post-maturity), skin thin and transparent (pre-maturity)</td>
</tr>
<tr>
<td>Colour</td>
<td>Pink</td>
<td>Pallor, cyanosis, jaundice within 24 hours</td>
</tr>
<tr>
<td>Head size</td>
<td>34-35 cm</td>
<td>Microcephaly, macrocephaly</td>
</tr>
<tr>
<td>Shape</td>
<td>Caput succedaneum</td>
<td>Cephalhaematoma</td>
</tr>
<tr>
<td>Fontanelles</td>
<td>Anterior fontanelle diamond-shaped, posterior fontanelle triangular-shaped</td>
<td>Bulging, tense, abnormally large, flat, open, depressed fontanelle</td>
</tr>
<tr>
<td>Sutures</td>
<td>Slightly separated or overlapping at birth</td>
<td>Widely separated sutures, premature closure of sutures</td>
</tr>
<tr>
<td>Eyes</td>
<td>Symmetrical spacing, less than 3 cm apart</td>
<td>Abnormal width in spacing. Persistent purulent discharge (ophthalmia neonatorum, chlamydia conjunctivitis)</td>
</tr>
<tr>
<td>Ears</td>
<td>Clear and well formed</td>
<td>Low set, malformed, pre-auricular sinus</td>
</tr>
<tr>
<td>Mouth</td>
<td>Lips intact, mouth and tongue pink and moist</td>
<td>Cleft lips, white plaques on tongue, gum, buccal cavity (candida infection)</td>
</tr>
<tr>
<td></td>
<td>Palate intact; swallowing, gagging, rooting and sucking reflexes present</td>
<td>Cleft palate, reflexes absent (prematurity, CNS injury or disorder). Abnormally short</td>
</tr>
<tr>
<td>Neck</td>
<td>Trachea in midline</td>
<td>Nuchal rigidity (meningitis), tracheal deviation (neck mass), webbed neck</td>
</tr>
<tr>
<td>Chest - lungs</td>
<td>Normal respiratory rate (40-50 breaths per minute) Breath sounds clear and</td>
<td>Tachypnoea (fast breathing), apnoea, rales, rhonchi, decreased breath sounds, asymmetrical supernumerary nipples</td>
</tr>
</tbody>
</table>
equal on both sides. Chest symmetrical

<table>
<thead>
<tr>
<th>Heart</th>
<th>Rate normal (120-160 beats per minute)</th>
<th>Tachycardia, bradycardia, persistent murmurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdomen</td>
<td>Full, rounded and soft</td>
<td>Distended (abdominal masses, GI obstruction), scaphoid</td>
</tr>
<tr>
<td>Umbilicus</td>
<td>2 arteries, 1 vein</td>
<td>1 artery, 1 vein, omphalocele</td>
</tr>
<tr>
<td>Genital female</td>
<td>Labia major large, covering clitoris and labia minora</td>
<td>Ambiguous genitalia</td>
</tr>
<tr>
<td>Genital male</td>
<td>Penis with foreskin intact, foreskin covering glans</td>
<td>Phimosis, undescended testes, hypospadias</td>
</tr>
<tr>
<td>Anus</td>
<td>Patent,</td>
<td>Imperforate, ectopic position</td>
</tr>
<tr>
<td>Limbs</td>
<td>Symmetrical movement, strong muscle tone, strong grasp reflex</td>
<td>Asymmetrical movements, weak or absent muscle tonus, grasp reflex absent, polydactyl, syndactyly, club feet</td>
</tr>
<tr>
<td></td>
<td>Multiple palmar creases</td>
<td>Simian crease (Down's syndrome)</td>
</tr>
<tr>
<td>Spine and hips</td>
<td>Back straight, spine intact, buttock folds symmetrical</td>
<td>Spinal bifida</td>
</tr>
</tbody>
</table>

**SUBSEQUENT CARE OF THE NEONATE**

**General Observation**
Observe the following daily:
- Skin for infection.
- Eyes for jaundice and infection.
- Stool – foul-smelling, watery, and bloody stools are abnormal (note that in breastfed infants, stools may be frequent and loose).
- Urine – frequency, volume and colour.
- Vomiting – remember that regurgitation of feeds (possetting) is not normal. Make sure child is properly winded.
- Umbilical infection.

**Nutritional needs**
- Put baby to the breast as soon as possible after delivery – within one (1) 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 suck the breast.
- Do not give artificial milk if breast milk is available and not contraindicated.
- Cup feeding should be encouraged if the mother is unable to breast feed.

**Indication for Referrals of Neonates born at home to Medical Officer/Hospital**
- Birth weight less than 2.5kg or more 4.2 kg.
- Birth asphyxia – Apgar score of seven (7) or less in five (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 mucous.
• Abdominal distention.
• Dysmorphic features.
• Born to a diabetic mother.
• Born to a Rhesus negative mother.
• Born to a mother with a sexually transmitted infection.
• Born to a mother with sickle cell disease.
• Born to a mother with fever during labour, foul smelling liquor.
• Born to a mother with rupture of membranes longer than 24 hours.

Each child referred should have a referral form showing assessment, history, care given, history of feeding, passage of stool, etc.

**Neonates born to Mothers with the following should be referred to a Social Worker:**
- Mother with a psychiatric history.
- Mother who is an alcoholic or drug addict.
- Mother less than 17 years old.
- Mother with socio-economic difficulties.

## SOME NEONATAL PROBLEMS AND THEIR MANAGEMENT

### 1) Pre-Term
A pre-term baby is any infant born before 37 weeks gestation (less than 37 completed weeks of gestation). The causes usually include inadequate prenatal care and poor socio-economic conditions. Common conditions include:
- Weighs less than 2.5 kg.
- Skin is thin, shiny, and the underlying veins can be seen.
- Respiratory distress syndrome as inadequate surfactant is produced from the lungs.
- Sucking and swallowing reflexes may not be fully developed.
- Retinopathy of immaturity (blindness) may occur due to prolonged and excessive oxygen therapy.

### 2) Post-Mature Infant
The post-mature infant is any infant born after 42 weeks gestation of delivery. The infant appears mature but there is a loss of subcutaneous fat and the skin may be use loose, dry, and show signs of peeling. Problems include:
- Possibility of placental insufficiency syndrome.
- Prone to asphyxia and aspiration of meconium.
- Hypoglycaemia.
3) **Small for Gestation Age (SGA)**
This is defined as any infant whose birth weight is below the 10th percentile for gestation age whether, premature, full-term, or post-mature. The condition is often associated with:
- History of SGA, genetics.
- Maternal hypertension, pre-eclampsia.
- Placenta insufficiency.
- Early intrauterine infection, e.g. rubella.
- Maternal smoking, abuse of alcohol, cocaine addiction.
Problems include:
- Hypoglycaemia
- Birth asphyxia
- Meconium aspiration

4) **Large for Gestational Age (LGA)**
This is defined as any infant whose weight is above the 90th percentile for gestation age whether, premature, full-term, or post-mature. The causes may be gestational diabetes or familial.
Problems include:
- Vaginal delivery may be difficult and traumatic.
- Hypoglycaemia, respiratory distress syndrome.

---

### 2.2 POST-NEONATAL CARE

**PROCEDURES AT CLINIC VISITS**

**First Visit Registration**
Standard registration forms should be filled in completely. The information to be recorded may include:
- Correct name of child
- Correct name and known names of mother and father
- Address
- Place of birth – hospital, health centre, home
- Weight at birth
- Condition of infant at birth
- Family history – number and condition of children in family, obstetric history of mother, social and economic living conditions
- Feeding pattern
Growth Monitoring
Standard growth monitoring charts should be used for each child and all instructions followed carefully. The importance and use of the clinic card and the child’s take-home card should be explained fully to the mother.

PHYSICAL EXAMINATION OF THE INFANT

Physical Examination
- Explain to the mother what you are going to do to the child and the reason.
- Measure and record head circumference.
- Assess general appearance – observe colour, muscle tone, and alertness.
- Observe respiration pattern, i.e. normal retraction of the intercostals, ribs, sternum.
- Check reflexes – sucking, etc.
- Check nostrils for flaring.

Table 2.4 below, summarises the body parts that should be given special attention during physical examination.

Table 2.4: Physical Examination of the Infant

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>Size, shape, fontanelles, sutures, scalp, hair</td>
</tr>
<tr>
<td>Eyes</td>
<td>Conjunctiva for redness, discharge and pallor, signs of cataract or infection</td>
</tr>
<tr>
<td>Nostril</td>
<td>Discharge and abnormalities</td>
</tr>
<tr>
<td>Mouth</td>
<td>Cleft palate, harelip, thrush, condition of gum and teeth</td>
</tr>
<tr>
<td>Ears</td>
<td>Discharge and abnormalities</td>
</tr>
<tr>
<td>Chest</td>
<td>Shape, heart sounds and breath sounds</td>
</tr>
<tr>
<td>Breast</td>
<td>Swelling</td>
</tr>
<tr>
<td>Abdomen</td>
<td>Distension, hernia, peristaltic movement</td>
</tr>
<tr>
<td>Umbilicus</td>
<td>Healed, hernia present, granuloma (umbilical stump)</td>
</tr>
<tr>
<td>Spine</td>
<td>Curvature, spinal bifida, meningocele</td>
</tr>
<tr>
<td>Skin</td>
<td>Turgor, eruption, birth marks, discolouration, rashes</td>
</tr>
<tr>
<td>Female Genitalia</td>
<td>Imperforate vagina, discharge</td>
</tr>
<tr>
<td>Male Genitalia</td>
<td>Undescended testicles, tight foreskin, hydrocele</td>
</tr>
<tr>
<td>Extremities</td>
<td>Club feet, flat feet, webbing, extra digits, dislocation of hip, other congenital abnormalities</td>
</tr>
</tbody>
</table>
IMMUNISATION

Childhood Immunisation
Childhood immunisation is a critical component of post-neonatal care. At the outset, health providers should:

- Establish the child’s immunisation status.
- Start immunisation according to national guidelines.
- Explain to the parent what immunisation the child is being given, purpose, importance of maintaining the schedule, and keeping the immunisation record in a safe place.

Table 2.5: shows the recommended immunisation schedule that health providers should follow and parents should be made aware of.

Table 2.5: Immunisation Schedule During Post-Neonatal Period

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Dose</th>
<th>Administration</th>
<th>Age</th>
<th>Medium</th>
<th>Site</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td>0.05 ml</td>
<td>Infants &gt; 3 months</td>
<td>Intra-dermal</td>
<td>Mid-upper right arm</td>
<td>Keep on ice six (6) hours only after reconstitution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1 ml</td>
<td>All others over 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT or Paediatric DT</td>
<td>0.5 ml</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; dose – 2 months</td>
<td>Intra-muscular</td>
<td>Antero-lateral thigh</td>
<td>Hib and Hep B may be administered simultaneously with DPT and TOPV</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; dose – 4 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; dose – 6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOPV</td>
<td>2 drops</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; dose – 2 months</td>
<td>Oral</td>
<td>Mouth</td>
<td></td>
<td>Keep on ice while using</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; dose – 4 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; dose – 6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>0.5 ml</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; dose at birth simultaneously with BCG</td>
<td>Intramuscular</td>
<td>Antero-lateral thigh</td>
<td>Infants with Hep B positive mother – 4 doses</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; dose at 2 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; dose at 4 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; dose at 6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hib</td>
<td>0.5 ml</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; dose -2</td>
<td>Intramuscular</td>
<td>Antero-</td>
<td>Not recommended</td>
<td></td>
</tr>
</tbody>
</table>
months
2nd dose – 4 months
3rd dose – 6 months

lateral thigh or deltoid region for older child

for children over 4 years of age; only one dose for children 1-4 years if they did not receive 3 doses as infants

Rubella/MMR
0.5 ml
First postnatal visit to clinic
Subcutaneous or intramuscular injection
Arm

Keep on ice not more than one hour after reconstitution

Paediatric and Adult DT
0.5 ml
For boosterpost-primary schedule and pregnant women as indicated
Intramuscular
Deltoid region

Adult DT or Td should be used for children > 7 years of age

Paediatric DT, TOPV & MMR
4-5 years (School age entry)

Td or Adult DT
0.5 ml
10-11 years (School leaving age)
Pregnant women if not appropriately vaccinated

NOTE
1. Protect all vaccines against sunlight and heat
2. Vaccines when not administered simultaneously should be given with a minimum interval of four (4) weeks apart

Family Immunisation
All individuals along the life cycle should be assessed for their immunity to disease and advised accordingly. Special attention should be paid to adolescents, the elderly and the disabled. Vaccines for consideration should include those in the routine schedule as well as influenza, meningococcus, pneumococcus, HPV, and others as deemed necessary. The immunisation booster schedule for adults is outlined at Table 2.6.

Table 2.6: Immunisation Booster Schedule

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Dose</th>
<th>Administration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Age</td>
<td>Medium</td>
</tr>
<tr>
<td>Paediatric DT, DT and TOPV</td>
<td>0.05 ml</td>
<td>1st Booster – 18 months</td>
<td>School age entry</td>
</tr>
<tr>
<td></td>
<td>2 drops</td>
<td>2nd Booster – 4-6</td>
<td></td>
</tr>
<tr>
<td>Td or adult DT</td>
<td>0.5 ml</td>
<td>Children 10-11 years old</td>
<td>High school entry Also for children &gt; 7 years who need boosters</td>
</tr>
<tr>
<td>---------------</td>
<td>--------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Td or adult DT (Contd.)</td>
<td></td>
<td>Pregnant women, not appropriately vaccinated: 1st dose at 1st antenatal visit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 2nd dose at least 4 weeks after 1st dose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 3rd dose at least 6 months after 2nd dose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 4th dose at least 1 year after 3rd dose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 5th dose at least 1 year after 4th dose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Boosters are not necessary for subsequent pregnancies</td>
</tr>
</tbody>
</table>

**Contraindications to Vaccination**

- There are few absolute contraindications to the vaccines used in the expanded programme of immunisation. All vaccines should be given on schedule, even when a child has a low-grade fever, a mild cold, diarrhoea or other mild illness.
- Infants born prematurely, regardless of birth weight, should be vaccinated at the same chronological age and according to the same schedule and precautions as full-term infants and children.
- Neither killed nor live vaccines affect the safety of breastfeeding for mothers or infants.
- Generally, live vaccines should not be given to individuals with immune deficiency diseases, or to individuals who are immuno-suppressed due to malignant disease, treatment with immuno-suppressive agents, HIV infection, or irradiation. MMR and oral poliomyelitis vaccines can be given to persons with HIV infection, although inactivated polio vaccine is preferred.
- Children with symptomatic HIV infection should not be immunised with BCG and yellow fever vaccines.
• Vaccines containing the whole-cell pertussis component should not be given to children with an evolving neurological disease (e.g. uncontrolled epilepsy or progressive encephalopathy).
• Pregnant women should not be given live vaccines.

**Conditions that are not Contraindications to Vaccination**

- Minor illness such as upper respiratory tract infections or diarrhoea, with fever less than 38.5°C.
- Allergy, asthma, or other atopic manifestations, hay fever or snuffles.
- Prematurity, small-for-date infants.
- Malnutrition.
- Breastfeeding.
- Family history of convulsions.
- Treatment with antibiotics, low-dose corticosteroids, or locally-acting (example, topical or inhaled) steroids.
- Dermatoses, eczema, or localized skin infection.
- Chronic diseases of the heart, lung kidney or liver.
- Stable neurological conditions such as cerebral palsy and Down’s Syndrome.
- History of jaundice after birth.

**Management of Anaphylaxis**

Anaphylaxis is a serious side effect of vaccines. Although very rare and unexpected, anaphylactic reactions can be fatal and must be managed promptly. All health workers must therefore be able to distinguish anaphylaxis from convulsion and fainting. Fainting, while relatively common after immunization of adults and adolescents, is very rare in young children in whom sudden loss of consciousness should be presumed to be an anaphylactic reaction.

There is no place for conservative management of anaphylaxis. Early administration of adrenaline is essential.

**Signs and Symptoms of Anaphylaxis**

Anaphylactic shock is characterized by:

- Changes in muscle tone.
- Partial or complete paralysis.
- Lack of colour.
- Cyanosis.
- Diminished or zero response to stimuli.
- Reduction or loss of consciousness.
- Cardiovascular changes with hypotension or shock.
- Changes in respiration and sometimes, heart failure.

**Treatment**
All vaccination units must have resuscitation equipment permanently available. Medical and nursing personnel must be trained to recognize and treat anaphylactic shock. Rapid treatment is vital. Actions include:

- Keep airways clear.
- Administer adrenaline 1:1000, dosage - 0.01 mg/kg solution subcutaneously. This is the mainstay of the treatment of anaphylactic reactions; it should be used early at the first suspicion of anaphylaxis. It is safe and effective.
- Administer hydrocortisone 10 mg/kg IV as initial dose, followed by similar doses every 6 hours until recovery from the shock.
- Oxygen administered through mask, Ambu-bag or intubation.
- Transfer to hospital once stabilized.

THE VACCINE COLD CHAIN

The system used for storing vaccines in good condition is called the cold chain. The cold chain consists of a series of links that are designed to keep vaccines within recommended temperature ranges, from the point of manufacture to the point of administration to the client. To maintain a reliable vaccine cold chain at the peripheral level, the following key procedures must be observed:

- Store vaccines and diluents within the required temperature range at all sites.
- Pack and transport vaccines to and from outreach sites according to recommended guidelines and procedures.
- Keep vaccines and diluents within recommended cold chain conditions during immunization sessions.

Temperature Requirements for Vaccines

Vaccines are sensitive biological products. Some are sensitive to freezing, some to heat, and others to light. Vaccine potency can diminish when the vaccine is exposed to inappropriate temperatures. Once lost, vaccine potency cannot be regained. To maintain quality, all liquid vaccines must be stored at between +2º C and +8º C. All oral poliovirus vaccines should be stored at between -15º C and -25º C. Also, please note the following:

- Never freeze DPT, DT, Td, Hepatitis B, or Hib.
- Never freeze diluents
- Keep diluents at between +2º C and +8º C

Guidelines for Health Centres

Health workers can adequately protect vaccines at the health centre level by doing the following:

- Keep vaccines in appropriate vaccine refrigeration equipment.
- Use a temperature monitoring device to ensure temperatures remain between +2 ºC and +8 ºC.
• If required, transport vaccines to immunization sessions in a vaccine carrier, correctly packed, using coolant packs that have been properly prepared.

• One person at the facility must have overall responsibility for managing the vaccine cold chain. A second person can fill in when the primary person is absent. Their responsibilities should include:

  - Checking and recording vaccine temperatures twice daily, typically in the morning and at the end of the session or day
  - Storing vaccines, diluents, and water packs in a proper manner
  - Organising preventive maintenance of the cold chain equipment

• All health workers in a facility should know how to monitor the cold chain and what to do if temperatures are out of range.

The Refrigerator
The refrigerator used to store vaccines is an indispensable requirement of the cold chain. It must be well maintained and kept in good operating condition. A vaccine refrigerator in a health facility should meet the following standards:

• Store only vaccines and medicines.
• Located away from any heat source, in the coolest section of the building.
• Tightly sealed door.
• Placed at least six inches away from any wall to allow good air flow.
• Equipment such as a surge protector to guard against power fluctuation.
• Ice packs in the freezing compartment to help maintain low temperature (-10°C to 30°C).
• Water bottles on the lower shelf of the refrigerator also to further assist in maintaining low temperature.
• Vaccines arranged in the refrigerator to allow for free circulation of air.
• Thermometer to monitor the temperature.
• Defrosted when 1/4 inch or 5/8 centimetre of ice has formed on the internal sides of the freezer compartment, if the refrigerator is not self-defrosting.
• Remain closed during power outages.
• Do not store expired vaccines in the refrigerator.
• Do not store food or drink in the vaccine refrigerator.

If a vaccine refrigerator stops working, first protect the vaccines by moving them to other cold chain equipment until the refrigerator is repaired. For a problem that can be solved quickly, a cold box or vaccine carrier lined with conditioned ice packs can be used for temporary storage. For a problem that might take longer to solve, another refrigerator is needed.

The Shake Test
The Shake Test is used to check whether vaccines that should not be frozen have been damaged by exposure to temperatures below 0 °C. Frozen vaccines no longer have the appearance of a cloudy liquid after thawing, but tend to form flakes that settle at the bottom of the vial.

The Shake Test requires two vials of the same vaccine from the same manufacture and with the same batch number. One of these is a vial that you suspect has been frozen and the other is a vial that you have deliberately frozen solid overnight. Allow the frozen test vial to melt completely, shake the two vials in the same hand, place them side-by-side, and watch the contents settle. If the suspect vial settles at the same speed as the frozen vial you know that it has been frozen. If it settles more slowly, it has not been frozen. The Shake Test protocol is shown at Table 2.7 below:

**Table 2.7: Vaccine Shake Test Protocol**

<table>
<thead>
<tr>
<th>NOTES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) <strong>This protocol must not be altered.</strong> There is only one correct way to conduct a Shake Test.</td>
</tr>
<tr>
<td>2) The test procedure described below should be repeated with all suspect vaccines.</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Take a vial of vaccine of the same type and batch number as the vaccine you want to test, and made by the same manufacturer.</td>
<td>10. Sedimentation is similar in both vials OR The TEST vial sediments faster than the FROZEN vial THEN,</td>
</tr>
<tr>
<td>2. Clearly mark the vial as “FROZEN.”</td>
<td></td>
</tr>
<tr>
<td>3. Freeze the vial in a freezer or the freezing compartment of a refrigerator until the contents are completely solid.</td>
<td>11. Use the vaccine batch.</td>
</tr>
<tr>
<td>4. Let it thaw. Do <strong>NOT</strong> heat it!</td>
<td>12. Vaccine damaged: Notify your supervisor. Set aside all affected vaccine in a container marked “DAMAGED VACCINE FOR DISPOSAL – DO NOT USE”</td>
</tr>
<tr>
<td>5. Take your “TEST” vial from the batch that you suspect has been frozen.</td>
<td>13. Discard all affected vaccine once you</td>
</tr>
<tr>
<td>6. Hold the “FROZEN” vial and the “TEST” vial together in one hand.</td>
<td></td>
</tr>
<tr>
<td>7. Shake both vials vigorously for 10–15 seconds.</td>
<td></td>
</tr>
<tr>
<td>8. Place both vials on a flat surface side-by-side and start continuous observation of the vials until the test is finished.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** If the vials have large labels that conceal the vial contents, turn both vials upside down and observe sedimentation in the neck of the vial.

