



## MATERNAL AND CHILD HEALTH

### Key points:

1. Women are at increased health risk during pregnancy.
2. Families need to be informed about the public services and care for mothers and children.
3. Family planning improves maternal and child health and reduces poverty.
4. Good nutrition improves childhood development and ensures good health.
5. Immunisation is a highly successful and cost effective way of preventing childhood diseases.

South Africa has made progress in improving access to maternal and child health care services by expanding primary health care and providing free services for pregnant women and children under 6 years old. But there is still need for improvement, especially in empowering communities to

access care in time. Community Health Workers (CHWs) play a very important role in improving maternal and child health by informing and supporting families and communities. This chapter helps CHWs meet the special health needs of children and women of child bearing age.





## Medical terms you will need to know:

- **MORTALITY:** death rate/number of deaths in a specific place or time
- **ANTENATAL/PRENATAL:** before birth, usually used to describe the care and treatment of the unborn child and pregnant woman
- **POSTPARTUM:** after birth, usually used for the first few weeks after giving birth
- **INTRAPARTUM:** during birth
- **PERINATAL:** around the time of birth
- **NEONATAL:** relates to newborn infants, usually the first 4 weeks after birth
- **CAESAREAN SECTION:** when a baby is surgically delivered by making a cut through the abdomen and uterus to remove the baby
- **TERMINATION OF PREGNANCY (TOP):** when a pregnancy is medically stopped and the foetus is destroyed and removed, also known as an abortion
- **IMMUNISATION:** the same as vaccination, when a child/person is injected with a small amount of a germ or part of a germ so that the body develops immunity and prevents the person from getting sick from the disease caused by the germ in the future
- **MALNUTRITION:** poor nutrition, which means that the child/adult is not getting enough to eat and/or they are not eating enough different kinds of food which means they are not getting all the vitamins and minerals that the body needs
- **DEFICIENCY:** when there is not enough (i.e. vitamin deficiency means that a person is not getting enough vitamins)
- **SUPPLEMENTATION:** when extra is given to make up for a deficiency (i.e. vitamin supplementation is when a person takes vitamin pills/syrup in order to supplement their existing diet when they need more of a specific vitamin or when they do not get enough vitamins in their diet)



Information on maternal & child health is important for everyone

# Improving maternal and child health

Episode 15, Chapter 1



The Millennium Development Goals (MDGs) are committed to improving maternal and child health in developing countries.

## Specific MDG targets are:

- Reduce under-5 mortality by two-thirds by 2015
- Reduce maternal mortality by three-quarters by 2015
- Achieve universal access to reproductive health by 2015

South Africa is failing to reach the Millennium Development Goals of reducing the number of maternal and child deaths and improving access to reproductive health care. Recent reports have shown that even though South Africa is wealthier than neighbouring African countries and spends more on health care, we are still failing to provide better care for women and children.



*South Africa needs to provide better health care for women and children.*

South Africa's maternal mortality rate is high and rising. It was reported to be 625 deaths per 100,000 live births in 2007. By signing the MDGs, South Africa has promised to reduce the rate to 38 deaths per 100,000 live births. In 2007, South Africa's under-5 mortality rate was 104 per 1,000 live births. The target set by the MDGs is 20. From these figures we can see how important it is that we commit to improving maternal and child health in our country.

The main challenges are HIV/AIDS, lack of transport to health care facilities and not having enough trained staff. South Africa needs to increase the number of nurses, midwives and doctors. Apart from providing better patient transport services it is also important to take health care to remote rural areas. Most maternal and infant deaths in South Africa are preventable.

It is important that families are involved in maternal and child health care. It is the role of CHWs to educate and support families in the decisions around how best to look after the health of women and children. This includes improving general family health and ensuring safe pregnancies and deliveries.

## Effective health care provision includes:

- Pre-pregnancy (the time before the mother falls pregnant or conceives)
- Pregnancy (during the 9 months of pregnancy)
- Childbirth (during the process of giving birth)
- Postpartum (after the mother has given birth to the child)
- Newborn care (caring for the newly born infant)
- Care of the growing child

## Apart from providing health education and support, CHWs should also consider:

- Social factors relating to health
- Community needs assessment
- Proper referral to health services

**Most maternal & infant deaths in South Africa are preventable**

## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What can CHWs do to support women of child bearing age and children?

CHWs can educate and support families on the decisions around general family health and how to ensure safe pregnancies and deliveries.

### 2. Why do you think it is important for families to be educated about maternal and child health?

It is important that women have the support of their families when they seek health care for themselves and their children. Families can also advise pregnant women on how to access care and how to take care of the child once it is born.

# Maternal care during pregnancy and after the birth of the child

Episode 15, Chapter 2



In this section we are going to learn more about the causes of maternal ill health and death due to complications with pregnancy and childbirth. Most importantly we are going to find out how to provide better health care for mothers and women of child bearing age. For most women living in sub-Saharan Africa, pregnancy is a vulnerable time when they have more physical, psychological and social risks.

**Research shows that the most common causes of maternal mortality (death) in sub-Saharan Africa are:**

- Severe (serious, heavy) bleeding during or after giving birth
- Infection (bacterial)
- Unsafe termination of pregnancy (abortion)
- Eclampsia (hypertension caused by pregnancy, often causes seizures/fits)
- Obstructed labour (when the baby gets stuck and cannot exit the mother's vagina)

**If the mother experiences any of these complications she needs hospital care. Recommendations for reducing maternal mortality include:**

- Access to health care
- Access to family planning services (contraception)
- Care during pregnancy
- Emergency childbirth services (such as caesarean assisted birth)

Firstly, it is very important to act quickly when there is a health risk, such as severe (serious/heavy) bleeding after birth. CHWs need to recognise the danger signs and respond quickly. Sometimes it is not possible for families to act quickly, especially if they live far away from health care services, don't have transport or enough money. CHWs also need to be aware of how household decisions are made, such as needing the husband's permission before the wife can seek care.

In many cultures, families believe in a period of confinement of both mother and newborn child lasting from 1 to 6 week(s) or more. During this time the mother and child are often kept inside the home and separate from the rest of the family so they can rest and strengthen. Sometimes it can be difficult to convince families to seek care outside the home during this period of confinement. It is also difficult at times to notice danger signs in sick newborn babies. Families may not understand the seriousness of signs, such as feeding problems or lethargy (when the child is unusually sleepy and unresponsive).

## BIRTH PLAN

The CHW can help a mother-to-be create a birth plan to prepare for the birth of her child. This plan is to make the mother aware of what is involved in giving birth.

**The birth plan should answer the following questions:**

- At which clinic will you deliver your baby?
- How will you get to the clinic?
- Who will come with you to the clinic?
- Who will look after your family while you are giving birth?
- Do you have clothes ready for your baby?
- Did you pack your bag, ID and ANC card?
- Did you take your medication?
- Will you be ready if you go into labour early?
- Is your family emotionally prepared for a new baby?

**In addition, the mother should be aware of signs of labour. These include:**

- On-going pain on the back or lower stomach
- Breaking of water
- Bloody mucus discharge
- Regular contractions



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. What kinds of different risks do pregnant women face? Explain what these risks mean.**

Pregnant women are at increased social, psychological and physical risk. Psychological risks mean that women may experience greater mental and emotional stress during pregnancy. Physical risks are related to the body and the changes that the woman goes through during pregnancy which may endanger her health. Social risks are linked to her position as a pregnant woman within her family and community.

**2. What are some of the danger signs in newborn infants that families can overlook?**

Feeding problems and lethargy are sometimes not seen to be potentially dangerous.

## Care during pregnancy

Antenatal care is given to pregnant mothers before they give birth in order to look after their health and also prepare them for birth and for caring for the infant once it is born. Antenatal care is important because it ensures the wellbeing of both the pregnant mother and the unborn child. Antenatal care enables mothers-to-be to get information and knowledge about:

- Nutrition during pregnancy
- Safer sex to prevent HIV infection and other STIs
- Breast feeding options for when the child is born
- Family planning options after the birth of the child
- Healthy lifestyle such as no cigarettes and alcohol

**It is very important that all pregnant women attend antenatal health care services so that they can:**

- Receive advice on labour and get to know possible danger signs that will mean they need to go to the clinic or hospital
- Be informed about how to monitor the progress of their pregnancy
- Access services that assess maternal (mother) and foetal (unborn infant) wellbeing and to check if the mother has enough nutrition (food)
- Detect potential problems that can complicate pregnancy and early birth (e.g. anaemia, hypertension, bleeding, twin pregnancy)
- Encourage preventative treatments such as iron and folic acid supplementation
- Get support if living with HIV/AIDS
- Get support in the case of domestic violence and get referred to the correct services
- Get treatment and referral for severe complications (such as bleeding or infection)

**All pregnant women should access antenatal care**



*Women need to be cared for during pregnancy.*



*Good nutrition is very important during pregnancy.*

**DANGER SIGN DURING PREGNANCY**

To find out if the mother is experiencing any danger signs during pregnancy, the CHW must ask the following questions:

- Have you gained at least 6kgs during pregnancy?
- Are the palms of your hands, inner eyelids and tongue much paler in colour?
- Are you experiencing abnormal swelling in your legs, hands or face?
- Do you have new sores, bumps or warts in your genital area?
- Is there a burning sensation when you urinate?
- Is there abnormal vaginal discharge or bleeding?
- Are you often very tired or short of breath?
- Is your unborn baby hardly moving, or not moving at all?
- Are you experiencing bad headaches?
- Do you have blurry vision or have difficulty seeing clearly?
- Are you vomiting badly and often?
- Do you have a high fever?
- Are you experiencing convulsions?
- Are you experiencing painful cramping in the womb?
- Has your water broken much earlier than the expected delivery date?
- When the water has broken, is the fluid green, brown, yellow or any other colour than clear or pink?

If the answer to any of these questions is yes, then the pregnant woman must be taken to a clinic as soon as possible.

**DISCUSSION POINTS**

In a group talk about the following questions and see if you can answer them.

**1. What is antenatal care?**

Antenatal care looks after the wellbeing of the mother-to-be and the unborn child.

**2. What kind of antenatal services can a pregnant woman expect to receive?**

Antenatal care services include advice on labour, monitoring the progress of the pregnancy, preventative treatments and support and referral if the mother-to-be has any complications, is HIV positive or in the case of domestic violence.

**Care during childbirth**

Substance abuse is smoking, drinking alcohol in excess and taking drugs. None of these things are good for your health. It is very important that CHWs educate mothers-to-be and families about childbirth and how to access care and services. To make sure that the mother and child are safe and healthy the CHW should be able to assist in:

- Encouraging the pregnant woman to attend a clinic or hospital
- Diagnosis of labour
- Monitoring progress of labour, maternal and foetal (unborn child) wellbeing
- Detection of problems and complications (e.g. hypertension, bleeding, infection)
- Delivery and immediate care of the newborn baby
- Support with initiation of breast feeding



**DANGER SIGNS AFTER CHILDBIRTH**

It is important to look for danger signs in a newly born baby, as most deaths occur within the first month from birth.

