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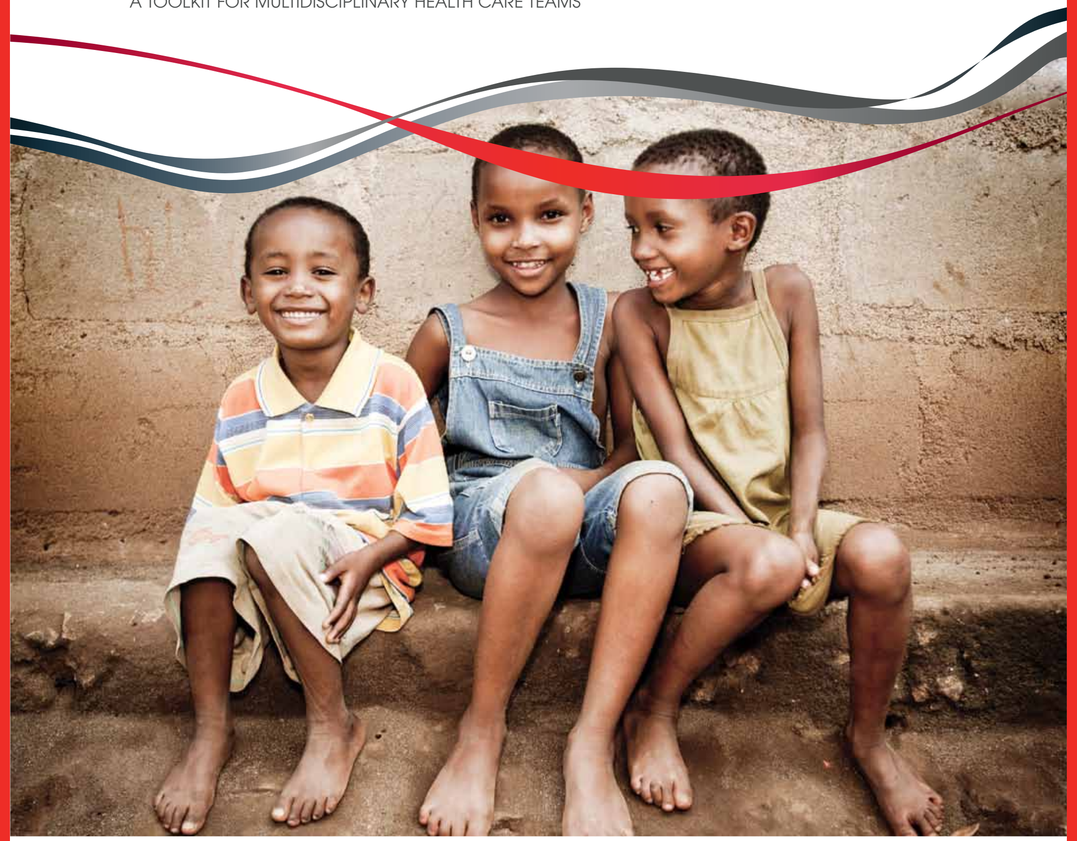
PAEDIATRIC
HIV CARE & TREATMENT TOOLKIT

PAEDIATRIC
HIV Care and Treatment

A TOOLKIT FOR MULTIDISCIPLINARY HEALTH CARE TEAMS



INTRODUCTION

In response to the urgent need to expand care and treatment for children with HIV and their families, South to South in collaboration with PATA (Paediatric AIDS Treatment for Africa) and Zoe-Life, have brought together this comprehensive toolkit for public sector health facilities in Africa.

PATA is a network of frontline healthcare workers dedicated to expanding access to care for children affected and infected with HIV and their families throughout the African continent. PATA values and promotes models of care that address both the medical and psychosocial needs of the child and that offer high quality, integrated, patient-centred, and affordable services. The foundation of PATA lies with the PATA teams - multidisciplinary Treatment Teams of nurses, pharmacists, counsellors and doctors, who work together at clinics across Sub-Saharan Africa to form a community of compassionate and committed individuals who provide treatment and care to children infected with HIV and their families. The fundamental purpose of PATA is to assist Treatment Teams to improve the quality of health care they deliver to their patients. The principle of PATA lies in the belief that Treatment Teams can best improve themselves, (collectively and individually) and the quality of their work through self-initiated projects in which they have a sense of ownership, responsibility and pride.

The South to South Program for Comprehensive Family HIV Care and Treatment (South to South), an organisation based at the University of Stellenbosch, is a USAID specialist partner in the Prevention of Mother-to-Child Transmission (PMTCT) of HIV, Paediatric HIV, and Psychosocial programming, and responds to specific clinical and health systems strengthening needs within South Africa. As a capacity building organisation, South to South provides technical assistance through training, mentoring, resource development, and quality improvement support of healthcare workers and district teams.

Zoë-Life is a purpose-driven organisation based in South Africa that aims to equip children, communities, and countries to experience authentic abundance. This is achieved through partnering to multiply resources and through strengthening systems within a context of learning from strengths and best practices. Zoë-Life developed KidzAlive, a caregiver-facilitated, child-focused psychosocial care model designed for HIV-infected and affected children and their families. The programme offers psychosocial care and support to children and their caregivers from the point of preparing caregivers and healthcare workers for testing of children, through child-centered testing, age appropriate disclosure, care and support, treatment literacy, and adherence support as well as wellness for HIV affected children. The model and tools enable caregivers and healthcare workers to give informed and age-appropriate support to children in ways that celebrate their individual personalities using counselling and educational play.

It is our hope that the availability of this resource will help us get one step closer to the goal of eliminating the devastating effect of paediatric HIV and AIDS, and will contribute to the good health and well-being of children and families affected by HIV and AIDS throughout Africa.

ACKNOWLEDGEMENTS

In response to the urgent need to expand care and treatment for children with HIV and their families, the South to South Partnership for Comprehensive Family HIV Care & Treatment Program, has developed a comprehensive toolkit for public sector health facilities in Africa.

The *Paediatric HIV Care and Treatment: A Toolkit for Multidisciplinary Health Care Teams* is a collection of job aides, reference guides, and decision-making tools which reflects the collaborative effort, collective experience, and knowledge of many institutions and individuals who are tirelessly committed to strengthening health care systems in Africa. The authors have drawn upon various curricula and program materials, incorporated theories of best practice, and enhanced these materials based on their own field experiences as well as the invaluable feedback from facilitators, participants, and health care providers.

South to South, PATA, and Zoe Life would like to express their sincere appreciation to the many individuals, institutions, and organisations who contributed a significant amount of their time and tireless effort to the development and design of this Toolkit. Special thanks to Joan Marston, Chief Executive Officer of the International Children's Palliative Care Network, for making the material available for the palliative care section. The International Union Against Tuberculosis and Lung Disease (The Union) www.theunion.org for permission to draw from the 'Desk-guide for diagnosis and management of TB in children. S.M Graham et al 2010, specifically Wall Chart 1 (Pg 141): Guidance for the screening of children in close contact with an adolescent of adult with newly diagnosed pulmonary TB, Wall Chart 2 (Pg 142): Guidance for the diagnosis of children who present with symptoms suggestive of TB, Strict Symptom Criteria (Pg 139) and Indications for requiring hospitalization/referral (Pg 138). We also thank Purple Mosaic, for laying out and designing the Toolkit.

This document was made possible through funding provided by the United States Agency for International Development (USAID), under the President's Emergency Plan for AIDS Relief (PEPFAR), and PATA funders, which include One to One Children's Fund, Sidaction, and the Diana Princess of Wales Memorial Fund. The KidzAlive Programme is funded by PEPFAR CDC. We also acknowledge the following organizations for their support: Department of Health, Republic of South Africa; University of Witwatersrand; Stellenbosch University; Tygerberg Children's Hospital; International Centre for AIDS Care and Treatment Programs at Columbia University (ICAP); University of Cape Town; Red Cross Children's Hospital, and the Baylor International Paediatric AIDS Initiative.

The following references serve as key documents which informed the main components of the toolkit:

1. Integrated Management of Childhood Illness for High HIV Settings - Chart Booklet, World Health Organisation & Unicef. 2008.

2. Antiretroviral Therapy for HIV Infection in Infants & Children Towards Universal Access, World Health Organisation. 2010 Revision.

3. Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants, World Health Organisation. 2010 Version.

4. Republic of South Africa Department of Health. Primary Health Care Standard Treatment Guidelines and Essential Medicines List. 2008.

5. McKerrow NH, et al. Step by Step Guide for the Management of Children on ART. Pietermaritzburg, KwaZulu-Natal, South Africa. 2008.

DISCLAIMER

The content expressed herein does not necessarily reflect the views of the funders. Although every effort was made to ensure that all information in this document is accurate and up-to-date, the authors accept no liability for the consequences of inaccurate or misleading data due to errors in writing or printing/duplication. Every effort has been made to ensure that drug doses are presented accurately, but readers are advised that these should only be followed in conjunction with the drug manufacturer's published literature.

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HOW TO USE YOUR TOOLKIT

The *Paediatric HIV Care and Treatment: A Toolkit for Multidisciplinary Health Care Teams* is designed to assist and empower multidisciplinary HIV care teams based in hospitals, clinics, and health facilities across Africa, who provide services to infants, children, and their families, living with HIV.

The Toolkit contains innovative job aides, tools, and reference material on aspects of care in children infected with HIV. Each section begins with relevant background information, followed by a summary of each topic. The Toolkit is not a training package and we encourage users to adapt the content in line with local guidance. For this purpose, the Toolit is contained in a binder so that the individual job aides can be copied, faxed, individually laminated, and used separately for specific purposes. It is strongly recommended that if documents are removed from the Toolkit, they should be copied first and the original replaced immediately. The Toolkit is intended to be a dynamic document, allowing individual tools to be up-dated and replaced over time. We also encourage you to add additional material to this folder, which you may deem useful.

KEY MESSAGE:

Highlights important information, and provides concise statements about a topic area and overall message and/or purpose of the section and associated tools

This Toolkit information is for anyone to share, copy, distribute and transmit, as long as you:

- attribute the material to ECHO, South to South, PATA, and Zoe Life; as well as maintain citations to other sources cited in the Toolkit;
- do not use any of the material for commercial purposes – our work is not intended for generating profit;
- do not change or alter the contents in any way without consulting.

Please refer to Terms of Use for additional information.

No matter how you use this Toolkit, we hope it contributes to better services for children and their families affected by HIV!

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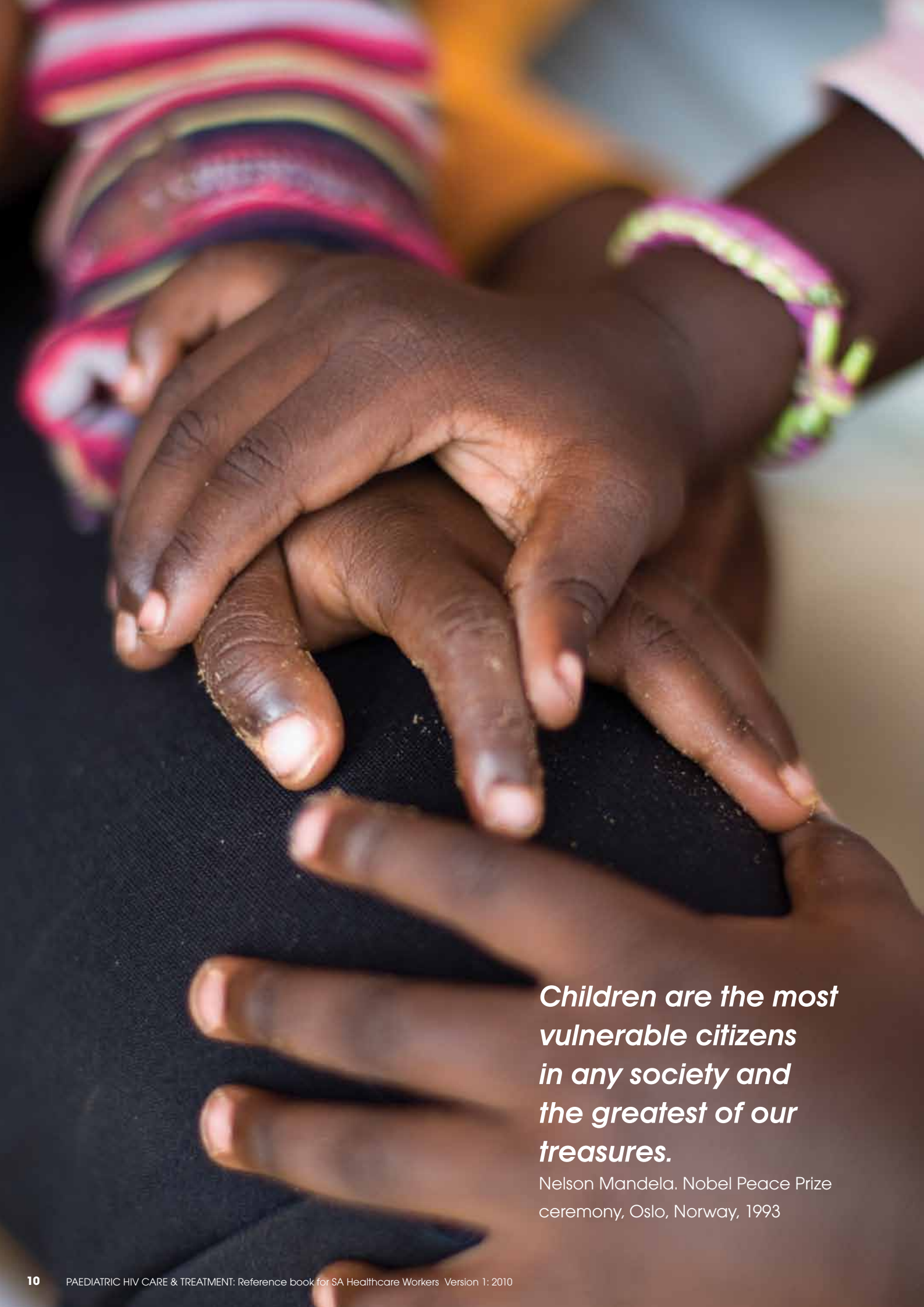
IMPORTANT
TELEPHONE NUMBERS

CONTACT	ORGANISATION	NUMBER

CONTACT	ORGANISATION	NUMBER



Children are the most vulnerable citizens in any society and the greatest of our treasures.