Use an adequate source of light to compare the sedimentation rates between vials.

**IF,**

9. The TEST vial sediments slower than the FROZEN vial, **THEN,** 11. Use the vaccine batch.

| 10. Sedimentation is similar in both vials OR The TEST vial sediments faster than the FROZEN vial THEN, |
|---|---|
| 11. Use the vaccine batch. | 12. Vaccine damaged: Notify your supervisor. Set aside all affected vaccine in a container marked “DAMAGED VACCINE FOR DISPOSAL – DO NOT USE” |
| 13. Discard all affected vaccine once you |

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COMMON CHILDHOOD ILLNESSES AND THEIR MANAGEMENT

Infant Colic
Infant colic is common in children between two (2) weeks and three (3) months old. The condition is more common in boys and in formula-fed infants. In an otherwise healthy, well-fed baby, signs of colic include:

- Predictable crying episodes. A baby who has colic often cries about the same time every day, usually in the late afternoon or evening. Colic episodes may last from a few minutes to three hours or more on any given day.
- Intense crying. Colic crying is intense, sounds distressed and is often high pitched. The baby becomes very difficult, if not impossible, to comfort.
- Crying that occurs for no apparent reason. It's normal for babies to cry sometimes. But, crying usually means the baby needs something, such as food or a clean diaper. Crying associated with colic occurs with no clear cause.
- Posture changes. Curled up legs, clenched fists and tensed abdominal muscles are common during colic episodes.

Management:
- Breast feed only – no water is required in totally breastfed babies.
- Keep abdomen warm, e.g. skin-to-skin contact may be useful.
- Gripe water should be discouraged as it contains mainly alcohol, which sedates babies.

Constipation
This is manifested in children as crying and straining when attempting to pass stool. Some infant formulae have greater tendency to cause constipation than others. In older children, the main symptom is passage of infrequent hard stool, that is often caused by poor diet low in fibre.

If present from neonatal period with history of delayed passage of meconium, refer for paediatric assessment. This may also be associated with “spurious diarrhoea”, therefore always inquire about previous constipation in patient with diarrhoea. This may result from an anal fissure so always look for same.

Management:
Infants under six (6) months:
- Increase breastfeeding or breastfeed only.
Infants over six (6) months:
- Give fruit juices with the pulp and high-fibre diet.
- Increase fluid intake.
- If persistent, change the formula.
- Get stool out; a mineral oil enema is recommended; do not use soap suds.

**Diaper Rash**

There are three main types of diaper rash:

a) Ammoniacal rash that is caused by dirty diapers being kept on too long. The area becomes sore and erythematous accompanied by an odour.

**Management:**
- Change nappies frequently and wash; wash thoroughly and frequently as appropriate.
- Expose to air and treat with zinc/castor oil cream after each nappy change.
- Refer to medical officer for further treatment, if necessary.

b) Candidiasis (Thrush). This is a fungal infection that may be due to diaper rash and is commonly associated with the use of broad-spectrum antibiotics and in debilitated children. Erythematous rash often extends into creases of the perineum. Oral thrush may or may not also be present.

**Management:**
- Expose to the air to dry.
- Apply gentian violet 1%, paint three (3) times daily until clear; or mycostatin or other antifungal cream – apply after each diaper change until clear for ten (10) days to prevent recurrence.

c) Psoriasis are raised plaque-like lesions and the condition should be referred to the medical officer.

**Scabies**

Scabies is caused by a tiny mite that is invisible to the naked eye. Typically, it causes small intensely itching papules on the skin, particularly in moist areas between fingers, toes, buttocks and axillae. It may also involve a wider area of the skin especially the abdomen. It usually spares the face.

**Management:**
- Lindane cream or benzyl benzoate in the affected child and family members simultaneously.
- Leave on infants for six (6) hours; older children and adults for 72 hours without bathing; reapply after washing hands, changing diaper, etc.
- Second application after eight (8) days minimum may be necessary.
- Daily change of all clothing and bed linen.
• Lesions/itching may last up to 21 days so a wait of at least three (3) weeks before repeating treatment is advisable.
• Wash thoroughly and dry in sun or press all bedding and clothing especially underwear to destroy all mite and eggs.
• Treat all members of the household.
• Refer to Medical Officer if condition does not improve within three (3) days.

**Thrush (Candidiasis)**
This condition is common after use of broad-spectrum antibiotics and in children in debilitated state. White plagues appear in the oral mucosa and inside of the lips; cannot be scraped off; may have erythematous skin rash in diaper area, neck and axilla. Treatment of choice is oral anti-fungal drugs for one (1) week or until clear.

**Ringworm (Scalp)**
Ringworm of the scalp is characterised by patchy circular hair loss with erythematous scaly plaques. Large boggy granuloma of the scalp may also be present.

*Treatment:*
- Griseofulvin orally 10 mg/kg 24 hours daily for 6-8 weeks.
- Topical therapy is adjunctive and ineffective if used alone.

**Ringworm (Body)**
This condition appears on parts of the body as scaly plaques with raised edges. Treatment may include:
- Whitfield’s ointment topically twice daily for 2 - 4 weeks, or
- Clotrimazole or Miconazole topically twice daily for 2 – 4 weeks
- Anti-fungal creams/ointments topically twice daily for 2 – 4 weeks

**Ringworm (Feet)**
Treatment with Haloprogin or Tinactin topically and, if necessary, Griseofulvin by mouth as directed by a medical officer.

**Asthma**
Asthma is a chronic inflammatory condition of the airway, associated with widespread but often reversible airway obstruction. The clinical presentation of asthma is not uniform. Many patients have episodic symptoms and known triggers. Certain conditions frequently accompany asthma and serve to worsen symptoms. These conditions include:
- Allergic rhinitis
- Sinusitis
- Gastroesophageal reflux

Asthma may be indicated in the following situations:
- History of coughing particularly at night.
- Cough, sneeze, or tight chest.
- Recurrent sneezing.
- Symptoms worsen on exposure to smoke, viral infection, pollen.
All suspected cases of asthma in infants should be referred to a medical officer. Parents and caregivers should be educated on:
- Triggers of asthma and how to avoid them
- Early warning signs and symptoms of asthma
- How to manage asthma

**Vomiting**
This condition may be associated with infection (e.g. gastroenteritis), sepsis of any kind, bowel obstruction, and inter-cranial lesion. Vomiting may appear in many forms:
- Projectile or forceful vomiting in a newborn is the classical symptom of pyloric stenosis. The patient should be referred to the Medical Officer if this condition continues for any time.
- Possetting also called “wet burp” or “spitting up” is the regurgitation of frequent, small quantities of feeds in infancy. This condition is often caused by over-feeding
- Bile-Stained Vomitus indicates intestinal obstruction unless proven otherwise. Refer urgently to hospital.
- Bloody Vomitus (Haematemesis) may be associated with drug ingestion (e.g. aspirin, steroids) or liver disease. Refer to medical officer.

**Acute Gastroenteritis**
Acute gastroenteritis is the passage of three or more loose/watery stools in a 24-hour period that may or may not be accompanied by vomiting and fever. In the young child, diarrhoea causes dehydration and when food intake is reduced, it contributes to under-nutrition. Acute dehydration may lead to death if untreated. Table 2.8 below provides guidelines on assessment of dehydration after three or more loose/watery stools.

**Table 2.8: Assessment of Dehydration**

<table>
<thead>
<tr>
<th>Signs of Dehydration</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td>Look at appearance</td>
<td>Well, alert</td>
</tr>
<tr>
<td>Look at condition of:</td>
<td>Alert, normal</td>
</tr>
<tr>
<td></td>
<td>Present</td>
</tr>
<tr>
<td></td>
<td>Moist</td>
</tr>
<tr>
<td></td>
<td>Drinks normally, not thirsty</td>
</tr>
<tr>
<td>Feel – Pinch Skin</td>
<td>Goes back quickly</td>
</tr>
<tr>
<td>Decide</td>
<td>No signs of dehydration</td>
</tr>
</tbody>
</table>
**Action**
- Weigh the patient
- Use Treatment Plan A
- Weigh the patient
- Use Treatment Plan B
- Weigh the patient
- Use Treatment Plan C urgently

<table>
<thead>
<tr>
<th>Treatment Plan</th>
<th>Plan A</th>
<th>Plan B</th>
<th>Plan C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Give approximately 50mls/kg of oral rehydration fluids (ORF) over 4-hour period</strong>&lt;br&gt;Re-assess as appropriate</td>
<td><strong>Give approximately 70mls/kg of oral rehydration fluids (ORF) over 4-hour period</strong>&lt;br&gt;Re-assess as appropriate</td>
<td><strong>Give IV fluids. In a clinic setting, oral rehydration fluids (ORF) Plan B may be given initially if patient is able to drink. Refer to hospital</strong></td>
<td></td>
</tr>
</tbody>
</table>

The presence of the following signs will require additional investigation and treatment. Refer to medical officer/hospital, as necessary:
- Severe dehydration
- Blood or mucus in stool
- Chronic diarrhoea
- High fever (101°F or 38.5°C) Confusion, seizures.

**Useful Hints**
- Oral rehydration can be done with most fluids that the child normally takes. However, the most appropriate fluids to give are breast-milk, plain water, coconut water, diluted fruit juice, and oral rehydration fluids.
- Oral rehydration mixture may be prepared by adding one packet of Oral Rehydration Salts (ORS) to one litre of potable water.
- The medical officer/nurse midwife should initiate feeding and show mother how to feed using cup and spoon.
- Give small quantities of fluids frequently (60 - 90 ml every 30 minutes).
- Continue breastfeeding.
- Discontinue infant formula for 6-12 hours, then re-start with half-strength milk feeds.
- Replace on-going losses. If child vomits, wait 15 minutes then continue ORS.
- If signs and symptoms persist or worsen, refer child to hospital.
- Give care-giver instructions to continue feeding at home.

**HIV Infection in Children**
Vertical transmission of HIV could occur in-utero or intrapartum. The risk of vertical transmission is 30-40% in a mother who is infected, even if she is asymptomatic. All infants born to infected women have passively acquired maternal antibodies to the HIV, irrespective of whether the infant is infected or not with the virus itself. These maternal antibodies may persist for up to 15 months. As a result, HIV antibody testing in a newborn can only reliably indicate the HIV status of the mother and not the infant.  
**Managing HIV-infected Children:**
• PCR testing should be performed on infants as early as birth.
• Infants detected with viral genome (as opposed to antibodies) should be initiated on ART immediately.
• Children with mildly symptomatic or asymptomatic infection should be managed as otherwise healthy children.
• Special attention should be paid to any developmental abnormalities that may be present or develop later.
• Nutritional status of the child should be monitored carefully. Decreased intake, poor absorption, poor utilization, and frequent diarrhoea may affect nutritional status adversely.

**HIV Infection and Breastfeeding**

Since there is a 30% probability that HIV can be transmitted through breast milk, breastfeeding among HIV positive mothers is generally not recommended. However, the decision to breastfeed or not rests with the mother. The mother must first be given all the information on the risk of HIV transmission to the infant, and be allowed to make her own informed choice.

---

**2.3 EARLY CHILDHOOD DEVELOPMENT (1-4 YEARS)**

**DEVELOPMENTAL MILESTONES**

Developmental milestones are things most children can do by a certain age. Learning to move (crawling, walking, running), speak, and play are important milestones that children achieve at various stages of their young life. Parents and care-givers should track how well children are progressing along the developmental pathway as shown in Table 2.9.

**Table 2.9: Summary of Developmental Milestones**

<table>
<thead>
<tr>
<th>Age in Months</th>
<th>Cognitive/Learning</th>
<th>Physical Development</th>
</tr>
</thead>
</table>
| 12            | - Starts to use things correctly, e.g. holds small objects, drinks from a cup  
                 - Copies gestures  
                 - Looks at the right picture or thing when it’s named  
                 - Follows simple directions like “pick up the toy” | - Gets to a sitting position without help  
                 - Pulls up to stand, walks holding on to furniture  
                 - May take a few steps without holding on  
                 - May stand alone |
| 24            | - Points to things or pictures when they are named  
                 - Knows names of familiar people and body parts  
                 - Says sentences with 2 to 4 words | - Stands on tiptoe  
                 - Kicks a ball  
                 - Begins to run  
                 - Climbs onto and down from furniture without help |
• Follows simple instructions
• Repeats words overheard in conversation
• Points to things in a book

• Draws and does straight lines and circles

| 36 | • Can name most familiar things  
• Says first name, age, and sex  
• Names a friend  
• Talks well enough for strangers to understand most of the time  
• Carries on a conversation using 2 to 3 sentences |
| --- | --- |
| 36 | • Climbs well  
• Runs easily  
• Pedals a tricycle (3-wheel bike)  
• Walks up and down stairs, one foot on each step |

| 48 | • Names some colors and some numbers  
• Understands the idea of counting  
• Starts to understand time  
• Remembers parts of a story |
| --- | --- |
| 48 | • Hops and stands on one foot up to 2 seconds  
• Catches a bounced ball most of the time  
• Feeds self, pours drink, cuts with supervision |

**Developmental Challenges Alert**

Young children (by 4 years of age) should be referred for specialist attention if the following characteristics are demonstrated:

- Doesn’t show a wide range of emotions.
- Shows extreme behaviour (unusually fearful, aggressive, or sad).
- Unusually withdrawn and not active.
- Is easily distracted, has trouble focusing on one activity for more than 5 minutes.
- Doesn’t respond to people, or responds only superficially.
- Can’t give first and last name.
- Doesn’t draw pictures.
- Can’t brush teeth, wash and dry hands, or get undressed without help.
- Loses skills once had.

**INTERVENTIONS/PROCEDURES DURING CLINIC VISITS**

Children 1-4 years old attending clinics should receive general health appraisal as well as assessment of developmental milestones consistent with their age. Table 2.10 summarises the clinical procedures that should be undertaken and the areas of information and education that should be emphasised.

**Table 2.10: Summary of Clinical Interventions by Age**

<table>
<thead>
<tr>
<th>Age in Months</th>
<th>Clinical Interventions</th>
<th>Education</th>
</tr>
</thead>
</table>
| 12            | • General health appraisal  
• Weight/growth and nutritional assessment  
• Assessment of milestones | • Accident prevention  
• Dental hygiene  
Importance of bonding and play |
| 18 | **Check/update vaccination** | **General health appraisal** | **Nutritional needs of children** |
|    |                             | **Weight/growth and nutritional assessment** | **Value of play** |
|    |                             | **Assessment of milestones** | **Toilet-training** |
|    |                             | **Booster vaccination – DPT and Polio** | **Immunization** |
|    |                             | **Screening as indicated** | **Dental hygiene** |
|    | **Assessment of milestones** | **Immunization** | **Accident prevention in the home** |
|    | **Weight and nutritional assessment** | **Dental hygiene** | **Nutritional needs of children.** |
|    | **Haemoglobin assessment** | **Parenting - coping with sibling rivalry** | **High-risk children.** |
|    | **Screening as indicated** | **Accident prevention in the home** | **Nutritional needs of children.** |
|    | **Dental examination if indicated** | **Psycho-social and cognitive development** | |

**POINTS TO CONSIDER: EARLY CHILDHOOD DEVELOPMENT**

- There is a tendency for males to achieve developmental milestones at a later age than females.
- Persistent bed-wetting beyond the expected age of attainment of night dryness may be an indication of a urinary tract infection, especially in females. This may warrant further evaluation.
- Regression of milestones may occur following traumatic/stressful events, including a new addition to the family, separation from caregiver, or exposure to violence.
- Assessment of development is an integral part of each child health visit. If delays in development are suspected, referrals should be made to a medical officer or the appropriate agency for further evaluation.

**HIGH-RISK CHILDREN**
Health workers should be on the constant lookout for children considered to be at high-risk for morbidity and mortality. The main high-risk conditions include:

- Low birth weight / prematurity.
- Birth injury/congenital deformity.
- Anaemia / Sickle Cell Disease.
- HIV-exposed or infected.
- Child of an adolescent mother.
- Not maintaining a satisfactory growth curve.
- Siblings who are malnourished.
- Physically/sexually/emotionally abused.
- Disabled
- Mother dead or mentally/emotionally disturbed.
- Wards of the State.
- Children of parents with lower socio-economic status present special risks.

**WHEN HOME VISITS BECOME NECESSARY**

Home visits are a very important component of health promotion within the family. Such visits become essential when the following conditions exist:

- High-risk children based on categorisations described above.
- A child who is failing to thrive or to attain developmental milestones.
- Clinic defaulters – failure to keep appointments.
- Mothers who have difficulty with breastfeeding.
- Families with socio-economic challenges – inadequate living conditions.
- Family members with known mental illness.
Health promotion among Pre-School and Primary School children is an integral component of health service delivery. It is concerned with protecting the health of children while providing a supportive environment for learning. The Family Nurse Practitioner (FNP) is primarily responsible for conducting this programme, with support from the district medical officer, district nurse/midwife, and other health-related personnel. Provision of these services may extend beyond the school environment to families and communities; and must be a collaborative effort between health and education personnel.

Adolescence is described as the period between 10 and 19 years of age. During this period, psychological and social issues are usually more common than physical problems. The threats include inadequate nutrition, unplanned pregnancy, sexually transmitted infections including HIV, and substance abuse.

**GOAL**

Promote and protect the health and well-being of children and adolescents within the school, family and community.

**OBJECTIVES, KEY INDICATORS, TARGETS**

The objectives, indicators and targets outlined below are designed to achieve the goal promoting the health of school-aged children and adolescents. (See Table 3.1)

**Table 3.1: Objectives, Key Indicators and Targets for Antenatal Care**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Institutionalise school health programmes at the pre-primary and primary levels of the education system</td>
<td>No. of pre-primary and primary schools implementing formal school health programmes</td>
<td>90% of primary schools with established school health programmes</td>
</tr>
<tr>
<td>2) Increase physical health screening in pre-primary and primary schools</td>
<td>No. of children in pre-primary and primary schools receiving health screening upon entering and leaving school</td>
<td>80% of children in pre-primary and primary schools receiving health screening upon entering and leaving school</td>
</tr>
<tr>
<td>3) Increase health coverage among adolescents</td>
<td>No. of adolescents accessing services from health facilities</td>
<td>60% increase in number of adolescent accessing services from health centres/medical clinics</td>
</tr>
<tr>
<td>4) Reduce teenage fertility rate</td>
<td>No. of total number of live births attributable to adolescent women</td>
<td>40% decrease in number of live births to adolescent women</td>
</tr>
</tbody>
</table>
STRATEGIES

- Review policies and programmes to support school and adolescent health.
- Streamline health assessment and management conditions.
- Institutionalise health promotion.
- Build strategic partnerships with relevant public and private sector entities, especially the education and social development sectors.

3.1 SCHOOL HEALTH

MINIMUM STANDARDS/REQUIREMENTS

Minimum standards are the prerequisites that health workers responsible for implementing school health programmes must undertake routinely. They include:

1) General physical examination should be conducted annually on all children entering and leaving Pre-Primary and Primary Schools.
2) Permission by way of a signed letter should be received from parents/guardians prior to performance of the general physical examination.
3) A record of each physical examination should be maintained. This record will be in the form of a “Health Card” with the following information:
   - Name
   - Age
   - Address
   - Date of Birth
   - Gender
   - Weight/Height
   - Immunisation Status
   - Next of Kin
   - Telephone Contact Number
   - Summary of Findings

Equipment required to conduct school health visits include:
   - Scales – height and weight
   - Snellen charts
   - Tuning forks

4) The Health Card should be kept in a safe and private place in the office of the Pre-School Director or Primary School Head Teacher.
5) Children requiring further investigation/attention should be referred to the appropriate agencies.
6) Parents/guardians should be informed/counseled on unusual or abnormal findings of physical examination.
7) An oral summary report should be provided to the head teacher after each visit.

**PROCEDURES FOR CONDUCTING PHYSICAL EXAMINATIONS**

Each physical examination should assess:
- General cleanliness
- Nutritional status – signs of under-nutrition or over-nutrition
- Growth and development milestones
- Skin
- Mouth and teeth
- Eyes (vision)
- Ears (hearing)
- Heart and lungs
- Spine and abdomen
- Extremities

Special attention should be paid to children who:
- Suffer from frequent illnesses and miss school often.
- Consistently fall below growth and development milestones.
- Show evidence of physical abuse or drug use.
- Exist under poor socio-economic conditions and have limited family support.

**NURSERY/PRESCHOOL PREPARATION**

Starting pre-school is an adjustment for young children and carry potential health risks. Health workers should assist parents and pre-school teachers in making this transition by undertaking the following:
- Appropriate screening for growth and development milestones as shown in Table 2.9.
- Vision and hearing assessments.
- Complete immunisation schedule.
- Health education/promotion of parents to recognise danger signs such as failure to thrive, withdrawn or aggressive behaviour, delayed milestones.