**Danger signs for a baby include:**

- A high fever
- Changer of skin colour
- Swelling of the head
- Not responding in general
- Abnormal breathing
- Visible birth defects
- Soft or broken crying
- Being unable to suckle or swallow
- Convulsions
- Cold or hot temperature
- Red or swollen eyes with a discharge
- Redness or swelling around the umbilical cord with a foul smell
- Unable to urinate for the whole day
- Persistent diarrhoea
- Constipation

The health of a mother is equally important after birth and she may show danger signs following labour.

**These danger signs include:**

- A high fever
- Constant bleeding
- Foul smelling discharge
- Pale skin
- Inflamed breasts

If either the mother or baby experiences these danger signs then they must be referred to the clinic immediately.

**DISCUSSION POINTS**

In a group talk about the following question and see if you can answer it:

**1. What is the general role of the CHW in supporting a mother during and after childbirth?**

The CHW is there to educate and support families and mothers on how to access health care services, how to recognise any health problems and complications and how to care for the mother and the newborn infant.



*CHWs have a role to play in ensuring children are developing well.*



*Exclusive breast feeding provides the best nutrition for babies for the first 6 months of life.*



*Immunisation to prevent common diseases is very important.*

# Family planning

Episode 15, Chapter 3



Family planning is when a woman prevents unintended pregnancy by using contraception methods, also known as birth control. Family planning helps sexually active women gain control of when they fall pregnant. By making use of family planning or contraceptive services, women are able to better look after their health and the health of their children. If a woman is sexually active, it is important to prevent unplanned pregnancies. This applies to both unmarried and married women. Apart from social and economic considerations, there are also health decisions a woman needs to make before she falls pregnant to ensure a safe pregnancy and a healthy child. For example, a woman should not drink alcohol during pregnancy and she should take folic acid.

Teenage pregnancy makes it difficult for young women to complete their education and care for their child. It also means that they will be less likely to find work and support their child. For married women, it is also important to plan pregnancies so that the health of the mother and other children in the family is not harmed. Having children very close together in age can put the mother's health at risk. While in some cultures it is important to have many children, in today's world it is also important to think about the possible economic and social pressure that having many children can put on families.

## Different family planning options available in public health care

There are many different ways of preventing pregnancy. There are physical barriers that prevent conception, such as condoms. There are also non-barrier methods, such as taking birth control pills that use hormones to prevent pregnancy. Family planning is provided free at public clinics.

## Family planning improves maternal and child health by:

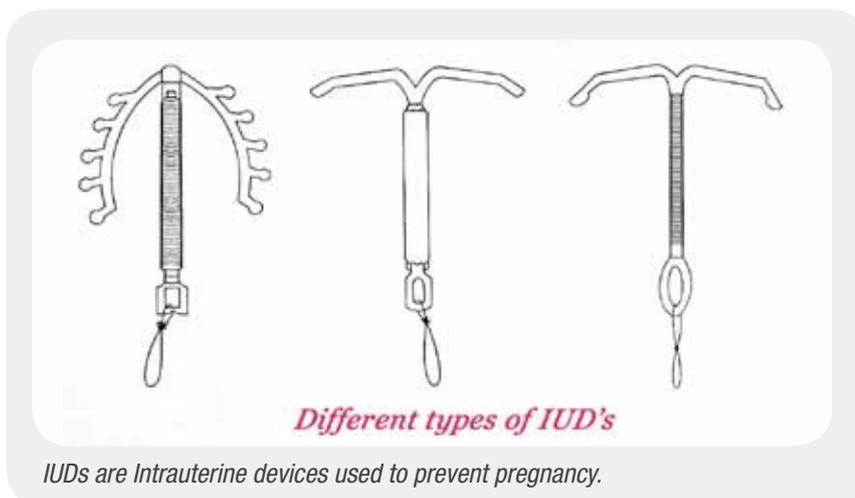
- Reducing unplanned pregnancies
- Reducing termination of pregnancy (abortion)
- Lowering HIV infection rates



Male condoms are an effective way to prevent pregnancy and HIV.



Female condoms are also effective in preventing pregnancy and HIV.



Contraceptive pills are available for free in public clinics.

Research shows that family planning raises the standard of living and reduces poverty by improving girls' education and empowering women to make more informed decisions about their health and when to have children. Different family planning options are available in public health care facilities. It is important to learn about the different options and any potential risks involved. For example, condoms (both male and female) are the only birth control option that protect against HIV infection, as well as preventing pregnancy.

**Family planning options available in public health care facilities include the following options:**

- Male condom – rubber tube worn over the penis during sex to prevent pregnancy and sexually transmitted infections (STIs) including HIV
- Female condom – rubber tube inserted into the vagina before sex to prevent pregnancy and sexually transmitted infections (STIs) including HIV
- IUD (Intrauterine device) – either a stainless steel ring or spiral of plastic that is placed in the uterus to prevent pregnancy
- Diaphragm – a thin rubber cap that is fitted over the cervix before sex to act as a barrier to prevent pregnancy
- Birth control pill (also called ‘the pill’ or oral contraception) – pills that are taken daily and use hormones to prevent pregnancy
- Birth control patch – a thin patch that sticks to the skin like a plaster and releases hormones through the skin to prevent pregnancy
- Vaginal contraceptive ring – a small plastic ring inserted into the vagina near the cervix that releases hormones and prevents pregnancy for 1 month at a time
- Depo-Provera shot – an injection of a hormone that prevents pregnancy for 3 months
- Emergency contraception (or the “morning-after pill”) – prevents pregnancy up to 3 days after unprotected sex

**Family planning should ideally also include:**

- Counselling on different family planning methods to help the woman make the best choice
- Screening for STIs and provision of treatment where necessary
- HIV counselling and testing
- Referrals to other services if needed

**Different family planning options are available for free in public health facilities**



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. What is family planning?**

Family planning is also known as birth control and is when a woman uses a form of contraception to prevent unplanned pregnancy.

**2. What is the only kind of contraception that also protects against HIV infection?**

Male and female condoms are the only kind of contraception that helps prevent HIV infection.

**3. Do you have to pay for family planning?**

No, family planning is free in government clinics. If you choose to go to a private doctor or buy condoms in a shop then you will have to pay.

# Options for termination of pregnancy

A termination of pregnancy is when a fertilised egg or foetus is removed from the mothers uterus or womb. While many people may prefer to avoid a termination of pregnancy (abortion) because of religious beliefs or other spiritual or cultural reasons, it is important for women to know that it is their right to choose whether or not to terminate a pregnancy. The male partner has no legal right to prevent his partner from terminating a pregnancy.

Using termination of pregnancy services as a form of contraception is not recommended - it is much better to rather avoid unintended pregnancy by using family planning services. But mistakes do happen and a woman must be able to choose what is best for her health and the future of the unborn child.

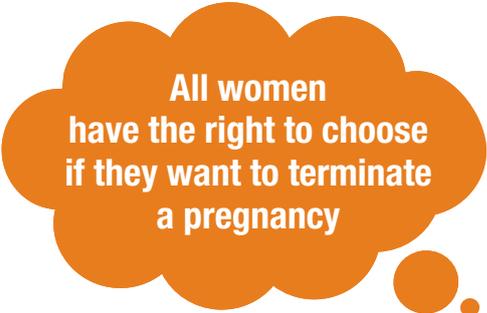
A woman is allowed to terminate pregnancy if she is within the first 12 weeks of pregnancy. However an abortion can only be performed from the 13th to 20th week of pregnancy if approved by a medical practitioner under the following conditions:

- Continuing the pregnancy may be a risk to the mother's physical or mental health.
- The foetus may suffer with severe physical or mental abnormalities should the pregnancy continue to full term.
- The pregnancy is a result of rape or incest.
- Continuing the pregnancy may have severe economic or social impact on the mother.

A termination will not be allowed after the 20th week of pregnancy unless 2 doctors agree that the pregnancy will endanger the mother's life, will result in severe malformation or injury to the unborn baby.

It is very important that women, men, families and communities are informed and educated about safe termination of pregnancy, as well as:

- General sexual and reproductive health
- Safer sex and availability of family planning and contraceptive methods
- Coerced (forced) sex and rape
- Consequences of unprotected sex
- Consequences of unsafe abortion
- Availability of pregnancy tests and safe termination of pregnancy services
- Prevention and treatment of STIs and HIV



**All women  
have the right to choose  
if they want to terminate  
a pregnancy**



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What is a Termination of Pregnancy?

A Termination of Pregnancy is when the fertilised egg or foetus is removed from the mother's uterus or womb.

### 2. What are some of the sexual and reproductive health issues that communities need to be informed about?

Communities need to be informed about where to access family planning and termination of pregnancy services, the consequences of unsafe termination of pregnancy, rape and forced sex and prevention and treatment of STIs and HIV.

Handwriting practice area with 20 horizontal dashed lines.



**WORKBOOK NOTES**

Handwriting practice area for notes, with 10 horizontal dashed lines.

# Child care and childhood development



The first 5 years of a child's life is a very important time for **physical** (body), **cognitive** (mind), **emotional** and **social** development. Research on early childhood development has shown that it influences a person's health and wellbeing for the rest of their lives.

Growth is very important for babies and their development, which is why all clinics weigh and measure babies regularly. Routine measuring and weighing is the easiest and quickest method available for the early detection of disease, developmental and nutritional problems. It also encourages behaviour, such as eating a balanced diet, which ensures good growth in children and into adulthood.

The best way to see if a child is healthy and growing is to record its weight. The Road to Health Booklet is a record of a child's monthly development and helps to see if a child's growth is faltering (slowing/stopping). The aim of the Road to Health Booklet is to:

- Have an accurate home-based record of a child's health and development
- Make sure the child gets vaccinated (immunised) correctly
- Help with early identification of any growth problems
- Help see if children need extra care
- Make sure the child is getting enough food (nutrition)

The Road to Health Booklet must be given to the mother as soon as the baby is born. Some sections on the booklet can be discussed and completed on admission to the labour ward. If birth takes place at home, the booklet should be given to the mother as soon as possible after the child is born.

The Road to Health Booklet belongs to the child's parent/caregiver. The booklet should be given to the health care worker at every visit to a clinic or other health facility so that it can be updated. Filling in the child's details and recording the progress on the booklet helps the parent/caregiver and the clinic to make more informed decisions and manage the child's health better.



Babies can be weighed in slings hanging from a scale (Image courtesy of UNICEF).