Nelson Mandela. Nobel Peace Prize ceremony, Oslo, Norway, 1993

IMCI & ART

IMCI & ART

INTRODUCTION

The Integrated Management of Childhood Illness (IMCI) approach is a primary WHO strategy for reducing deaths in young children. The IMCI case management process assists health care workers to accurately identify and manage those conditions responsible for most deaths in young children, namely acute respiratory infections, diarrhoea, malnutrition and other infections. At the same time, the IMCI case management process ensures that each child receives preventative care, such as immunization and vitamin A supplementation.

South Africa was the first country to include identification and management of HIV infection in children in the IMCI Chart Booklet. Earlier editions focused on identification and provision of palliative care to children with AIDS, but as more treatments became available, the IMCI approach was adapted to include these. With a shift in the South African HIV programme in 2010, where ART was to be provided at all public health sectors, nurses were placed at the forefront of initiating and following up children on ART. This required that IMCI be expanded to include ART provision as a component of the package of health services provided at Primary Health Care (PHC) level. As a result, a simple six step approach to initiating ART in children as well as a seven step approach to providing follow-up has been added to the IMCI Chart Booklet. These steps can be used to initiate and provide follow-up to the majority of children who require ART at PHC level, especially when the diagnosis is made early, before the child develops severe signs and complications.

As this South African specific ART supplement to the IMCI Chart Booklet has been found to be extremely useful for healthcare workers, it has been included in this Toolkit as an adjunct tool to assist frontline healthcare workers when managing HIV infected children. The content has been adapted in alignment with the WHO recommendations whilst retaining the stepwise approach. These pages however do not replace the existing IMCI chart booklets or the need for formal IMCI and ART training.

This section also includes patient management recording forms based on the stepwise guidelines as well as a 'Skin and Mouth Condition' pictionary from the Integrated Management of Childhood Illness for High HIV Settings Chart Booklet (World Health organisation 2008).

STARTING ART

FOLLOW THE SIX STEPS

STEP 1: DECIDE IF THE CHILD HAS CONFIRMED HIV INFECTION

- Child less than 18 months: POSITIVE HIV Virological (PCR) test
- Child 18 months and above: POSITIVE HIV Antibody test

STEP 2: DECIDE IF THE CHILD IS ELIGIBLE TO RECEIVE ART

- Stage the child (WHO Clinical staging)
- Record the child's CD4 count and percentage
- Decide whether the child is eligible based on the eligibility criteria (See recommended WHO eligibility criteria on page 49)
- If criteria met, move to STEP 3
- If the child does not meet the eligibility criteria, classify as CONFIRMED HIV INFECTION not on ART, and follow up (at least 3 monthly). Continue Cotrimoxazole prophylaxis and do clinical staging and a CD4 count at least six monthly to assess if the child meets the criteria for initiation of ART.

STEP 3: DECIDE IF THE CAREGIVER IS ABLE TO GIVE ART

- Check that the caregiver is willing and able to administer ART
- The caregiver should ideally have disclosed the child's HIV status to another adult who can assist with providing ART (or to be part of a support group)
- If caregiver is able to give ART, move to STEP 4
- If not, classify as CONFIRMED HIV INFECTION not on ART, and follow up regularly with intensive psychosocial support and counseling

STEP 4: DECIDE IF A NURSE SHOULD INITIATE ART BASED ON LOCAL GUIDELINES

- If the child has associated opportunistic infections or is severely ill, the initiation of ART may be best done at the next level of care.

STEP 5: ASSESS AND RECORD BASELINE INFORMATION

- Record the following information:
  - Weight, height, and head circumference
  - Assess and Classify for Malnutrition and Anaemia
  - Feeding assessment and problems
  - TB classification
  - WHO Clinical stage
  - Laboratory results as per local protocol: VL (if available), CD4 count and percentage
- If the child has SEVERE MALNUTRITION, SEVERE ANAEMIA, TB or POSSIBLE TB, refer to the next level of care for initiation of ART
- If Hb is less than 10g/dL, classify as ANAEMIA and treat. Do not delay starting ART.
- Send any outstanding laboratory tests.

STEP 6: START ART

- Decide on treatment regimen as per local guidelines (See recommended WHO first line ARV regimens for children on page 54 - 55)
- Determine ARV drug dosages based on the weight of the child (See recommended WHO ARV drug dosages on page 56)
- Remember to give Cotrimoxazole (page 134)
- Give other routine treatments (immunization, Vitamin A and deworming)
- Follow up after one week

STARTING ART: FOLLOW THE SIX STEPS RECORDING FORM

Name of child: _____ Age: _____ Weight: _____ Temp: _____ °C Date: _____

ASSESS

STEP 1: CONFIRM HIV INFECTION

Child < 18 months:
☐ POSITIVE HIV Virological Test

Child > 18 months:
☐ POSITIVE HIV Antibody Test

- Send any outstanding tests
- If HIV infection confirmed, proceed to Step 2

STEP 2: IS THE CHILD ELIGIBLE TO RECEIVE ART?

☐ Yes ☐ No
☐ CONFIRMED HIV INFECTION (Step 1)
☐ Stage 1 ☐ Stage 2 ☐ Stage 3 ☐ Stage 4 ☐ Unknown
CD4: Count _____ %
CD4 Criteria met: ☐ Yes ☐ No ☐ N/A

- If criteria met, proceed to Step 3
- If child 2 - 5 years does not meet staging and CD4 criteria, classify as HIV INFECTION not on ART, and provide follow-up

STEP 3: IS THE CAREGIVER ABLE TO GIVE ART?

☐ Caregiver available and willing to give medication?
☐ Caregiver has disclosed to another adult (or is part of a support group)

STEP 4: SHOULD ART BE NURSE-INITIATED?

☐ Yes ☐ No

STEP 5: ASSESS AND RECORD BASELINE INFORMATION

Weight: _____ kg _____ Height: _____ cm _____
Head circumference: _____
Assess and classify for malnutrition:
☐ GROWING WELL ☐ NOT GROWING WELL
☐ SEVERE MALNUTRITION

Development: ☐ Normal ☐ Delayed
Classify for TB: ☐ TB confirmed ☐ TB Exposed ☐ Possible TB
Who Clinical Stage: ☐ 1 ☐ 2 ☐ 3 ☐ 4
Hb (if available): _____ g/dl Viral load (if available) _____
CD4: Count _____ cells/mm³ Perecentage: _____ %

- If POSSIBLE TB, follow-up as outlined in the IMCI Chart booklet. Refer as described.
- If Hb < 10g/dl, classify and treat for ANAEMIA - do not delay starting ART.
- Send any outstanding tests - If the child already meets the criteria for starting ART, do not wait for the results before starting ART.
- Proceed to Step 6.

STEP 6: START ART

- Decide on a treatment regimen as per local guidelines
- Determine ARV drug dosage based on the weight of the child
- Remember to give Cotrimoxazole
- Give other routine treatments

Record ARVs and dosages here

Record other treatments here

- Follow up after one week
- If child is stable, follow up monthly

PROVIDE FOLLOW UP CARE

RECORD ACTIONS AND TREATMENTS HERE: ALWAYS REMEMBER TO COUNSEL THE MOTHER AND PROVIDE ROUTINE CARE

PROVIDING FOLLOW UP

FOR CHILDREN ON ART (CHILD 2 MONTHS TO 5 YEARS): FOLLOW THE SEVEN STEPS

STEP 1: ASSESS AND CLASSIFY

- **ASK**

  Does the child have any problems?
  Has the child received care at another health facility since the last visit?

- **CHECK FOR GENERAL DANGER SIGNS**

  Ask: is the child able to drink or breastfeed?
  Does the child vomit everything?
  Has the child had convulsions?
  Look: see if the child is lethargic or unconscious.
  Is the child convulsing now?

- **CHECK FOR ART DANGER SIGNS (if present, REFER URGENTLY)**

  Severe skin rash
  Difficulty breathing and severe abdominal pain
  Yellow eyes
  Fever, vomiting, rash (only if on Abacavir)
  Severe pallor

- **CHECK FOR MAIN SYMPTOMS (Treat and follow up accordingly)**

  Cough or difficulty breathing
  Diarrhoea
  Fever
  Ear problem
  Mouth and Skin lesions

STEP 2: MONITOR PROGRESS ON ART

- Assess and classify for **Malnutrition and Anaemia**
  Record the child's weight, height and head circumference

- Assess **Development**
  Decide if the child is developing well/ has some delay/ is losing milestones

- Assess **Adherence**
  Ask how often, if ever, the child misses a dose. Record your assessment

- Assess for **Drug Side Effects**
  Ask specifically about the side effects of the drugs the child is taking
  Manage mild side effects

- Assess **Clinical Progress**
  Assess the child's clinical WHO stage and document if any new stage 3 or 4 staging events
  Compare with the stage at previous visits

- Monitor **Blood Results**
  Record results of tests that have been sent
  Send tests that are due

STEP 3: PROVIDE ART

- If the child is stable, continue with the current regimen
- Remember to check drug doses - these will need to increase as the child grows

STEP 4: PROVIDE OTHER HIV TREATMENTS

- Provide cotrimoxazole prophylaxis (pg 134)

NOTE: Remember cotrimoxazole can be stopped once the child has been stable on ART for at least six months, and has had two CD4 counts higher than 500cells/mL (or higher than 15%) taken at least three months apart.

STEP 5: PROVIDE ROUTINE CARE

- Check that the child's immunizations are up to date
- Provide Vitamin A and deworming if due

STEP 6: COUNSEL THE MOTHER OR CAREGIVER

- Use every visit to provide support to the mother or care giver
- Key issues to discuss include:
  - How the child is progressing, feeding, adherence, side-effects and correct management, disclosure (to others and the child), and support for the caregiver
  - Remember to check that the mother and other family members are receiving the care that they need

STEP 7: ARRANGE A FOLLOW UP

ART FOLLOW UP: RECORDING FORM

Name of child: _____ Age: _____ Weight: _____ Temp: _____ °C Date: _____

STEP 1: ASSESS AND CLASSIFY

ASK: Does the child have any problems? If yes, record here:
ASK: Has the child received care at another health facility since the last visit? If yes, record here:

Check for General Danger Signs:
- ☐ NOT ABLE TO DRINK OR BREASTFEED
- ☐ CONVULSIONS DURING THIS ILLNESS
- ☐ VOMITS EVERYTHING
- ☐ LETHARGIC OR UNCONSCIOUS

Check for ART Danger Signs:
- ☐ Severe skin rash
- ☐ Difficulty breathing and severe abdominal pain
- ☐ Yellow eyes
- ☐ Fever, vomiting, rash (only if on Abacavir)
- ☐ Severe pallor

Provide pre-referral treatment and
REFER URGENTLY

Record actions taken

Check for Main Symptoms
- ☐ Cough or difficult breathing ☐ Diarrhoea
- ☐ Fever ☐ Ear problem
- ☐ Other problems ☐ Mouth and skin lesions

Consider (screen for) TB
- ☐ No classification required ☐ TB
- ☐ TB EXPOSURE ☐ Possible TB

Assess, classify, treat and follow up according to IMCI guidelines.
Refer if necessary.

If TB, refer.
If POSSIBLE TB, manage according to IMCI Chart booklet and refer if needed.

STEP 2: MONITOR ARV TREATMENT

Assess and classify for Malnutrition
Weight _____ kg Height _____ cm
Head circumference _____ cm
- ☐ GROWING WELL ☐ NOT GROWING WELL
- ☐ SEVERE MALNUTRITION

Assess development
- ☐ Developing well ☐ Some delay
- ☐ Losing milestones

Assess adherence:
- ☐ Takes all doses ☐ Occasionally misses a dose
- ☐ Frequently misses doses
- ☐ Not taking medication

Assess side-effects:
- ☐ Nausea ☐ Diarrhoea ☐ Rash
- ☐ Sleep disturbances ☐ Dizziness
- ☐ Tingling, numb or painful hands, feet or legs
- ☐ Abnormal distribution of fat
- ☐ Other

Assess clinical progress:
Stage when ART initiated
- ☐ Stage 1 ☐ Stage 2 ☐ Stage 3 ☐ Stage 4
- ☐ Unknown

Any new Stage 3 or 4 conditions?: ☐ Yes ☐ No

Monitor blood results:
Record latest results here: Date taken _____
CD4 (if available): Count _____ cells/mm3
Percentage % _____
Viral Load (if available) _____
If on Lopinavir/Ritonavir (yearly):
LDL Chol _____ TGs _____

IF ANY OF THE FOLLOWING ARE PRESENT, REFER THE CHILD TO THE NEXT LEVEL OF CARE
- Not gaining weight for 3 months
- Loss of developmental milestones
- Suspected Treatment Failure
  - New clinical Stage 3 or 4 illnesses (clinical treatment failure)
  - CD4 count decreasing (immunological failure)
  - Viral load increasing despite adherence counselling and support (virological failure)
- Significant side effects
  - LDL cholesterol higher than 3.5 mmol/L
- TGs higher than 5.6 mmol/L

Manage side effects

Send tests that are due
- ☐ CD4 count
- ☐ Viral load
- ☐ LDL, cholesterol and Triglycerides

Record actions taken

STEP 3: PROVIDE ART

ARVs	DOSAGE

STEP 4: PROVIDE OTHER HIV TR

OTHER	DOSAGE

STEP 5: PROVIDE ROUTINE CARE

MEDICATION	RECORD
Vitamin A	
Deworming	
Immunizations	
Other medication	

REMEMBER TO CHECK DOSES - THESE NEED TO BE INCREASED AS THE CHILD GAINS WEIGHT

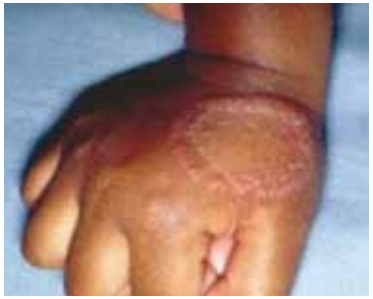
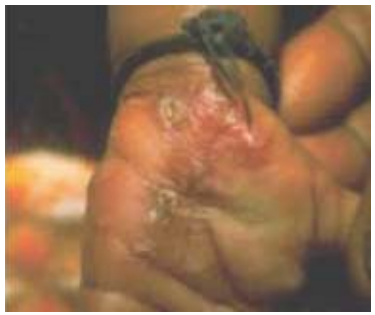
STEP 6: COUNSEL

Use every visit to educate and provide support to the caregiver.
Key issues to discuss include:
How the child is progressing, adherence, side-effects and correct management, disclosure (to others and to the child) and support for the caregiver.