**Vision Screening**

All pre-school and primary school students should receive vision screening appropriate to their age when entering and leaving school, or as otherwise considered necessary. Table 3.2 below lists the minimum vision screening tests that should be undertaken.
### Table 3.2: Vision Screening Tests by Age-Group

<table>
<thead>
<tr>
<th>Age-group</th>
<th>Screening Tests</th>
<th>Actions Required</th>
</tr>
</thead>
</table>
| 1-2 years          | • Red reflex  
• External eye examination – shape of globe, etc  
• Pupillary responses  
• Observe for any consistency deviations  
• Recognition of faces/objects  
• Deviation of eye(s)  
• Tearing/photophobia  
• Hand-eye coordination  
• Preference for one eye over the other (cover-uncover test)                                                                                                                                                                                                                   | Refer to Medical Officer/Ophthalmologist if any suspected ocular alignment abnormalities or preference of one eye over the other                                                                                                                                                                                                                 |
| 3-4 years          | • Red reflex  
• External eye examination  
• Pupillary responses  
• Observe for any consistent eye deviations  
• Recognition of faces/objects  
• Deviation of eye(s)  
• Tearing/photophobia  
• Hand-eye coordination  
• Preference for one eye over the other (cover-uncover test)  
• Abnormal head posturing, squinting or blepharospasm  
• Ocular deviation  
• Visual acuity testing – Tumbling E chart, HOTV, Snellen picture test                                                                                                                                                                                                 | Refer to ophthalmologist if visual acuity <20/40 in one or both eyes, difference of 2 or more lines between each eye.                                                                                                                                                                                                                             |
| 6 years and above  | • Red reflex  
• External eye examination  
• Pupillary responses  
• Observe for any consistent eye deviations  
• Recognition of faces/objects  
• Deviation of eye(s)  
• Tearing/photophobia  
• Hand-eye coordination  
• Preference for one eye over the other (cover-uncover test)  
• Abnormal head posturing, squinting or blepharospasm  
• Ocular deviation  
• Visual acuity testing – Tumbling E chart, HOTV, Snellen picture test                                                                                                                                                                                                 | Refer to ophthalmologist if visual acuity <20/40 in one or both eyes, difference of 2 or more lines between each eye.                                                                                                                                                                                                                             |
**Vision Screening Tools**
The vision screening tools required include:
- Snellen chart – letters, pictures
- Occluding eye patch
- Lapcard
- Colour vision chart
- Ophthalmoscope

**Hearing and Speech Screening**
Hearing loss may occur if a child:
- Was born prematurely.
- Stayed in the neonatal intensive care unit.
- Had newborn jaundice with bilirubin level high enough to require a blood transfusion.
- Was given medications that can lead to hearing loss.
- Hereditary factors.
- Had certain complications at birth.
- Had many ear infections.
- Had infections such as meningitis.

Signs of hearing loss in young children may include:
- Limited, poor, or no speech.
- Frequently inattentive.
- Difficulty learning.
- Fails to respond to conversation-level speech or answers inappropriately to speech.
- Fails to respond to his or her name or is easily frustrated when there is a lot of background noise.

**Table 3.3: Hearing and Speech Examination by Age-Group**

<table>
<thead>
<tr>
<th>Age-Group</th>
<th>Examination (What to look for)</th>
</tr>
</thead>
</table>
| 1-2 years       | • Says up to 20 words by 18 months of age  
                     • Says 50 or more words by 2 years of age and begins to combine words to make simple sentences  
                     • Obeys simple two-step instructions  
                     • Identifies common objects (in person or pictures)  
                     • Points to eyes, ears, or nose when asked |
| 3-4 years       | • Huge gains in speech  
                     • Says too many words to count  
                     • Routinely combines words into sentences  
                     • Identifies colours and concepts |
| 5 years and over| • Hearing test should be done  
                     • Observe for speech impediments |
3.2 ADOLESCENT HEALTH

AREAS OF FOCUS

The key issues to be addressed in an adolescent health programme include:

- Growth and development
- Sexual and reproductive health
- Personal hygiene
- Self-esteem and values clarification
- Conflict resolution among individuals and families
- Career guidance and skills development
- Unplanned and unwanted pregnancies
- Sexually transmitted infections, including HIV
- Nutrition
- Violence, injuries and accidents
- Substance use and abuse
- Mental health

IMPLEMENTATION APPROACHES

The health promotion approach is essential to a successful adolescent health programme. Health and other personnel involved delivering adolescent health must pay attention to the following:

- Design policies and implement programmes that focus evolving developmental needs of adolescents.
- Begin health messaging in early adolescence.
- Provide health services that are affordable, accessible, confidential, and non-judgmental.
- Engage families, schools, and communities in developing supportive environments for youth.
- Involve adolescents in activities that build life skills and enhance their self-worth and sense of belonging.

HEALTH INTERVENTIONS

Health workers should maximise their contact with adolescents whether in a health, school, or community setting. Specific interventions should include:

- Conducting general physical examination looking specifically at:
  - General cleanliness
  - Vision and hearing screening
  - Skin care
• Dental hygiene
  • Providing females with clear, precise, and complete information on the menstrual cycle and management of menstrual issues/problems.
  • Providing both males and females with information on delaying sexual initiation, contraceptives and condom use, and prevention of sexually transmitted infections, including HIV.
  • Initiating counselling aimed at addressing special needs of adolescents.
  • Offering voluntary counselling and testing (VCT) to adolescents who are sexually active (See Table 4.4 for details)

**SOCIAL SKILLS TRAINING**

Many of the growth and development challenges that adolescents face are concerned with psychosocial issues such as self-understanding, self-esteem, and conflict resolution. Health care professionals and social partners should assist in developing social skills of adolescents through organisation of:

• Youth guidance programmes
• Youth clubs
• Peer counselling
• Drama
• Sports and culture
Family planning is concerned with providing education and services on the various methods and techniques of contraception, so that persons can make informed choices about their family size and spacing of pregnancies. In St. Vincent and the Grenadines, both the total fertility rate and the adolescent fertility rate have shown continuous improvement over time, although further declines are required, especially in the latter case.

**GOAL**

Enhance the health of women and their families through provision of high-quality and gender-sensitive reproductive health services.

**OBJECTIVES, KEY INDICATORS, AND TARGETS**

Ensuring the maximum health and well-being of the childbearing Vincentian family will be accomplished through pursuit of the objectives, key indicators and targets outlined in Table 4.1 below.

**Table 4.1: Objectives, Key Indicators and Targets for Antenatal Care**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Reduce fertility rates among women, including adolescent women</td>
<td>No. of sexually active women maintaining sustained use of approved contraceptives</td>
<td>80% contraceptive prevalence rate among sexually active women</td>
</tr>
<tr>
<td></td>
<td>No. of live births attributable to adolescent women</td>
<td>Less than 12% of total number of live births attributable to adolescent women</td>
</tr>
<tr>
<td>2) Increase male involvement in fertility control</td>
<td>No. of men attending family planning counselling sessions with their female partners</td>
<td>40% increase in male participation in family planning counselling sessions</td>
</tr>
</tbody>
</table>

**STRATEGIES**

- Maintain optimal levels of contraceptive service delivery nationally, with attention paid to mix and efficacy of methods.
- Continuous training and re-training of health workers to provide modern high-quality family planning services to clients.
- Provide counselling and emergency contraceptive services for victims of rape and incest.
- Strengthen health promotion initiatives aimed at advancing family planning services, including among the male population.
• Promote privacy and confidentiality in the delivery of family planning services.

ESSENTIALS OF FAMILY PLANNING SERVICE DELIVERY

Family planning service delivery involves the proper coordination of the following key components:

• **Counselling.** Trained health workers and clients share family planning information in an interactive manner. This interactive process allows clients to make informed decisions about their fertility, and take appropriate actions to improve their own health and the well-being of their families.

• **Provision of contraceptive services.** Trained health workers provide contraceptive information and services to clients, in accordance with approved method-specific guidelines.

• **Follow-up and referral.** Health providers should inform and support family planning clients on appropriate follow-up requirements, consistent with established referral guidelines.

• **Record keeping.** All family planning services provided by health workers, public or private, should be carefully recorded and kept securely.

RIGHTS OF CLIENTS

Family planning service providers should respect the rights of all clients. These rights cover:

• **Information.** All clients should be provided with adequate information on available contraceptive methods, how they work, and management of side effects; importance of follow-up support, referral mechanisms, and hours of operation of the family planning facility.

• **Access to services.** All clients, including adolescents and persons with disabilities, have the right to family planning services at all levels of care, consistent with national policy guidelines.

• **Informed choice.** All clients should be counselled on the range of contraceptive options and methods that are available at all levels of care; and should be provided with accurate and complete information to enable them to make an informed decision.

• **Safety of services.** Service providers should adhere strictly to infection prevention and control practices; as well as instructions provided by manufacturers on the safe and effective use of contraceptive methods.

• **Privacy and confidentiality.** All family planning services should be individualised and provided in sound-protected areas as far as possible. Service providers should not share client family planning information with relatives, friends or members of the public without explicit informed consent. Clients should be treated with dignity and respect.

• **Continuity of care.** All client records should be accurately and completely documented to ensure effective client management and appropriate referral, as appropriate.
NEEDS OF SERVICE PROVIDERS

Family planning service providers have the responsibility to assist clients (women and men) to choose and correctly use a suitable contraceptive method. Among the tools required are:

- **Appropriate skills.** Service providers should be well-trained and be exposed to ongoing skills development to remain on the cutting edge of contraceptive information and technology. The type and level of training provided should be consistent with the designated roles and responsibilities of the individual service provider.

- **Adequate supplies and equipment.** Service providers should have sufficient and appropriate materials, supplies, and instruments to deliver uninterrupted care and assure the safety of clients and staff.

- **Effective oversight.** A system of consistent supervisory support and mentoring should be available to family planning service providers to increase competence and problem solving.

INITIATING FAMILY PLANNING SERVICES

The optimum time for initiating discussion on family planning is as follows:

**Education**
- Start at secondary school level as part of Health and Family Life Education curriculum
- During the antenatal period
- Lying-in period (seclusion before and after birth)
- Child health clinic

**Services**
- Within 24 hours after delivery, e.g. in the case of tubal ligation
- Six (6) weeks postnatal

PROCEDURES AT FAMILY PLANNING CLINIC VISITS

**First Visit**
Family planning service providers should initiate counselling with clients in comfortable and private conditions. These counselling sessions should involve a respectful sharing of information that would allow clients to make informed choice of contraceptive method. Table 4.2 outlines procedures to be followed by service providers during first clinic visit.

**Table 4.2 Procedures during First Family Planning Clinic Visit**

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Key Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>• Name, age, and other identification data</td>
</tr>
<tr>
<td>Medical History</td>
<td>• Past surgical operations - breast or pelvic organs</td>
</tr>
<tr>
<td></td>
<td>• Hypertension, diabetes</td>
</tr>
<tr>
<td></td>
<td>• Migraine headaches</td>
</tr>
<tr>
<td></td>
<td>• Thrombo-embolic disorders (blood clots)</td>
</tr>
</tbody>
</table>
- Ischaemic heart disease
- Valvular heart disease with complications
- Varicose veins
- Jaundice or liver disease
- Sickle cell anaemia and other blood abnormalities
- Other vascular disorders
- Smoking, alcohol and drug use
- Abnormal vaginal bleeding
- Cancers of the breast, uterus or cervix
- Current or recent STIs
- Breastfeeding for less than six (6) weeks

Family History
- Breast cancer
- Cancer of uterus or cervix
- Hypertension, diabetes

Reproductive History
- Last menstrual period
- Past treatment for infection in pelvis
- Number of pregnancies
- Number of children alive
- When and what was the outcome of last pregnancy
- Previous contraceptives used

Physical Examination
- General examination
- Specific examination of breast, external genitalia, vagina and pelvis

Laboratory Investigations
- Papanicoloau Smear as indicated (See Table 4.4)
- Urine tests for sugar, albumin, acetone

**Routine Visits**
The frequency of routine clinic visits depends on the contraceptive method chosen and the needs of the individual client. During routine clinic visits, family planning service providers should routinely:
- Measure and record weight of clients.
- Assess and record vital signs.
- Test urine for albumin, sugar, acetone.
- Advise/educate on any problems/issues related to the method of contraception being used

**METHODS OF CONTRACEPTION**
There are several types of contraceptive methods available, but not all types are appropriate for all situations. The most appropriate birth control method depends on an individual's overall health, age, frequency of sexual activity, number of sexual partners, desire to have children in the future, and family history of certain diseases. For
convenience, the family planning methods that are available for use in the national programme may be divided into two categories:

A. Temporary Contraceptive Methods

These methods are meant to space out or delay pregnancies for specific periods of time such as a single act of sexual intercourse, or for several days, months, years, or for as long as the client desires. These methods may be discontinued anytime a woman decides to resume her fertility. The most commonly available temporary methods of birth control and the recommended schedule for check-ups are shown in Table 4.3.

**Table 4.3: Commonly-used Temporary Family Planning Methods**

<table>
<thead>
<tr>
<th>Method</th>
<th>Schedule for Check-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectable</td>
<td>1, 2 or 3 months</td>
</tr>
<tr>
<td>Oral Contraceptive</td>
<td>3 months</td>
</tr>
<tr>
<td>Intra-uterine Device</td>
<td>6 months initially, then annually</td>
</tr>
<tr>
<td>Barriers (condom, diaphragm)</td>
<td>No specific time</td>
</tr>
<tr>
<td>Vaginal Spermicides (foam, gel, sponge)</td>
<td>No specific time</td>
</tr>
<tr>
<td>Natural methods (abstinence, fertility awareness method, lactational amenorrhoea, withdrawal)</td>
<td>No specific time</td>
</tr>
</tbody>
</table>

B. Permanent Contraceptive Methods

For all practical purposes, permanent contraceptive methods are irreversible. The two forms of permanent contraceptive methods are:

- Tubal ligation – cutting of the fallopian tubes of the woman.
- Vasectomy – clamping, cutting, or otherwise sealing the vas deferens of the male testicles.

**CONTRAINdicATIONS RELATED TO CONTRACEPTIVE METHODS**

Some contraceptive methods are contraindicated for some clients. Family planning service providers should provide clients with sufficient information on each contraceptive option to allow them to make the best choice based on their health condition, lifestyle, desired family size, and intended timing for pregnancy. Table 4.4 below provides a list of contraindicators by contraceptive method.

**Table 4.4: Contraceptive Methods and Associated Contraindicators**

<table>
<thead>
<tr>
<th>Contraceptive Method</th>
<th>Contraindicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectable</td>
<td>Women with:</td>
</tr>
<tr>
<td></td>
<td>- High blood pressure: Systolic ≥160 mmHg or diastolic ≥100 mmHg</td>
</tr>
<tr>
<td>Combined Oral Contraceptive</td>
<td>Women with:</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>Established pregnancy</td>
</tr>
<tr>
<td></td>
<td>Less than 6-8 weeks postpartum</td>
</tr>
<tr>
<td></td>
<td>Unexplained vaginal bleeding</td>
</tr>
<tr>
<td></td>
<td>Active liver disease</td>
</tr>
<tr>
<td></td>
<td>History of valvular or ischaemic heart disease, stroke or high blood pressure</td>
</tr>
<tr>
<td></td>
<td>Breast cancer</td>
</tr>
<tr>
<td></td>
<td>History or risk of blood clotting problems, diabetes for more than 20 years, or with vascular disease</td>
</tr>
<tr>
<td></td>
<td>Migraines and focal neurologic symptoms</td>
</tr>
<tr>
<td></td>
<td>Over age 35 who smoke</td>
</tr>
<tr>
<td></td>
<td>On rifampicin, griseofulvin or anticonvulsants</td>
</tr>
<tr>
<td></td>
<td>Breastfeeding for less than 6 months</td>
</tr>
<tr>
<td></td>
<td>Less than 21 days postpartum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intra-uterine Device</th>
<th>Women with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Known or suspected pregnancy</td>
</tr>
<tr>
<td></td>
<td>Unexplained abnormal vaginal bleeding</td>
</tr>
<tr>
<td></td>
<td>Cervical, endometrial, or ovarian cancer</td>
</tr>
<tr>
<td></td>
<td>Active genital tract infections (vaginitis, cervicitis, pelvic inflammatory disease)</td>
</tr>
<tr>
<td></td>
<td>Sexually transmitted infection, including HIV infection</td>
</tr>
<tr>
<td></td>
<td>Distorted uterine cavity</td>
</tr>
<tr>
<td></td>
<td>Women with severe cervical stenosis</td>
</tr>
<tr>
<td></td>
<td>Women with history of septic abortion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diaphragm</th>
<th>Women with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Repeated urinary tract infections</td>
</tr>
<tr>
<td></td>
<td>Physical disabilities</td>
</tr>
<tr>
<td></td>
<td>Uterine prolapse or with severe cystocele or rectocele</td>
</tr>
<tr>
<td></td>
<td>Genital abnormalities, e.g. vaginal stenosis</td>
</tr>
<tr>
<td></td>
<td>Women with past toxic shock syndrome</td>
</tr>
<tr>
<td></td>
<td>Allergy to latex (female and male)</td>
</tr>
</tbody>
</table>
|           | Age, parity, or health problems that makes pregnancy a
**Spermicide**

Women with:
- Age, parity, or health problems that makes pregnancy a high-risk
- Physical and mental disabilities
- Genital abnormalities

**Condom**

- Couples who are allergic to materials from which condoms are made, usually latex
- Couples who need a highly effective or long-term contraceptive method
- Pregnancy poses serious health risk to the woman
- Couples not willing to use the method correctly and consistently

**Natural Family Planning**

- Women whose age, parity or health problems make pregnancy high-risk
- Unwillingness to practice sexual abstinence during certain periods
- Women with irregular menstrual cycles

**Lactation Amenorrhoea Method (LAM)**

- Menstrual period has returned
- Not breastfeeding exclusively
- Last baby more than six (6) months old
- Use of antidepressant or anti-psychotic drugs

**Tubal Ligation**

- Uncertainty over desire to bear children in the future
- Unresolved vaginal bleeding and acute pelvic or systemic infections
- Cervical, endometrial or ovarian cancer
- Pelvic tuberculosis or endometriosis
- Anaemia or severe liver disease
- History of, or at-risk from, thromboembolic disorders

**Vasectomy**

- Uncertain over desire to have children in the future
- Men with current sexually transmitted infection, including HIV
- Men with history of coagulation disorders

**ADOLESCENTS AND CONTRACEPTION**

Despite continuing decline, adolescent birth rates remain an individual and family challenge. It is strongly recommended that adolescents postpone sexual activity until they are fully ready for the emotional, physical, and financial consequences. However, access to family planning services should be made available to adolescents who opt not to delay sexual activity. Such services should be accompanied by professional counselling based on age, health condition, and marital status. Family planning service providers should be guided by the information contained in Table 4.5 in counselling adolescents on choice of contraceptive methods.
Table 4.5: Adolescent Contraceptive Counselling Guidelines

<table>
<thead>
<tr>
<th>Contraceptive Method</th>
<th>Counselling Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence</td>
<td>Should encouraged as the first option, especially during early adolescence</td>
</tr>
</tbody>
</table>
| Combined Oral Contraceptives and Progestin-Only Pills | Contraindications are rare  
|                                                   | Popular among adolescents  
|                                                   | Regular use must be emphasised; forgetfulness increases failure rate                   |
| Combined Injectable Contraceptives                | Common side effects include irregular bleeding/spotting, acne, and weight gain  
|                                                   | Thorough counselling is essential  
|                                                   | Eliminates need for adolescents to keep supplies of contraceptives  
|                                                   | Second choice only for adolescents who require intermediate-duration contraception     |
| Condoms                                           | Provides immediate protection but requires planning to ensure that supplies are available when needed  
|                                                   | Easy to use and convenient for adolescents  
|                                                   | Only contraceptive method that protects against sexually transmitted infections, including Hepatitis B and HIV infection  
|                                                   | Must be used correctly and consistently to ensure efficacy                             |
| Withdrawal (Coitus Interruptus)                   | High contraceptive failure rate among adolescents  
|                                                   | Full information on correct technique is critical  
|                                                   | Only method that is often available in unplanned sexual activity                      |
| Emergency Contraceptives                          | Option should available in cases of unplanned, unprotected intercourse  
|                                                   | Safest methods should be used based on medical history of adolescent  
|                                                   | Intra-uterine devices are least desirable                                              |
| Intrauterine Devices                               | Not recommended for adolescents with multiple sex partners  
|                                                   | Thorough counselling is essential                                                     |
| Diaphragm                                         | Not recommended generally for adolescents because it requires fitting (e.g. pelvic examination) and continued motivation to use with each act of intercourse |
| Voluntary Sterilization (Tubal Ligation and Vasectomy) | Not appropriate for adolescents in most circumstances                                 |

**BREASTFEEDING WOMEN AND CONTRACEPTION**

Breastfeeding women do not need contraception for at least 6 weeks postpartum, and up to six (6) months if they are using the lactation amenorrhoea method (LAM). If a breastfeeding
woman decides to use contraception other than LAM, she should be counselled about the potential effect of some contraceptives on breastfeeding, as well as the health of the infant. For example, combined oral contraceptives and combined injectable contraceptives decrease breast milk production, and may also affect the normal growth of the baby during the first 6-8 weeks of life. They should be treated as last choice methods.

It is recommended that combined oral contraceptives and combined injectable contraceptives should not be introduced until at least 8-12 weeks postpartum. This delay allows breastfeeding to be better established. Table 4.6 below provides a recommended schedule for starting breastfeeding women on contraceptives.

### Table 4.6: Schedule for Initiating Breastfeeding Women on Contraceptives

<table>
<thead>
<tr>
<th>Method</th>
<th>Time Schedule</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delivery</td>
<td>6 weeks</td>
</tr>
<tr>
<td>LAM</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
| Intra-uterine Device        | x             | x       | x        | • Immediate post-placental or postpartum (<48 hours) insertion  
                             |               |          |          | • Requires adequate counselling and specially-trained service provider  |
| Tubal Ligation              | x             | x       | x        | • Can be performed at anytime  
                             |               |          |          | • Requires adequate counselling and specially-trained service provider  |
| Condoms and Spermicides     | x             | x       | x        | May be introduced at any time  |
| Combined Oral Contraceptives| x             | x       | x        | • May affect quantity of breast milk and growth of infant during the first six months  
                             |               |          |          | • May start as soon as 6 weeks postpartum if other methods are not available or acceptable  |
| Natural Family Planning     | x             | x       | x        | • Reduced ovarian function creates difficulty in interpreting fertility signs  
                             |               |          |          | • May can require prolonged periods of abstinence during breastfeeding until fertility signs are fully established  |

### NON-BREASTFEEDING WOMEN AND CONTRACEPTION

Ovulation can occur as early as 25 days postpartum among non-breastfeeding women. This underscores the importance of initiating contraception in the very early postpartum period to
avoid unwanted pregnancy. Table 4.7 outlines the recommended schedule for initiating contraception among non-breastfeeding women.