It is important to weigh babies often to ensure that they are growing and developing well.



## WORKBOOK NOTES

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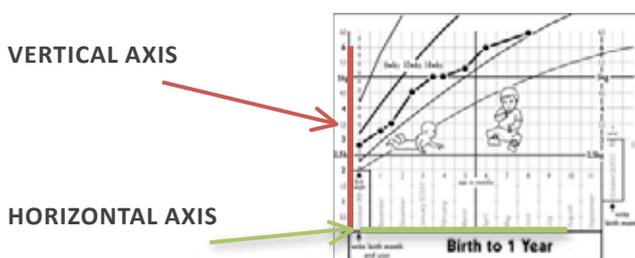


## How to read and use the Road to Health Booklet

In the Road to Health Chart there is a graph that records the child's growth progress called the Growth Monitoring Chart. The top left corner on the Growth Monitoring Chart provides space to record the child's name. This should be checked every time that the child's weight is recorded. Every time you weigh a child, make sure the scale weighs accurately. The booklet is also used to record medical details about the child, immunisation dates, clinic visits and other information that is important to both you and the health worker.

### (i) Vertical axis (upright line)

This is the weight axis. It records the weight in kilograms which are written on both on the left and right margin of each year. The weight start at 0kg and the 2,5kg and 5 kg lines are highlighted. The vertical axis is marked at 0,5kg intervals (dotted lines) with the 1kg intervals (solid lines) exactly 1 centimetre apart. The child should be weighed naked or with only a little clothing (vest and nappy). The accuracy of weighing and plotting on the growth graphs should always be double checked by a second health worker for every 10th to 20th child. The weighing scale should be zeroed daily and calibrated (checked for accuracy) weekly using standard 5kg and 10kg weights.

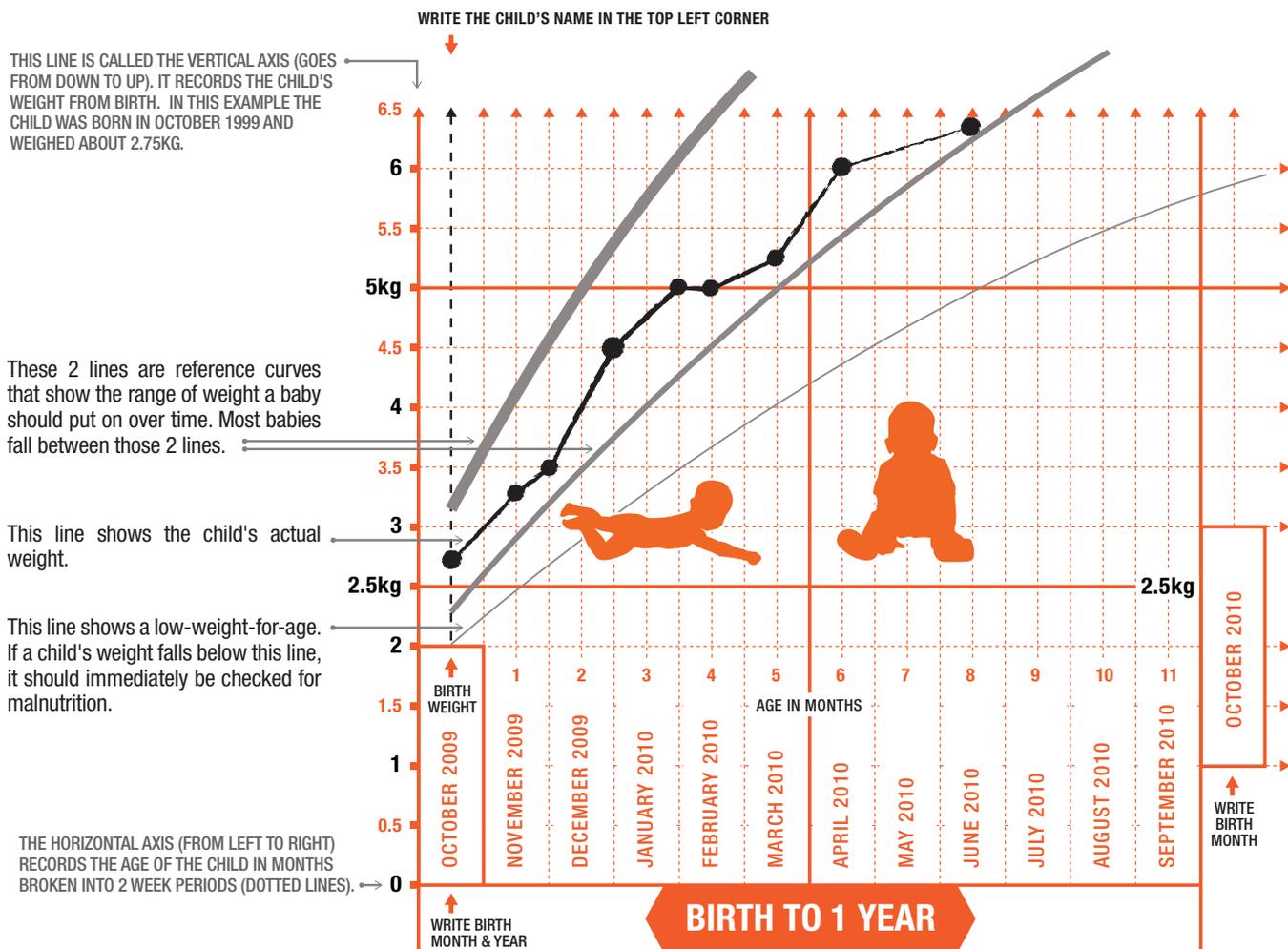


It is important to monitor & record a child's weight every month

### (ii) Horizontal axis (flat line)

This is the age axis. The age scale has 1 space (column) per month. Each month is represented by a block in which the health worker has to write the name of the month. The first block of each year is outlined in bold and records the birth month. There is also enough space to write the year of birth (see example). The first year and the birth month of each year should be filled in at birth, in neat block letters. When the child is weighed every month it is important to write in the month on the age-axis. If the months have been correctly written in, the child's age can be read immediately from the age scale.

# Growth Monitoring Chart



Blank growth monitoring chart grid for recording a child's weight and age over time.



## WORKBOOK NOTES

# Monitoring child growth using the Growth Monitoring Chart

Children who do not gain weight for more than 2 months, or who are losing weight should be quickly referred to a health facility to be checked for malnutrition. Every child, whether big or small, should gain a known amount of weight each month if she/he is growing well.

### Good growth

- The monthly weight of the child is recorded on the Growth Monitoring Chart with a dot. Join the dots with a line to see if the child is growing and getting heavier (line goes up), or if the child is not growing (line stays flat or goes down).
- The child has gained enough weight if the curve is going up and the slope matches 1 of the reference curves (see example). Even if the child is small, the growth curve should still go up and should be parallel to 1 of the reference curves to show the child is growing well.
- If the child has missed 2 or more months and has not been weighed, the child's weight should be added on the Growth Monitoring Chart at the correct month but it cannot be joined with the previous dot. Wait until the next month to see if the child's weight is going up or down before you measure if there has been "Adequate growth" (enough weight has been put on to show that the child is growing).

### Bad growth

- The child is not growing if the curve is flat or straightened out. This means that it is not putting on weight. This is a dangerous sign and the child should go to see a clinic or a doctor.
- The child has lost weight if the child's growth curve shows a downward direction and should visit a clinic.
- The child's growth is slowing and the weight gain is less than expected if the curve is not as steep as the reference curve.
- The CHW should support the mother in seeking help and advice on feeding and nutrition for herself and the child.

### Children should be referred for suspected acute malnutrition if:

- They do not gain weight for more than 2 months
- They are losing weight
- They are falling below the bottom line (i.e. a child's plotted weight is below the "low-weight-for-age" curve shown on the Growth Monitoring Chart)

## Tips for CHWs when adding information on the Growth Monitoring Chart

- Don't forget to write the date of the child's birth and the place of birth. If a child is born at a maternity home, clinic, health centre or hospital it must be noted as such in the space provided. If a child is born at home, it should be clearly stated (home delivery).
- Birth weight, birth length, head circumference and gestational age (full term pregnancy = 9 months) are recorded as baseline data (information at birth). This information helps health care workers care for the child.
- Complications during pregnancy and child delivery should be recorded as they may influence the health and development of a child.
- The number of sisters/brothers born, and the number alive, must be written down. The reason(s) for the death of any of the child's sisters/brothers must be recorded under the heading Reason(s) for death(s):
- When vitamin A is given to a child it must be written down on the supplementation chart together with the date and the signature of the person who gave it.
- If the child needs special care it should be recorded on the Growth Monitoring Chart so that extra time can be given to discuss problems, give encouragement and advice and referral if necessary. If the child is at risk, record the relevant information under In need of special care.



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What is the Growth Monitoring Chart?

The Growth Monitoring Chart is used for monitoring and recording a child's growth and weight gain over time and information about birth and immunisation.

### 2. How often should a baby be weighed?

A baby should be weighed every month for the first 2 years.

### 3. What do you do if the curve levels or starts to drop?

This means that the baby is losing weight or not growing properly and should go to a clinic to see a doctor.