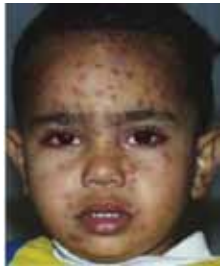
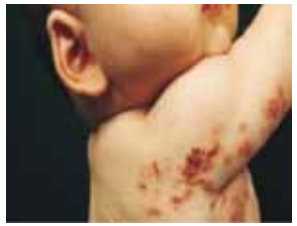
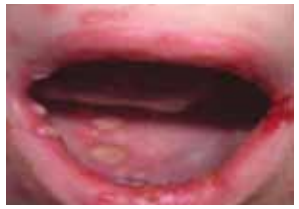
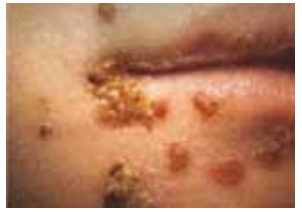
STEP 7: PROVIDE FOLLOW UP

If the child is well, make a follow-up date in one month's time. Follow-up any problems more frequently

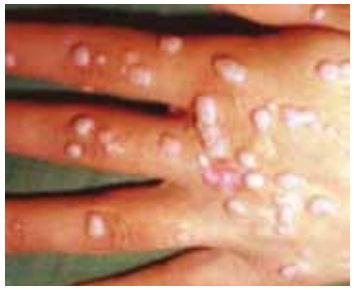
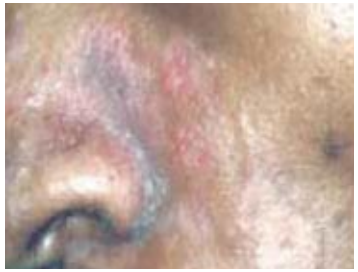
IDENTIFY SKIN PROBLEM IF SKIN IS ITCHING

	SIGNS	CLASSIFY AS:	TREATMENT	UNIQUE FEATURES IN HIV
	Itching rash with small papules and scratch marks. Dark spots with pale centres.	**PAPULAR ITCHING RASH (PRURIGO)**	Treat itching: - Calamine lotion - Antihistamine by mouth If not improved, 1% hydrocortisone. Can be an early sign of HIV and needs assessment for HIV.	Is a Clinical Stage 2 defining disease.
	An itchy circular lesion with a raised edge and fine scaly area in centre with loss of hair. May also be found on body or web of feet.	**RINGWORM (TINEA)**	Whitfield's ointment or other anti-fungal cream if few pacthes. If extensive Refer, if not give: ketoconazole for 2 up to 12 months (6-10kg) 40 mg per day. For 12 months up to 5 years give 60mg per day. Or give griseofulvin 10mg/kg/day. If in hairline shave hair. Treat itching as above.	Extensive: There is a high incidence of coexisting nail infection which has to be treated adequately, to prevent recurrences of tinea infection of skin. Fungal nail infection is a Clinical Stage 2 defining disease.
	Rash and excoriations on torso, burrows in web space and wrist. Face spared.	**SCABIES**	Treat itching as above. Manage with anti-scabies medications: 25% topical benzyl benzoate at night, repeat for 3 days after washing. 1% topical lindane cream or lotion once - wash off after 12 hours.	In HIV positive individuals scabies may manifest as crusted scabies. Crusted scabies presents as extensive areas of crusting mainly on the scalp, face, back and feet. Patients may not complain of itch but the scales will be teeming with mites.

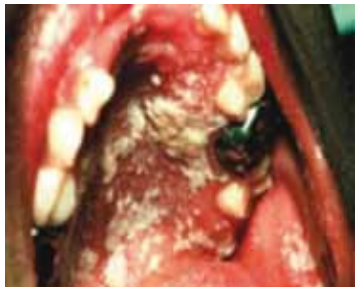
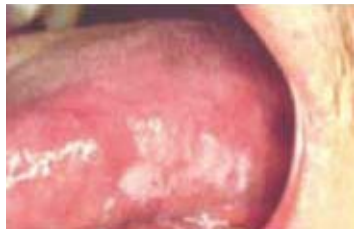
IDENTIFY SKIN PROBLEM IF SKIN HAS BLISTERS/SORES/PUSTULES

	SIGNS	CLASSIFY AS:	TREATMENT	UNIQUE FEATURES IN HIV
	Vesicles over body. Vesicles appear progressively over days and form scabs after they rupture.	**CHICKEN POX**	Treat itching as above. Refer URGENTLY if pneumonia or jaundice appear.	Presentation atypical only if child is immunocompromised. Duration of disease is longer. Complications more frequent. Chronic infection with continued appearance of new lesions for >1 month; typical vesicles evolve into nonhealing ulcers that become necrotic, crusted and hyperkeratotic
	Vesicles in one area on one side of the body with intense pain or scars plus shooting pain. Herpes zoster is uncommon in children except where they are immuno-compromised, for example if infected with HIV	**HERPES ZOSTER**	Keep lesions clean and dry. Use local antiseptic. If eye involved give acyclovir - 20 mg/kg (max 800 mg) 4 times daily for 5 days. Give pain relief. Follow-up in 7 days.	Duration of disease longer. Haemorrhagic vesicles, necrotic ulceration. Rarely recurrent, disseminated or multidermatomal. Is a clinical Stage 2 defining disease.
	Vesicular lesion or sores, also involving lips and/or mouth.	**HERPES SIMPLEX**	If child unable to feed, refer. If first episode or severe ulceration, give acyclovir as above.	Extensive area of involvement. Large ulcers. Delayed healing (often greater than a month). Resistance to Acyclovir common. Therefore continue treatment till complete healing of ulcer. Chronic HSV infection (>1 month) is a clinical Stage 4 defining disease.
	Red, tender warm crusts or small lesions.	**IMPETIGO OR FOLLICULITIS**	Clean sores with antiseptic. Drain pus if fluctuant. Start cloxacillin if size >4cm or red streaks or tender nodes or multiple abscesses for 5 days (25-50 mg/kg every 6 hours). Refer URGENTLY if child has fever and/or if infection extends to the muscle.	

IDENTIFY PAPULAR LESIONS: NON-ITCHY

	PRESENTING SIGNS AND SYMPTOMS	CLASSIFY	MANAGEMENT & TREATMENT	UNIQUE FEATURES IN HIV
	Skin coloured pearly white papules with a central umbilication. It is most commonly seen on the face and trunk in children.	**MOLLUSCUM CONTAGIOSUM**	Can be treated by various modalities: Leave them alone unless superinfected. Pricking each lesion with a needle or sharpened orange stick and dabbing with phenol Electrodesiccation. Liquid nitrogen application (using orange stick). Curettage.	Incidence is higher Giant molluscum (>1cm in size), or coalescent double or triple lesions may be seen. More than 100 lesions may be seen. Lesions often chronic and difficult to eradicate. Extensive molluscum contagiosum is a clinical Stage 2 defining disease.
	The common wart appears as papules or nodules with a rough (verrucous) surface.	**WARTS**	Topical salicylic acid preparations (eg. Duofilm). Liquid nitrogen cryotherapy. Electrocautery.	Lesions more numerous and recalcitrant to therapy. Extensive viral warts is a Cinical Stage 2 defining disease.
	Greasy scales and redness on central face, body folds.	**SEBBHORREA**	Ketoconazole shampoo. If severe, refer or provide tropical steroids. For seborrheic dermatitis: 1% hydrocortisone cream x 2 daily. If severe, refer.	Seborrheic dermatitis may be severe in HIV infection. Secondary infection may be common.

MOUTH PROBLEMS: THRUSH

	SIGNS	CLASSIFY	TREATMENT
	Not able to swallow.	**SEVERE OESOPHAGEAL THRUSH**	Refer urgently to hospital. If not able to refer, give fluconazole. If mother is breast-feeding check and treat the mother for breast thrush. (STAGE 4 disease)
	Pain or difficulty swallowing.	**OESPHAGEAL THRUSH**	Give fluconazole. Give oral care to young infant or child. If mother is breast feeding, check and treat the mother for breast thrush. Follow up in 2 days. Tell the mother when to come back immediately. Once stabilized, refer for ART initiation. (Stage 4 disease).
	White patches in mouth which can be scraped off.	**ORAL THRUSH**	Counsel the mother on home care for oral thrush. The mother should: - Wash her hands. - Wash the young infant/child's mouth with a soft clean cloth wrapped around her finger and wet with salt water. - Instill 1ml nystatin four times per day or paint the mouth with half strength gentian violet for 7 days - Wash her hands after providing treatment for the young infant or child - Avoid feeding for 20 minutes after medication. - If breastfed, check mother's breasts for thrush. If present (dry shiny scales on nipples and areola), treat with nystatin or GV. - Advise the mother to wash breasts after feeds. If bottle fed, advise to change to cup and spoon. - If severe, recurrent or pharyngeal thrush, consider symptomatic HIV. - Refer for ART initiation (stage 3 disease). - Give Paracetamol if needed for pain.
	Most frequently seen on the sides of the tongue, a white plaque with a corrugated appearance.	**ORAL HAIRY LEUCOPLAKIA**	Does not independently require treatment, but resolves with ART and Acyclovir (Stage 2 disease)


Nursing is a work of Heart!

Investment in AIDS will be repaid a thousand-fold in lives saved and communities held together.

Dr. Peter Piot, Executive Director, UNAIDS

HIV CARE PACKAGES

HIV CARE PACKAGES

Depending upon a child's HIV test results, whether there is any ongoing HIV exposure, and ARV treatment eligibility, every child may be categorized as either:

- HIV Negative
- HIV Exposed
- HIV Infected not on ART
- HIV Infected on ART

This is a helpful approach since each patient category can be provided with a certain "care package" or set of healthcare services outlined by national HIV care and treatment guidelines. The exception is patients found to be HIV Negative whom require only routine child health services.

KEY MESSAGE:

Care Packages are a reminder to offer comprehensive prevention, treatment, and support services.

The following pages outline the various HIV care and treatment packages for children. They may be used as checklists during patient visits, copied for insert into clinic files, or implemented as a quick reference to ensure comprehensive service provision.
Busy clinics might not allow for every aspect of the care package to be provided at every visit, however, at some point the entire care package should be offered to ensure quality service provision and successful patient outcomes.

HIV EXPOSED INFANT CARE PACKAGE

- ✓ Measure weight, height, and head circumference. Plot on growth chart, interpret, and classify nutritional status.

- ✓ Screen for the following concerning clinical features:
  - Hospitalization
  - Cough
  - TB
  - Fever
  - Oral thrush
  - Diarrhoea
  - Malnutrition
  - Developmental Delay

  If any are present, conduct a thorough clinical review and determination of possible repeat HIV testing.

- ✓ Ongoing HIV testing and diagnosis. Does the infant have any new HIV testing results to evaluate?
  - If yes, determine the HIV status based upon test results
  - If no, does the infant need repeat testing today based on age and time since weaning?

- ✓ Assess and educate the mother on her infant feeding options and important steps she can take to minimize HIV transmission while promoting overall feeding safety and healthy infant outcomes.

- ✓ Provide vertical transmission prevention prophylaxis therapy to all HIV exposed infants in the first 6 weeks of life and continue thereafter, if:
  - Infant is breastfeeding AND
  - Mother is not on lifelong ART

- ✓ Assess the child's development

- ✓ Provide Cotrimoxazole prophylaxis therapy (CPT)

- ✓ Ensure the infant receives routine child health services such as immunisation, Vitamin A supplementation, and deworming.

- ✓ Take a family history for HIV, TB, and any other concerns that may impact the infant's health or ability to receive ongoing chronic care. Encourage HIV testing for all family members, even if clinically well.

- ✓ Ensure the mother is accessing her own HIV care, treatment, and maternal support services.

- ✓ Discuss family planning with the infant's parents and offer further information or family planning services as requested.

- ✓ Document health information in the Child Health Record / Passport and clinic file. Key information includes:
  - HIV test information: Type of test, test date, test results
  - Breastfeeding status (exclusive, mixed feeding, weaned, etc.)
  - Nutritional and developmental assessment
  - Any medical problems and treatments, including drug dosages
  - Counseling notes
  - Due date for repeat HIV testing if indicated
  - Review date

HIV INFECTED NOT ON ART CARE PACKAGE

✓ Measure weight, height, and head circumference (HC if less than 3 years). Plot on growth chart, interpret, and classify nutritional status.

✓ Screen for the following concerning clinical features:
- Hospitalization
- Cough
- TB
- Fever
- Oral thrush
- Diarrhoea
- Malnutrition
- Developmental Delay.

If any are present, conduct a thorough clinical review and investigations as indicated.

✓ Ongoing reassessment of ART eligibility.
- Clinical review for any new WHO staging conditions at least every 3 months. More frequent review for children with active illness, pending investigations or complications.
- CD4 percentage (Under 5y of age) and/or total CD4 count (all ages) every 6 months.

✓ Provide Cotrimoxazole prophylaxis as indicated.

✓ Psychosocial support to the child and family, including the reassessment and empowerment of the child disclosure process. Involve the child in his/her own healthcare.

✓ Ensure the child receives routine child health services such as immunisation, Vitamin A supplementation, and deworming.

✓ Take a family history for HIV, TB, and any other concerns that may impact the infant's health or ability to receive ongoing chronic care. Encourage HIV testing for all family members, even if clinically well.

✓ Discuss family planning with the infant's parents and offer further information or family planning services as requested.

✓ Document health information in the Child Health Record / Passport and clinic file. Key information includes:
- Child age and WHO stage
- HIV test information: Type of test, test date, test results
- Nutritional and developmental assessment
- Any medical problems and treatments, including drug dosages
- Laboratory results (CD4%, FBC, etc.)
- Counselling notes
- Review date

HIV INFECTED ON ART CARE PACKAGE

- ✓ Measure weight, height, and head circumference (HC if less than 3 years). Plot on growth chart, interpret, and classify nutritional status.

- ✓ Assess and treat any new illness while considering:
  - Are there any new WHO staging conditions? Especially Stage 3 or 4 which may represent a poor response to ART.
  - Are there any treatment side effects or toxicities?

- ✓ Provide ongoing care for any chronic conditions.