Table 4.7: Schedule for Initiating Non-Breastfeeding Women on Contraceptives

<table>
<thead>
<tr>
<th>Method</th>
<th>Time Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delivery</td>
</tr>
<tr>
<td>Combined Oral Contraceptives</td>
<td>x</td>
</tr>
<tr>
<td>Intra-uterine Device</td>
<td>x</td>
</tr>
<tr>
<td>Tubal Ligation</td>
<td></td>
</tr>
<tr>
<td>Condoms and Spermicides</td>
<td>x</td>
</tr>
<tr>
<td>Natural Family Planning</td>
<td>x</td>
</tr>
</tbody>
</table>

POST-ABORTION CONTRACEPTION

Post-abortion family planning should be based on an individual assessment of each woman's situation including health condition and personal characteristics. For this reason, family planning service providers should emphasise the following:

- Counselling about contraceptive needs in terms of the client’s reproductive goals.
- Information and counselling about all available methods, their characteristics, effectiveness, and side effects.
- Choices among methods (e.g., short and long-term, hormonal and nonhormonal).
- Assurance of the contraceptive resupply.
- Access to follow-up care.
- Information about the need for protection against sexually transmitted infections.

MEN AND FAMILY PLANNING

Reproductive health information and services for men should be provided in a gender-sensitive manner. The emphasis should be on improving knowledge, attitudes, and practices related to family planning; while stressing the critical role that men can play in improving the reproductive health of their partners and well-being of their families. Topics to be covered include:

A) Information and Education

- Understanding male and female anatomy and physiology
- Sexuality and sexual dysfunction
- Contraceptive methods and location of family planning services
- Sexually transmitted diseases
- Screening for prostate and other cancers of the reproductive organs
- Male infertility
B) Contraceptive Services

The existing contraceptive services available to men are:

- Condoms
- Vasectomy

PAP SMEARS (Cytology Screening)

A Pap smear should be taken for laboratory investigation at the initial visit and subsequently as shown in Table 4.8. Cervical cancer is typically slow growing, and most cancers are found in women who have never been screened or have not been screened in the past five (5) years.

Table 4.8: Screening of Women for Cervical Cancer using Cytology

<table>
<thead>
<tr>
<th>Population by Age-Group</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| Younger than 21 years   | • Screening not generally recommended  
|                        | • Sexually active women with abnormal bleeding should have a thorough physical examination |
| 21-29 years             | • Screening with cytology recommended every three (3) years.  
|                        | • HPV testing is not recommended |
| 30-65 years             | • Screening with cytology recommended every three (3) years  
|                        | • For women who want to lengthen the screening period, a combination of cytology and HPV testing every five years is recommended |
| Older than 65 years     | • Not recommended for women who have had adequate prior screening and are not otherwise at risk for cervical cancer |

Health providers should ensure that women selected for pap smears do not have any of the following conditions:

- Currently pregnant.
- Known or suspected endometrial carcinoma or pre-malignant change of the endometrium.
- Active genital or urinary tract infection at the time of the procedure.
- Suffer from an active pelvic inflammatory disease.
- Currently have an IUD in place.
Good nutrition is an important pathway to robust family health and wellbeing. The practice ensures that the human body gets all the nutrients, vitamins, and minerals it needs to sustain healthy lifestyles across the life course. Good family nutrition helps to:

- Reduce the risk of diseases such as hypertension, diabetes, heart disease, some forms of cancer, and osteoporosis.
- Lower high cholesterol.
- Improve ability to recover from illness or injury.
- Increase energy level.

Health providers should encourage good family nutrition through counselling, information, and education. Food supplementation may also be necessary in some cases. Although some nutritional considerations for maternal and child health have been referenced earlier, this Section of the Manual provides more detailed information across the life course.

GOAL

Maintain healthy living among individuals, families, and communities by promoting good nutritional practices throughout the life course.

OBJECTIVES, KEY INDICATORS, AND TARGETS

The objectives, key indicators, and targets associated with promoting good nutritional practices in the family are described in Table 5.1 below.

Table 5.1: Objectives, Key Indicators and Targets for Family Nutrition

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Increase exclusive breastfeeding among women</td>
<td>No. of children being exclusively breastfed for first six (6) months of life</td>
<td>80% exclusive breastfeeding among children for first six (6) months of life</td>
</tr>
<tr>
<td>2) Reduce under-nutrition and over-nutrition among children 0-59 months</td>
<td>% under-nutrition among children 0-59 months</td>
<td>Less than 1% under-nutrition among children 0-59 months</td>
</tr>
<tr>
<td></td>
<td>% over-nutrition among children 0-59 months</td>
<td>Less than 2% over-nutrition among children 0-59 months</td>
</tr>
<tr>
<td>3) Reduce morbidity and mortality from chronic non-communicable diseases</td>
<td>No. of clinic visits due to chronic non-communicable diseases CNCDs</td>
<td>Less than 40% of clinic visits due to chronic non-communicable diseases</td>
</tr>
<tr>
<td></td>
<td>No. of deaths attributable to chronic non-communicable diseases</td>
<td>Less than 50% of deaths due to chronic non-communicable diseases</td>
</tr>
</tbody>
</table>
STRATEGIES

- Routine growth monitoring for children aged 0-59 months.
- Skills development in monitoring nutritional status of children for relevant health workers.
- Consistent nutrition counselling, education, and surveillance.
- On-going promotion of exclusive breastfeeding during first six (6) months of life.
- Promotion of appropriate complementary feeding to ensure adequate provision of micronutrients and energy.
- Cross-sectoral collaboration in nutrition policy formulation, implementation and evaluation.

5.1 NUTRITION DURING PREGNANCY

DIET DURING PREGNANCY

Important Sources of Micronutrients
Good nutrition during pregnancy, beginning in the first trimester, is an important component of safe motherhood and the health of the newborn. In this regard, the most important micronutrients and their sources are as follows:

- **Iron**: liver, kidney, lean meats, dark green leafy vegetables, molasses, dried peas and beans, dried seeds, enriched breads, flour and cereal products
- **Folate**: dark green leafy vegetables (e.g. callaloo, pakchoi), liver, kidney, peas and beans, whole grains (e.g. wheat, rice, oats)
- **Iodine**: sea foods, salt-water fish, salmon, tuna, shellfish, iodised salt, irish moss
- **Zinc**: sea foods especially oysters, food from animals, eggs, cheese, peas and beans, whole grains (e.g. wheat, rice, oats)
- **Calcium**: milk, cheese, yogurt, callaloo, bush cabbage, canned fish with bones (e.g. sardines), molasses, pigeon peas, kidney beans
- **Magnesium**: green leafy vegetables (e.g. callaloo and lettuce), whole grain cereals
- **Vitamins**:
  - **A**: liver, egg yolk, whole milk and whole milk products, fortified butter and margarine, dark green leafy vegetables, pumpkin, pawpaw, mango, carrots, yellow yam
  - **B1**: peas, beans, nuts, enriched whole grain breads, chicken, fish, lean pork, beef, mutton, liver, milk, eggs
  - **B2**: dark green leafy vegetables, milk, egg, liver, fish, lean pork, mutton, beef, enriched breads, flour and cereal
  - **C**: garden cherries, oranges, grapefruits, limes, guava, pawpaw, tomato, custard fruit, raw cabbage
Key Nutritional Guidelines
Pregnant women should adhere to the following nutritional guidelines:

1) Approximately 300 extra calories are needed daily by the pregnant woman to ensure healthy outcomes.
2) These calories should come from the six (6) food groups representing a balanced diet of protein, fruits, vegetables, and whole grains. Sweets and fats should be kept to a minimum.
3) Expectant mothers should be encouraged to talk with their health care provider about restricting intake of caffeine and artificial sweeteners.
4) All tobacco, alcohol, and non-prescription drugs should be avoided during pregnancy.
5) Appropriate and timely vitamin and mineral supplementation is required. These include:
   • Daily supplementation of 5 mg of folic acid commencing as early as possible in the pregnancy
   • Daily supplementation with iron (60mg of elemental iron) should routinely be given in pregnancy
   • Iron supplement should be taken with animal protein, after meals with fruit/fruit juice for better absorption
   • Iron and folic acid supplementation should continue up to six months postpartum
6) Adequate fluid intake is an important part of healthy pregnancy nutrition. Several glasses of water should be taken each day, in addition to fluids in fruit juices and soups.
7) Ingestion of small but frequent portions of bland meals can assist in alleviating episodes of nausea and vomiting that are commonly experienced during pregnancy, especially during the first trimester.

Conditions Requiring Special Attention
Certain conditions present during pregnancy may require specialist management by Nutritionists/Dieticians, Medical Officers, and Obstetricians. These conditions include women with:

• Diabetes mellitus, including gestational diabetes.
• Hypertension and its complications of pre-eclampsia and eclampsia.
• Sickle Cell disease, anaemia (haemoglobin less than 10mg/dl), cardiac or renal impairment, obesity.
• Multiple pregnancies.
• Poor dietary history or inadequate weight gain.

NUTRITIONAL MANAGEMENT OF MINOR HEALTH CONDITIONS
There are at least five (5) common nutrition-related problems during pregnancy that can be treated with certain alterations in the diet. (See Table 5.2 below)
**Table 5.2: Nutritional Management of Minor Disorders of Pregnancy**

<table>
<thead>
<tr>
<th>Disorders</th>
<th>Recommended Actions</th>
</tr>
</thead>
</table>
| **Morning Sickness/Nausea and Vomiting** | Usually lasts for about six (6) weeks during the first trimester. Pregnant women with this condition should be encouraged to:  
  - Eat small but frequent meals throughout the day  
  - Eat dry toast or crackers before getting out of bed in the morning  
  - Avoid strongly flavoured and highly seasoned foods                                                                                                                                                                                                                                    |
| **Heartburn**                     | This condition is common in pregnant women and is caused by the movement of acid from the stomach up into the oesophagus resulting in a burning sensation. Heartburn may also occur depending on the position of the baby, if the baby is pushing up on the stomach. Recommended actions for heartburn are like those for morning sickness:  
  - Eat small but frequent meals throughout the day  
  - Avoid strongly flavoured and highly seasoned foods  
  - In severe cases, diet changes may be required involving foods such as tomato-based products, mint, citrus fruits, caffeine, fatty foods  
  - Wait for 30 minutes after eating before lying down  
  - Medicines such as commercial antacid preparations may be used in consultation with a Medical Officer                                                                                                                                                                         |
| **Constipation**                  | Most common during the third trimester of pregnancy and is the result of decreased activity in muscles that line hollow organs such as the urinary bladder, uterus, stomach and intestines. Recommended actions include:  
  - Increase daily intake of fluids (water and other mild fluids)  
  - Increase intake of high-fibre foods including fruits and vegetables (the average woman needs about 25 grams of fibre per day)  
  - Controlled exercise and physical activity are often helpful  
  - If none of the above works, the Medical Officer may consider prescribing some form of medication                                                                                                                                                                        |
| **Gestational Diabetes**          | This condition is defined as the degree of glucose intolerance that occurs during pregnancy and imposes risks on both the mother and foetus. Diet therapy is the first line of defence in management of gestational diabetes:  
  - Monitor diet very closely – diets higher in complex carbohydrate and fibre, low in simple sugar, and lower in saturated fat are most effective  
  - Meals should be taken at scheduled times  
  - Consistent medical review and follow-up is critical  
  - Education/counselling by nutritionist/dietician is highly recommended                                                                                                                                                                                                                   |
5.2 NUTRITION DURING INFANCY (0-6 MONTHS)

BREASTFEEDING

Breastfeeding is an unparalleled way of providing the ideal food for the healthy growth and development of infants. For this reason, infants should be exclusively breastfed for the first six months of life, except in the following cases:

- Mother cannot breastfeed for medical reasons such as:
  - Infants suffer from galactosemia, maple syrup urine disease, or phenylketonuria.
  - Infants born weighing less than 1500 g or at less than 32 weeks of gestation or who are at risk of hypoglycaemia due to specific conditions. This may be for a limited period depending on severity of condition.
  - Certain maternal medications. For example, cancer treating drugs are contraindicated for breastfeeding. (See Table 5.3 for WHO Recommendations on Breastfeeding and Maternal Medication).
  - Herpes simplex virus type 1 lesions on the mother’s breasts or the infant’s mouth.

- Mother has taken an informed decision not to breastfeed after a full counselling and support.

Table 5.3: Breastfeeding and Maternal Medication\(^5\)

<table>
<thead>
<tr>
<th>Maternal Medication</th>
<th>Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticancer drugs (antimetabolites)</td>
<td>Contraindicated for breastfeeding</td>
</tr>
<tr>
<td>Radioactive substances</td>
<td>Contraindicated for breastfeeding</td>
</tr>
<tr>
<td>Selected psychotropic drugs and anticonvulsants</td>
<td>Contraindicated for breastfeeding temporarily</td>
</tr>
<tr>
<td>Chloramphenicol, tetracyclines, metronidazole, quinolone antibiotics (e.g. ciprofloxacin)</td>
<td>Use alternative drug if possible</td>
</tr>
<tr>
<td>Sulfonamides, dapsone, sulfamethoxazole+trimethoprim (cotrimoxazole), sulfadoxine+pyrimethamine (fansidar)</td>
<td>Monitor baby for jaundice</td>
</tr>
<tr>
<td>Oestrogens, including oestrogen-containing</td>
<td>Use alternative drug</td>
</tr>
</tbody>
</table>

\(^5\) Adapted from “Breastfeeding counselling: A training course”, WHO/CDR/93.3-6. Available at: http://apps.who.int/iris/bitstream/10665/62435/1/55732.pdf
contraceptives, thiazide diuretics, ergometrine

- May inhibit lactation

<table>
<thead>
<tr>
<th>Most commonly used drugs:</th>
<th>Safe in usual doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• analgesics and antipyretics</td>
<td></td>
</tr>
<tr>
<td>• short courses of paracetamol, acetylsalicylic acid, ibuprofen</td>
<td></td>
</tr>
<tr>
<td>• occasional doses of morphine and pethidine</td>
<td></td>
</tr>
<tr>
<td>• antibiotics: ampicillin, amoxicillin, cloxacillin and other penicillins, erythromycin</td>
<td></td>
</tr>
<tr>
<td>• anti-tuberculosis drugs, anti-leprosy drugs (see dapsone above)</td>
<td></td>
</tr>
<tr>
<td>• anti-malarial drugs (except mefloquine, fansidar)</td>
<td></td>
</tr>
<tr>
<td>• anti-helminthic drugs, antifungals</td>
<td></td>
</tr>
<tr>
<td>• bronchodilators (e.g. salbutamol), corticosteroids, antihistamines, antacids</td>
<td></td>
</tr>
<tr>
<td>• drugs for diabetes</td>
<td></td>
</tr>
<tr>
<td>• most anti-hypertensive drugs</td>
<td></td>
</tr>
<tr>
<td>• digoxin</td>
<td></td>
</tr>
<tr>
<td>• nutritional supplements of iodine, iron, vitamins</td>
<td></td>
</tr>
</tbody>
</table>

**Benefits of Breastfeeding for Infant**

Infants benefit from breastfeeding in the following ways:

- Supplies all essential nutrients required by the infant, including water.
- Contains non-nutritional components that promote and protect infant health such as:
  - Antimicrobial elements
  - Anti-inflammatory substances
  - Growth modulators
  - Hormones
  - Digestive enzymes
- Protects against the infant against infection through maternal antibodies.
- Protects premature infants against necrotising enterocolitis and other early childhood diseases.
- Offers unique emotional and psychosocial bonding between mother and child.

**Benefits of Breastfeeding to Mother**

Breastfeeding provides the following benefits to the mother:

- Reduces the risk of excessive bleeding after birth
- Provides a protective effect against breast and ovarian cancer
- Promotes psychosocial bonding with offspring
• Provides a measure of natural birth control
• Offers financial benefits – no need for purchase of artificial milk or infant formula

Establishing Exclusive Breastfeeding
Exclusive breastfeeding is defined as no other food or drink, not even water, except breast milk during the first six months of life. However, this concept allows for the infant to receive oral rehydration therapy, vitamins, minerals and medicines as deemed necessary. The following actions should be taken to assist mothers in establishing exclusive breastfeeding:

- The baby should be put to the breast as soon after birth as possible.
- Mothers and infants should be kept together (rooming-in) day and night, and should not be separated for more than one hour at any time.
- Training in breastfeeding techniques, especially among new mothers, should be reinforced. Mothers should be shown how to put the baby to the breast, i.e., chin to breast, chest to chest, and aiming nipple towards the roof of the mouth. Nipple and areola should be in the baby’s mouth.
- Attending health workers should observe breastfeeding technique used by mothers and provide counselling on proper positioning, latching-on, and attachment, as appropriate.
- Babies should be breastfed on demand. No limit should be placed on the number of feedings or the length of time of suckling. A minimum of 8-12 feedings over a 24-hour period is recommended.
- Attending health workers should provide education and counselling to mothers experiencing problems such as engorged breast, cracked nipples, and breast abscess.
- Counselling and emotional support should be provided to mothers who had previously experienced challenges with breastfeeding.
- Special attention and support should be provided to mothers of low birth weight and sick newborns in establishing full lactation. Expressed breast milk may be given, by cup or tube feeding, to infants who are unable to suckle adequately.
- Guidance and counselling on breastfeeding should be given to mothers who have tested positive for HIV and HTLV1. WHO recommends that HIV-positive mothers or their infants take antiretroviral drugs throughout the period of breastfeeding and until the infant is 12 months old. This means that the child can benefit from breastfeeding with low-risk of becoming infected with HIV.
- Demonstrate and encourage cup feeding if the mother cannot breastfeed for any reason.
- Demonstrate how to express breast milk and advise on safe storage procedures.

Storage of Breast Milk

Some mothers may find it necessary to express and store breast milk for a variety of reasons. Babies born prematurely may be unable to feed directly from the mother, while women returning to work may want to continue giving their babies breast milk. Breast milk can be stored in several ways:

- At room temperature (no more than 25º C) for up to six hours.
- In a cool box with ice packs, for up to 24 hours.
- In a home refrigerator (at 4º C or colder) for up to five days. It is best to store at the back of the fridge where it's coldest, away from meat, eggs, or uncooked foods.
- In the freezing compartment of a home refrigerator for two weeks.
- In a home freezer (at -18º C or lower) for up to six months.

<table>
<thead>
<tr>
<th>Room Temperature</th>
<th>Cooler with Ice Packs</th>
<th>Refrigerator</th>
<th>Freezer</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-6 hours at 66-78 ºF</td>
<td>24 hours at 59 ºF</td>
<td>3-8 days at 39 ºF or lower</td>
<td>6 months at 0-4 ºF</td>
</tr>
<tr>
<td>(19-26 ºC)</td>
<td>(15 ºC)</td>
<td>(4 ºC)</td>
<td>(ˉ18-ˉ20 ºC)</td>
</tr>
</tbody>
</table>

Whenever the decision is taken refrigerate or freeze breast milk, a few precautions should be adhered to:

- Use only clean, sterile storage containers.
- Label and date containers, and use up the oldest ones first.
- If breast pump is used, keep it as clean and sterile as possible.
- Always wash hands thoroughly with soap and clean water before expressing and handling breastmilk for storage.

**REPLACEMENT FEEDING**

**Breast Milk Substitutes**

Infants that receive no breastmilk during the first six months of life, for whatever reason, should be provided with replacement feeding that contains all required nutrients. A suitable breastmilk substitute such as iron-fortified infant formula may be used. Whenever replacement feeding of the infant becomes necessary, health providers should encourage mothers to:

- Always buy infant formula with iron – look for the terms “iron fortified” or “added iron” on the packaging.
- Check the expiry date of the product. Do not use after that date.
- Check the type of infant formula. There are three (3) types on the market – ready-to-feed, liquid concentrate, powdered. Use the one that is most appropriate to your situation.
Replacement foods must be correctly and hygienically prepared and stored. Mothers should be educated on how to prepare infant formula to maintain nutrient concentration, and avoid introduction of germs that may cause illness. (See Table 5.4 below)

### Table 5.4: Issues for Consideration in Preparation of Infant Formula

<table>
<thead>
<tr>
<th>Type of Infant Formula</th>
<th>Issues for Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready-to-Feed (not widely available in St. Vincent and the Grenadines)</td>
<td>- Sterile product&lt;br&gt;- No preparation is needed&lt;br&gt;- Contains the right concentration of nutrients and water required by the infant - reduces risk of dilution&lt;br&gt;- Preparation instructions from manufacturers should be followed closely</td>
</tr>
<tr>
<td>Liquid Concentrate (not widely available in St. Vincent and the Grenadines)</td>
<td>- Sterile product&lt;br&gt;- Water must be added&lt;br&gt;- Risk of dilution of formula and introduction of germs that may cause illness - vomiting and diarrhoea&lt;br&gt;- Preparation instructions from manufacturers should be followed closely</td>
</tr>
<tr>
<td>Powdered (Most commonly used in St. Vincent and the Grenadines)</td>
<td>- Not a sterile product&lt;br&gt;- Preparation is needed&lt;br&gt;- Risk of dilution of formula and introduction of germs that may cause illness - vomiting and diarrhoea&lt;br&gt;- Preparation instructions from manufacturers may or may not be available</td>
</tr>
</tbody>
</table>

### Preparing a Feed Using Powdered Infant Formula

Powdered infant formula is the most commonly used breastmilk substitute. It is not a sterile product and can pose health risks to infants, particularly if it is prepared and handled inappropriately.

For best results, fresh feeds should be made on demand and consumed immediately, as reconstituted powdered infant formula provides ideal conditions for the growth of harmful bacteria. Mothers should be educated/counseled on the safest ways to prepare individual feeds in bottles or in feeding cups for immediate consumption. The following steps should be stressed:

1) Clean and disinfect a surface on which to prepare the feed.
2) Wash hands with soap and water, and dry using a clean cloth or a single-use napkin.
3) Boil a sufficient volume of safe water. If using an automatic kettle, wait until the kettle switches off; otherwise make sure that the water comes to a rolling boil. (Note: bottled water is not sterile and must be boiled before use).
4) Microwaves should never be used in the preparation of powdered infant formula as uneven heating may result in 'hot spots' that can scald the infant's mouth.