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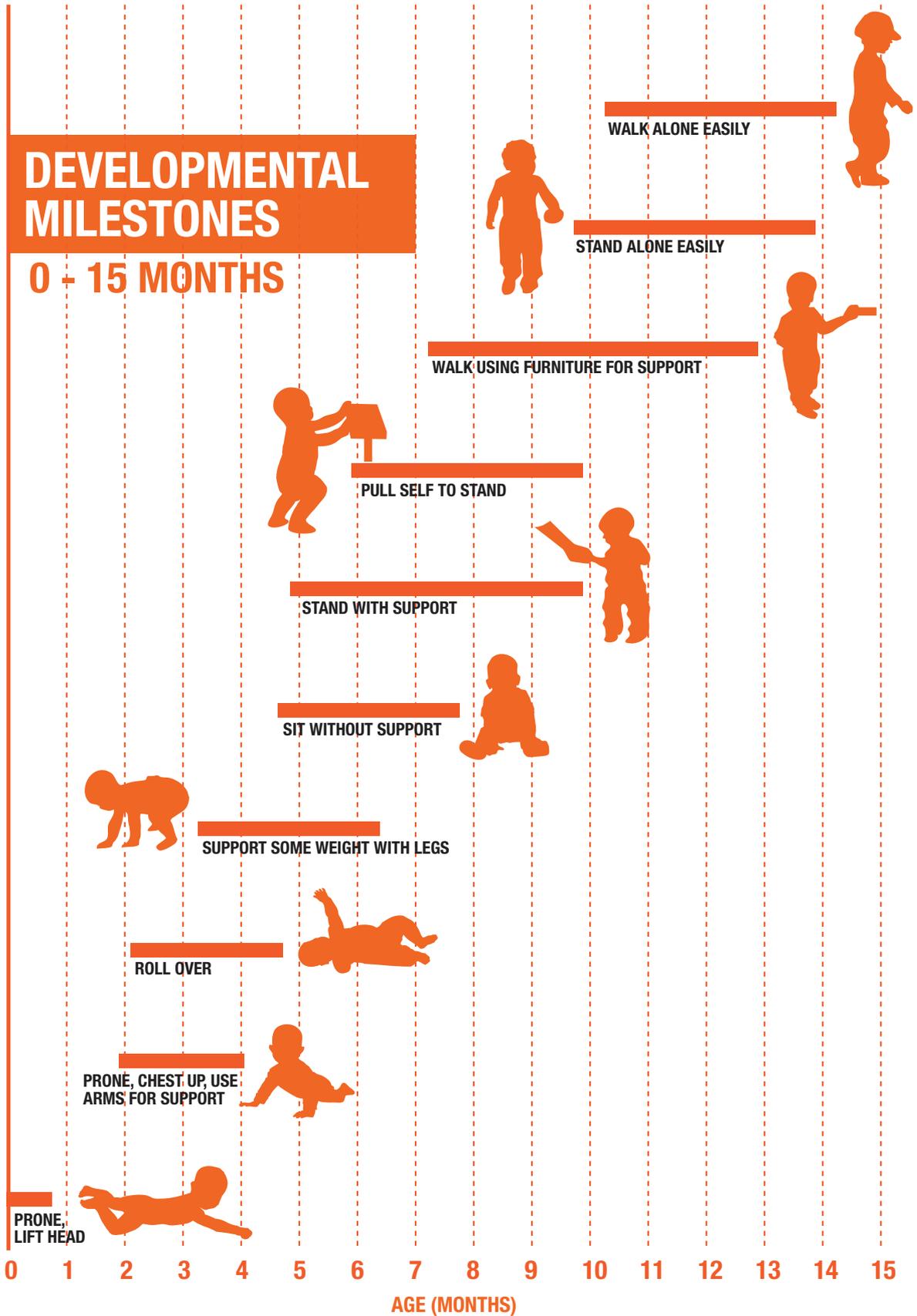


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# DEVELOPMENTAL MILESTONES

## 0 - 15 MONTHS

DEGREE OF MOTOR DEVELOPMENT



Baby milestones. 0 - 15 months.

**From birth the infant:**

- Needs head support
- Turns head from side to side while lying on back
- Cries or fusses to show hunger
- By 2 months follows objects with its eyes and head and tries to mimic facial expressions

**At 4 months and more:**

- Sits with help or support
- Holds head up
- Rolls over from stomach to back

**At 6 months and more:**

- Sits with no help or support
- Passes things from one hand to the other
- Turns toward sounds and voices
- Imitates sounds
- Reaches for spoon/food when hungry
- Clenches mouth or pulls away when full

**At 8 months and more:**

- Starts to crawl
- May pull up to stand while holding on to something
- Sits upright without support
- When hungry reaches for food and shows excitement
- When full, pushes food away

**12 months and more the toddler:**

- Stands alone and begins to walk
- Feeds himself/herself easily with fingers
- Shows that wants food with certain sounds/gestures – may even start using words
- Shakes head to say “no more” when full

**24 months and more:**

- Walks and runs
- Mastering use of spoon and fork
- Memorises short rhymes and songs
- Combines phrases with gestures such as “want that”
- Uses words like “all done” and “no” when full

**2-3 years (24-36 months)**

- From 2 years of age you will notice that the toddler’s speech and language development progresses to the stage where he/she can have a conversation with an adult

**3-4 years (36-48 months)**

- From 3 years of age, a child will be very talkative and inquisitive. This is the stage where parents/caregivers are asked a lot of questions and will hear a lot of ‘why?’

**4-5 years (48-60 months)**

- At this stage the child is now getting ready for school and is becoming increasingly complex, particularly with language development and thought processes

# When to be concerned about child development

If a child has not reached the development milestones for each age shown above, the parent/caregiver and child should go to a clinic. The following are also reason for concern and a doctor should be consulted:

- If a child is not using its hands to show you what it likes and doesn't like at 12 months of age
- If a child is not pointing to show interest by 15 months of age
- If a child is not walking by 18 months (unless he/she is a bottom shuffler which could mean he/she may only walk at 2 years of age)
- If child is using a fisted grasp or grip at age 3 years
- If child is unable to make his/her needs known at age 3 years



## WORKBOOK NOTES

Handwriting practice area with multiple sets of horizontal dashed lines for writing notes.

# Child immunisation

Episode 15, Chapter 5



Immunisation is a simple, safe and effective way of protecting children against some diseases which can cause serious illnesses and sometimes death. Vaccination is the same thing as immunisation. Vaccines are used for immunisation/vaccination. If children are immunised, they are less at risk of getting diseases and so they are less likely to pass infections on to other people, such as very young babies who are not yet fully immunised. Certain vaccine-preventable diseases can infect babies within the first few months of life. Vaccinating small babies helps provide them with protection when they need it.

## How do immunisations work?

The idea of childhood immunisations is that they protect babies from potentially serious illnesses at the start of their lives by “teaching” their immune system how to recognise and fight germs (bacteria, virus or fungus). By giving the body a small “sample” of the germ, it can develop resistance (ability to fight off infection) without actually getting the disease.

- For disease prevention, it is crucial to make sure the parent/caregiver take their infants for immunisation.
- It is very important that the child completes the full course of immunisation shots - make sure the parent/caregiver understands that the child must have all the shots.

## Routine immunisation

Routine immunisation means that children are vaccinated at particular times in their lives. Vaccines are given free of charge at public clinics and hospitals, as well as mobile clinics. These vaccines prevent the following illnesses:

- Measles (viral infection that cause fever, cough and a rash)
- Tuberculosis (TB, bacterial infection that most often affects the lungs)
- Polio (viral infection that can cause paralysis and deformed limbs)
- Diphtheria (bacterial infection that causes sore throat, swollen neck and fever)
- Pertussis (Whooping Cough – a bacterial infection causing a high pitched cough)
- Tetanus (bacterial infection from cuts, wounds and animal bites, causes spasms and death)
- Hib (Haemophilus influenza is a bacterial infection that can cause pneumonia and meningitis among other diseases)
- Hepatitis B (a virus that causes liver damage)

Vaccines need to be given at an age when the best immune response can be encouraged. It is best to give vaccines before the child is at high risk of getting the diseases. In practice this means giving the vaccines as soon as possible after birth. However, acquired immunity from mother to infant sometimes interferes with vaccine-induced immunity, especially for viruses such as measles, mumps and rubella. These vaccines are most effective when the maternal antibodies have dropped so that they do not interfere with the vaccines. This usually happens after the child is 9-12 months of age.

Vaccines can result in side effects but they are usually not serious. The most typical side effects include a slight fever, drowsiness and soreness at the injection site. Although extremely rare, vaccines can cause other side effects such as a very high temperature. If a child develops a high fever or appears to be in severe pain after an immunisation shot, the child should be referred to a clinic or hospital immediately.

**All children must be immunised to help prevent disease & death**



*Routine immunisation helps prevent many childhood diseases.*



*A mother must keep track of the immunisation dates for her child.*

# South African National Immunisation Schedule

Updated April 2009

It is very important to follow the schedule set out below:

Age of child	Vaccine	How is it given?
At birth	BCG* OPV	Injection into skin on right upper arm Drops by mouth
6 weeks	OPV RV** DTP-IPV/Hib Hep B PCV <sub>7</sub>	Drops by mouth Liquid by mouth Injection into the left thigh muscle Injection to the right thigh muscle Injection to the right thigh muscle
10 weeks	DTP-IPV/Hib Hep B	Injection into the left thigh muscle Injection to the right thigh muscle
14 weeks	RV DTP-IPV/Hib Hep B PCV <sub>7</sub>	Liquid by mouth Injection into the left thigh muscle Injection into the right thigh muscle Injection into the right thigh muscle
9 months	Measles PCV <sub>7</sub>	Injection into the left thigh muscle Injection into the right thigh muscle
6 years	Td	Injection into the left arm muscle
12 years	Td	Injection into the left arm muscle

\*BCG vaccine can cause a small red, raised area on the arm which can burst open and have some pus. It can take a few weeks to heal and may leave a small scar on the arm. This is normal. Do not put any ointment or Vicks on the area. Keep it dry and clean by washing it with soap during the baby's bath and drying it softly with a towel.

\*\*Rotavirus vaccine should NOT be administered after 24 weeks

## Abbreviations:

- BCG: Bacilli Calmete-Guerin (vaccine against tuberculosis)
- OPV: Oral Polio vaccine
- DTP-IPV/Hib: Combination vaccine against Diphtheria, Tetanus, Pertussis, inactivated Polio, and Haemophilus influenza Type B
- Td: Tetanus and Diphtheria vaccine
- RV: Rotavirus vaccine
- PVC<sub>7</sub>: Pneumococcal vaccine (pneumonia and meningitis)



# Infant and child nutrition

Episode 15, Chapter 6



A recent UNICEF report (2009) shows that nearly a third of all deaths in children under 5 years of age are caused by not getting enough nutrition. In South Africa, rural areas are particularly at risk where 18% of children are malnourished. Malnutrition (not enough to eat and/or not enough different kinds of food) is often not noticeable until it is very serious. Children who may seem healthy could be at serious risk and may even have permanent damage to health and development.

Malnutrition can begin in the womb when the mother is pregnant. But most often a slowing down in growth, due to a lack of good nutrition happens in the first year of life and has a lasting impact on the child. Once a child's growth stops or slows down, it is difficult for a child to physically develop at a normal pace.

Therefore it is very important to support mothers in infant feeding behaviours from birth with:

- Starting breast feeding within the first hour of birth
- Exclusive breast feeding until the child is 6 months
- Complementary (food as well as breast milk) feeding after the child is 6 months old



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What is immunisation?

Malnutrition is when a child/person does not get enough food or enough different kinds of foods and so they lack the necessary vitamins and minerals.

### 2. Why is it important for pregnant women to eat a balanced diet?

Malnutrition can begin in the womb – that is why it is important that pregnant women to eat well.

## EXCLUSIVE BREAST FEEDING FOR INFANTS 0-6 MONTHS

Breast feeding is the best way of providing the ideal food for healthy infant growth and development up until 6 months of age. After 6 months of age infants should be fed other foods together with continued breast feeding up until they are 2 years of age or older.