- ✓ Provide routine ART monitoring as per your local guideline schedule.
  - Clinical response
  - Immunologic (CD4) and virologic (viral load) response if available
  - ART toxicity surveillance

- ✓ Assess and promote patient adherence to the treatment regimen.
  - Discuss successes and challenges
  - Medication bottle inspection and pill counts
  - Caregiver support – provide individualized adherence counselling support when indicated.

- ✓ Provide Cotrimoxazole prophylaxis as indicated.

- ✓ Psychosocial support to the child and family, including the reassessment and empowerment of child disclosure process. Involve the child in his/her own healthcare.

- ✓ Ensure the infant receives routine child health services such as immunisation, Vitamin A supplementation, and deworming.

- ✓ Take a family history for HIV, TB, and any other concerns that may impact the infant's health or ability to receive ongoing chronic care. Encourage HIV testing for all family members, even if clinically well.

- ✓ Discuss family planning with the infant's parents and offer further information or family planning services as requested.

- ✓ Document health information in the Child Health Record / Passport and clinic file. Key information includes:
  - Child age and WHO stage
  - Nutritional and developmental assessment
  - Any medical problems and treatments
  - ARV regimen, dosages and quantity dispensed
  - Cotrimoxazole dosing and quantity dispensed (if indicated)
  - Laboratory results (CD4%, FBC, etc.)
  - Counselling notes
  - Review date

PHYSICAL HEAD TO TOE EXAMINATION OF A CHILD

1

- **Skeletal abnormalities:** motor activity, gait, shape
- **Skin abnormalities:** colour, hydration
- **State of health:** severity of illness, level of consciousness, growth and nutrition, development, level of hygiene

2

- Temperature
- Pulse (rate, rhythm and volume)
- Respiration
- Colour

3

- Weight (check against previous records)
- Head circumference
- Height/Length

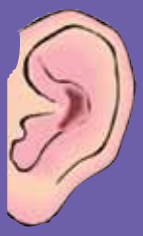
4

- Anterior fontanelle
- Posterior fontanelle (neonates)
- Hair
- Scalp
- Face

5

- Position & alignment
- Vision including fields
- Eyebrows
- Eyelids
- Conjunctiva
- Sclera
- Cornea
- Iris
- Pupils

6

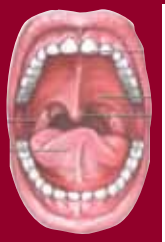


- Size
- Position
- Ear canal
- Ear drum
- Hearing

7

- Nasal Mucosa
- Septum
- Turbinates
- Frontal and Maxillary Sinuses

8



- Lips
- Buccal mucosa
- Teeth
- Gums
- Tongue
- Pharynx
- Hard & soft palates
- Lymph nodes

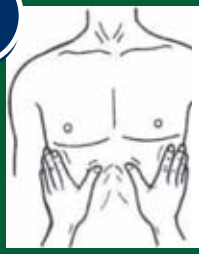
9

- Size of trachea
- Position of trachea

10

- Length of fingers
- Fingers and nails

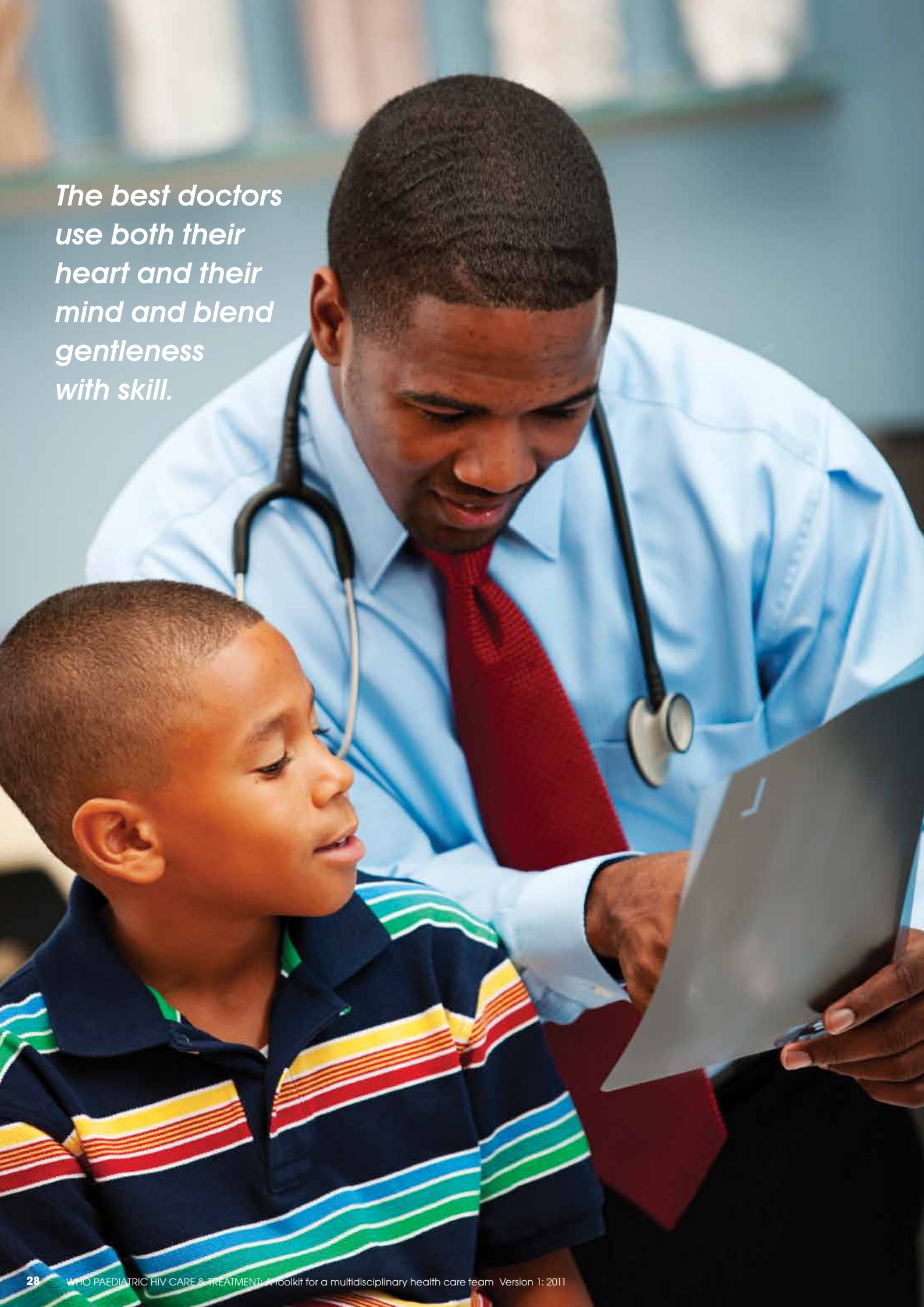
11



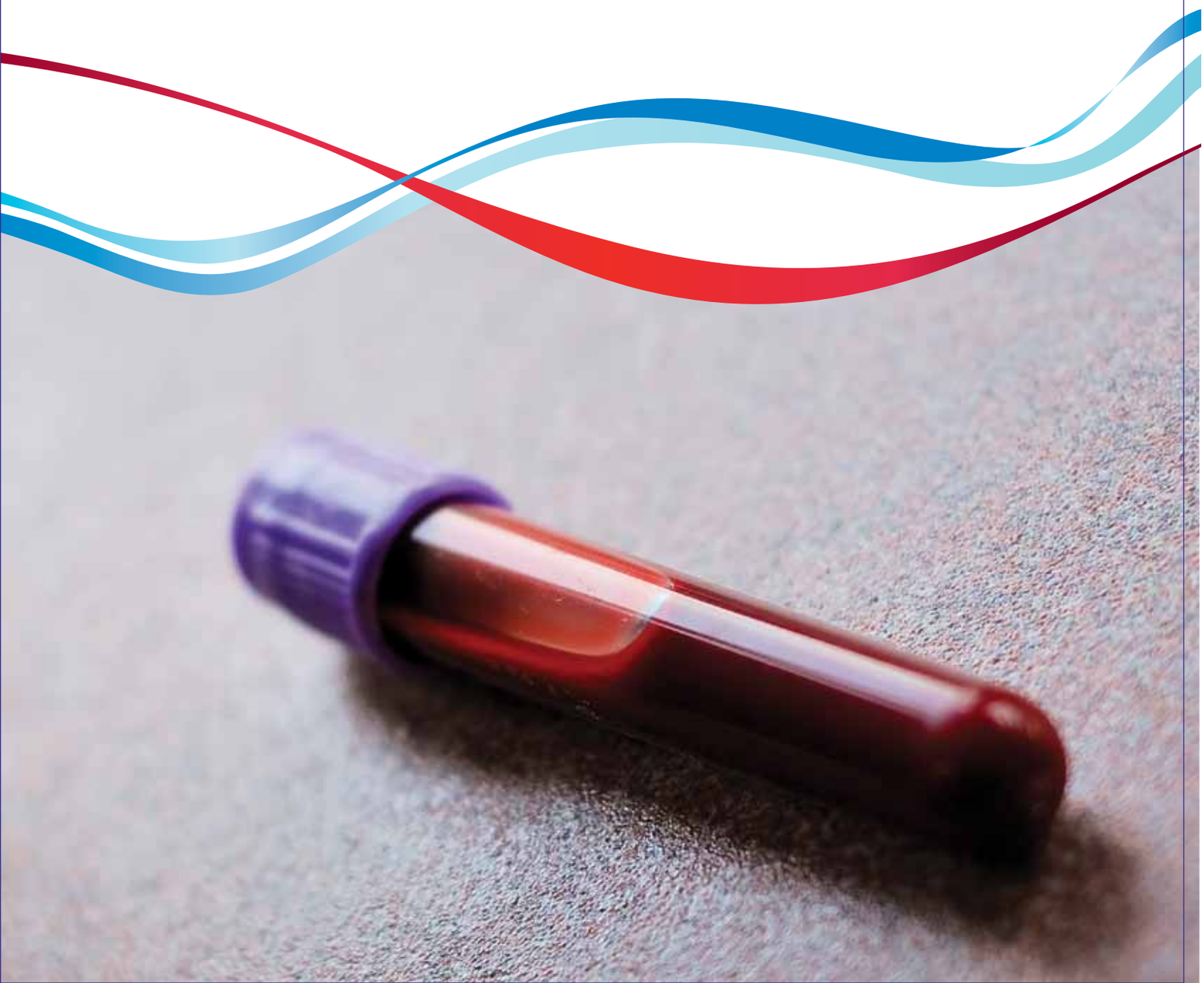
- Observe shape, symmetry of chest movements, breathing
- Palpate: position of apex beat
- Percussion: dullness
- Auscultation: breath & heart sounds

12

- Genitalia


The best doctors use both their heart and their mind and blend gentleness with skill.

DIAGNOSIS



DIAGNOSIS

Approximately half of perinatally HIV-infected children who do not receive any treatment will die by two years of age. Therefore, early identification of children exposed to and infected with HIV is key to reducing the risk of death. This begins with the identification of HIV-infected woman during pregnancy and close mother-infant follow-up. However, some infants and children are "late comers" or become ill with concerning symptoms. Therefore, just as all children are assessed for malnutrition and anaemia, HIV infection needs to be considered in all children.

KEY MESSAGE:

Early identification of HIV status among children is essential to prevent rapid HIV progression and death.

This health service delivery approach is called Provider Initiated Counselling & Testing (PICT) and is the recommended approach to HIV testing. Historically, HIV testing was often delegated to Voluntary Counselling and Testing (VCT) rooms and delivered as a separate service from routine child healthcare. In PICT, healthcare workers must take an active role in routinely integrating the offering of HIV testing to all children who come to the health facility. Of course, children with concerning signs and symptoms or family members with HIV will remain a priority focus. However, with the PICT approach we also recognize that HIV-infected patients can appear healthy and unaware of their status. The only way to know for sure is to test. The PICT approach to HIV testing remains voluntary and continues with pre- and post-test counselling information.

KEY MESSAGE:

Routine offering of HIV testing should be integrated into routine child health visits. An example of a PICT approach is expanding where HIV testing takes place to include exam or immunisation rooms for a one-stop consultation service.

ANTIBODY VERSUS VIROLOGIC TESTS

HIV testing can be done using either antibody or virologic tests. The table below explains some of the important differences between these tests.