5) Taking care to avoid scalds, pour the appropriate amount of boiled water that has been allowed to cool no less than 70 °C, into a cleaned and sterilized feeding cup or bottle. To achieve this temperature, the water should be left for no more than 30 minutes after boiling.

6) To the water, add the exact amount of formula as instructed on the label. Adding more powder or less powder than instructed could make infants ill.
   - If using bottles, assemble the cleaned and sterilized parts of the bottle according to the manufacturer's instructions. Shake or swirl gently until the contents are mixed thoroughly, taking care to avoid scalds
   - If using feeding cups, mix thoroughly by stirring with a cleaned and sterilized spoon, taking care to avoid scalds

7) Immediately after preparation, quickly cool feeds to feeding temperature by holding the bottle or feeding cup under running tap water, or by placing in a container of cold or iced water. Ensure that the level of the cooling water is below the top of the feeding cup or the lid of the bottle.

8) Dry the outside of the feeding cup or bottle with a clean or disposable cloth.

9) Because very hot water has been used to prepare the feed, it is essential that the feeding temperature is checked before feeding to avoid scalding the infant's mouth. If necessary, continue cooling as outlined in step 7.

10) Discard any feed that has not been consumed within two hours.

Cup Feeding Infants

Cup feeding is an option that may be used when breastfeeding is difficult or impossible. It is a better alternative than bottle feeding. Health care providers should demonstrate the skill of cup feeding infants to mothers. Mothers should adhere to the following guidelines:

- Ensure baby is fully awake, alert, and interested in feeding. Never cup feed a sleepy baby or a baby who is lying flat.
- Use a small cup with a smooth edge.
- Cup should be half or two-thirds filled with slightly warmed breastmilk or infant formula. Never fill cup up to the brim as the contents will be difficult to control, cause spillage, and encourage choking.
- If needed, wrap baby to prevent the cup being knocked around.
- Sit baby in a comfortable, upright position on the lap. Place a cloth under the baby's chin to catch any spillage.
- Rest the rim of the cup on the baby's lower lip or the lower gum ridge.
- Tip the cup just enough so that the milk reaches the rim of the cup; do not put the cup too far into the baby's mouth.
- The baby will quickly learn to sip or lap milk from the rim of the cup with the tongue.
- Do not pour milk into baby's mouth; go slowly keeping the milk just at the rim of the cup.
• Leave the cup in position when the baby pauses to rest between swallows and is not drinking; avoid putting pressure on the lower lip.
• Continue to tip the cup enough to keep the milk at the rim.
• Burp baby during the feed, if needed.

Cleaning and sterilizing feeding and preparation equipment
It is very important that all equipment used for feeding infants and for preparing feeds has been thoroughly cleaned and sterilized before re-use. The following guidelines should be shared with parents (mother and father):
1) Hands should always be washed thoroughly with soap and water before cleaning and sterilizing feeding and preparation equipment (as described below).
2) Cleaning: Wash feeding and preparation equipment (e.g. cups, bottles, teats and spoons) thoroughly in hot soapy water. Where feeding bottles are used, clean bottle and teat brushes should be used to scrub inside and outside of bottles and teats to ensure that all remaining feed is removed.
3) After washing the feeding and preparation equipment, rinse thoroughly in safe water.
4) Sterilizing: Feeding and preparation equipment can also be sterilized by boiling:
   - fill a large pan with water and completely submerge all washed feeding and preparation equipment, ensuring there are no trapped air bubbles
   - cover the pan with a lid and bring to a rolling boil, making sure the pan does not boil dry
   - keep the pan covered until the feeding and preparation equipment is needed
5) Hands should be washed thoroughly with soap and water before removing feeding and preparation equipment from a sterilizer or pan. The use of sterilized kitchen tongs for handling sterilized feeding and preparation equipment is recommended.
6) To prevent re-contamination, it is best to remove feeding and preparation equipment just before it is to be used. If equipment is removed and not used immediately, it should be covered and stored in a clean place.
7) Feeding bottles can be fully assembled to prevent the inside of the sterilized bottle and the inside and outside of the teat from becoming contaminated.

BREASTFEEDING AND HIV
WHO recommends that HIV-positive mothers or their infants take antiretroviral drugs throughout the period of breastfeeding and until the infant is 12 months old. This means that the child can benefit from breastfeeding with minimal risk of becoming infected with HIV.\(^7\) The baby should be started on complementary foods after six (6) months.

At the same time, HIV-positive mothers who have full access to suitable infant formula and clean boiled water, may opt not to breastfeed. In such cases, infant formula feeding may the

safest option since it carries zero risk of passing HIV infection from mother to child. Health care providers offering counselling and support to HIV-positive mothers should emphasise the following:

For the Mother
- HIV treatment keeps the mother healthy and lowers the amount of HIV in breast milk, thereby reducing the risk of passing the infection to the newborn.
- HIV treatment should commence as soon as the mother’s status is confirmed.
- HIV-positive women should receive treatment for life.
- HIV treatment should be taken exactly as instructed.
- Keeping follow-up appointments with health provider is very important.

For the Baby
- The newborn should receive HIV treatment for the first few weeks of life to prevent HIV infection.
- An HIV test should be done at 4-6 weeks (or earlier), when breastfeeding stops, and at 18 months.
- If the baby tests HIV-positive, long-term HIV treatment should commence immediately.
- HIV treatment should be given exactly as instructed.

5.3 NUTRITION DURING EARLY CHILDHOOD (6-59 MONTHS)

COMPLEMENTARY FEEDING

Complementary feeding is required when breastmilk alone is no longer sufficient to meet the nutritional requirements of infants. Additional foods and liquids are therefore needed, along with breastmilk. Typically, the transition from exclusive breastfeeding to family foods covers the period from 6 - 24 months of age, even though breastfeeding may continue up to two years of age and beyond. WHO recommended guidelines for complementary feeding of young children is summarised at Table 5.5.8

Table 5.5: WHO Guidelines for Complementary Feeding of Young Children

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommended Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Food Required</td>
<td>• Ensure that energy needs are met. Approximately:</td>
</tr>
<tr>
<td></td>
<td>- 600 kcal per day at 6-8 months of age</td>
</tr>
<tr>
<td></td>
<td>- 700 kcal per day at 9-11 months of age</td>
</tr>
<tr>
<td></td>
<td>- 900 kcal per day at 12-23 months of age</td>
</tr>
<tr>
<td>Food Consistency</td>
<td>• Gradually increase food consistency and variety as the infant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>gets older, adapting to the infant’s requirements and abilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Beginning at six months, infants can eat pureed, mashed and semi-solid foods</td>
</tr>
<tr>
<td>• By eight months, most infants can also eat “finger foods” (snacks that can be eaten by children alone)</td>
</tr>
<tr>
<td>- By 12 months, most children can eat the same types of foods as consumed by the rest of the family</td>
</tr>
<tr>
<td>• Avoid foods in a form that may cause choking (i.e., items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as whole nuts, whole grapes or raw carrots, whole or in pieces)</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>• For the average healthy infant, meals should be provided 4-5 times per day, with additional nutritious snacks (such as pieces of fruit or bread offered 1-2 times per day, as desired</td>
</tr>
<tr>
<td>• The appropriate number of feedings depends on the energy density of the foods and the usual amounts consumed at each feeding</td>
</tr>
<tr>
<td>• If energy density or amount of food per meal is low, more frequent meals may be required</td>
</tr>
<tr>
<td>Nutrient Content</td>
</tr>
<tr>
<td>• Feed a variety of foods to ensure that nutrient needs are met.</td>
</tr>
<tr>
<td>• Meat, poultry, fish or eggs should be eaten daily, or as often as possible, because they are rich sources of many key nutrients such as iron and zinc. Diets that do not contain animal source foods (meat, poultry, fish or eggs, plus milk products) cannot meet all nutrient needs at this age</td>
</tr>
<tr>
<td>• Milk products are rich sources of calcium and several other nutrients</td>
</tr>
<tr>
<td>• If milk and other animal-source foods are not eaten in adequate amounts, both grains and legumes should be consumed daily. Dairy products are the richest sources of calcium</td>
</tr>
<tr>
<td>• Additional sources of calcium are foods such as soybeans, cabbage, carrots, squash, papaya, dark green leafy vegetables, guava and pumpkin</td>
</tr>
<tr>
<td>• The daily diet should include Vitamin A-rich foods (e.g. dark coloured fruits and vegetables; Vitamin C-rich foods (e.g. many fruits and vegetables) consumed with meals to enhance iron absorption; foods rich in the B vitamins including riboflavin (e.g. liver, egg, dairy products, green leafy vegetables, fruit juices, soybeans, legumes)</td>
</tr>
<tr>
<td>• Provide diets with adequate fat content. If animal source</td>
</tr>
</tbody>
</table>
foods are not consumed regularly, 10-20 g of added fats or oils are needed

**Use of Vitamins and Fortified Products**
- Use fortified foods or vitamin-mineral supplements preferably mixed with or fed with food), as needed
- If adequate amounts of animal-source foods are not consumed, these fortified foods or supplements should also contain other micronutrients, particularly zinc, calcium and vitamin B12

**Fluid Intake**
- Non-breastfed infants and young children need at least 400-600 mL/d of extra fluids
- Plain, clean (boiled, if necessary) water should be offered several times per day to ensure that the infant’s thirst is satisfied
- Avoid giving drinks with low nutrient value such as tea, coffee and sugary soft drinks
- Limit the amount of juice offered, to avoid displacing more nutrient-rich foods

**Safe Preparation and Storage**
- Practise good hygiene and proper food handling by:
  - washing caregivers’ and children’s hands with soap before food preparation and eating
  - storing foods safely and serving foods immediately after preparation
  - using clean utensils to prepare and serve food
  - using clean cups and bowls when feeding children
  - avoiding the use of feeding bottles, which are difficult to keep clean

**Feeding During and After Illness**
- Increase fluid intake during illness and encourage the child to eat soft, varied, appetizing, favourite foods
- After illness, give food more often than usual and encourage the child to eat more

After 6 months of age, it becomes increasingly difficult for breastfeeding alone to meet the nutritional requirements of young children. As the child grows older, the quantity of complementary foods offered should be increased incrementally, while frequent breastfeeding is maintained. **Table 5.6** below outlines the energy requirements from complementary foods for breastfed and non-breastfed older infants and young children.

**Table 5.6: Energy Needed from Complementary Foods for Breastfed and Non-Breastfed Young Children**

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Recommended Daily Feeding</th>
<th>Energy Needs from</th>
</tr>
</thead>
</table>
### Frequency (meals/snacks) and Complementary Foods

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Breastfed</th>
<th>Non-Breastfed</th>
<th>Breastfed (kcal/day)</th>
<th>Non-Breastfed (kcal/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8 Months</td>
<td>2-3</td>
<td>4-5</td>
<td>200</td>
<td>600</td>
</tr>
<tr>
<td>9-11 Months</td>
<td>3-4</td>
<td>4-5</td>
<td>300</td>
<td>700</td>
</tr>
<tr>
<td>12-23 months</td>
<td>3-4</td>
<td>4-5</td>
<td>550</td>
<td>900</td>
</tr>
</tbody>
</table>

### NUTRITION-RELATED PROBLEMS IN EARLY CHILDHOOD

Children’s dietary and nutritional requirements differ from those of adults because they are still growing. Common nutritional problems associated with children that parents should be made aware of include:

**Failure to Thrive**
Failure to thrive is a term that is used when a child’s weight or weight gain is below normal standards. These children may appear much shorter or smaller than others, and normal development such as puberty, may be delayed. Failure to thrive may result from:

- Medical conditions such as chromosome abnormalities, chronic infections, and low birth weight. Appropriate medical interventions involving Medical Officers and specialists should be instituted to manage these conditions.
- Poor nutrition that is due to inadequate diet. In such cases, the Medical Officer, Nurse/Midwife, and Nutritionist/Dietician should combine to encourage a balanced and regular diet including fruits, vegetables and proteins

**Food Refusal**
Food refusal is a big contributor to poor nutrition in children. For whatever reason, some children are very selective when it comes to eating and refuse to eat a variety of foods. Parents should work consistently with their children to at least taste each item of food on their plate. In time, food habits will change.

**Allergy and Intolerance**
Food allergies can be common in children with the most typical allergies being eggs, milk and peanuts. Gluten and lactose intolerances can also be a factor. Children with food allergies should be referred to Medical Officer, Specialist, or Nutritionist/Dietician as appropriate to determine the reasons for allergies and to be counselled on possible nutrient supplements.

**Iron Deficiency Anaemia**
Anaemia is a condition in which the body does not have enough healthy red blood cells. A diet lacking in iron is the most common cause of anaemia. It often occurs in young children, usually between the ages of 9 and 24 months, whose diet consists of a lot of milk and not enough iron-rich foods. Cow’s milk reduces the body’s ability to absorb iron and can cause
the intestines to lose a small amount of blood, which further reduces the red blood cells. Parents should be encouraged to:
- Prepare foods rich in iron including meats, fish, poultry, egg yolks, legumes, whole grain breads and raisins.
- Limit the amount of cow’s milk in the diet.
- Administer iron supplements, if recommended.

MALNUTRITION IN INFANTS AND YOUNG CHILDREN

Causes of Malnutrition
Malnutrition is a broad term used to describe the condition that develops from inadequate and/or unbalanced intake of nutrients required to maintain healthy tissue and organ function. The condition occurs in two broad categories – undernutrition (insufficient calories) and overnutrition (too many calories).

Children presenting with undernutrition display evidence of being underweight for age, too short for age (stunting), thin or wasted, and deficient in vitamins and minerals. Table 5.7 below shows the major signs and symptoms of nutritional deficiency.

Table 5.7: Signs and Symptoms of Nutritional Deficiency

<table>
<thead>
<tr>
<th>Area/System</th>
<th>Sign/Symptom</th>
<th>Deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>General appearance</td>
<td>Wasting</td>
<td>Energy (calories)</td>
</tr>
<tr>
<td>Skin</td>
<td>Rash</td>
<td>Vitamins including zinc and fatty acids</td>
</tr>
<tr>
<td></td>
<td>Easy bruising</td>
<td>Vitamin C or Vitamin K</td>
</tr>
<tr>
<td>Hair</td>
<td>Thinning or loss of hair</td>
<td>Protein</td>
</tr>
<tr>
<td>Nails</td>
<td>Spooning (up-curling)</td>
<td>Iron</td>
</tr>
<tr>
<td>Eyes</td>
<td>Impaired night vision</td>
<td>Vitamin A</td>
</tr>
<tr>
<td></td>
<td>Corneal drying</td>
<td>Vitamin A</td>
</tr>
<tr>
<td>Mouth</td>
<td>Cheilosis and glossitis</td>
<td>Riboflavin, niacin, pyridoxine, iron</td>
</tr>
<tr>
<td></td>
<td>Bleeding gums</td>
<td>Vitamin C, riboflavin,</td>
</tr>
<tr>
<td>Extremities</td>
<td>Oedema</td>
<td>Protein</td>
</tr>
<tr>
<td>Neurologic</td>
<td>Numbness</td>
<td>Thiamin</td>
</tr>
<tr>
<td></td>
<td>Cognitive and sensory deficits</td>
<td>Thiamin, niacin, pyridoxine, vitamin B₁₂</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Dementia</td>
<td>Thiamin, niacin, vitamin B₁₂</td>
<td></td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>Wasting of muscle</td>
<td>Protein</td>
</tr>
<tr>
<td></td>
<td>Bone deformities (e.g. bowlegs, knocked knees, curved spine)</td>
<td>Vitamin D, calcium</td>
</tr>
<tr>
<td></td>
<td>Bone tenderness</td>
<td>Vitamin D</td>
</tr>
<tr>
<td></td>
<td>Joint pain or swelling</td>
<td>Vitamin C</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Diarrhoea</td>
<td>Protein, niacin, folate, vitamin B₁₂</td>
</tr>
<tr>
<td></td>
<td>Diarrhoea and dysgeusia</td>
<td>Zinc</td>
</tr>
<tr>
<td></td>
<td>Dysphagia or odynophagia (due to Plummer-Vinson Syndrome)</td>
<td>Iron</td>
</tr>
</tbody>
</table>

**Overnutrition** is a growing problem among young children. It is caused by excessive intake of nutrients resulting in overweight and obesity. Overweight and obesity are defined as abnormal accumulation of fat that may impair health. For children under five years of age:

- Overweight is weight-for-height greater than 2 standard deviations⁹ above WHO Child Growth Standards median
- Obesity is weight-for-height greater than 3 standard deviations above the WHO Child Growth Standards median

Body Mass Index (BMI) is a simple measure of weight-for-height that is commonly used to classify underweight, overweight, and obesity. To calculate a child's BMI:

1) Measure weight (pounds)
2) Measure height (inches)
3) Calculate BMI by dividing the child's weight by height squared, and multiplying the total by a conversion factor of 703.

The WHO BMI-for-age percentile growth chart is the most commonly used indicator to measure the size and growth patterns of children. **Table 5.8** shows the recommended BMI-for-age and weight categories and the corresponding percentiles.

**Table 5.8: Body Mass Index in Children by Category and Percentile Range**

<table>
<thead>
<tr>
<th>Weight Status Category</th>
<th>Percentile Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Less than 5th percentile</td>
</tr>
</tbody>
</table>

⁹ Standard deviation is a measurement expressing by how much the members of a group differ from the average value for the group.
Normal or Healthy Weight: 5\textsuperscript{th} percentile to less than 85\textsuperscript{th} percentile

Overweight: 85\textsuperscript{th} to less than 95\textsuperscript{th} percentile

Obese: Equal to or greater than 95\textsuperscript{th} percentile

\textbf{N.B.} A percentile is a measure used to indicate the value below which a given percentage of observations in a group of observations fall. For example, the 20\textsuperscript{th} percentile is the value (or score) below which 20\% of the observations may be found.

\textbf{Nutrition Interventions}

Nutrition interventions for the prevention and control of undernutrition and overnutrition in young children that health providers should promote are summarised in Table 5.9 below.

\textbf{Table 5.9: Nutrition Interventions for Childhood Malnutrition by Category and Type}

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Recommended Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural</td>
<td>Breastfeeding</td>
<td>Promote exclusive breastfeeding through sustained information and education</td>
</tr>
<tr>
<td></td>
<td>Drug and alcohol use</td>
<td>Advocate for complete cessation during pregnancy and breastfeeding period</td>
</tr>
<tr>
<td></td>
<td>Caffeine</td>
<td>Advocate for restricted use during pregnancy</td>
</tr>
<tr>
<td></td>
<td>Complementary feeding</td>
<td>Advise on appropriate complementary feeding with respect to quantity, consistency, nutrient content, vitamins and fortified foods, and feeding during and after illness</td>
</tr>
<tr>
<td></td>
<td>HIV infection</td>
<td>Provide counselling and support on nutritional care for HIV-positive mothers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide counselling and support on nutritional care of HIV-infected children</td>
</tr>
<tr>
<td></td>
<td>Low birth weight</td>
<td>Promote breastfeeding of low-birth-weight babies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promote cup feeding for low-birth-weight babies unable to breastfeed</td>
</tr>
<tr>
<td></td>
<td>Obesity</td>
<td>Provide counselling and support on portion size to reduce risk of overweight and obesity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advocate for reduced consumption of sugar sweetened products to reduce unhealthy weight gain</td>
</tr>
</tbody>
</table>
### 5.4 ADOLESCENT NUTRITION

**NUTRIENT REQUIREMENTS**

Except for the first year, growth during adolescence is faster than in any other period of the individual’s life. This period of phenomenal growth creates increased demands for energy and nutrients. Total nutrient needs are higher during adolescence than any other time in the lifecycle. Prior to puberty, nutrient needs are similar for boys and girls. It is during puberty that body composition and biological changes (e.g., menarche) emerge that affect gender-specific nutrient needs. Table 5.10 below provides estimates on the daily caloric and protein requirements for adolescent females and males.

**Table 5.10: Recommended Caloric and Protein Intakes for Adolescents**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Calorie (Kcal/day)</th>
<th>Protein (grams/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-14</td>
<td>2,200</td>
<td>46</td>
</tr>
<tr>
<td>15-18</td>
<td>2,200</td>
<td>44</td>
</tr>
<tr>
<td>19-24</td>
<td>2,200</td>
<td>46</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-14</td>
<td>2,500</td>
<td>45</td>
</tr>
<tr>
<td>15-18</td>
<td>3,000</td>
<td>59</td>
</tr>
<tr>
<td>19-24</td>
<td>2,900</td>
<td>58</td>
</tr>
</tbody>
</table>

In addition to caloric and protein intake, adolescents need adequate daily intakes of minerals (calcium, iron, zinc), vitamins (A, D, E, C, folic acid) and fibre to maintain healthy growth and development. These nutrient requirements may be influenced by factors such as pregnancy, lactation, level of physical activity, and chronic illnesses.

---

**FOOD SOURCES**

Adolescents should be encouraged to eat three regular meals a day. Skipping meals will result in reduced intake of calories, protein, vitamins, and minerals that may contribute to low energy, inability to concentrate, and ill health. Dietary education and counselling of adolescents should include the following:

1) Breads, grains and cereals are excellent sources of energy that support brain and muscles; and are also an excellent source of fibre and B vitamins. Some of these foods should be included in each meal.

2) Fruit and vegetables are reliable sources of vitamins and minerals which help boost immune system. They also promote healthy skin and eyes. It is recommended that adolescents should have two servings of fruit and five servings of vegetables each day.

3) Meat, chicken, fish, eggs, nuts and legumes (e.g. beans and lentils) are useful sources of iron and protein. At least one of these foods should be included in each meal. Vegetarians may meet their iron and protein requirements from foods such baked beans, pulses, lentils, nuts and seeds.

4) Dairy foods like milk, cheese and yoghurt help to build bones and teeth and keep heart, muscles and nerves working properly. Two servings of dairy products will meet the daily requirements of adolescents.

5) Adolescents should avoid eating too much fats and oils that can result in weight gain. Fats and oils should be used in small amounts. Other high-fat foods like chocolate, chips, cakes, and fried foods may also increase body weight without contributing too many nutrients.