To enable mothers to establish and sustain exclusive breast feeding for 6 months, the following is recommended:

- Start breast feeding within the first hour of a baby being born
- Exclusive breast feeding (the infant only gets fed breast milk without any other food or drink, not even water)
- Breast feeding on demand (as often as the child wants, day and night)
- No use of bottles, teats or pacifiers (dummies)

Breast milk is the natural first food for babies and it provides:

- All the energy and nutrients that the infant needs for the first 6 months
- Up to half or more of a child's nutritional needs from 6-12 months
- Up to one-third of a child's nutritional needs from 12-24 months

Breast milk also promotes sensory (using the senses) and cognitive (brain) development and protects the infant against infectious and chronic diseases. **Exclusive breast feeding reduces infant mortality due to common childhood illnesses, such as diarrhoea or pneumonia, and helps for a quicker recovery during illness.** Breast feeding contributes to the health and wellbeing of mothers by helping to space children and increase family resources. Breast feeding also reduces the risk of ovarian cancer and breast cancer.

It is important to observe, assist, encourage and support mothers to:

- Give skin-to-skin contact between mother and infant immediately after birth
- Start breast feeding within first hour after birth
- Give the colostrum (“First Milk”) to the baby
- Empty 1 breast before switching baby to other breast
- Do not give water, glucose or any other fluids to the infant
- Breast feed frequently and on-demand, day and night (at least 8 times in a 24 hour period)

### The immunological benefits of breast milk

All newborn babies and especially preterm Newborns (born early before 9 months) are at high risk for infection during the first months of life. During this time, infection is one of the leading causes of illness and death.

A newborn does not yet have a mature immune system and often does not have an effective immune response. Newborns are generally protected by the antibodies they receive through the placenta before birth and through their mother’s breast milk after birth. These antibodies will be the same ones that are found in the mother’s system, and will include antibodies to the microorganisms in the mother’s home environment. Therefore, babies mostly have antibodies to the germs in their own homes.

This means that generally a baby does not have antibodies for germs outside the home. The baby will not have antibodies to protect against these germs and cannot create its own antibodies against these new germs because the immune system is not developed yet. Breast milk is considered best for baby because it helps build the baby’s immune system.



*Exclusive breast feeding for the first 6 months is recommended.*



*Breast milk helps build the baby’s immune system.*

## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What are some of the benefits of breast feeding for the infant?

Breast feeding has been shown to provide the best nutrition for infants up until 6 months. Breast feeding helps ensure that newborn babies get their mother’s antibodies that help prevent infections.

### 2. What are some of the benefits of breast feeding for the mother?

Breast feeding helps space children and also helps prevent breast and ovarian cancer.

### Alternatives to exclusive breast feeding

There may be reasons why a mother is unable to breast feed. It is important for a CHW to be aware of any reasons why a mother cannot breast feed and offer support and advice. The reasons for choosing alternatives to exclusive breast feeding include:

- The mother is infected with HIV and has a very low CD4 count or has tuberculosis. Just because a mother is HIV positive does not mean she should not breast feed. **For more information about HIV and breast feeding please see below and also see Chapter 14 on PMTCT (Prevention of Mother-to-child transmission).**
- The mother is malnourished or extremely ill.
- The mother drinks too much alcohol and is unable to stop drinking alcohol.
- The mother is taking any kind of drug that could harm the baby.
- The baby is unable to breast feed because of a birth defect or a health problem.
- The mother's employment interferes with breast feeding.
- The child is adopted, orphaned, abandoned or in the sole care of a man.
- The mother is separated from her child by being in prison or a mental hospital.
- The mother has left the child in the care of another person for an extended period of time.
- The mother eats foods that may provoke an allergic reaction in the infant.
- Family members, such as a husband, mother, boyfriend, or other members of society may encourage the use of infant formula. For example, they may believe that breast feeding will decrease the mother's energy, health, or attractiveness.
- The mother is not shown how to breast feed without pain or to produce enough milk.
- The mother is unable to produce enough milk. This affects around 2 to 5% of women. Alternatively, despite a healthy supply, the woman or her family may incorrectly believe that there is not enough breast milk.

In these examples, women may choose to use infant formula. An HIV positive mother should not mix breast and formula feeding (see more on mixed feeding later).

Infant formula is not as good as breast milk for nutrition but it is better than other substitutes, such as cow's milk. Besides breast milk, infant formula is the only other milk product which is medically and nutritionally acceptable for infants under the age of 1 year.

### Preparation of infant formula

Infant formula should be prepared by the parent/caregiver in small amounts just before feeding it to the infant. Either a cup or a baby bottle can be used to feed the baby.

### When mixing formula milk it is very important to:

- Measure the powder accurately so that the right concentration is mixed. If the formula is too weak (too much water) the child will be malnourished.
- Wash and sterilise all cups/bottles/teats/mixing spoons before using them to feed the baby. To sterilise these things it is a good idea to use boiling water and soap or a little bleach. You can also use a microwave to sterilise bottles and feeding equipment.
- Boil the water used to make the formula to kill bacteria. Let the water cool before mixing formula.
- Keep any mixed formula in the fridge to prevent bacterial infection.

Over concentrated (too much) infant formula gives the infant too much salt and waste amino acid which can be dangerous for the infant's kidneys. If the infant formula is too diluted (weak) the infant could be at risk of malnutrition. It is recommended to avoid bottle feeding and to rather use cup feeding. This is because the teat of a bottle can carry germs and be difficult to clean. For more information about cup feeding, please read Chapter 14 on PMTCT (Prevention of mother-to-child transmission).



Formula is often prepared incorrectly which results in high infant mortality due to malnutrition and diseases such as diarrhoea and pneumonia. The reasons for incorrectly prepared formula include:

- No clean water (bacteria free)
- Bottles/teats/cup not being sterile (clean of all germs)
- No refrigeration
- Illiteracy (written instructions cannot be followed)
- Poverty (diluting formula so that it lasts longer)
- Lack of education of mothers by people who give the formula to them



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. Why is it important for a mother to decide if she is going to breast feed or use formula before she goes into labour?**

It is important to decide on feeding options before going into labour because feeding needs to start within the first hour after birth.

**2. Why is it important that formula milk is mixed correctly?**

Over concentrated infant formula gives the infant too much salt and waste amino acid which can be dangerous for the kidney. If the infant formula is too diluted the infant could run the risk of malnutrition.

### Disadvantages of formula feeding

Mothers, their partners and families, should be counselled about the disadvantages of formula feeding. Babies who are formula fed are more likely to be sick or to die from diarrhoeal diseases, pneumonia, or malnutrition. Whenever possible, mothers should be encouraged to breast feed to provide the best nutrition for their child and to help develop the child's immune system.

### How to decide if a mother can choose alternative feeding to breast milk

A mother needs to be enabled (helped/supported) to make an informed decision about the best infant feeding option based on what is referred to as AFASS:

- **A**ceptable
- **F**easible
- **A**ffordable
- **S**ustainable
- **S**afe

**These 5 points help decide whether or not a mother is able to choose formula feeding or whether breast feeding should be encouraged. AFASS means the mother/family:**

- Accepts not to breast feed and thus will use exclusive replacement feeding through formula milk.
- The use of formula milk substitute should be feasible (possible/workable) in the mother's extended family/community and also suit the work and lifestyle of the mother/family.
- The mother/family can afford to buy enough formula milk for the first 6 months plus an additional 12-18 months when on milk and other foods.
- Can sustain (continue to maintain) the supply of formula milk, as well as support from the family.
- Can maintain safe conditions for the preparation of the formula milk (have clean water and good sanitation standards).

### AFASS assessment table

It is important to avoid mixed feeding in the first 6 months (breast feeding together with formula milk or other foods). If the mother is HIV positive it is especially important that she avoids mixed feeding. Feeding the infant any food other than breast milk in the first 6 months puts the child at risk of developing gut irritation, diarrhoea and respiratory infections that may increase the risk of HIV transmission.

- It is important to decide on either exclusive breast milk OR exclusive formula milk for the first 6 months.
- Exclusive breast feeding for the first 6 months is recommended unless there are reasons why a mother cannot breast feed and only if exclusive replacement feeding is Acceptable, Feasible, Affordable, Sustainable and Safe (AFASS).
- The mother needs to decide if she is going to breast feed or formula feed before she gives birth because feeding needs to take place within the first hour after birth.

Breast feeding is best. But if there are special reasons why a mother has to (or wants to) rather formula feed, then the questions below can help the CHW and mother decide if it is possible for the mother to use formula feeding.

The table below includes key questions to help making an informed and objective decision:

Question	Should not formula feed, breast feeding must be encouraged	Replacement feeding possible (Formula milk)
Where do you get your drinking water?	River, stream, pond, or well	Piped water at home or can buy clean water
What kind of latrine/toilet do you have?	None or pit latrine	Waterborne latrine or flush toilet
How much money could you afford for formula each month? In South Africa, in 2011 you will need at least an extra R400 per month to be able to spend on formula	Less than minimum required amount available for formula each month	Minimum amount required for formula every month
Do you have a fridge that works and is your electricity supply reliable?	No working fridge, or irregular power supply	Yes
Can you prepare each feed with boiled water and clean utensils?	No	Yes
How would you arrange night feeds?	Preparation of milk feeds at night difficult	Preparation of milk feeds at night possible.
Is your family supportive of formula feeding and are they willing to help?	Family not supportive and not willing to help, or don't know- can't discuss	Family supportive and willing to help

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You can also use the “AFASS hand” in Figure 1 below to help a mother to see if they are able to meet all AFASS criteria.

## Breast is best

Exclusive breast feeding for 6 months before introducing solid foods and continuing to breast feed for at least 2 years is the healthiest way to feed your baby.

Even if you are HIV+ exclusive breast feeding for 6 months is the best way to feed your baby unless you meet all the AFASS criteria indicated below.

It is important that you understand the risks and benefits of breast and formula feeding, before using the “AFASS hand” to help you decide what feeding method is best for you and your baby.