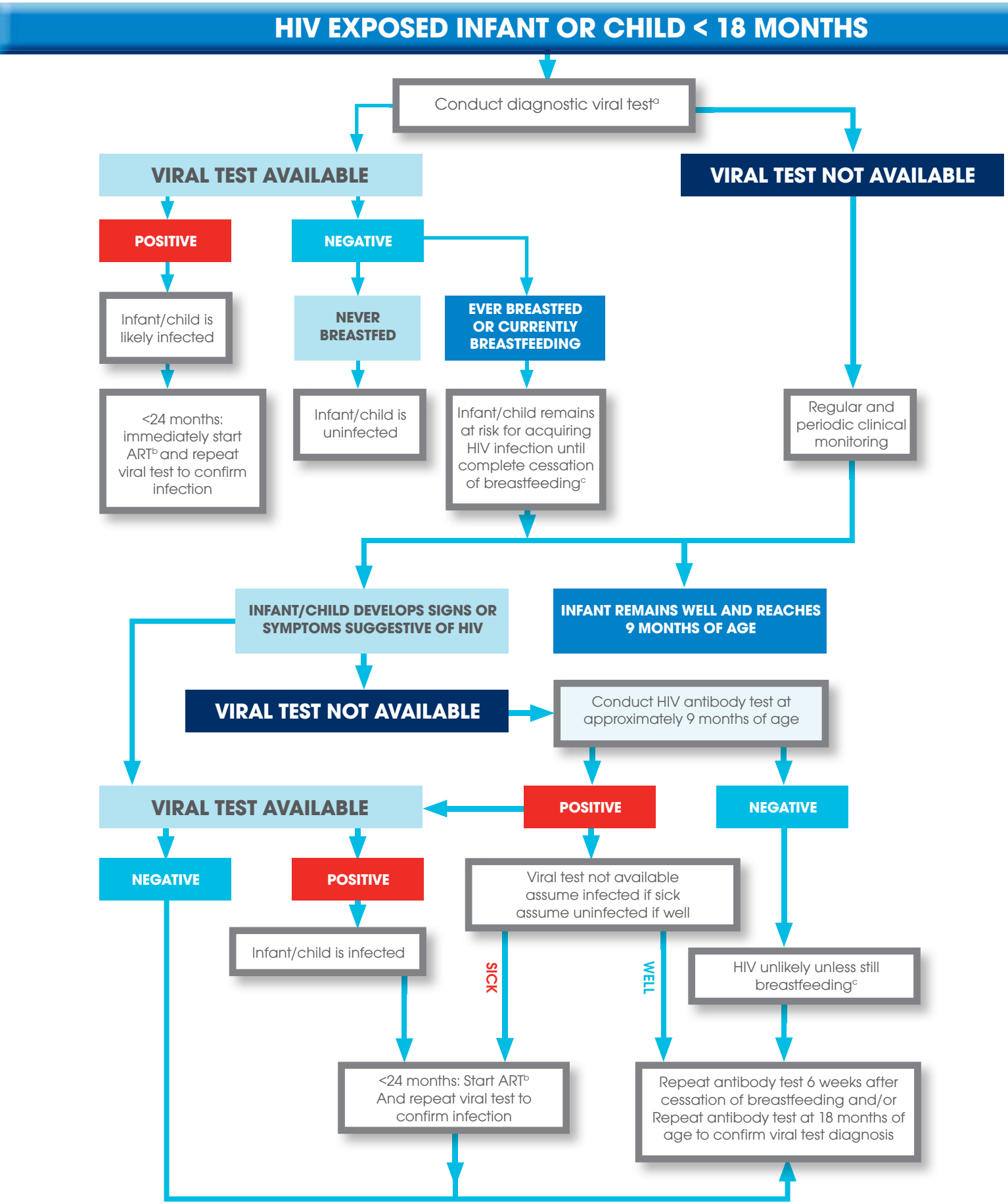
ANTIBODY TESTS	VIROLOGIC TESTS
These tests detect antibodies made by immune cells in response to the virus. They do not detect the virus itself. Antibodies from the mother pass on to the child and most have gone by 12 months of age, but in some instances they do not disappear until the child is 18 months of age. This means that a positive antibody test in children under the age of 18 months is not a reliable way to check for infection in the child. However, a positive test would indicate the infant is HIV exposed which may be of use in situations of unknown maternal HIV status.	These tests directly detect the presence of the HIV virus or products of the virus in the blood. Positive virological tests can therefore reliably detect HIV infection at any age, even before the child is 18 months old. If the tests are negative and the child has been breastfeeding, this does not rule out infection as the infant may have just become infected. Virological tests done six weeks or more after completely stopping breastfeeding rule out infection.
Examples of antibody tests: • Rapid HIV tests • ELISA	**Examples of virologic tests:** • HIV DNA PCR (collected by DBS) • HIV RNA PCR (viral load)

KEY MESSAGE:

Below 18 months of age a virologic test is needed to determine if a child is infected with HIV.

Using two different rapid tests for confirming HIV infection in children 18 months or older is preferred to ELISA due to rapid results, especially at primary healthcare facilities where specimen transport to a laboratory is required. ELISA is indicated as a tie-breaker when rapid tests differ.
(See algorithm, page 35)

Establishing the presence of HIV infection in HIV exposed infants and children less than 18 months of age in resource-limited settings

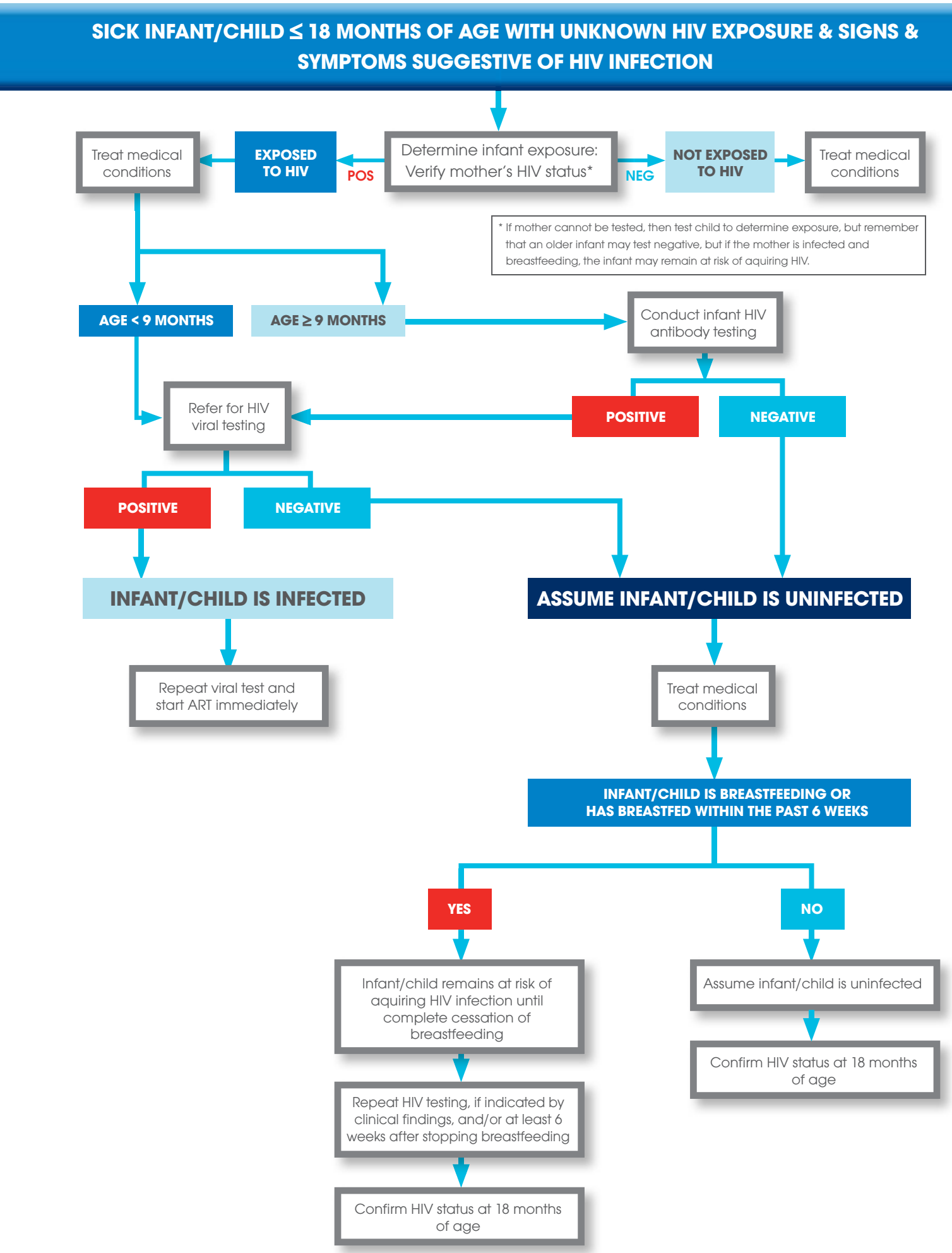


a For newborn, test first at or around birth or at the first postnatal visit (usually 4 - 6 weeks)

b Start ART, if indicated, without delay. At the same time, retest to confirm infection.

c The risk of HIV transmission remains as long as breastfeeding continues.

Establishing the presence of HIV infection in sick infants and children less than 18 months of age, in resource-limited settings where viral testing IS AVAILABLE.



Establishing the presence of HIV infection in sick infants and children less than 18 months of age, in resource-limited settings where viral testing is NOT AVAILABLE.

SICK INFANT/CHILD ≤ 18 MONTHS OF AGE WITH UNKNOWN HIV EXPOSURE & SIGNS & SYMPTOMS SUGGESTIVE OF HIV INFECTION

Confirm exposure:
Verify mother's HIV status

NEG → **NOT EXPOSED TO HIV** → Treat medical conditions

POS

Maternal testing not possible

EXPOSED CONFIRMED

CONDUCT HIV ANTIBODY TESTING IN INFANT/CHILD

POSITIVE

INFANT/CHILD IS EXPOSED AND MAY BE INFECTED

AND

INFANT/CHILD HAS SYMPTOMS THAT MEET CLINICAL CRITERIA FOR PRESUMPTIVE SEVERE HIV INFECTION

NO

Monitor infant/child's clinical condition frequently

AND

Repeat HIV antibody test at around 9 months and at 18 months of age

YES

Provide presumptive clinical diagnosis

Start ART immediately and confirm HIV status using standard rapid testing at 18 months

NEGATIVE

ASSUME INFANT/CHILD IS UNINFECTED AND/OR UNEXPOSED

Treat medical conditions

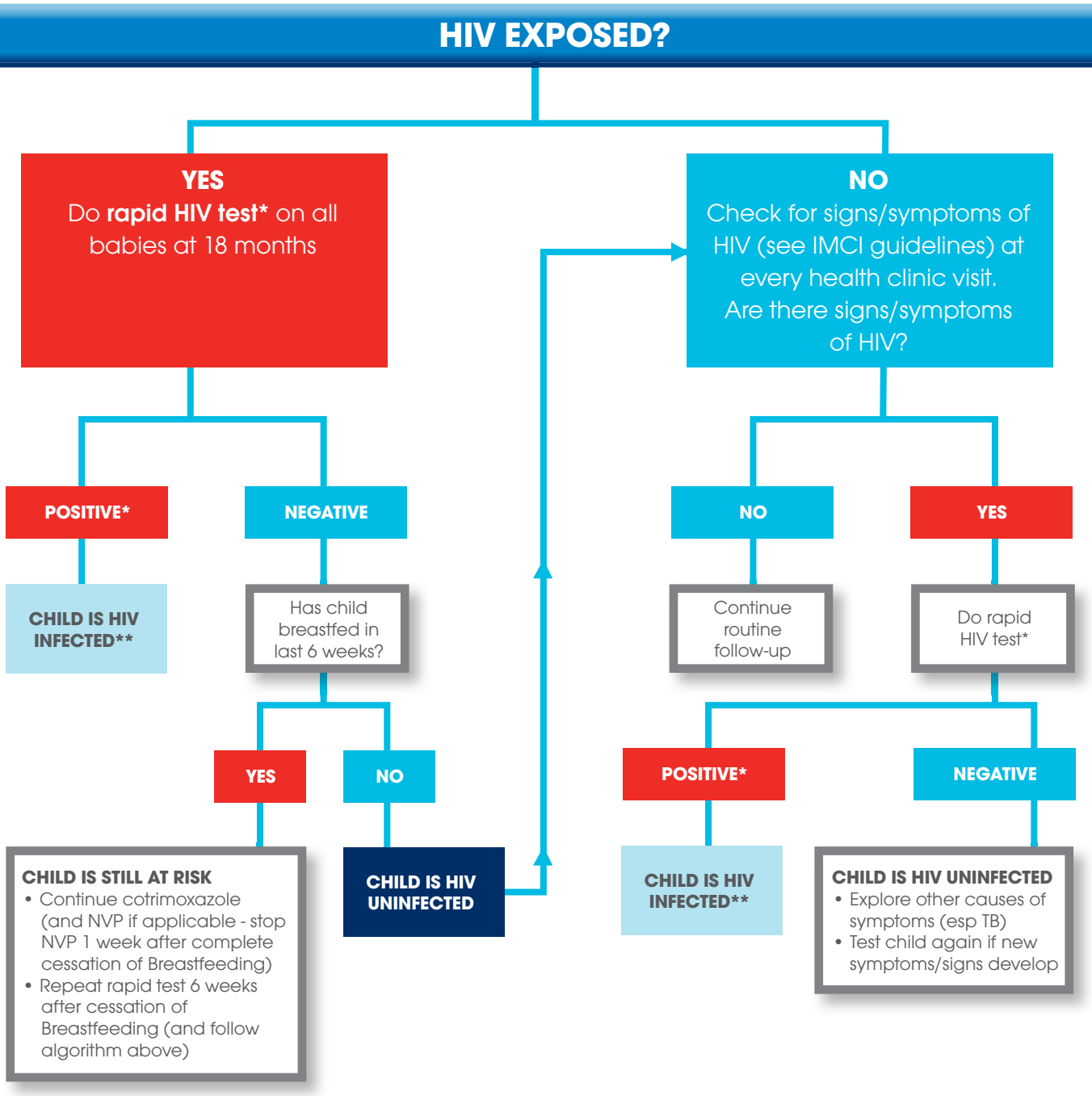
Regular and periodic clinical monitoring

Repeat HIV testing for infant/child known to be exposed or continuing to breastfeed

KEY MESSAGE:

Don't rely on verbal report of HIV status. Confirm status of mother if no documented result in the last 3 months

HIV TESTING IN CHILDREN >18 MONTHS



** **ALL HIV INFECTED** children need to be urgently referred to an ART clinic for clinical staging and CD4 testing (if available).
They should be started on cotrimoxazole while awaiting referral and further management

* See page 35 for rapid HIV testing procedures

RAPID HIV TESTING PROCEDURE

DO RAPID HIV TEST (see pg 46)

POSITIVE

Do second rapid HIV test (different brand)

POSITIVE

CHILD IS HIV INFECTED
Refer for clinical staging and CD4 testing (if available)

NEGATIVE (results are inconclusive)

Send HIV Elisa for diagnosis

NEGATIVE

Child is HIV uninfected (retest after window period)

INVALID

Check procedures and repeat test

KEY MESSAGE:

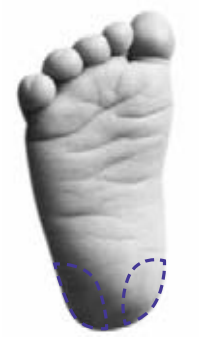
Always take into consideration your clinical assessment of the patient. If test results do not conform to your clinical assessment, consider repeating the test or referring for a second opinion.

DRIED BLOOD SPOTS (DBS) FOR INFANT DIAGNOSIS

CHOOSE WHERE YOU WILL PRICK THE INFANT ACCORDING TO SIZE AND AGE:

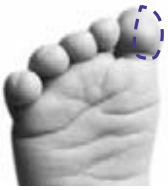
a. SMALL INFANTS UP TO ABOUT THE AGE OF 4 MONTHS AND UP TO 5 KG – PRICK THE HEEL.

The best area is the lateral section of the heel.
Do not prick the back of the heel where the bone is.



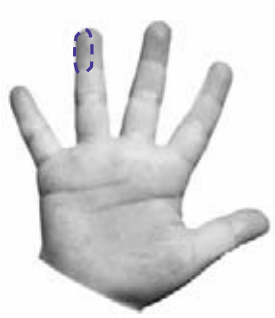
b. LARGER INFANTS BETWEEN 4 AND 10 MONTHS OLD, OR MORE THAN 5 KG – PRICK THE BIG TOE.