6) Fluids are also an important part of the diet of adolescents. Drinking 6-8 glasses of water daily will aid hydration, prevent constipation, and enhance health generally. Flavoured waters and sports drinks are not highly recommended.

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**5.5 NUTRITION IN ADULTHOOD**

**NUTRITIONAL CONSIDERATIONS**

By adulthood, most growth and development would have been completed. For this reason, the focus of nutrition during adulthood shifts to maintaining a healthy and active lifestyle; and reducing the risk of developing chronic non-communicable diseases such as diabetes and hypertension. The best way for adults to maintain optimum levels of health is to eat a balanced diet. The basic components of any adult diet should include a combination of the following:

- Protein from meat, fish, eggs, and pulses.
- A minimum of five portions of fruit and vegetables daily.
- Carbohydrates from brown rice, potatoes, cereals, or pasta.
- Limit salt, sugar, and alcohol intake.

Vitamins and minerals are also vital nutritional considerations during adulthood and as ageing progresses. Adults should be encouraged to take adequate amounts of the following to maintain their health:

**Calcium**
Calcium is important for maintaining healthy bones and prevention of osteoporosis. Reliable sources of calcium are milk and dairy foods such as yogurt and cheese, leafy green vegetables and calcium-fortified cereals.

**Fat**
Adults should minimise saturated fat intake to improve heart health. Examples of saturated fat are animal fat products such as cream, cheese, butter, other whole milk dairy products and fatty meats which also contain dietary cholesterol. In adults above the age of 75 years and below normal healthy weight, extra fat may be required to increase the number of calories consumed and to aid weight gain. Elderly adults wishing to gain weight should be encouraged to always consult their healthcare provider or a qualified nutritionist/dietician before making any significant changes to their diet.

**Fibre**
Adequate fibre in the diet promotes a health digestive system and aids bowel movement, especially in older adults. Reliable sources of fibre include wholegrain cereal, porridge, wholegrain bread, brown pasta and rice, fresh fruit and vegetables and pulses.

**Fluid**
The ability of the body to conserve water decreases gradually as ageing progresses. Adults should be encouraged to remain hydrated throughout the day, even if they do not feel thirsty. Fluid intake includes water, fruit juices with limited added sugar, and hot drinks such as tea and coffee (if not contraindicated).

**Iron**
The human body uses iron to make haemoglobin, which helps to store and transport oxygen to all parts of the body. Without iron in the blood, the organs and tissue become starved of oxygen leading to feelings of tiredness and lethargy, commonly known as iron deficiency anaemia. Iron can be found in meat, some vegetables and dried fruit.

**Vitamin C**
This vitamin assists the body in its formation of collagen, which is needed to heal wounds and repair bones and teeth. It is also needed to repair skin, ligaments, blood vessels and tendons; while its antioxidant properties help in the prevention of heart disease and cancer. Fresh fruit and vegetables are the main source of vitamin C, but supplements can also be used maintain normal levels.
**Vitamin D**
Vitamin D helps the body to absorb calcium thereby slowing the rate of calcium loss from bones. Foods rich in this nutrient are fish, eggs and certain fortified cereals and spreads. As ageing progresses, vitamin D supplement may be introduced in the diet. It is recommended that people aged 65 and over should take a daily 10 microgram vitamin D supplement.

**Zinc**
Zinc is required for the maintenance of a healthy immune system and is most commonly found in meat, shellfish, wholemeal bread and pulses.

**SELF-MANAGEMENT OF CHRONIC CONDITIONS**

**General Principles**
Health outcomes for most patients with chronic conditions such as obesity, hypertension, and diabetes may be improved through self-management. Self-management is a dynamic process in which individuals become actively involved in the treatment and control of their chronic conditions. The medical officer, nurse/midwife, family nurse practitioner, nutritionist/dietician and other health providers should support this process by:

- Providing appropriate/adequate information, education and counselling through structured interactions with clients.
- Supporting the development of problem-solving skills to improve efficacy of treatment and other forms of interventions.
- Linking knowledge and skills provided to real-life situations. This strategy becomes particularly in conditions of low-income status and disorganised family relations.
- Advocating for family and community support in self-management of chronic conditions.

**Promoting Self-Management of Obesity**
Based on the general principles outlined above, the health provider should:

a) Collaborate with the client to develop and implement a weight loss programme. The goals set should be realistic since weight loss is a slow process and takes time. It should be emphasised that there is no magic food that will achieve and maintain weight loss. A recommended realistic goal for obese persons is lose 5-10% of initial body weight at a rate of 1-2 lbs per week. To accomplish this, the client should consider:

- Decreasing intake of high caloric foods such as fats (9 Kcal/g) and alcohol (7 Kcal/g)
- Adopting low-calorie alternatives to high-calorie foods in the diet. Caloric intake less than 1200 k/calories will require strict clinical supervision
- Monitoring weight using the same scale
- Ensuring individual nutritional counselling
b) Provide guidance to client on how to maintain a proper diet. Guidance should include how to choose foods that are lower in calories, portion control, eating out, and methods of food preparation.

c) Encourage and support the client in effecting changes in eating and general lifestyle behaviour to facilitate weight loss. These changes may include:
- Identifying triggers and sources of excess calories
- Monitoring and recording body weight monthly
- Participating in moderate physical activity for most days of the week for at least 1 hour each day
- Avoiding situations that may contribute to over-eating
- Modifying the time meals are eaten and reducing portion sizes
- Choosing different foods and methods of preparation
- Substituting low calorie alternatives for high calorie foods

d) Discourage fad dieting by the client which can lead to a weight loss/weight gain pattern that may de-motivate the client and make weight loss more difficult.

e) Promote reading of food labels so that clients will be able to make appropriate food choices such as avoiding foods which are excessively high in calories.

f) Suggest non-caloric sweeteners as an alternative to sugar.

Table 5.11 shows the international classification for underweight, overweight, and obesity according to BMI in adults over 20 years of age.

Table 5.11. Nutritional Classification using BMI

<table>
<thead>
<tr>
<th>Nutritional Classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Below 18.5</td>
</tr>
<tr>
<td>Normal weight</td>
<td>18.5–24.9</td>
</tr>
<tr>
<td>Pre-Obesity</td>
<td>25.0–29.9</td>
</tr>
<tr>
<td>Obesity – Class 1</td>
<td>30.0–34.9</td>
</tr>
<tr>
<td>Obesity – Class 2</td>
<td>35.0–39.9</td>
</tr>
<tr>
<td>Obesity – Class 3</td>
<td>Above 40</td>
</tr>
</tbody>
</table>

Source: WHO International Classification

**Promoting Self-Management of Diabetes**

The management of diabetes rests heavily with the capacity of the individual to cope with the challenges of living with the condition. Perhaps the most important self-management tool is education. Clients who understand what to do and why it should be done are more likely to be motivated to participate in achieving and maintaining good health outcomes. The following are useful guidelines that the health provider should adopt in preparing the client for self-management of diabetes:
a) Ensure that the client understands what is diabetes, types, signs and symptoms, the causes and management of hypoglycaemia, hyperglycaemia, and ketoacidosis.
b) Discuss the role of diet, medication and physical activity in controlling diabetes
c) Emphasize the role of blood glucose monitoring and use of the results
d) Explain conditions under which exercise is not appropriate
e) Train clients to detect and manage complications
f) Discuss how/where to access information and resource persons in the community
g) Teach nutrition label reading – recognizing ingredients that contain sugar or carbohydrate content
h) Explain how to manage diet in unusual circumstances e.g. travel, parties, eating out, illness.
i) Demonstrate the use of foods and food groups and their use in formulating meal plans
j) Explain the importance of self-care in achieving optimal results

Promoting Self-Management of Hypertension
The following are useful guidelines that the health provider may adopt in preparing the client for self-management of hypertension:

a) Discuss hypertension, its causes, risk factors and complications.
b) Explain the role of good nutrition in the context of hypertension control.
c) Teach clients to read food labels. This will help to avoid excessive intake of sodium in the diet.
d) Encourage clients to use alternatives such as herbs and spices to flavour foods instead of salt. Suggest that they taste food before adding salt and to avoid adding salt after the food has been cooked.
e) Explain the role of food intake and physical activity in achieving weight loss and in lowering blood pressure.
f) Discourage the use of excess caffeine. Discuss sources of caffeine, e.g. coffee, cola beverages, tea and chocolate.
g) Explain that it takes time to see the results of nutrition intervention so patients will be more patient in expecting results.
h) Discuss the possible effects of sodium on blood pressure.
i) Promote self-monitoring, recording and using the information to improve management of hypertension.
Women's health refers to health issues that are specific to the human female anatomy. The structures most commonly involved are the external and internal genitalia and breasts. Some health issues may also be caused by hormones that are specific to, or most notable in, females. This section will focus on the women’s health issues of menopause, breast cancer and cancer of the uterine cervix.

**GOAL**

Improve the physical and social well-being of women through effective management of specific health conditions.

**OBJECTIVES, KEY INDICATORS, AND TARGETS**

The objectives, key indicators, and targets associated with improving the health and well-being of women are outlined in Table 6.1 below.

**Table 6.1: Objectives, Key Indicators and Targets for Women's Health**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Reduce mortality rate due to breast cancer</td>
<td>No. of deaths due to cancer of the breast</td>
<td>40% reduction in annual number of deaths due to cancer of the breast</td>
</tr>
<tr>
<td>2) Increase in detection of cancer of uterine cervix</td>
<td>No. of women over 40 years of age receiving pap smears</td>
<td>50% increase in number of pap smears undertaken annually</td>
</tr>
<tr>
<td>3) Reduce mortality rate due to cancer of the uterine cancer</td>
<td>No. of deaths due to cancer of the uterine cervix</td>
<td>50% reduction in annual number of deaths due to cancer of the uterine cervix</td>
</tr>
</tbody>
</table>

**STRATEGIES**

- Aggressive health promotion on breast examination and cervical cancer screening among women using the national health service, and among the general population.
- Strengthen public/private partnership to promote women's health.
- Expand and decentralise national cervical cancer screening programme.
- Strengthen referral, follow-up, and counselling systems for women diagnosed or at-risk for breast cancer and cancer of the uterine cervix.
6.1 MANAGEMENT OF MENOPAUSE

KEY POINTS

- Menopause is defined as the absence of menstrual periods for 12 months. It is the time in a woman's life when the function of the ovaries ceases and marks the end of fertility.
- Menopause is a gradual process that may occur over a period of 1-2 years. This is the so-called peri-menopausal transition and the duration may vary among women.
- The average age of menopause is 51 years but menopause may occur as early as 40 years old or as late as 60 years old. There are no reliable methods to predict when a woman will experience menopause.
- The age at which a woman starts having menstrual periods is not related to the age of menopause onset.

SIGNS AND SYMPTOMS

Some women go through menopause without any complications or unpleasant symptoms. Other women experience many distressing symptoms that may last for years. These symptoms are related primarily to reduced production of the female sex hormone known as oestrogen that regulates the menstrual cycle. Table 6.2 below summarises the main symptoms of menopause and actions that health providers may take to support affected women.

Table 6.2: Symptoms of Menopause and Recommended Actions

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description and Recommended Action</th>
</tr>
</thead>
</table>
| Hot flashes                           | - A primary menopause symptom<br>- A sudden feeling of heat in the upper portion of the body<br>- Break out of sweats that may last between 30 seconds and 10 minutes<br>- Night sweats  
  **Recommendation**<br> If hot flashes become unbearable or continue long after menopause, refer to a doctor. |
| Vaginal dryness and pain during intercourse | - Itching around the vulva and stinging or burning sensation<br>- Painful sexual intercourse<br>- Feeling of need to urinate frequently  
  **Recommendation**<br> Water-based lubricant may assist in combatting dryness. Otherwise refer to a doctor. |
<p>| Insomnia                              | - Difficulty in falling asleep and staying asleep                                                  |</p>
<table>
<thead>
<tr>
<th>Medical Complications</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Waking early that usual and inability to return to sleep | Exercise as much as possible to induce tiredness  
Avoid foods and drinks that alter sleep like chocolate, caffeine, or alcohol  
Read or listen to soothing music just before bedtime  
Try going to bed at the same time every night |
| Urinary tract infection | Lowered levels of oestrogen and changes in the urinary tract increase susceptibility to infection  
Persistent urge to urinate or urinating more frequently |
| Decreased libido | Reduced interest in sexual intercourse  
Slow or absent orgasmic response  
Vaginal dryness causing discomfort during sexual intercourse |
| Tissue changes | Skin becomes drier and thinner  
Hair becomes brittle and dry and may result in hair loss |
| Weight gain | Reduced metabolic rate  
Many women gain weight |

**MEDICAL COMPLICATIONS OF MENOPAUSE**

Menopause is not a disease and is not a direct cause of morbidity and mortality. However, it is known that menopausal women are predisposed to developing conditions such as osteoporotic fractures and cardiovascular diseases due mainly to decreased endogenous oestrogen.

**OSTEOPOROSIS AND FRACTURES**

Osteoporosis is a condition characterized by low bone mass and deterioration of bone tissue. This bone fragility increases the risk of fractures. The primary sites for fracture are the long bones and vertebrae. The risk factors for osteoporosis in menopausal women are:

- Family history (genetic susceptibility)
- Inadequate vitamin D intake
- Low calcium intake
- Smoking
- High alcohol consumption
- Inactivity
Health providers should encourage women to adopt of healthy lifestyles throughout the life cycle. The measures should include:

- Balanced diets with foods rich in calcium and vitamin D.
- Supplementation of diets with calcium and vitamin D for post-menopausal women.
- Maintenance of muscle tone and strength through exercise/physical activity.
- Promotion of friendly environment to prevent falls, especially to the elderly.

**Cardiovascular diseases**

Menopause does not cause cardiovascular diseases. However, certain risk factors increase around the time of menopause. For example, blood pressure starts to go up; LDL cholesterol or “bad” cholesterol, tends to increase; while HDL or “good” cholesterol may decline. Menopause is also accompanied by reduced levels of oestrogen that negatively affect the elasticity of blood vessels and blood flow. Health providers should emphasise the importance of the following actions in promoting the cardiovascular health of menopausal women:

- Engage in regular exercise. Women should aim for 150 minutes of physical activity each week. Activities that use larger muscles at low resistance such as walking, cycling, dancing or swimming are most effective.
- Eliminate unhealthy habits such as smoking, excessive use of alcohol, and non-prescription drug use.
- Maintain a healthy dietary pattern. The diet should include:
  - fruits, vegetables
  - whole grains
  - low-fat dairy products
  - poultry, fish and nuts
  - limited quantities of red meat, and sugary foods and beverages

6.2 **PREVENTION OF CANCER OF THE UTERINE CERVIX**

**KEY POINTS**

- Although cancer of the uterine cervix is a largely preventable condition, it remains one of the leading causes of cancer death in women.
- The primary cause of cervical pre-cancer and cancer is persistent or chronic infection with one or more of the “high-risk” types of human papillomavirus (HPV). HPV is acquired most commonly during sexual relations and, if unresolved or untreated, may lead to cervical cancer.
- Women living with HIV are more likely to develop persistent HPV infections at an earlier age and to develop cancer sooner.
- Basic knowledge of the woman’s pelvic anatomy, and the natural history of cervical cancer provide the framework for promoting cervical cancer prevention in women.
EARLY DETECTION OF CERVICAL CANCER

Screening tests provide the best opportunity for the early detection of cervical cancer. If detected early, cervical cancer is one of the most successfully treatable cancers. Most cervical cancers are found in women who have never had a screening test or who did not have one for three (3) or more years.

A Pap smear, also called a Pap test, is a screening procedure for cervical cancer. It tests for the presence of pre-cancerous or cancerous cells on the cervix. The recommended guidelines for early detection of cervical cancer are as follows:

- All women should begin cervical cancer screening at age 21. Women aged 21 to 29, should have a Pap test every 3 years. HPV testing should not normally be used for screening in this age group, although it may be used as a part of follow-up for an abnormal Pap test.
- Beginning at age 30, the preferred way to screen is with a Pap test combined with an HPV test every 5 years. This is called co-testing and should continue until age 65.
- Another reasonable option for women 30 to 65 is to get tested every 3 years with just the Pap test.
- Women who are at high-risk of cervical cancer because of a suppressed immune system (for example from HIV infection, organ transplant, or long-term steroid use) may need to be screened more often.
- Women over 65 years of age who have had regular screening in the previous 10 years should stop cervical cancer screening if they haven’t had any serious pre-cancers like CIN2 or CIN3 found in the last 20 years. Women with a history of CIN2 or CIN3 should continue to have testing for at least 20 years after the abnormality was found.
- Women who have had a total hysterectomy should stop screening (such as Pap tests and HPV tests), unless the hysterectomy was done as a treatment for cervical pre-cancer or cancer. Women who have had a hysterectomy without removal of the cervix should continue cervical cancer screening according to the guidelines above.
- Women who have been vaccinated against HPV should still follow these guidelines.

PREVENTION STRATEGIES FOR CERVICAL CANCER

Preventing cervical cancer means controlling possible risk factors that include:

- Delaying first sexual intercourse until after the adolescent period.
- Limiting the number of sex partners.
- Avoiding sexual intercourse with people who have had many partners.
- Avoiding sexual intercourse with people who are obviously infected with conditions such as genital warts, or show other symptoms of infection.
- Eliminate smoking.
- Avoid excessive use of alcohol and eliminate use of recreational drugs.
• HPV vaccination for girls 9-13 years of age helps to prevent cervical cancer caused by HPV.

6.3 PREVENTION OF BREAST CANCER

**KEY POINTS**

- Breast cancer is the most usual form of cancer in women.
- Breast cancer can be:
  - Ductal carcinoma: Begins in the milk duct and is the most common type
  - Lobular carcinoma: Starts in the lobules
- Invasive breast cancer occurs when the cancer cells break out from inside the lobules or ducts and invade nearby tissue, thereby increasing the chance of spreading to other parts of the body.
- Non-invasive breast cancer is when the cancer is still inside its place of origin and has not broken out. However, these cells can eventually develop into invasive breast cancer.

**SIGNS AND SYMPTOMS**

The first symptom of breast cancer usually appears as an area of thickened tissue in the breast, or a lump in the breast or in an armpit. Most lumps are not cancerous, but women should have them checked by a health care professional. Other symptoms include:

- Pain in the armpits or breast that does not change with the monthly cycle.
- Pitting of the skin of the breast.
- Rash around or on the nipples
- A discharge from a nipple, possibly containing blood.
- A sunken or inverted nipple.
- Change in the size or shape of the breast.

**RISK FACTORS**

The exact cause of breast cancer remains unclear but some of the known risk factors that health providers should be aware of are as follows:

- Genetics. Breast cancer sometimes runs in families. Women who carry certain types of genes (BRCA1, BRCA2, TP53) have a higher risk of developing breast cancer. These genes can be inherited.
- History of breast cancer or breast lumps. Women who have had breast cancer before are more likely to have it again, compared with those who have no history of the disease.
- Some types of benign or non-cancerous breast lumps increase the risk of developing breast cancer later.
• Dense breast tissue. Breast cancer is more likely to develop in higher density breast tissue.

• Oestrogen exposure. Exposure to oestrogen for a longer period appears to increase the risk of breast cancer. This could be due to starting periods earlier or entering menopause later than average. Between these times, oestrogen levels are higher.

• Breast-feeding. Women who breastfeed, especially for more than one year, appear to have reduced risk of developing breast cancer. This is perhaps because pregnancy followed by breastfeeding reduces exposure to oestrogen.

• Body weight. Women who are overweight or develop obesity after menopause may have a higher risk of developing breast cancer, possibly due to higher levels of oestrogen in the system. High sugar intake may also be a risk factor.

• Alcohol consumption. High rates of consumption appear to play a role. Studies have shown that women who consume more than three (3) drinks a day have a 1.5 times higher risk.

• Hormone treatments. The use of hormone replacement therapy and certain types of oral birth control pills have been linked to breast cancer, due to increased levels of oestrogen.

**BREAST SELF-EXAMINATION**

Breast self-examination is a technique that allows individuals (men and women) to examine their breast tissue for any physical or visual changes such as unusual lumps, skin changes, or discharge. It is an effective method of early detection of breast cancer. Women of all ages should perform once-a-month self-examination of the breasts, with the best time being about one week after the start of a period.

The breasts are composed of firm glandular tissue and soft fatty tissue. Together they make the breast tissue feel lumpy and bumpy with hills, valleys and ridges. That is normal. These lumps are often painless but, in a small percentage of women, painful breast lumps may be cancerous.

Health providers have a critical role to play in educating/training and counselling women on the importance of breast self-examination and the steps in doing so effectively. Table 6.3 outlines the steps in breast self-examination and what to look for.

**Table 6.3: Steps in Breast Self-Examination**

<table>
<thead>
<tr>
<th>Steps</th>
<th>What to look for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
</tr>
<tr>
<td>Begin by looking at breasts in the mirror with</td>
<td>- Breasts that have usual size, shape, and color</td>
</tr>
</tbody>
</table>
shoulders straight and arms on hips  

- Breasts that are evenly shaped, without visible distortion or swelling  
- A nipple has changed position or an inverted nipple (pushed inward instead of sticking out)  
- Redness, soreness, rash, or swelling

**Step 2**  
Raise arms and look for the same changes as in Step 1  

- Breasts that have usual size, shape, and colour  
- Breasts that are evenly shaped, without visible distortion or swelling  
- Dimpling, puckering, or bulging of the skin  
- A nipple has changed position or an inverted nipple (pushed inward instead of sticking out)  
- Redness, soreness, rash, or swelling

**Step 3**  
While at the mirror, look for any signs of fluid coming out of one or both nipples  

- No discharge  
- Watery, milky, or yellow fluid, or blood

**Step 4**  
Lying down, use right hand to feel left breast and left hand to feel right breast.  
Cover the entire breast from top to bottom, side to side — from collarbone to top of abdomen, and from armpit to cleavage  

- No unusual lumps or masses  
- Unusual lumps or masses whether or not they are tender or painful to the touch  
- Signs of swelling

Step 5  
Finally, feel breasts while standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Be sure to cover entire breast using the same hand movements described in Step 4.  