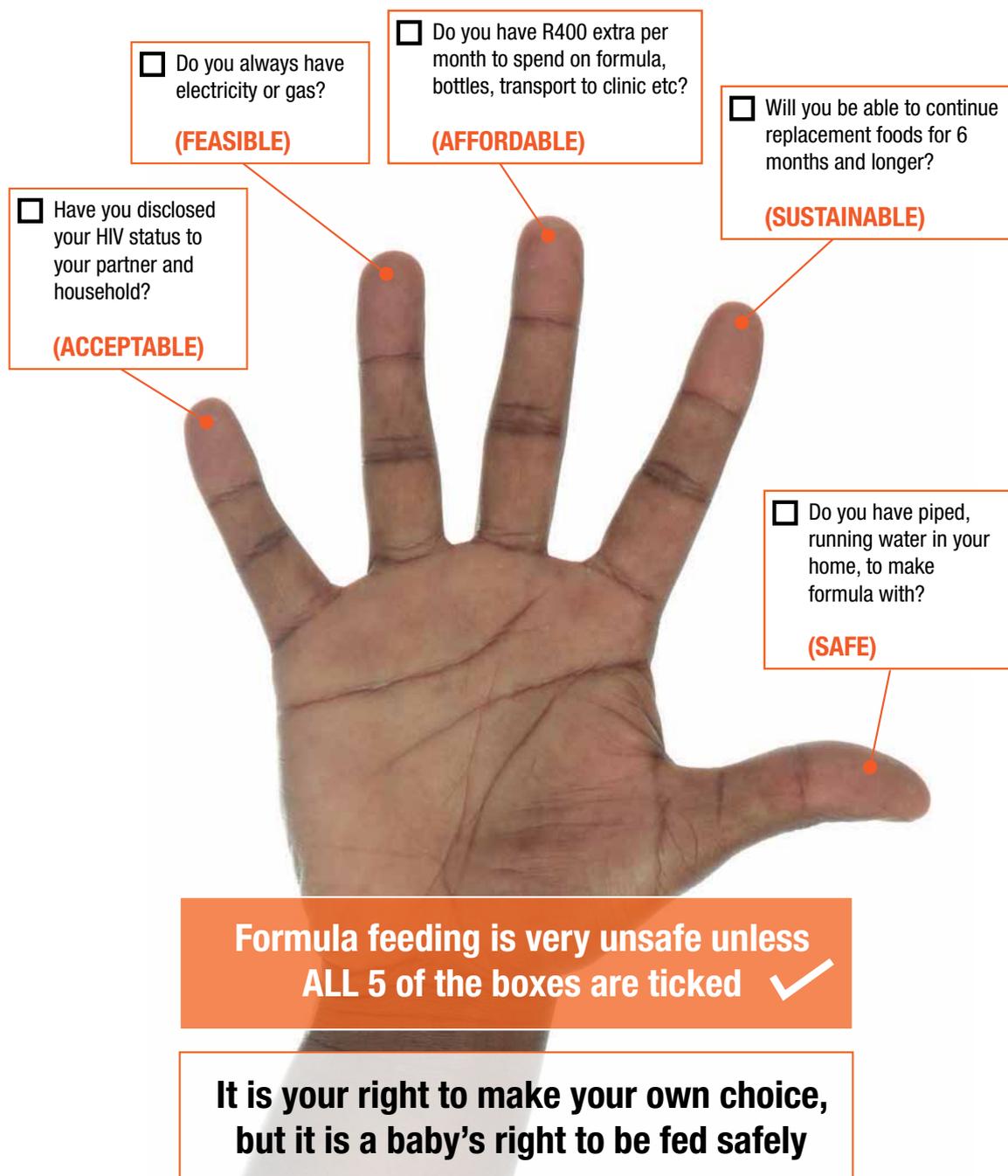


Figure 1: This 5-finger method of assessing AFASS criteria was developed by Anna Coutsooudis and colleagues (Department of Paediatrics and Child Health, UKZN) and Max Kroon, Mowbray Maternity Hospital, Western Cape)

# Infant feeding in the context of HIV/AIDS

The transmission of HIV from mother to child through breast milk is a complex issue because of the many challenges involved in making an informed decision about infant feeding. It is very important that CHWs provide information and counselling to help the mother to make the best decision and reduce HIV transmission rates. Please also read Chapter 14 on PMTCT (Prevention of mother-to-child transmission). It is important that we balance the risks of HIV infection through breast milk with the risks of infant deaths due to diarrhoea and pneumonia – which are more common if a mother does not breast feed. Follow-up care and support are also essential.

- All breast feeding mothers who do not know their HIV status should be encouraged to go for HIV Counselling and Testing (HCT).
- All HIV positive mothers should be supported with infant feeding.

It is recommended that HIV positive mothers breast feed exclusively for the first 6 months. This means the mother should not feed their baby anything other than breast milk – no water, formula milk or solids. The baby must take Nevirapine syrup as prescribed to prevent the risk of HIV infection. The baby must take other medication prescribed by a doctor or nurse if they are sick, including oral rehydration therapy if necessary.

After 6 months, the baby needs additional food to ensure good nutrition. The World Health Organisation recommends that HIV positive mothers continue breast feeding for 12 months. HIV positive mothers who consider stopping breast feeding after 6 months must meet all the AFASS criteria discussed above. If the mother does not meet the criteria for formula feeding, then she should continue to breast feed. If the mother does continue to breast feed, and she is not on HAART, the baby must continue to receive Nevirapine syrup for as long as she is breast feeding and for 1 week after the baby has been fully weaned. Please refer to Chapter 14 in this manual on PMTCT for further information on infant feeding for HIV positive mothers.

HIV positive mothers that choose exclusive breast feeding for the first 6 months should be assisted to start breast feeding within the first hour of birth. They should learn how to practice the right position to hold the baby and how to make sure the baby attaches to the breast correctly to prevent common breast problems like cracked nipples, sore nipples and mastitis (inflammation of the breast tissue). HIV positive mothers should also be taught how to check the infant's mouth for sores. If cracked nipples, mastitis or sores in the baby's mouth develop the mother and child should go to the clinic as soon as possible.

HIV positive mothers that meet all AFASS conditions and choose exclusive formula milk feeding should be assisted with feeding within the first hour of birth. These mothers should be counselled during pregnancy on how to safely prepare and use the infant formula. In a one-on-one consultation the mother needs to show that she can follow the instructions on the tin for mixing the formula to make sure the formula is not too weak (diluted) or too concentrated (strong).

HIV positive mothers that have to change from exclusive breast feeding to formula feeding because of their own or their baby's health should be helped during the weaning process to make the mixed feeding period as short as possible.



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. What does AFASS stand for?

AFASS stands for Acceptable, Feasible, Affordable, Sustainable and Safe.

### 2. What is the problem with mixed feeding?

Mixed feeding, especially in the first 6 months, puts the infant at risk of developing gut irritation, diarrhoea and respiratory infections that may increase the risk of HIV transmission.



## WORKBOOK NOTES

### Feeding children after 6 months

Infants older than 6 months need additional (complementary) feeding, as well as breast milk or formula milk. Malnutrition and not enough vitamins and minerals (micronutrients) in children younger than 5 years of age are often caused by:

- Poor maternal nutrition
- Poor feeding practices
- Too little food
- Too much disease/illness

Micronutrients (vitamins and minerals) are found in food and are important for good growth. If a child's diet is deficient in micronutrients, it means that they are not getting enough of the different vitamins and minerals. Micronutrients can also be given as supplements which means that they are either added to foods (fortified foods), or given in pill or syrup form. For example, in South Africa, bread is fortified which means that micronutrients are added to bread flour.

Micronutrients help prevent malnutrition and other medical conditions such as anaemia (too little iron). It is important that pregnant women eat well and get micronutrients while pregnant so that the unborn baby is getting the right nutrition in the womb.

Of all the micronutrients the most important are:

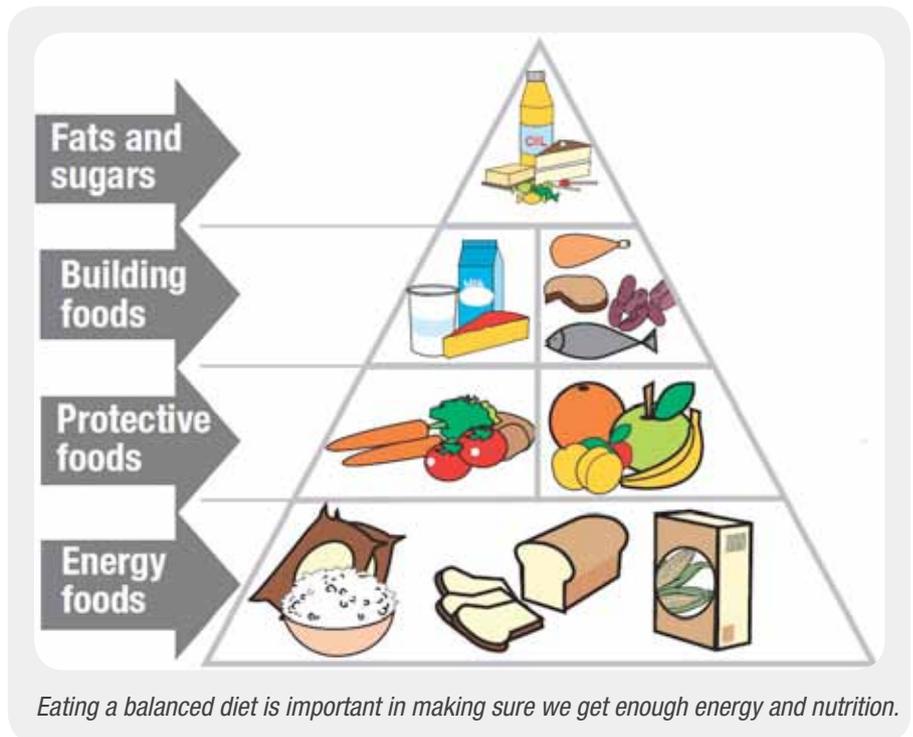
- **Folic acid** (all pregnant women need to take additional folic acid to help prevent birth defects)
- **Iron** (all pregnant women need to take additional iron; it is also very important for children's growth and development)
- **Vitamin A** (deficiency can cause blindness and prevent wounds from healing)
- **Zinc** (reduces severity and duration of diarrhoea in children under 5)
- **Selenium** (especially important for HIV positive mothers)

We can get micronutrients from eating a balanced diet. A balanced diet means that we eat a mixture of different foods. A balanced diet includes:

- Building foods are proteins like milk, meat, chicken, fish, eggs, soya, lentils, peanuts and sprouts. They build muscle that gives us strength.
- Energy foods are rich in carbohydrates. Carbohydrates include maize meal, rice, samp, pasta, bread and potatoes. Oils are also important energy foods (such as margarine, butter and sunflower oil). Sugar also gives us energy.
- Protective foods help strengthen our immune system. These foods include all vegetables and fruits which have many different vitamins and other micronutrients.

If we eat a balanced diet we usually do not need to take additional vitamins or other micronutrients. Supplementation of micronutrients is only necessary:

- During pregnancy
- If children are not fed properly
- When people don't have a balanced diet due to lack of education or poverty



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. What are some of the things that cause malnutrition?**

Malnutrition can be caused by poor maternal nutrition, poor feeding practices, too little food and too much disease/illness.

**2. What are the 3 main kinds of food that we should eat to make sure that we get all the nutrients that we need?**

We need to eat building foods, energy foods and protective foods.