The lateral side or outside part of the big toe works best. Do not prick the very end of the toe where the bone is close to the skin.



c. OLDER INFANTS OVER 10 MONTHS OR MORE THAN 10 KG – PRICK THE FINGER.

The best finger is the ring finger on the left hand as this finger will be the least used by the baby.
Select the lateral side of the fingertip.
Do not stick the very end of the finger where the bone is close to the skin.
The thumb is not recommended because it will be the most painful.



STANDARD OPERATING PROCEDURES FOR TAKING BLOOD FROM INFANTS FOR THE HIV DNA PCR TEST

- Two types of blood samples can be used for an HIV DNA PCR test:
    1. Dried blood spots (DBS)
    2. Whole blood in an EDTA / purple top tube

- Dried blood spots are technically easier to obtain, and are suitable for blood sampling in the primary health care setting.
- Handle all specimens as if they are capable of transmitting infectious agents.

1. DRIED BLOOD SPOT COLLECTION AND STORAGE

Dried blood spots (DBS) can be collected from a heel-stick (or toe-stick or finger-stick) or venous blood onto filter paper (DBS card). The filter paper is framed, preprinted with 3 circles and has space for labeling.

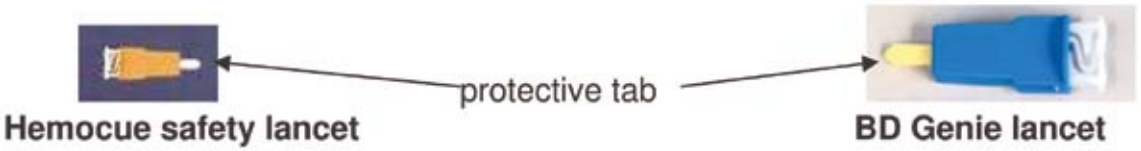
Materials Required:

- Powder-free gloves
- Disinfectant for skin
- Cotton wool or gauze
- Single use, spring-loaded lancing device (e.g. Hemocue or similar device)
- DBS Cards (Figure 1: correctly labeled)
- Zip-lock plastic bags (biohazard bags)
- Desiccant sachets
- Drying rack
- Laboratory forms per country protocol

DBS Collection Kits containing consumables for blood sampling and collection are available and instructions for performing the procedure are printed on the back of each kit.

CONTENTS OF A COLLECTION KIT

The **Safety Lancet** makes a sufficiently deep incision (2.25mm) to ensure an adequate flow of blood.
The lancet is safe, puncturing the skin and retracting automatically within one or two milliseconds. The needle is concealed inside the plastic casing before and after use and the lancet cannot be reused.



Read the instructions on the protective tab. **Twist** (Hemocue) or **Pull** (BD Genie) off the protective tab, hold against skin, and press the white plunger

Method for collection (see Figures 7 - 10)

- Label the DBS card with the patient's name, patient's hospital or clinic number and the date that the sample was obtained. Use a ballpoint pen or other water-indelible marker directly on the paper (Figure 1).
- Complete the laboratory form and if required, carefully stick the bar-code from that form onto the back of the DBS card as shown in Figure 1.
- Clean the selected area of skin (heel, toe or finger) with a skin disinfectant and allow to dry. Take care to keep away from bony prominences (Figure 3).
- Position the foot or hand with the puncture-site downwards.
- Use the loaded lancing device to puncture the skin to allow the blood to flow.
- While holding the foot correctly (Figures 7 – 10), apply & release pressure to allow a drop to form. Do not squeeze or "milk" the puncture site as this may dilute the blood with tissue fluid. Wipe away/discard first drop of blood. Once a drop of blood has formed, lightly touch the drop to the preprinted circle on the filter paper (DBS card) allowing it to soak onto the circle. Allow the next drop of blood to form, and allow it to soak onto the adjacent marked circle on the filter paper.
- Repeat until all marked circles are adequately filled with blood. The preprinted circles hold 50-75 uL blood each when fully filled (Figure 1). Samples with insufficient blood cannot be processed (Figure 6). Fill all three of the marked circles. If insufficient blood flow occurs, a second puncture may need to be made. Do not excessively saturate the card with blood. Do not touch or attempt to smear the blood spots.
- Apply gauze or cotton wool to the puncture site after obtaining sufficient blood.
- Dispose of the lancet into a sharps container.

Method for drying:

- Place the DBS cards in a drying rack to dry (Figure 4). Place only one card per drying slot in the drying rack and do not allow the cards to touch each other.
- Allow to dry for at least three hours. The blood spots should be a dark brown colour once properly dried.
- Do not dry artificially with heat and do not expose to direct sunlight.

Method for storing/submission to laboratory:

- After the blood spots have dried, place each card in a separate zip-lock plastic bag. Insert one desiccant sachet per bag (Figure 5).
- Fold the corresponding, completed laboratory form in half and insert into the pocket of the plastic bag with the patient details facing outwards.
- Ensure all information is provided on the laboratory form including:
    - Baby's date of birth
    - Contact details for the sister or doctor concerned
    - Clear description that this is the baby's sample if the mother's hospital number is used
- DBS samples are very stable and, if necessary, can be kept overnight or over the weekend before being submitted to the laboratory.

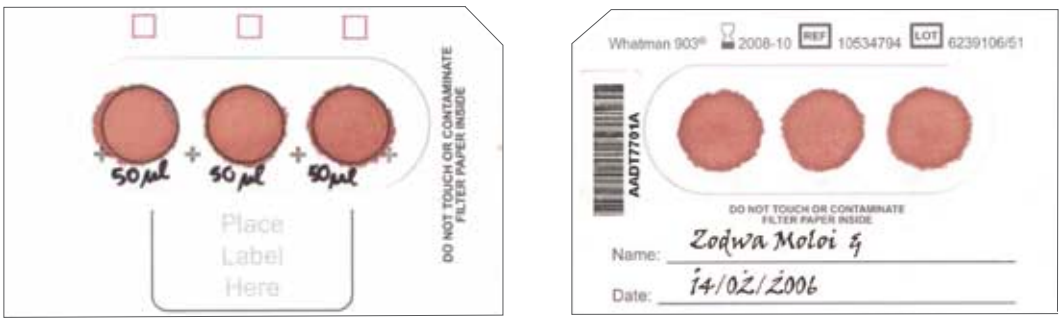


Figure 1. The size of the blood spot and the penetration of the spot through to the reverse side of the card allow for some assessment of the blood volume. All 3 preprinted circles should be completely filled with blood.

PROCEDURE FOR HEEL PRICK

1. Warm the area
2. Wash hands, put on gloves
3. Position baby with foot down
4. Clean area, dry 30 sec
5. Press lancet into foot, prick skin
6. Wipe away first drop
7. Allow large drop to collect
8. Touch blood drop to card
9. Fill entire circle with drop
10. Fill at least 3 circles
11. Clean foot, no bandage

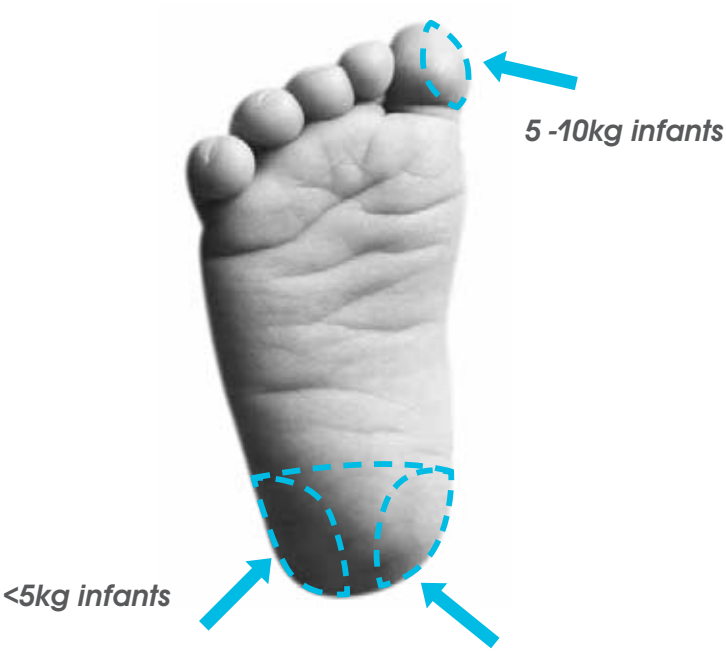


Figure 3. Heelprick and toe stick positions

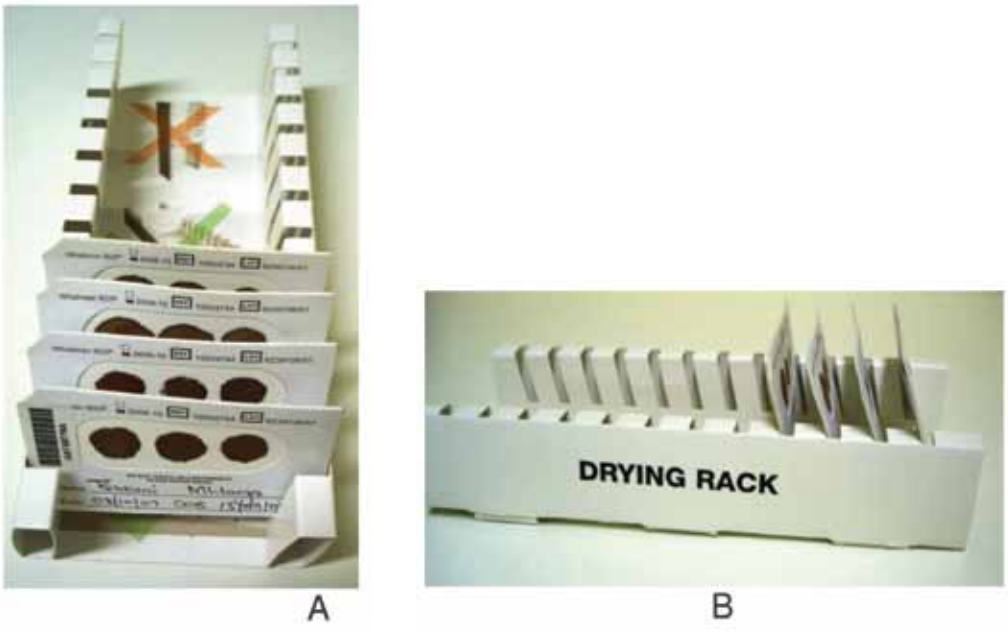


Figure 4. Dry completely before packing (blood turns dark red)

Figure 5. One DBS card and one dessicant sachet per biohazard bag

Figure 6. Insufficient sample for processing – samples rejected

Blood spots should fill the circle and should not be 'smeared' or crusted. Blood spotted outside the circle cannot be used.

Note: 7-10 reflect the previously used 'Guthrie DBS cards', however the principles of blood sampling are the same as for the framed DBS cards.

Figure 7. Correct holding position by mother and handling of heel

Figure 8. Allow large drop of blood to collect

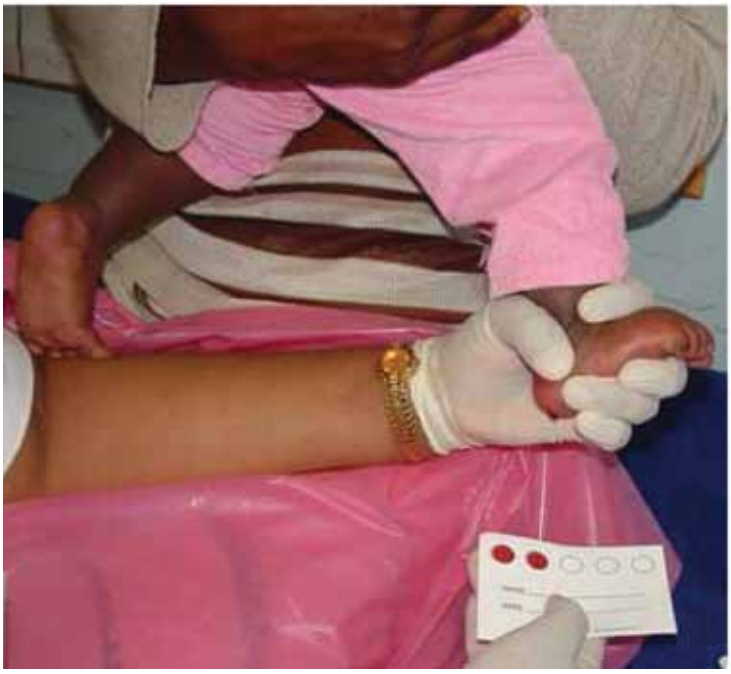


Figure 9. Lateral view of correct grip for heelprick

Figure 10. Collection from toe-prick

2. WHOLE BLOOD COLLECTION

Clotted whole blood samples interfere with HIV DNA PCR test results and will not be processed by the laboratory. Take care to mix whole blood samples well.

Materials Required:

- Powder-free gloves
- Disinfectant for skin
- Cotton wool or gauze
- Single use, spring-loaded lancing device (e.g. Hemocue) or 23 Gauge needle (blue)
- EDTA tube (BD microtainer with BD Microgard closure; 8mm diameter; BD catalogue no. 365975)
- Zip-lock plastic bags
- Complete the local laboratory requisition form with all the patient's details (Figure 2).
- Label the microtainer.

Collect blood in an approved purple top (EDTA) microtainer by using one of the following methods:

1. Heel/Finger Prick Method

- Clean the proposed puncture site and position as mentioned above.
- Puncture heel or finger using the disposable lancing device.
- Allow drops of blood to collect and fall into the purple top microtainer gently shaking the tube after each drop to prevent clotting. Squeezing at the puncture site will dilute the blood with tissue fluid.
- Ideally there should be 500µl (microlitres) of blood (minimum volume of 250µl)
- Place the lid on the microtainer and invert several times to prevent the formation of clots.

2. 'Vein Drain' Method

- Using a 23 Gauge (blue) needle, prick the baby on the dorsal vein of the hand. (usually overlying the 4th metacarpal)
- Allow blood to drop out slowly out of the back of the needle into the purple top microtainer gently shaking the tube after each drop to prevent clotting.
- Ideally there should be 500µl (microlitres) of blood (minimum volume of 250µl)
- Place the lid on the microtainer and invert several times to prevent the formation of clots.
- Remember to maintain universal precautions as there is a greater risk of sustaining a needle-stick injury when using this method.