- No unusual lumps or masses  
- Unusual lumps or masses if they are tender or painful to the touch  
- Signs of swelling
Any abnormality discovered during breast self-examination should be referred to a medical doctor for further evaluation that may include mammogram screening. Women aged 45 to 49 years should have mammograms every year or as directed by a medical doctor.

**PREVENTION OF BREAST CANCER**

There is no sure way of preventing breast cancer. However, some lifestyle decisions can significantly reduce the risk of breast and other forms of cancer. Women should be encouraged to:

- Avoid excess alcohol consumption.
- Follow a healthy diet with plenty of fresh fruit and vegetables.
- Engage in regular exercise.
- Maintain healthy body weight.
SECTION 7: MEN’S HEALTH

Men are exposed to all the health conditions that affect the general population. However, the most common threats to men’s health are cardiovascular diseases, cancer, and intentional and unintentional injury. For the most part, these threats result from lifestyle choices and are largely preventable. Evidence indicates that, compared to women, men are more likely to smoke and drink alcohol and generally lead less healthy lifestyles. In addition, men are more likely to postpone medical check-ups and consulting a health provider when problems arise.

GOAL

Improve the physical and social well-being of men through effective management of health conditions.

OBJECTIVES, KEY INDICATORS, AND TARGETS

The objectives, key indicators, and targets associated with improving the health and well-being of men are outlined in Table 7.1 below.

Table 7.1: Objectives, Key Indicators and Targets for Men’s Health

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Reduce mortality rate due to cardiovascular diseases</td>
<td>No. deaths due to cardiovascular diseases</td>
<td>40% reduction in annual number of deaths due to cardiovascular diseases</td>
</tr>
<tr>
<td>2) Increase in detection of cancer of the prostrate</td>
<td>No. of men over 40 years of age receiving screening for prostate cancer</td>
<td>50% increase in number of prostate cancer screening undertaken annually</td>
</tr>
<tr>
<td>3) Reduce incidence of intentional and unintentional injury among men</td>
<td>No. of intentional and unintentional injury occurring annually among men</td>
<td>50% reduction in annual number of injury occurring annually among men</td>
</tr>
</tbody>
</table>

STRATEGIES

- Increase access to health services by men.
- Promote healthy behaviours and lifestyles among men across all age groups.
- Expand prostate cancer screening services.
- Integration of male health services into normal clinic services.
• Strengthen referral, follow-up, and counselling systems for men diagnosed with prostate and other forms of cancer.

7.1 STANDARD OPERATING PROCEDURES: PROVIDING HEALTH SERVICES FOR MEN

Health providers must strive towards providing friendly and holistic services to the male population, taking into consideration their cultural belief and behaviour patterns. Regular visits to health care providers should be encouraged and standard operating procedures followed.

PRIMARY CONTACT

Knowing personal and family history is one of the best ways of assessing men’s health risks. Such knowledge may also be important in determining tests and screenings that may be required. Upon first contact, the health care provider should seek to gather the following information that should form part of the permanent record of the client:

Personal Data such as:
• Full name
• Date of birth
• Marital status
• Next of kin
• Address
• Telephone contact

Social History such as:
• Smoking
• Alcohol and recreational drug use
• Exercise habits

Family History such as:
Is there a parent, brother, or sister with a history of any of the following:
• Asthma
• Bleeding
• Diabetes
• Heart attack
• High blood pressure
• High cholesterol
• Stroke
• Thyroid disease
Personal Medical Conditions such as:
Has the client ever experienced any of the following:
• Bleeding disorder
• Cancer (especially prostate and colon)
• Diabetes
• Heart disease or condition
• High blood pressure
• Kidney disease
• Liver disease
• Migraine headaches
• Seizures
• Sexually transmitted infection, including HIV
• Tuberculosis
• Stroke or stroke-like conditions
• Current medication

Hospitalisation or Surgical Interventions such as:
• Date and reason

PHYSICAL EXAMINATION

Men should be encouraged to have routine annual physical examinations, or as often as by be recommended by a medical doctor. A sample checklist for conducting routine physical examinations is set out at Table 7.2.

Table 7.2: Checklist for Routine Physical Examination

<table>
<thead>
<tr>
<th>Body Parts</th>
<th>Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>At beginning and end</td>
<td>Examiner washes hands at beginning and end of exam.</td>
</tr>
<tr>
<td>General Inspection/Upper Extremities</td>
<td>Inspect both hands (nails, dorsum, palms)</td>
</tr>
<tr>
<td></td>
<td>Inspect and palpate arms and nodes</td>
</tr>
<tr>
<td></td>
<td>Test muscle strength in hand grip, and flex joints (wrists and elbows)</td>
</tr>
<tr>
<td>Vital Signs</td>
<td>Pulse in radial artery for 10 seconds</td>
</tr>
<tr>
<td></td>
<td>Compare both radial pulses</td>
</tr>
<tr>
<td></td>
<td>Blood pressure in right arm</td>
</tr>
<tr>
<td>Head</td>
<td>Inspect scalp and hair</td>
</tr>
<tr>
<td>Eyes</td>
<td>Measure visual acuity</td>
</tr>
<tr>
<td></td>
<td>Inspect external eye (conjunctive, eyelids, sclera)</td>
</tr>
<tr>
<td></td>
<td>Extraocular movements (6 positions)</td>
</tr>
<tr>
<td></td>
<td>Pupil reaction to light</td>
</tr>
<tr>
<td></td>
<td>Visual fields</td>
</tr>
<tr>
<td>Ears</td>
<td>Hearing test using wrist watch or whispered number (if abnormal, tuning fork)</td>
</tr>
<tr>
<td>System</td>
<td>Examination Steps</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nose/Mouth</td>
<td>- Inspect external and external ear</td>
</tr>
<tr>
<td></td>
<td>- Inspect nasal septum and turbinates</td>
</tr>
<tr>
<td></td>
<td>- Palpate frontal and maxillary sinuses</td>
</tr>
<tr>
<td></td>
<td>- Inspect mouth with blade: tongue, mucosa, ducts, tonsillar fossa, pharynx</td>
</tr>
<tr>
<td></td>
<td>- Phonate and protrude tongue; observe palate and uvula</td>
</tr>
<tr>
<td>Neck/shoulder/back</td>
<td>- Palpate lymph nodes, thyroid, trachea</td>
</tr>
<tr>
<td></td>
<td>- Neck range of motion - to sides, forward, back</td>
</tr>
<tr>
<td></td>
<td>- Palpate spine</td>
</tr>
<tr>
<td></td>
<td>- Fist percussion of costovertebral angles</td>
</tr>
<tr>
<td>Chest</td>
<td>- Inspect skin</td>
</tr>
<tr>
<td></td>
<td>- Check symmetry with deep breath</td>
</tr>
<tr>
<td></td>
<td>- Percuss posteriorly and laterally</td>
</tr>
<tr>
<td></td>
<td>- Palpate axillary lymph nodes</td>
</tr>
<tr>
<td></td>
<td>- Percuss and auscultanterior and posterior lung fields</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>- Inspect neck veins</td>
</tr>
<tr>
<td></td>
<td>- Auscult carotids at upper and lower extents</td>
</tr>
<tr>
<td></td>
<td>- Palpate one carotid at a time</td>
</tr>
<tr>
<td></td>
<td>- Inspect and palpate precordium</td>
</tr>
<tr>
<td></td>
<td>- Auscult each valve area</td>
</tr>
<tr>
<td>Abdomen</td>
<td>- Auscult epigastrium</td>
</tr>
<tr>
<td></td>
<td>- Palpate liver edge in deep inspiration</td>
</tr>
<tr>
<td></td>
<td>- Percuss liver dullness</td>
</tr>
<tr>
<td></td>
<td>- Palpate spleen in deep inspiration</td>
</tr>
<tr>
<td></td>
<td>- Percuss for splenic dullness</td>
</tr>
<tr>
<td></td>
<td>- Palpate inguinal nodes</td>
</tr>
<tr>
<td></td>
<td>- Palpate and auscult femoral pulses</td>
</tr>
<tr>
<td>Lower extremities</td>
<td>- Inspect and palpate legs</td>
</tr>
<tr>
<td></td>
<td>- Check range of motion, hips, knees</td>
</tr>
<tr>
<td></td>
<td>- Test for ankle edema</td>
</tr>
<tr>
<td></td>
<td>- Check dorsalis pedes and posterior tibial pulses</td>
</tr>
<tr>
<td></td>
<td>- Extend arms for drift</td>
</tr>
<tr>
<td></td>
<td>- Check muscle strength in upper and lower extremities (proximal and distal)</td>
</tr>
<tr>
<td></td>
<td>- Reflexes - biceps, ankle, knee</td>
</tr>
<tr>
<td></td>
<td>- Plantar reflex bilaterally</td>
</tr>
<tr>
<td></td>
<td>- Check gait</td>
</tr>
<tr>
<td>Male genitalia</td>
<td>- Inspect and palpate penis</td>
</tr>
<tr>
<td></td>
<td>- Palpate testes and scrotum</td>
</tr>
<tr>
<td></td>
<td>- Perform hernia examination</td>
</tr>
<tr>
<td>Rectal examination</td>
<td>Rectal Examination</td>
</tr>
</tbody>
</table>

**ROUTINE SCREENING TESTS**
Routine screening means testing for diseases and conditions that may not yet be causing symptoms. These screening tests can identify critical changes that are taking place in the body before they become manifest as diseases. Table 7.3 lists some of the most important routine screening tests that should be conducted on men, especially men over 40 years of age. However, it is important to note that it is the responsibility of the medical doctor to determine frequency of screening tests once diagnoses have been confirmed.

**Table 7.3: Summary of Routine Screening Tests for Men**

<table>
<thead>
<tr>
<th>Screening Tests</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| Blood pressure testing              | - At least every two years if blood pressure is normal (120/80 or below)  
- At least once per year if blood pressure is elevated  
- At least once per year if there are increased risk for heart disease and stroke, such as from smoking or diabetes |
| Diabetes screening                  | - Men over 40 years of age 40 to 70 who are overweight or obese  
- Risk factors for type 2 diabetes or heart disease  
- Blood pressure higher than 135/80  
- Use of medication to control blood pressure |
| Cholesterol testing                 | - Test every five years  
- Men with risk factors for heart disease should be tested more frequently |
| Colorectal screening                | - Men ages 50 to 75 should be tested by one of these three methods:  
  o Faecal occult blood test annually  
  o Flexible sigmoidoscopy every five years along with stool occult blood test every 3 years  
  o Colonoscopy every 10 years |
| Prostate-specific antigen (PSA) test | - When and whether men should have regular PSA tests for prostate cancer is controversial  
- These tests are not recommended by authorities on the subject |
| Hepatitis B virus testing           | - Men at increased risk should be tested regularly  
- Risk is increased with unprotected sex with multiple partners  
- Risk is increased with shared needles during intravenous drug use  
- Regular exposure to human blood (such as medical workers)  
- Share living arrangements with someone who has chronic hepatitis B virus infection  
- Travel to regions with high rates of hepatitis B virus infection |
| Sexually transmitted infection testing, including HIV | - Men who have had unprotected sex with a partner whose health history they do not know  
- should be tested for syphilis (or other sexually transmitted diseases, if your doctor thinks you may be at risk). |
EDUCATION AND COUNSELLING GUIDELINES

The primary objective of providing education and counselling for men is to reduce health risks, achieve early detection of preventable illnesses, and improve outcomes for common health conditions. Health providers should consider the following guidelines in delivering education and counselling services to men:

Establish Trust
Men seek help and use health services less frequently than women. It is known that many men fail to get routine check-ups, preventive care, or health counselling; and often ignore symptoms or delay seeking care. Health providers should therefore reach out to men in special ways, make them feel comfortable, and demonstrate genuine interest in their well-being. Men develop trust when a health provider displays empathy and encouragement, and may then feel more comfortable discussing their medical issues.

Maintain Privacy and Confidentiality
Ensuring complete privacy and confidentiality helps patients, especially men, to feel more comfortable discussing personal medical issues. Health providers should assure men of the privacy of all personal information and exchanges. Voice levels should always be moderated, counseling sessions conducted in a sound-proof area or removed location, and all medical records fully protected.

Take Sufficient Time
It takes time to build rapport and establish trust with men. Health providers should therefore set aside adequate time for interaction with men. Emotions should also be managed carefully, and there should be no display of impatience. If time is limited, this should be explained to the patient early and a new appointment mutually agreed upon.

Provide Accurate of Information
All information provided must accurate, scientifically sound, and up-to-date.

7.2 CARDIOVASCULAR DISEASE IN MEN

The WHO estimates that one-third of adult male world-wide display symptoms of cardiovascular disease. Cardiovascular disease is an umbrella term that includes heart failure, coronary artery disease, arrhythmias, angina, and other heart-related irregularities. The risk factors are:

- Smoking
- Overweight or obesity
- Diet high in saturated fat
• Alcohol abuse/excessive drinking
• High cholesterol
• Diabetes
• Hypertension (high blood pressure)

A cluster of these risk factors may also signal threatening cardiovascular disease. For example, the risk of heart disease significantly increases with diabetes and high blood pressure.

**EARLY SIGNS OF CARDIOVASCULAR DISEASE**

Cardiovascular disease in men may go unrecognised for many years. The first sign is often a heart attack or other serious event. But, there are important signs that can alert health providers and men to existing problems before they escalate. In the initial stage, symptoms (that may come and go) include:

• Difficulty catching breath after moderate physical exertion, like walking up a flight of stairs.
• Sense of discomfort or squeezing in chest that may last from or 30 minutes up to a few hours.
• Unexplained pain in upper body, neck, and jaw.
• Heartbeat that is faster, slower, or more irregular than usual.
• Dizziness or fainting.

Heart disease that involves the blood vessels is often signalled by:

• Chest pain.
• Shortness of breath.
• Changes in the extremities such as pain, swelling, tingling, numbness, coldness, and weakness.
• Extreme fatigue.
• Irregular heartbeat.

These symptoms can be signs that blood vessels have narrowed. This narrowing, which can be caused by build-up of plaque, makes it more difficult for the heart to circulate oxygenated blood throughout the body.

**7.3 PREVENTION AND CONTROL OF INJURIES**

Injuries and violence are a leading cause of disability and death among men in St. Vincent and the Grenadines. The main contributors are homicides, traffic accidents, drowning and suicides. Injuries are often categorized as:

a) Intentional injury resulting from purposeful human action, whether directed at oneself or others, such as homicide or suicide.
b) Unintentional injury or injury of undetermined intent such as vehicular accidents, drowning or falls.

**Prevention and Control of Intentional Injuries**

Intentional injuries are a preventable health and social problem. The causes and methods of control of two of the most common forms are summarised at Table 7.4.

**Table 7.4: Prevention and Control of Intentional Injuries**

<table>
<thead>
<tr>
<th>Intentional Injury</th>
<th>Causes</th>
<th>Prevention and Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal violence</td>
<td>- Extreme anger</td>
<td>- Appropriate parenting of children and young adults</td>
</tr>
<tr>
<td></td>
<td>- Deep-seated prejudices</td>
<td>- Exposure of children, adolescents, and adults to social</td>
</tr>
<tr>
<td></td>
<td>- Desire for violent revenge</td>
<td>skills such as interpersonal relations and conflict</td>
</tr>
<tr>
<td></td>
<td>- Social alienation</td>
<td>resolution</td>
</tr>
<tr>
<td></td>
<td>- Mental illness</td>
<td>- Early identification and management of anti-social</td>
</tr>
<tr>
<td></td>
<td></td>
<td>behaviours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Management of mental disorders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Provision of legal support to control illegal activities</td>
</tr>
<tr>
<td>Suicide</td>
<td>- Depression or mental illness</td>
<td>- Knowledge of warning signs and access to appropriate help</td>
</tr>
<tr>
<td></td>
<td>- Alcohol and drug abuse</td>
<td>- Increase protection against risk factors</td>
</tr>
<tr>
<td></td>
<td>- Exposure to stressful life event – loss</td>
<td>- Family support and protection</td>
</tr>
<tr>
<td></td>
<td>or grief</td>
<td>- Engagement in worthwhile activities such as sports</td>
</tr>
<tr>
<td></td>
<td>- Physical illness</td>
<td>and crafts</td>
</tr>
</tbody>
</table>

**Prevention and Control of Unintentional Injuries**

Unintentional injuries occur within brief periods of time, usually seconds or minutes. These injuries may be prevented or minimised through the following actions:

**Traffic Safety**

- Public information, education, and awareness on safe use of roads.
- Introduce and enforce regulations on speed limits, wearing seat belts and crash helmets, and drinking and driving.
• Improve road conditions and visibility.

Home Safety (Particularly for Older Men)
• Remove clutter, electrical cords, throw rugs and anything else that might cause someone to trip.
• Secure carpets to the floor; wipe up spills immediately.
• Use non-skid mats and tiles in bathrooms and showers.
• Ensure that stairs and outdoor areas are well lit.
• Provide adequate lighting in every room and stairway
• Use safety latches for all cabinets containing hazardous substances.
• Keep hazardous automotive and gardening products in a securely locked area.
• Always keep liquids in their original containers.

Workplace Safety
• Wear protective gear, such as helmets, protective pads, and other gear as appropriate.
• Exercise caution when using ladders.
• Keep up-to-date on new hazards and educate employees about how to avoid them.
• Keep a well-stocked first-aid kit on the premises
• Be aware of safety standards and requirements in the workplace.
About 10 percent of the population of St. Vincent and the Grenadines is 60 years of age and older. The passage of time and the numerous associated risk factors predispose older adults to deterioration in health. The WHO estimates that more than 60 percent of older adults are managing two or more health conditions at a time that increase their vulnerability. The health and social well-being of older adults is therefore an important consideration of the national health service.

**GOAL**

Improve the health, function, and quality of life of older adults.

**OBJECTIVES, KEY INDICATORS, AND TARGETS**

The objectives, key indicators, and targets associated with improving the health, function, and quality of life of older adults are outlined in Table 8.1 below.

**Table 8.1: Objectives, Key Indicators and Targets for Health of Older Adults**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Increase the scope and quality of health service delivery to older adults</td>
<td>No. of primary health care facilities offering comprehensive care of older adults</td>
<td>100% of primary care facilities providing specialised health services for older adults</td>
</tr>
<tr>
<td></td>
<td>No. of older adults accessing health services at primary care facilities</td>
<td>60% increase in registration of older adults at primary health facilities</td>
</tr>
<tr>
<td>2) Increase public awareness on prevention and control of common health conditions affecting older adults</td>
<td>No. of health promotion programmes conducted annually geared specifically at older adults</td>
<td>50% increase in number of health promotion programmes for adults annually</td>
</tr>
<tr>
<td></td>
<td>No. of established community groups providing health and social support to older groups</td>
<td>60% increase in number of community groups providing health and social support to older persons</td>
</tr>
</tbody>
</table>
STRATEGIES

- Enhance the scope and quality of primary health care services offered to older persons.
- Apply “age-friendly principles” to health service delivery for older adults. These principles address the major areas of information, education, communication, and training.
- Promote positive ageing as a mechanism for enhancing health and independence among older adults.
- Promote healthy behaviours and lifestyles among older adults.
- Collaborate with other social services - public and private – in responding to the needs of older adults.
- Strengthen referral, follow-up, and counselling systems for older adults.

8.1 HEALTH ASSESSMENT OF OLDER ADULTS

DEFINITION OF OLDER ADULTS

Older adults are defined by the interplay of two main characteristics:

1) Chronological age. The WHO has established 60 - 65 years as the beginning point for categorisation as older adults. This definition is linked to retirement from paid employment. In some situations, persons over 85 years are referred to as oldest adults.

2) Change in functional abilities. Physical impairment and deterioration of mental processes occur among aging adults. The rate at which these changes occur vary across individuals and is dependent on factors such as underlying medical conditions, social support, and living conditions.

Older adults should undergo comprehensive assessments annually or as frequently as otherwise indicated by a medical officer. This assessment must be repeated after each new episode of illness and individual health records should be updated accordingly.

FUNCTIONAL ASSESSMENT

Functional Assessment is a determination of the capacity of the older adult to undertake functions of daily living. Table 8.2 summarises functional capacity of older adults to undertake activities of daily living.
<table>
<thead>
<tr>
<th>Functions of Daily Living</th>
<th>Independence</th>
<th>Dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing</td>
<td>Bathes self completely or needs help in bathing only a single part of the body, such as the back, genital area, or disabled extremity</td>
<td>Needs help with bathing more than one part of the body, getting in or out of the bathtub or shower; requires total bathing</td>
</tr>
<tr>
<td>Dressing</td>
<td>Gets clothes from closets and drawers, and puts on clothes and outer garments complete with fasteners; may need help tying shoes</td>
<td>Needs help with dressing self or needs to be completely dressed</td>
</tr>
<tr>
<td>Toileting</td>
<td>Goes to toilet, gets on and off, arranges clothes, cleans genital area without help</td>
<td>Needs help transferring to the toilet and cleaning self, or uses bedpan or commode</td>
</tr>
<tr>
<td>Transferring</td>
<td>Moves in and out of bed or chair unassisted; mechanical transfer aids are acceptable</td>
<td>Needs help in moving from bed to chair or requires a complete transfer</td>
</tr>
<tr>
<td>Feeding</td>
<td>Gets food from plate into mouth without help; preparation of food may be done by another person</td>
<td>Needs partial or total help with feeding or requires parenteral feeding</td>
</tr>
<tr>
<td>Faecal and urinary continence</td>
<td>Exercises complete self-control over urination and defecation</td>
<td>Is partially or totally incontinent of bowel or bladder</td>
</tr>
</tbody>
</table>

Health providers should also determine the capacity of older adults to undertake the following instrumental activities of daily living 1) without help, 2) with some help, or 3) completely unable to do so:

- Can use the telephone
- Can get to places that are out of walking distance
- Can go shopping for groceries
- Can prepare your own meals
- Can do own housework
- Can do your own laundry
- Can take medication
- Can manage own money
PHYSICAL EXAMINATION

The approach to physical examination of older adults should incorporate all facets of a conventional medical assessment including family and social history, current illness, and past and current medical problems. In addition to the chronic non-communicable diseases, attention should be paid to nutrition, osteoporosis, vision, hearing, faecal and urinary continence, and balance and fall prevention. Table 8.3 provides a framework for conducting a focused physical examination of older persons.