## Malnutrition in infants and children

It is very important to understand the life-saving importance of identifying acute malnutrition in children, before the start of complications. Early detection and referral make it possible to start treating acute malnutrition before life-threatening complications begin to appear.

Acute malnutrition is caused by a recent (short-term) deficiency of protein and minerals and vitamins which results in loss of body fats and muscle tissues. Children and infants should be checked (screened) for acute malnutrition at all clinic visits and at any other time CHWs are able to. The signs of acute malnutrition are:

- Wasting (Low Weight-For-Height)
- Presence of pitting oedema (Swelling) of both feet

**All children & infants must be checked for signs of malnutrition at clinic visits and by CHWs in the community**



To check for oedema normal thumb pressure is applied to both feet for 3 seconds.

**Children with suspected malnutrition must be referred to the clinic immediately**

Oedema is the retention of water in the tissues of the body and is a sign of malnutrition. To diagnose oedema, normal thumb pressure is applied to the tops of the child's feet for about 3 seconds. If there is oedema, a dent (pushed in area) remains for a few seconds where the oedema fluid has been pressed out of the tissue.

If a shallow print or pit can be seen on both feet when the thumbs are lifted, then the child has oedema.

Children with oedema must be referred to the closest health centre. These children are at high risk of dying from malnutrition and related illnesses and need to be treated by going onto feeding program urgently.

Kwashiorkor is a kind of malnutrition caused by not enough protein. A child has Kwashiorkor if there is:

- Pitting oedema in both feet
- Changes in hair (hair becomes reddish/light brown, thin and straight)
- Skin becomes itchy/flaky/very dry
- A large, over swollen belly

Marasmus is a form of extreme malnutrition and emaciation (weight loss) caused by not enough protein and micronutrients. A child has marasmus when they have:

- Bones that stick out (i.e. prominent rib bones)
- Skinny arms and legs
- Loose skin on the body
- Loose skin around the buttocks



## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. Why are early detection and referral of malnutrition so important?**

By detecting malnutrition early and referring the mother and child to the right services, the child's health is at reduced risk because it is treated before serious complications develop.

**2. What are some of the signs of serious malnutrition?**

A child has serious malnutrition if you can see its bones, if its skin is loose, if it has skinny arms and legs, if there is pitting oedema in both feet, if has a swollen belly and if the hair is thin and light brown/red.

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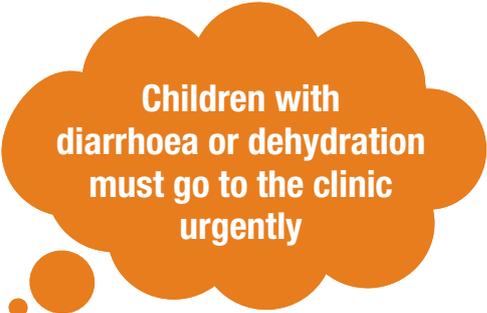


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# Common childhood illnesses

Studies conducted in the sub-Saharan Africa have shown that apart from malnutrition, the leading causes of death of children less than 5 years old are:

- Pneumonia
- Malaria
- Meningitis
- Diarrhoea
- Injury
- Measles



Children with diarrhoea or dehydration must go to the clinic urgently

## Diarrhoea

Diarrhoea is one of the most common causes of death in childhood. There is a strong relationship between the nutritional status of the child and the risk of diarrhoea. This means that malnutrition (micronutrient deficiencies) makes it easier for a child to get diarrhoea. Vitamin A and zinc supplementation has been shown to reduce the incidence of diarrhoea and encourage a quick recovery. Diarrhoea can be caused by different things such as:

- Most commonly a viral infection in the intestines
- Bacterial infections from drinking unclean water
- A flu or cold
- Reaction or intolerance to a food
- Some medications
- Sometimes teething gives children diarrhoea

Diarrhoea is the passing of unusually loose or watery stools (faeces) more than 3 times in a 24-hour period. It is the consistency of the stools rather than the number that is most important. Frequent passing of formed stools is not diarrhoea. Diarrhoea often has a very bad smell.

Many new mothers mistake bowel activity for diarrhoea. Breast fed babies tend to pass stools that are yellow, soft or seedy, and frequently watery. Formula-fed babies tend to pass stools that are soft, but more formed, and may be brown, brown-green or yellow.

Many babies have a bowel movement after each feeding, which is perfectly normal. Other babies may only have 1 every 3 days. It all depends on the individual infant and it is the changes in the normal pattern that a mother should watch out for.

## Dangers of diarrhoea

Although diarrhoea is not always a serious problem, it can be dangerous. The major concern is rapid fluid loss resulting in **dehydration**. Dehydration is especially dangerous for infants and young children because their bodies are much smaller than adults and so they become dehydrated much quicker. Diarrhoea makes food and liquid pass through the intestines much more quickly, taking with it water, nutrients and electrolytes (minerals such as sodium, potassium and chloride).

Vomiting often comes with diarrhoea. In these cases dehydration can develop even more quickly because there is even more loss of fluids. It is very important to **prevent dehydration by replacing lost water and electrolytes as soon as possible**. If a baby has diarrhoea, the mother should not starve the baby, but should let the baby eat or drink what s/he likes. If the baby is being breast fed, breast feeding should continue and the baby should be breast fed more regularly.

**Serious dehydration is an emergency.** A child should be taken to a clinic or doctor immediately if it develops any of the following signs:

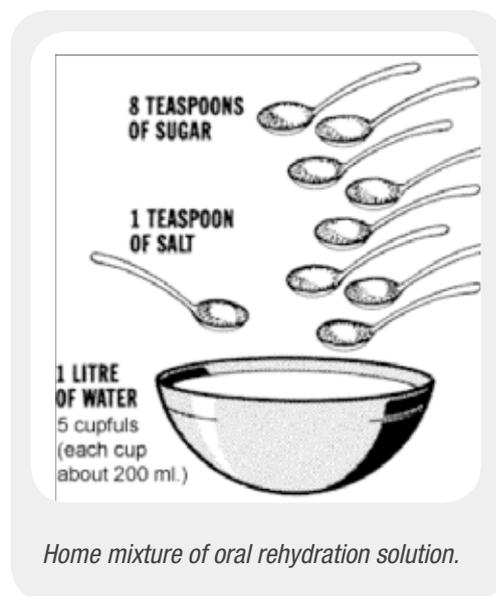
- Dry lips, tongue and skin
- Decreased amount of urine
- Weight loss
- Changes in skin colour
- Rapid breathing and pulse rate
- Sunken eyes or anterior fontanel (the baby's soft spot)

### Oral rehydration therapy (ORT)

Oral rehydration therapy (ORT) is a simple treatment for dehydration caused by diarrhoea. ORT is a mixture of water and salts and sugars which is given to children to drink. ORT should begin at home with a home-prepared “sugar and salt” solution at the first sign of diarrhoea to prevent dehydration. Feeding should continue at all times. However, if the child becomes dehydrated a visit to the clinic or doctor is necessary where sachets of official mixtures of oral rehydration solution (ORS) may be given to the mother to prepare.

When preparing oral rehydration therapy at home it is important that the water is first boiled (to kill any bacteria) and that there is the right amount of sugar and salt. Too little of either salt or sugar can be ineffective and/or harmful. The correct proportions for home ORT are:

- 1 litre boiled water (5 cups water left to cool after being boiled)
- 1 teaspoon salt
- 8 teaspoons sugar



Home mixture of oral rehydration solution.



## WORKBOOK NOTES

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Picture of official mixture of oral rehydration therapy available at clinics and pharmacies.

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## Measles

Measles is a highly contagious respiratory infection that is caused by a virus. It causes a skin rash over the whole body and flu-like symptoms, including a fever, cough, runny nose and red eyes. Measles can also cause pneumonia. The measles rash usually has a red or reddish brown blotchy appearance and first shows up on the forehead, then spreads downwards over the face, neck and rest of the body including the arms and feet. Another way to diagnose measles is Koplik's spots which are small red spots with blue-white centres that appear inside the mouth, but often disappear within a day. Symptoms usually last for about 2 weeks.

Measles is spread in the air, through breathing in infected droplets which are either sneezed or coughed into the air. Measles is also highly contagious (easy to infect another person). 90% of people without immunity to measles who share a house with an infected person will catch it. The infection has an average incubation period (the person is infected by the germ but does not display signs and symptoms of disease yet) of 14 days (range 6–19 days). A person can pass on the infection 2–4 days before the rash appears and 2–5 days after the onset of the rash. This means that it is possible for a person to be infectious before they know they have measles.

Infants are generally protected from measles for 6 months after birth because of immunity passed on from their mothers. Older children are usually immunised against measles as part of the government immunisation schedule that we have already discussed.

Since measles is caused by a virus, there is no specific medical treatment and the virus has to run its course. A child who is sick with measles should get lots of fluids and rest. The infected child should also be kept away from other family members to stop the infection from spreading. If fever is making them uncomfortable, non-Aspirin fever medication, such as Panado or Ibuprofen, may be given. Never give aspirin to a child who has a viral illness because it may cause Reye's syndrome. Reye's syndrome is a deadly disease that affects all body organs, but is particularly bad for the liver and brain.

In some cases, measles can lead to other complications, such as middle ear infection, swelling in the ears, croup, diarrhoea, pneumonia and encephalitis (a serious brain infection). These other infections may need antibiotics or hospitalisation. Vitamin A supplementation has been found to decrease complications and death associated with measles infections. Vitamin A should be considered for children between 6 months and 2 years who are hospitalised with measles and its complications.



*A photograph of the rash caused by Measles.*

**Vitamin A reduces complications & death associated with measles**

**Routine immunisation helps prevent pneumonia and related respiratory infections**



*Anopheles mosquito feeding on a human arm.*

### Malaria

Malaria is a widespread infectious disease in tropical and subtropical regions. Malaria is transmitted by the bite of a female Anopheles mosquito. Malaria is the cause of 1 in 5 deaths for children under the age of 5 in Sub-Saharan Africa (UNICEF, 2007). Malaria affects adults and children, but because children do not have fully developed immune systems they are affected more seriously. Malaria also contributes to malnutrition in children because of vomiting, loss of appetite and low iron (anaemia) caused by malaria infection (UNICEF, 2007).

There are different treatments used for malaria. Most treatments are oral (swallowed/taken by mouth) but some treatments for severe malaria are injected into the muscles. Treatment is also given for the symptoms such as fever and pain. Combination therapy is being advocated to help prevent drug resistance, which is increasingly common in malaria areas. If you live in a malaria area and your child has a fever (high temperature and sweating), headaches and is abnormally sleepy you should go to a clinic and ask to check for malaria.