3. Formal venesection

- Blood can also be sampled into larger EDTA Vacutainer / purple top tubes. Minimum volume of whole blood is 1ml to allow for dilution with EDTA in the tube.

3. RECORD KEEPING

For PCR testing the following record keeping is required:

1. Correctly completed laboratory form to ensure that the laboratory can inform the clinic should there be a problem with the PCR test and infant testing rates can be measured to assess the PMTCT program.
2. Clinic infant testing register to document infants that have been tested and ensure PCR test results are obtained and communicated to parents or caregivers. Document the treatment site to which HIV-infected infants have been referred for care.
3. Specimen transport check list as a record of the PCR sample being transported to the laboratory for analysis
4. Infant's Child Health Record/Passport to maintain complete medical records indicating that a PCR test has been done, the date it was done & the test result

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CONTRIBUTORS

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CLINICAL PICTURES

courtesy of Dr.Tracy Creek and the BOTUSA-Francistown PMTCT Project, Francistown, Botswana

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STANDARD OPERATING PROCEDURE: TAKING BLOOD FOR HIV ANTIBODY TESTING

WHOLE BLOOD - SPECIMEN COLLECTION AND TESTING PROCEDURES

- Check kit before use. Use only items that have not expired or been damaged.
- Allow kit and stored specimens to reach room temperature before use.
- Always use universal safety precautions when handling specimens.
- Keep work area clean and organized.
- Please note that this is intended for use as a guideline only. Refer to product insert or standard operating procedure (S.O.P.) for further information.

Abott Determine Test - used as an example

Image courtesy of Gary Pieterse

- Determine HIV Rapid Test kit components.

- Completely remove the foil cover from the test strip and label it with the patient's details

- Clean the patient's finger using an alcohol swab.
- Allow the finger to air-dry. Prick the patient's finger.
- Wipe away the first drop of blood. Allow another drop of blood to collect at the puncture site.
- Collect the blood into the Determine heparinised capillary tube.

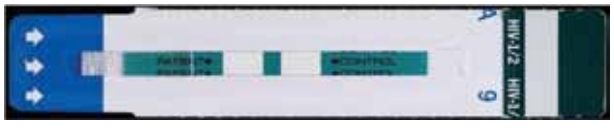
- Allow the blood to run into the capillary tube, until between the two black lines

- Gently touch the capillary tube to the test pad, allowing the blood to flow onto the pad.
- Avoid damaging the test pad by tapping it too hard.
- Allow the contents of the capillary tube to empty onto the pad.
- A small drop will be left behind in the tube.

- Add one drop of Determine Chase buffer to the test pad, holding the bottle at 90 degrees to the test strip.
- This will allow the accurately measured drop to be dispensed.

- Using a digital timer, time the test for **15 minutes**.
- Do not read after 60 minutes.
- In this case, discard the strip and retest.
- Record the results on the results log.

positive (patient and control lines present)



invalid (no control line)

negative (only control line present)

invalid (patient line visible but no control line)

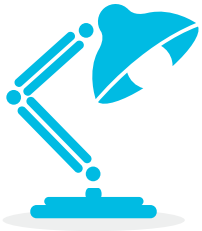
A mother understands what a child does not say.

Jewish proverb

ART ELIGIBILITY, INITIATION & FOLLOW-UP

ART ELIGIBILITY, INITIATION & FOLLOW UP

In 2010 paediatric HIV care guidelines expanded eligibility criteria for the initiation of antiretroviral therapy (ART). This was in response to a greater understanding about the rapid and often unpredictable progression of HIV infection to serious illness and death, especially in young infants.



KEY MESSAGE:

Assessment for ART should be made on an ongoing basis for children not yet initiated.

The determination of ART eligibility is made using several factors, including patient age, WHO stage based on clinical condition and immunologic stage based on CD4.
The CD4 count in children normally starts higher than adults, reaching adult-level values at around 5 years of age. Therefore, for children under 5 years of age, the CD4 percentage in addition to the standard total CD4 count is considered useful.

WHEN TO START ANTIRETROVIRAL THERAPY IN INFANTS AND CHILDREN

ART Eligibility for children with CONFIRMED HIV INFECTION

AGE CATEGORY		CRITERIA		
		Immunological		Clinical WHO staging
INFANTS	**Less than 12 months of age**	**ALL** , irrespective of CD4 count or WHO staging		
CHILDREN	**12 - 24 months of age**	**ALL** , irrespective of CD4 count or WHO staging *(Conditional WHO recommendation. Use local guidance)*		
	24 - 59 months of age	CD4% ≤ 25% **OR** CD4 count ≤ 750 cells/mm^2 (whichever is lower)	**OR**	Stage III and IV
	Age 5 years and older	CD4 count ≤ 350 cells/mm^2 (As in adults)	**OR**	Stage III and IV

Special considerations

CONSIDERATION	RECOMMENDATION
Viral testing not available	• Use the WHO Presumptive diagnostic criteria for children <18 months • Initiate ART • Confirm HIV infection as soon as possible
CD4 count not available	• The predictive value of the total lymphocyte count (TLC) for mortality is not reliable, especially for younger infants, and it is therefore not recommended to use TLC to guide decisions on starting ART

Criteria for presumptive diagnosis of severe HIV disease in infants and children <18 months of age where viral testing is not available

A PRESUMPTIVE DIAGNOSIS OF SEVERE HIV DISEASE SHOULD BE MADE IF:	
1. The child is confirmed as being HIV anti body-positive **AND**	**2a.** The infant is symptomatic with two or more of the following: • oral thrush • severe pneumonia • severe sepsis **OR** **2b.** A diagnosis of any AIDS-indicator condition(s) can be made
Other findings that support the diagnosis of severe HIV disease in an HIV-seropositive infant include: • Recent HIV-related maternal death or advanced HIV disease • Child's %CD4+ <20%	
Confirm the diagnosis of HIV infection as soon as possible.	

AIDS-indicator conditions include some, but not all, HIV paediatric clinical stage 4 conditions such as Pneumocystis pneumonia, cryptococcal meningitis, severe wasting or severe malnutrition, Kaposi sarcoma and extrapulmonary TB.

As per the IMCI definition:

Oral thrush: Creamy white-to-yellow soft small plaques on red or normally coloured mucosa which can often be scraped off (pseudomembranous), or red patches on the tongue, palate or lining of mouth, usually painful or tender.

Severe pneumonia: Cough or difficulty breathing in a child with chest indrawing, stridor or any of the IMCI general danger signs; i.e. lethargic or unconscious, not able to drink or breastfeed, vomiting, and presence or history of convulsions during current illness; responding to antibiotics.

Severe sepsis: Fever or low body temperature in a young infant with any severe sign, e.g. fast breathing, chest indrawing, bulging fontanelle, lethargy, reduced movement, not feeding or sucking breast milk, convulsions.

It is unclear how often CD4 is lowered in the above conditions in HIV-uninfected children.

KEY MESSAGE:

Remember that an important requirement of ART initiation is also psychosocial readiness, including a supportive caregiver.

ANTIRETROVIRAL THERAPY

INITIATION & FOLLOW UP

- Treatment for HIV infection involves the use of antiretroviral drugs to suppress (reduce the frequency of) replication of HIV in the body and its destruction of the immune system.

- The primary goal of ART is to:
    - Suppress the viral load as much as (and as long as) possible. It's best if the viral load is suppressed to an undetectable level
    - Restore and/or preserve immunological function (stabilise or improve CD4 count)
    - Stabilise and/or improve clinical status (no new HIV-related infections, improved growth, stable or improved neurological status)
    - Improve quality of life (e.g. improved appetite, increased energy, fewer symptoms)

- Antiretroviral drugs are divided into classes based on how and where they attack the virus during the HIV lifecycle. Drugs of different classes work to disrupt viral replication at different times during the cycle. In order to treat HIV effectively, a combination of ARV drugs is required.

Once an HIV infected child is eligible for ART (see ART eligibility page 49), the caregiver needs to:

1. Prepare the family for ARV initiation (see page 247)

2. Record baseline clinical and laboratory information
    - Child's weight and height (see page 174)
    - WHO Clinical Staging (see Pictionary of WHO Stages section, page 90)
    - Presence of symptoms suggestive of TB (see page 139)
    - Developmental level (see page 209)
    - CD4 count and percentage, Viral load, FBC if on AZT, ALT if on NVP

3. Choose an effective ARV regimen
    - ARV Treatment Guidelines for Children (see pages 54 & 55)
    - Correct dosage and formulation - (see pages 56 & 57)
    - Possible drug-drug and drug-food interactions to take into consideration (see pages 63 - 67)

4. Develop an appropriate follow-up schedule for monitoring of ART
    - Ongoing monitoring includes assessment of clinical status, laboratory parameters and adherence.
    - Monitoring includes the assessment of response to ART for:
        - **Efficacy:** Monitor success or failure of the treatment (see page 77).
        - **Safety:** Monitor for toxicity or adverse events related to ART. (Side effects for specific antiretroviral drugs are listed on page 69 - 71 and evaluation and management on page 73)

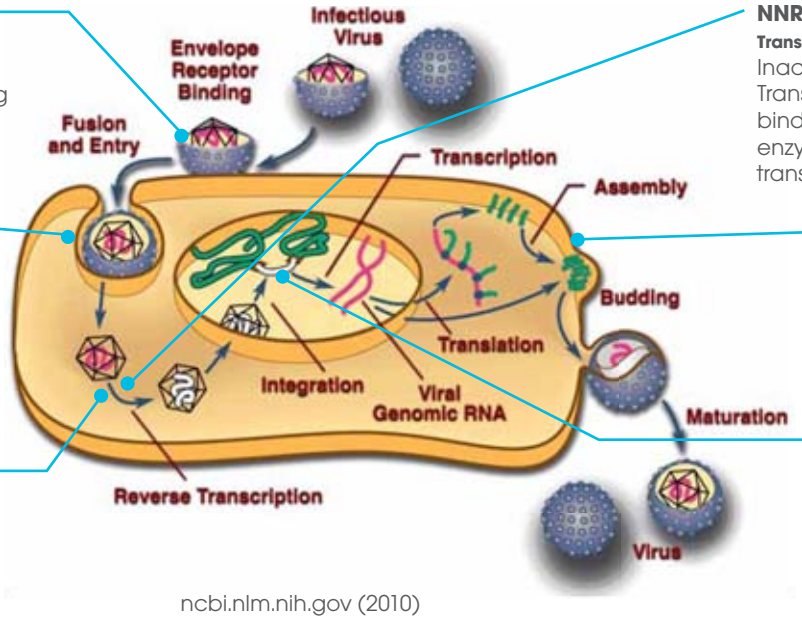
ARV DRUGS

MECHANISM OF ACTION

CCR5 INHIBITORS
Prevent attachment of the viral gp120 protein to the CCR5 co-receptor by binding to this receptor. This results in entry inhibition

FUSION INHIBITORS
Bind to the viral gp41 and prevents the conformational change required for viral fusion and entry into cells

NRTI's (Nucleoside Reverse Transcriptase Inhibitors)
Mistaken for a nucleotide and incorporated in the growing DNA chain prevents further growth of the pro-viral DNA chain



ncbi.nlm.nih.gov (2010)

NNRTI's (Non-Nucleoside Reverse Transcriptase Inhibitor)
Inactivates the Reverse Transcriptase enzyme by binding directly to the enzyme. This prevents reverse transcription from taking place

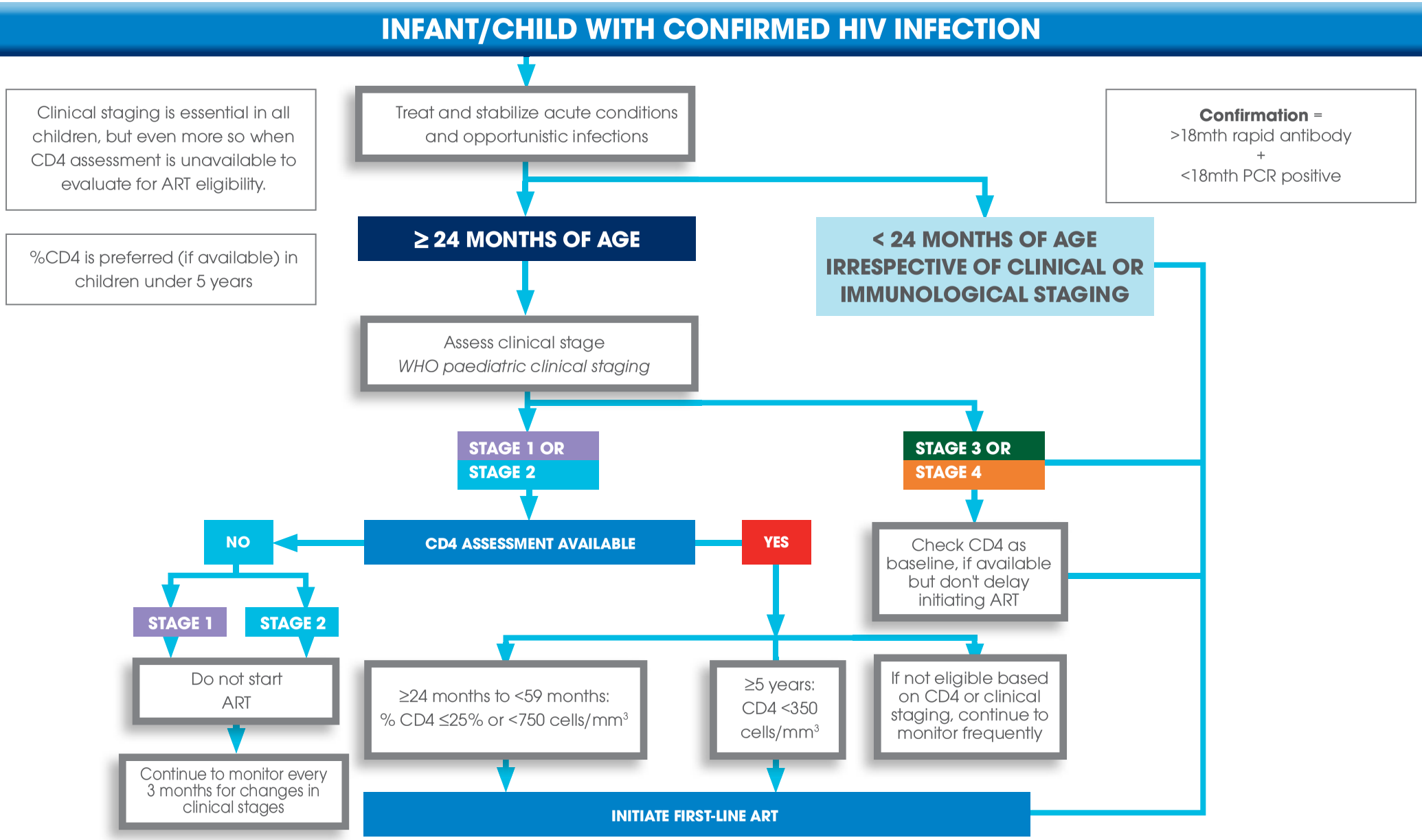
PI's (Protease Inhibitors)
Proteins necessary for viral assembly is not available due to Protease enzyme inhibition