Table 8.3: Checklist for Focused Physical Examination of Older Adults

<table>
<thead>
<tr>
<th>Body Areas/Parts</th>
<th>What to look for</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Unintentional weight loss</td>
</tr>
<tr>
<td></td>
<td>Weight gain</td>
</tr>
<tr>
<td>Vital signs</td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Orthostatic hypotension</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Bradycardia</td>
</tr>
<tr>
<td></td>
<td>Irregularly irregular heart rate</td>
</tr>
<tr>
<td>Heart rate</td>
<td>Increased respiratory rate greater than 24 breaths per minute</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>Hyperthermia, hypothermia</td>
</tr>
<tr>
<td>Temperature</td>
<td>Asymmetric facial or extraocular muscle weakness or paralysis</td>
</tr>
<tr>
<td></td>
<td>Frontal bossing</td>
</tr>
<tr>
<td></td>
<td>Temporal artery tenderness</td>
</tr>
<tr>
<td>Eyes</td>
<td>Eye pain</td>
</tr>
<tr>
<td></td>
<td>Impaired visual acuity</td>
</tr>
<tr>
<td></td>
<td>Loss of central vision</td>
</tr>
<tr>
<td></td>
<td>Loss of peripheral vision</td>
</tr>
<tr>
<td></td>
<td>Ocular lens opacification</td>
</tr>
<tr>
<td>Ears</td>
<td>Hearing loss</td>
</tr>
<tr>
<td>Mouth, throat</td>
<td>Gum or mouth sores</td>
</tr>
<tr>
<td></td>
<td>Leukoplakia</td>
</tr>
<tr>
<td></td>
<td>Xerostomia</td>
</tr>
<tr>
<td>Neck</td>
<td>Carotid bruits</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>Thyroid enlargement and nodularity</td>
</tr>
<tr>
<td>Cardiac</td>
<td>Fourth heart sound (S4)</td>
</tr>
<tr>
<td></td>
<td>Systolic ejection, regurgitant murmurs</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Barrel chest</td>
</tr>
<tr>
<td></td>
<td>Shortness of breath</td>
</tr>
<tr>
<td>Breasts</td>
<td>Masses</td>
</tr>
<tr>
<td>Abdomen</td>
<td>Pulsatile mass</td>
</tr>
<tr>
<td>Gastrointestinal, genital, rectal</td>
<td>Atrophy of the vaginal mucosa</td>
</tr>
<tr>
<td></td>
<td>Constipation</td>
</tr>
<tr>
<td></td>
<td>Faecal incontinence</td>
</tr>
<tr>
<td></td>
<td>Prostate enlargement</td>
</tr>
<tr>
<td></td>
<td>Prostate nodules</td>
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<tr>
<td></td>
<td>Rectal mass, occult blood</td>
</tr>
<tr>
<td></td>
<td>Urinary incontinence</td>
</tr>
<tr>
<td>Extremities</td>
<td>Abnormalities of the feet</td>
</tr>
<tr>
<td></td>
<td>Diminished or absent lower extremity pulses</td>
</tr>
<tr>
<td></td>
<td>Heberden nodes</td>
</tr>
<tr>
<td></td>
<td>Pedal oedema</td>
</tr>
<tr>
<td>Musculo-skeletal</td>
<td>Diminished range of motion, pain</td>
</tr>
<tr>
<td></td>
<td>Dorsal kyphosis, vertebral tenderness, back pain</td>
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<tr>
<td></td>
<td>Gait disturbances</td>
</tr>
<tr>
<td></td>
<td>Leg pain</td>
</tr>
<tr>
<td></td>
<td>Muscle wasting</td>
</tr>
<tr>
<td></td>
<td>Proximal muscle pain and weakness</td>
</tr>
<tr>
<td>Skin</td>
<td>Erythema, ulceration over pressure points, unexplained bruises</td>
</tr>
<tr>
<td></td>
<td>Premalignant or malignant lesions</td>
</tr>
<tr>
<td>Neurologic</td>
<td>Tremor with rigidity</td>
</tr>
</tbody>
</table>
COGNITIVE ASSESSMENT

Cognitive impairment in older adults has a variety of causes. These causes relate to side effects from medication, metabolic and/or endocrine imbalances, depression, and dementia, among others. Routine screening of older adults for cognitive impairment is not recommended. However, screening is recommended when signs and symptoms such as progressive loss of memory or speech difficulties are noticed. Cognitive screening assists in:

- Early identification and treatment of underlying disease or health condition.
- Managing co-morbid conditions more effectively.
- Averting or addressing potential safety issues.
- Ensuring the patient to create or update plan for long-term care.
- Ensuring the patient has a caregiver or someone to help with medical and other concerns.
- Ensuring the caregiver receives appropriate information and referrals.

Health providers may use two methods in assessing cognitive impairment at the primary care level:

1) Conduct interviews with clients/patients, family members and close friends. These interviews should only be done with the clear permission of the person and the person’s next of kin. Interviews provide insights on memory, behaviour, mood, and functional status.

2) Observe any changes/problems in the memory, behaviour, mood, and functional status of the client/patient. Information may be picked up from the patient’s behaviour during interactions with staff and other patients.

8.2 MANAGEMENT OF COMMON HEALTH CONDITIONS OF OLDER PERSONS

TEAM APPROACH

Older adults seeking health care must be assessed on their individual merits taking into consideration chronological age and functional abilities. There is no case of one size fits all. Providing effective health and social care to older persons is multi-faceted and complicated, and requires a team approach. The team should include a range of professionals with complementary skills to address the diverse, and often complicated, needs of older persons. The team should include:

- Medical Doctor
- Nurse
- Nurse Practitioner
- Community Health Aide

- Social worker
- Pharmacist
- Nutritionist/Dietician
- Health Promotion Specialist
- Physical Therapist
- Psychiatrist
- Psychologist

**COMMON HEALTH CONDITIONS**

Older adults are at risk from a range of chronic non-communicable diseases and other health conditions associated with the ageing process. Many of these conditions are serious and life-threatening conditions, while others undermine the health, well-being, and independence of older adults in gradual and insidious ways. The most common of these health conditions are:

- Heart disease
- Diabetes Mellitus
- Hypertension
- Cancer
- Respiratory diseases
- Renal failure
- Osteoporosis
- Arthritis
- Dementia (including Parkinson’s Disease)
- Incontinence (urinary and bowel)
- Accidents and injuries
- Eye problems (cataracts, glaucoma, macular degeneration)

Other things to be aware of as the body changes:

- Weight loss
- Slowed reaction time which is especially important when judging whether a person can drive safely or perform other similar functions that require swift reflex actions
- Thinner skin that can lead to tears or wounds that heal very slowly, especially if diabetes is present
- Weakened immune system which can make fighting off viruses, bacteria and diseases difficult
- Diminished sense of taste or smell, especially for smokers, which can lead to diminished appetite and dehydration
- Depression and loneliness (listlessness, loss of interest in usual activities, withdrawal)
PREVENTION AND CONTROL OF HIGH-RISK HEALTH CONDITIONS

The biggest killers of older adults in St. Vincent and the Grenadines are malignant neoplasm, heart disease, and stroke. At the same time, the greatest causes of disability among older adults are diabetes, sensory impairments, osteoarthritis, injuries from falls, and depressive disorders. Lifestyle factors and health promotion lie at the core of prevention and control measures for these conditions. Table 8.4 summarises the controllable risk factors and the prevention and control measures that health providers should promote.

Table 8.4: Prevention Measures for Common Health Problems of Older Adults

<table>
<thead>
<tr>
<th>Health Conditions</th>
<th>Controllable Risk Factors</th>
<th>Prevention and Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malignant neoplasm (cancer)</td>
<td>• Tobacco smoking&lt;br&gt;• Excess use of alcohol&lt;br&gt;• Some types of viral infections – Hepatitis B and HPV&lt;br&gt;• Exposure to radiation, including radiation from sunlight</td>
<td>• Healthy eating&lt;br&gt;  - Eat plenty of fruits and vegetables&lt;br&gt;  - Limit processed meats&lt;br&gt;  - Drink alcohol only in moderation, if at all&lt;br&gt;• Avoid obesity&lt;br&gt;• Exercise regularly&lt;br&gt;• Immunisation against Hepatitis B and HPV&lt;br&gt;• Regular screening for breast, cervical, colorectal and prostate cancers&lt;br&gt;• Limit exposure to radiation</td>
</tr>
<tr>
<td>Heart disease</td>
<td>• High blood cholesterol&lt;br&gt;• High blood pressure&lt;br&gt;• Overweight and obesity</td>
<td>• Healthy eating&lt;br&gt;  - Fruits and vegetables&lt;br&gt;  - Whole grains&lt;br&gt;  - Fat-free or low-fat dairy products&lt;br&gt;  - Fish, lean meats, poultry, eggs, nuts, seeds, soy products, legumes, and vegetable oils&lt;br&gt;  - Limit sodium, saturated and trans fats, added sugars&lt;br&gt;  - Limit alcohol&lt;br&gt;• Maintain healthy BMI (between 18.5 and 24.9)&lt;br&gt;• Routine physical activity – regular exercise&lt;br&gt;• Manage stress&lt;br&gt;• Quit smoking</td>
</tr>
<tr>
<td>Stroke</td>
<td>• High blood pressure</td>
<td>• Similar measures to heart disease</td>
</tr>
<tr>
<td>Health Concerns</td>
<td>Prevention Measures</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>High cholesterol</td>
<td>Eat a balanced, healthy diet</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>Limit takeaway and processed foods</td>
<td></td>
</tr>
<tr>
<td>High caloric intake</td>
<td>Manage weight</td>
<td></td>
</tr>
<tr>
<td>Abnormal cholesterol and triglyceride levels</td>
<td>Regular exercise</td>
<td></td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Limit alcohol intake</td>
<td></td>
</tr>
<tr>
<td>Overweight and obesity</td>
<td>Quit smoking</td>
<td></td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>Control blood pressure</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensory impairments (sight, hearing, smell, touch, taste and spatial awareness)</th>
<th>Prevention Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>Diabetes management</td>
</tr>
<tr>
<td>Cataracts</td>
<td>Healthy balanced diet</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>Regular medical check-up and appropriate treatment</td>
</tr>
<tr>
<td>Injuries</td>
<td>Age-friendly environments</td>
</tr>
<tr>
<td>Persistent exposure to loud noise</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Osteoarthritis</th>
<th>Prevention Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>Manage weight</td>
</tr>
<tr>
<td>Joint injuries</td>
<td>Regular exercise</td>
</tr>
<tr>
<td>Certain occupations</td>
<td>Avoid joint injuries</td>
</tr>
<tr>
<td></td>
<td>Avoid jobs that cause repetitive stress to joints</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Injuries</th>
<th>Prevention Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls due decreased activity and strength, poor balance, impaired vision, osteoporosis, dementia, and multiple medications and illnesses</td>
<td>Regular exercise to build strength and improve balance and coordination</td>
</tr>
<tr>
<td>Faulty building (home and workplace) construction</td>
<td>Home safety – non-slip tile and mats, building hand rails, improve lighting</td>
</tr>
<tr>
<td></td>
<td>Age-friendly work environments</td>
</tr>
<tr>
<td></td>
<td>Regular vision and hearing checks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depressive disorders</th>
<th>Prevention Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>Manage diabetes</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Engage family and community support</td>
</tr>
<tr>
<td>Dementia</td>
<td>Health promotion</td>
</tr>
<tr>
<td>Other neurological disorders</td>
<td>Medical support</td>
</tr>
</tbody>
</table>

**HEALTH CARE SETTINGS FOR OLDER ADULTS**

Health care for older adults should be of the highest quality and must meet established ethical standards. These services are usually provided in different settings depending on need.

**Primary Care Facility**

Most older adults receive their medical care in a primary care facility through a core team of health care providers including a medical practitioner, nurse, family nurse practitioner, pharmacist and community health aide. Support is also provided by nutritionists/dieticians, health promotion specialists, physical therapists, psychologist and psychiatrist, as required.
This facility is the first and principal point of contact with the healthcare system for most older persons. Services that may be accessed:

- Diagnosis and treatment of acute and chronic illnesses.
- Disease prevention and health maintenance.
- Health promotion – education and counselling.

**Hospitals**
Hospitals provide the most comprehensive medical care available to older adults. Admission to these facilities is usually based on referral from a primary care setting and may be for medical, surgical, or mental health reasons. Hospital services are provided by a range of health practitioners including medical specialists, nurses, pharmacists, nutritionists/dietitians, physical and occupational therapists, social workers, medical technicians, and nursing assistants. The duration of stay in hospital for older adults should be minimised since long stays increase the risk of problems such as infections, pressure sores, confusion, and incontinence.

**Home Health Care**
Older adults who are frail or who have recently been discharged from hospital often need care in their home. Much of this care may be provided by family members but support may also be required from the primary care team especially the medical officer, nurse, family nurse practitioner, and community health aide. Support may also be required from the nutritionist/dietician, and physical therapist, as appropriate.

**Homes for Older Adults**
Homes for the Aged provide residential care to older persons who are unable to live independently in their own homes or community due to some form of impairment. These homes have the advantage of providing on-site health care services, around the clock supervision, and individualised help with daily needs. However, these facilities should be regulated and carefully monitored by health care professionals such as medical officers, public health nurses, family nurse practitioners, and environmental health officers to ensure that standards are maintained.
Mental health is defined as emotional, psychological, and social well-being. It affects how people think, feel, and act; and helps to determine how stress is handled and choices are made. Mental health is important at every stage of life, from childhood and adolescence through adulthood. The leading causes of mental illness in St. Vincent and the Grenadines are schizophrenia, substance abuse with schizophrenia, and drug-induced psychosis, in rank order.

**GOAL**

Improve mental health through improvement in service delivery, advocacy, and education at primary, secondary and tertiary levels of the health system.

**OBJECTIVES, KEY INDICATORS, AND TARGETS**

The objectives, key indicators, and targets associated with improving the mental health of the population are outlined in Table 9.1 below.

**Table 9.1: Objectives, Key Indicators and Targets for Mental Health**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Indicators</th>
<th>Targets to be achieved by 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Early detection and continuity of care for mental illnesses</td>
<td>% of primary health care facilities with integrated mental health services</td>
<td>100% of primary care facilities providing integrated mental health services</td>
</tr>
<tr>
<td></td>
<td>% of persons with certified mental illness retained in care</td>
<td>90% of persons certified with mental illness receive at least three follow-up visits per year</td>
</tr>
<tr>
<td>2) Empower individuals, families and communities to promote mental health</td>
<td>No. of re-admissions to psychiatric hospital</td>
<td>50% decrease in re-admissions to psychiatric hospital</td>
</tr>
<tr>
<td>and manage mental illnesses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STRATEGIES**

- Integration of mental health into community health services.
- Community mental health promotion and education.
- Streamline mental referral systems to assure continuity of care.
• Training and re-training of health and community workers in modern approaches to mental health.
• Refine and implement mental health policies and regulations.

### 9.1 CAUSES AND SYMPTOMS OF MENTAL ILLNESS

#### CAUSES OF MENTAL ILLNESS

Although the exact causes of most mental illnesses are not known, it has become clear that many of these conditions are caused by a combination of factors:

- **Genetics** (heredity): Mental illnesses sometimes run in families, suggesting that people who have a family member with a mental illness may be somewhat more likely to develop one themselves. Susceptibility is passed on in families through genes.

- **Infections**: Certain infections have been linked to brain damage and the development of mental illness or the worsening of its symptoms. For example, a condition known as paediatric autoimmune neuropsychiatric disorder associated with the streptococcus bacteria has been linked to the development of obsessive-compulsive disorder and other mental illnesses in children.

- **Brain defects or injury**: Defects in or injury to certain areas of the brain have been linked to some mental illnesses.

- **Prenatal damage**: Some evidence suggests that a disruption of early foetal brain development or trauma that occurs at the time of birth -- for example, loss of oxygen to the brain -- may be a factor in the development of certain conditions, such as autism spectrum disorder.

- **Substance abuse**: Long-term substance abuse has been linked to anxiety, depression, and paranoia.

- **Other factors**: Poor nutrition and exposure to toxins such as lead, may play a role in the development of mental illnesses.

#### EARLY WARNING SIGNS

Mental illness can develop at any stage of the life cycle. Sudden changes in thoughts and behaviours may be the first warning sign of approaching mental illness. Health providers including doctors, nurses, counsellors, psychiatric workers, social workers have a pivotal role in ensuring that families, teachers, and community groups understand the early signs and symptoms of mental illness. The early warning signs are:

**Younger Children (< 5 years of age):**
- Changes in sleeping and/or eating habits.
- Excessive worry or anxiety (e.g. refusing to go to bed)
- Hyperactivity.
- Persistent nightmares.
• Persistent disobedience or aggression.
• Frequent temper tantrums.

Older Children and Pre-Adolescents
• Substance use.
• Inability to cope with problems and daily activities.
• Changes in sleeping and/or eating habits.
• Excessive complaints of physical ailments.
• Changes in ability to manage responsibilities - at home and/or at school.
• Defiance of authority, truancy, theft, and/or vandalism.
• Intense fear.
• Prolonged negative mood, often accompanied by poor appetite or thoughts of death.
• Frequent outbursts of anger.
• Changes in school performance - poor grades despite strong efforts.

Adolescents and Adults
• Confused thinking
• Prolonged depression (sadness or irritability)
• Feelings of extreme highs and lows
• Excessive fears, worries and anxieties
• Social withdrawal
• Dramatic changes in eating or sleeping habits
• Strong feelings of anger
• Strange thoughts (delusions)
• Seeing or hearing things that aren't there (hallucinations)
• Growing inability to cope with daily problems and activities
• Suicidal thoughts
• Numerous unexplained physical ailments
• Substance use

9.2 MENTAL HEALTH SERVICES

Optimal mental health care requires a careful mix of self-care, informed community support, primary health services, and psychiatric hospital services. (See pyramid at Figure 9.1)

Self-care
Self-care is the foundation upon which all other care is based. Most people should be encouraged to manage their mental health problems themselves, or with support from
family or friends. The model emphasizes health worker–patient partnerships in people with mental disorders managing their own care. The role of individuals in self-care include:

- decision-making concerning their treatment
- adherence to prescribed medication
- changing behaviours such as drug and alcohol use
- stress management

Self-care is most effective when it is supported by health promotion programmes and formal health services. Health promotion interventions:

- Improve mental health literacy among the population.
- Improve knowledge about the causes of mental illness and treatment options.
- Inform individuals and families about where to get help.

**Informal Community Care**

Informal community care comprises services provided by community members who are not part of the formal health system. Examples include professionals such as teachers, social workers, police, churches, non-governmental organisations, and family members who provide support in the following ways:

- Assist in identification of early warning signs of mental illness among relatives, friends, and other residents of communities.
- Encourage treatment compliance among people who have been discharged from hospitals.
- Provide follow-up and social support to certified mentally ill persons to avoid relapses.
- Participate in mental health promotion activities.

It is important for health providers to establish and maintain strategic partnerships with individuals and organisations providing informal community care to enhance mental health delivery services. These partnerships should be built around involving community members in planning mental health programmes, providing follow-up care to patients, and evaluation of services.

**Primary Health Care**

Primary health care represents the first level of care within the formal health system at which mental health services are provided. Essential services at this level include:

- Early identification of mental disorders.
- Management of stable psychiatric patients and referral to other levels where required.
- Management of physical health problems of persons with mental health needs.
• Mobilising social support systems for mentally ill persons working along with family and community members, and other government and civil society organisations.
• Mental health promotion and prevention.

Primary care for mental health is provided mainly by medical doctors and nurses working at the community level. Services at the primary care level are generally the most accessible and acceptable to the mentally ill and their families. In this context, there are two important points that health providers should remember:
• Continuity of care is a core element of effective primary care. The quality of mental health services is likely to be enhanced when there is an ongoing relationship between health workers and patients.
• Mental health services should be fully integrated into primary health care. In this way, mental health disorders and co-morbid physical health problems can be managed seamlessly.

Hospital Care
For many people with severe mental disorders, hospitalisation becomes necessary at some point in their lives. The psychiatric hospital provides 24-hour care and supervision of people with acute mental disorders. Professional services are provided by psychiatrists, psychologists, general and psychiatric nurses, and occupational therapists. Hospital management of mental disorders include the following usually in some combination:
• Medication.
• Psychotherapy
• Group therapy.
• Specific therapies, such as cognitive behaviour therapy and modification.
• Occupational therapy.

To minimize the risk of neglect, harmful physical damage to person, and human rights violations, the psychiatric hospital should adhere to clear policies and guidelines for clinical best practice, and support the treatment and management of mental disorders within a framework of dignity and respect.

9.3 PREVENTION OF MENTAL ILLNESS

Promoting mental health and preventing mental illness improves overall health and well-being of individuals, and enhances quality of life and productivity. These measures relate to every phase of the life cycle. Health providers, in all categories and at all levels, play important roles in preventing mental illness. Key actions include:

Mothers during Pregnancy and Perinatal Period
• Provide prenatal, perinatal and postnatal care to women according to established protocols. This care is usually provided by doctors, nurse/midwives, and family nurse
practitioners. It minimises the risk of foetal trauma and brain damage and postnatal depression, while improving child-parent attachment through breast feeding.

- Conduct early screening of newborns, especially babies of low birth weight for congenital and other abnormalities.
- Promote positive health behaviours such good nutrition during pregnancy and regular exercise appropriate to the stage of pregnancy.
- Discourage the use of alcohol, non-prescription drugs, and recreational drugs.
- Provide counselling/education to parents on monitoring growth and development of infants.

**Children and Adolescents**

- Train parents and teachers to detect early warning signs of mental problems and to facilitate appropriate interventions.
- Encourage healthy nutritional practices focusing on daily balanced diets.
- Introduce components of mental health such as self-esteem, positive social behaviours, and life skills development into school curricula.

**Adults**

- Encourage healthy nutritional practices focusing on daily balanced diets.
- Promote interventions that discourage use of alcohol and recreational drugs.
- Promote early identification and treatment of depression and schizophrenia.
- Mobilise families and social groups in supporting community mental health programmes.