The best thing to do if you live in a malaria area is to prevent being bitten by mosquitoes. Here are some prevention measures you can take:

- Use mosquito nets treated with insecticide to sleep under.
- If possible have mosquito screens on windows and doors.
- Use insect repellent to keep mosquitoes away.
- Cover up exposed skin, especially in the evenings when mosquitoes are active.
- Try and make sure there are no still pools of water near where you live, because mosquitoes breed in still water.



## WORKBOOK NOTES

# Infection control and childcare

Episode 15, Chapter 7



Infection control is preventing disease and illness by reducing the risk of coming into contact with germs. We have already discussed infection control in a lot of detail in Chapter 8. In this section we are going to concentrate on making sure the home is clean and safe environment for infants and children in order to reduce the risk of disease.

As we know diseases are caused by germs (viruses, bacteria, fungi and protozoa). Germs are spread between people and in the home or general environment in the following ways:

- Water
- Animals and insects
- Air
- Food
- Personal contact

We have already talked about the importance of making sure that the water used for mixing formula milk is safe by boiling it before using it for feeding an infant. Areas where water is not piped and there is no proper sanitation often have unclean or polluted water because rubbish and excrement gets into the water supply. Unclean water causes many health problems and is one of the main ways that diseases like cholera, typhoid and diarrhoea are spread.

Food can also carry germs, especially if it is not stored or prepared in a hygienic way. It is very important to wash all fresh fruit and vegetables in clean water, and to make sure that cooked food is stored in a fridge and is covered. This is especially important because diarrhoea is potentially very serious for children.

We already know that diseases like measles and TB are airborne, which means they are passed on through the air. It is important to make sure that the home is aired and that all children are vaccinated against measles, TB and other serious illnesses that are airborne.

Animals in the home can also spread disease. Dogs may carry worms. This is why it is important that children do not get licked on the face and mouth. Pets should also not eat off the same plates as people and your children should wash their hands after touching an animal. It is also important to de-worm your animals and your children.

Infection control for children includes the following:

- Throw away used disposable nappies and any toilet paper used to wipe a child clean. If living in a rural area or a place where rubbish is not collected, burn the nappies/paper waste.
- If you are using cloth nappies, make sure that you rinse the excess faeces off the cloth and then soak the nappy in bucket with a lid in water and Milton (sterilising fluid) or bleach to sterilise the nappy before washing it with soap.
- Bath your baby/child every day with warm water and soap. Dry with a clean towel.
- Make sure your baby's nappies are regularly changed and especially after the baby has urinated or passed a stool in the nappy.
- Make sure your baby's clothes are washed regularly.
- Wash your hands before preparing the child's food and before feeding the child.
- If you are sick make sure to wash your hands regularly and cough into your elbow or a tissue to try and prevent infected droplets from getting into the air.
- If your child has nappy rash, keep the area clean and dry. For bad nappy rash you might want to visit a chemist for some cream.
- If your child has any wounds or sores, keep them clean and dry. You might want to use an anti-bacterial cream.
- Keep your child's teeth and mouth clean to prevent fungal and bacterial infections. In HIV positive children it is especially important to look out for oral thrush (candida). If thrush develops visit a clinic as soon as possible.

## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

### 1. Why is infection control in the home especially important if you have infants and children?

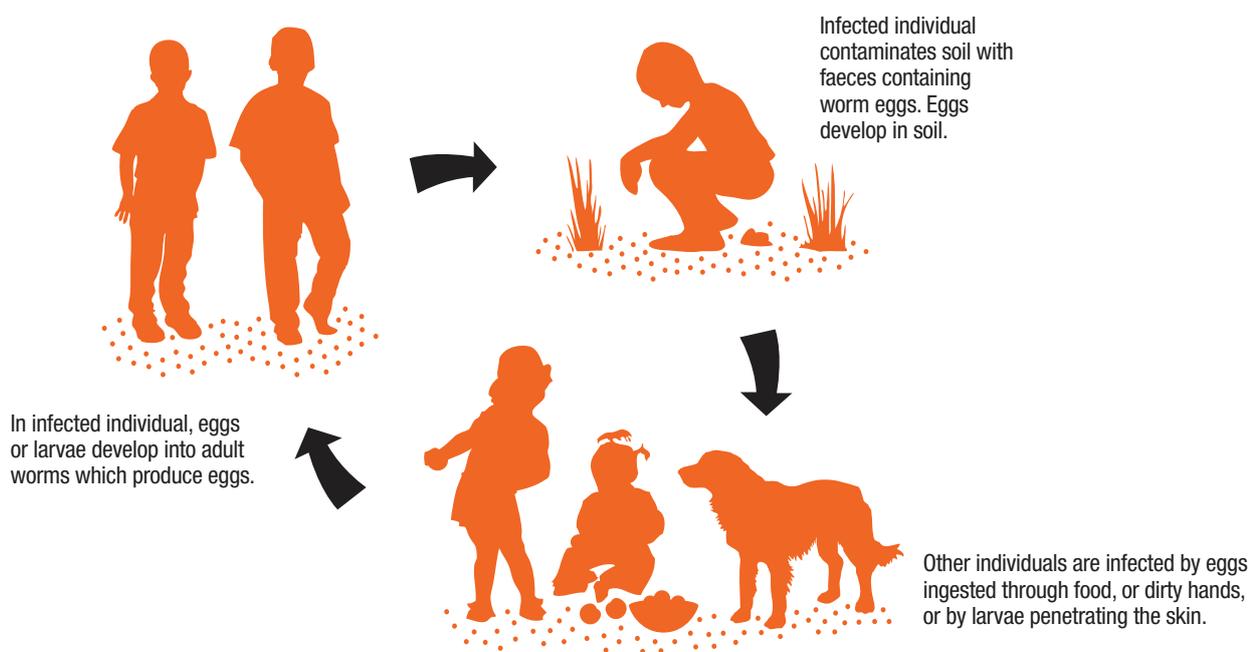
Infection control is important because infants and children do not have fully developed immune systems and their bodies are smaller so infections are generally more serious for children compared to adults.

### 2. What are some of the most important ways of reducing the risk of infection?

You can reduce risk of infection by making sure all food and liquids are safe, that water is clean and safe to drink, that the home is well aired and cleaned, that the child is regularly washed and dressed in clean clothes and nappies and that all faeces are cleaned away.

## Children and worm infections

Most children get infected with worms because they play on the ground and come into contact with pet animals, such as dogs. There are a large number of worms that can live inside humans. Intestinal worms are the most common infections. A person infected with worms has parasite eggs in their faeces. In areas where there are no toilets, the soil (and water) around the village or community becomes contaminated with faeces containing worm eggs. Young children play on the ground and often put their hands in their mouths without washing them and swallow the eggs and become infected.



*Illustration to show how worms pass from a human into the soil and can then infect other people.*

Apart from intestinal worms which are transmitted through contaminated soil and through animals, there are also hookworms which also live in the intestine. Hookworms enter the body by burrowing through the skin of the feet, usually between the toes. Worms can cause nausea, tiredness, abdominal pain and loss of appetite.

Worms can also cause the following health problems:

- **Vitamin A deficiency:** worms need vitamin A to live. In many developing countries where a person does not get enough vitamin A in their diet this can be a serious problem. We have already learnt how important vitamin A is for child development.
- **Loss of appetite:** one of the most noticeable changes after a child has been de-wormed is that his/her appetite returns.
- **Increased risk of other infections:** Having worms puts strain on a child's immune system and they are at higher risk of other infections, including HIV infection.
- **Anaemia/low iron:** hookworms live in the intestine. They attach and re-attach themselves to the intestine wall every few hours as they feed on blood from the cut vessels and mucosal tissues. This blood loss contributes to anaemia, especially in areas where people do not get enough iron in their diet and malaria is widespread.

Worm infection is easy to treat. Once you have treated a child for worms the infection should be completely cured. This means that re-infection is the result of a new contact with contaminated soil and needs to be treated again. There are 4 drugs that are easily available from clinics and pharmacies:

- Albendazole and Mebendazole are particularly easy to administer
- Pyrantel and Levamisol doses are based on the weight of the child

Routine de-worming of children who are HIV positive is important because if children have worms, it can wear down their immune systems very quickly. HIV positive children should receive treatment for worms every 6 months. This will assist to prevent malnutrition and promote good health outcomes.

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## DISCUSSION POINTS

In a group talk about the following questions and see if you can answer them.

**1. Why are children at increased risk of getting worm infections?**

Children are at increased risk of getting worm infections because they play on the ground and are at the height where animals can lick them.

**2. What are some of the health problems caused by worms?**

Worms can cause vitamin A and iron deficiency, malnutrition, loss of appetite and increased risk of other infections.





## MULTIPLE CHOICE QUESTIONS

Name : .....

Circle the correct answer for each question. You can only choose 1 answer for each question.

**1. Antenatal care is provided:**

- a) Only after the baby is born.
- b) Before the baby is born.
- c) During birth.
- d) When the child is older than 5 years old.

**2. Which of the following statements is NOT true?**

- a) Family Planning is when a woman prevents unintended pregnancy.
- b) Contraception is the same as birth control.
- c) Family planning is free in state clinics.
- d) Birth control is not given to unmarried women.

**3. Which form of contraception helps prevent HIV infection as well as preventing pregnancy?**

- a) Birth control pills
- b) IUD (Intrauterine device)
- c) Male and female condoms
- d) Depo-Provera shot

**4. Which of the following statements is NOT true?**

- a) The Road to Health Booklet records the child's age.
- b) The Road to Health Booklet records the child's weight.
- c) The Road to Health Booklet records the child's vaccinations.
- d) The Road to Health Booklet records the child's daily meals.

**5. Good growth on the Growth Monitoring Chart means:**

- a) The child's weight curve is going up.
- b) The child is losing weight.
- c) The child's weight curve is going down.
- d) The child's weight curve flat.

**6. Which of the following statements is NOT true?**

- a) Child immunisation is free at state facilities.
- b) Child immunisation prevents childhood diseases.
- c) Child immunisation prevents HIV/AIDS.
- d) Child immunisation is cost effective.

**7. Malnutrition is caused by:**

- a) Eating too much.
- b) Not enough food and/or variety of foods.
- c) Eating vegetables.
- d) Eating different kinds of food.

**8. Exclusive Breast feeding is recommended up until:**

- a) 8 months
- b) 2 years
- c) 6 months
- d) 2 months

**9. An HIV positive mother should try to avoid:**

- a) Exclusive breast feeding
- b) Mixed feeding (formula and breast milk)
- c) Getting tested for HIV if she doesn't know her status
- d) Looking after her health

**10. Which of the following is NOT a common childhood disease?**

- a) Pneumonia
- b) Measles
- c) Diarrhoea
- d) Cancer



## WORKBOOK NOTES

A large rectangular area with a light grey background, containing 25 horizontal dashed orange lines for writing notes.