INTEGRASE INHIBITORS
Prevent Integrase enzyme from integrating viral DNA into the nucleus

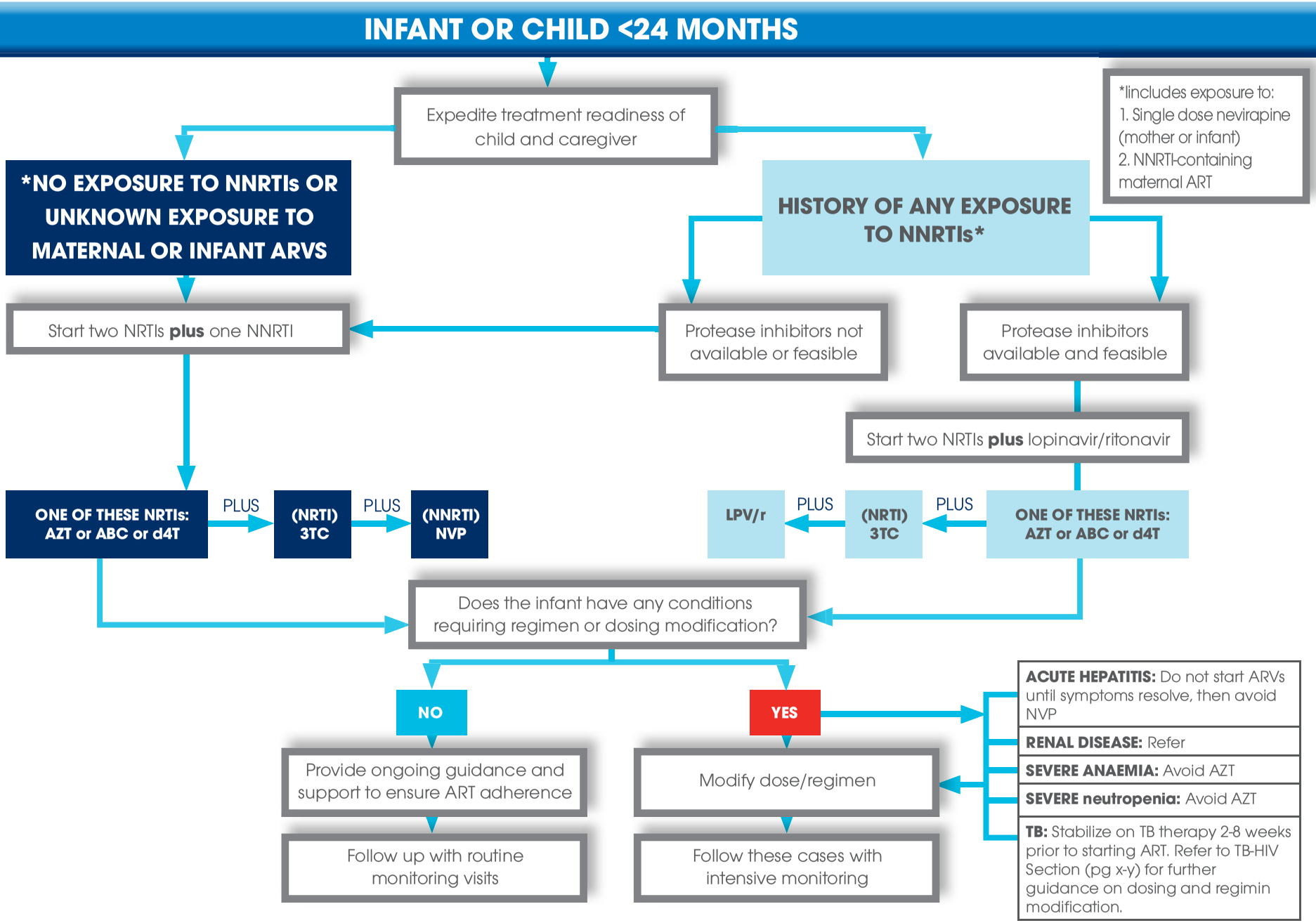
SUMMARY OF DRUG CLASSES

NRTIs	Stavudine	d4t	Zerit ®	**PIs**	Lopinavir/ ritonavir	LPV/r	Kaletra ® Aluvia ®
	Lamivudine	3TC	3TC ®		Ritonavir	RTV	Norvir ®
	Abacavir	ABC	Ziagen ®		Atazanavir	ATV	Reyataz ®
	Zidovudine	ZDV	Retrovir ®		Saquinavir	SQV	Invi-Rase ®
	Didanosine	ddI	Videx ®		Indinavir	IDV	Crixivan ®
NNRTIs	Nevirapine	NVP	Viramune ®		Nelfinavir	NFV	Vira-Cept ®
	Efavirenz	EFV	Stocrin ®		Darunavir	DRV	Prezista ®
	Etravirine	ETV	Intelence®	**IIs**	Raltegravir	RAL	Isentress ®
NtRTIs	Tenofovir	TDF	Viread ®	**Entry Inhibitors**	Maraviroc Enfuvirtide	– ENF	Celsentri ® Fuzeon ®

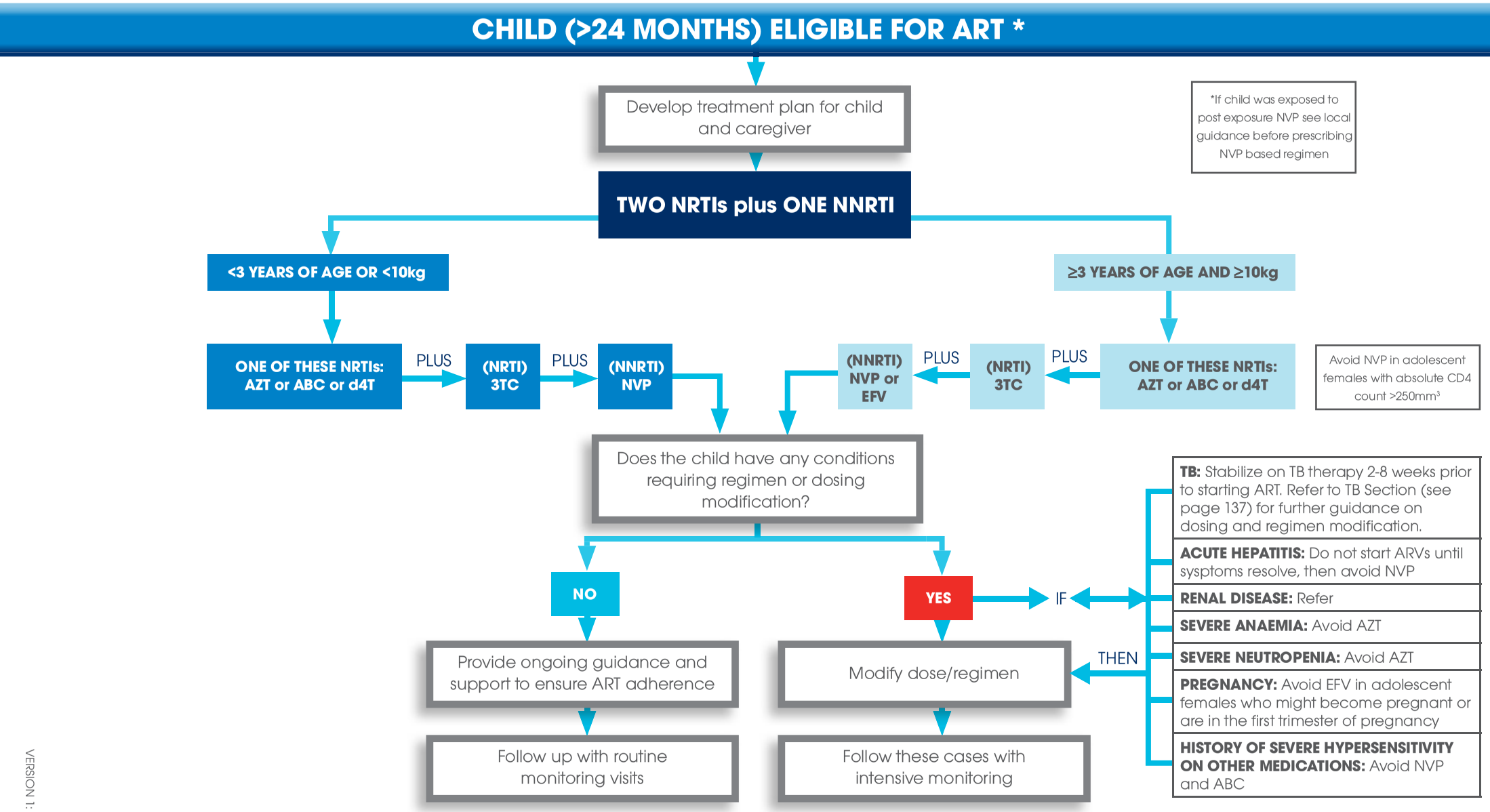
INITIATING ART FOR INFANTS AND CHILDREN



FIRST-LINE ART FOR INFANTS AND CHILDREN <24 MONTHS



FIRST-LINE ART REGIMENS FOR CHILDREN >24 MONTHS



Harmonized dosing schedules

Simplified table giving number of tablets of child-friendly solid formulations for morning and evening dosing

Drug	Strength of paediatric tab (mg)	Children 6 weeks of age and above										Strength of adult tab (mg)	Number of adult tablets by weight-band	
		Number of paediatric tablets by weight-band morning and evening												
		3 – 5.9kg		6 – 9.9kg		10 – 13.9kg		14 – 19.9kg		20 – 24.9kg			25 – 34.9kg	
		am	pm	am	pm	am	pm	am	pm	am	pm		am	pm
SINGLE DRUGS														
AZT	60	1	1	1.5	1.5	2	2	2.5	2.5	3	3	300	1	1
ABC	60	1	1	1.5	1.5	2	2	2.5	2.5	3	3	300	1	1
NVP	50	1	1	1.5	1.5	2	2	2.5	2.5	3	3	200	1	1
ddI	25	2[a]	2[a]	3	2	3	3	4	3	4	4	25	5	5
COMBINATIONS														
AZT/3TC	60/30	1	1	1.5	1.5	2	2	2.5	2.5	3	3	300/150	1	1
AZT/3TC/NVP	60/30/50	1	1	1.5	1.5	2	2	2.5	2.5	3	3	300/150/200	1	1
ABC/AZT/3TC	60/60/30	1	1	1.5	1.5	2	2	2.5	2.5	3	3	300/300/150	1	1
ABC/3TC	60/30	1	1	1.5	1.5	2	2	2.5	2.5	3	3	[b]		
d4T/3TC	6/30	1	1	1.5	1.5	2	2	2.5	2.5	3	3	30/150	1	1
d4T/3TC/NVP	6/30/50	1	1	1.5	1.5	2	2	2.5	2.5	3	3	30/150/200	1	1
LPV/r [c]	100/25	NR	NR	2	1	2	2	2	2	2	2	100/25	3	3

[a] This dose of ddI is only appropriate for children 3 months of age or older and weighing between 5 kg and 5.9 kg.

[b] See ABC/3TC FDC dosing table in 2010 WHO Guidelines (Antiretroviral Therapy for HIV Infection in Infants and Children: Towards Universal Access.)

[c] Higher doses of LPV/r may be required when co-administered with enzyme-inducing drugs such as NVP, EFV, fos-amprenavir (FPV), rifampicin.

Simplified table giving ml of liquid formulation and number of tablets or capsules of adult solid formulation for morning and evening dosing

Drug	Strength of paediatric liquid (mg/ml) and adult tab/ cap (mg)	Children 6 weeks of age and above									
		Number of tablets/capsules or ml by weight-band morning and evening									
		3 – 5.9kg		6 – 9.9kg		10 – 13.9kg		14 – 19.9kg		20 – 24.9kg	
		am	pm	am	pm	am	pm	am	pm	am	pm
AZT	10 mg/ml; 300 mg	6 ml	6 ml	9 ml	9 ml	12 ml	12 ml	0.5	0.5	1	0.5
ABC	20 mg/ml; 300 mg	3 ml	3 ml	4 ml	4 ml	6 ml	6 ml	0.5	0.5	1	0.5
3TC	10 mg/ml; 150 mg	3 ml	3 ml	4 ml	4 ml	6 ml	6 ml	0.5	0.5	1	0.5
d4T	1 mg/ml; 15 mg or 20 mg	6 ml	6 ml	9 ml	9 ml	1 (15 mg)	1 (15 mg)	1 (20 mg)	1 (20 mg)	1 (20 mg)	1 (20 mg)
NVP	10 mg/ml; 200 mg	5 ml	5 ml	8 ml	8 ml	10 ml	10 ml	1	0.5	1	0.5
ddI	10 mg/ml; 25 mg	3 ml [a]	3 ml [a]	5 ml	5 ml	6 ml	6 ml	4	3	4	4
LPV/r	80/20 mg/ml	1 or 1.5 ml[b]	1 or 1.5 ml[b]	1.5 ml	1.5 ml	2 ml	2 ml	2.5 ml	2.5 ml	3 ml	3 ml

[a] This dose of ddI is only appropriate for children 3 months of age or older and weighing between 5 kg and 5.9 kg.

[b] LPV/r liquid: for 3 – 3.9 kg, use 1 ml a.m. and 1 ml p.m.; for 4 – 5.9 kg use 1.5 ml a.m. and 1.5 ml p.m. In addition, higher doses of LPV/r may be required when co-administered with enzyme-inducing drugs such as NVP, EFV, FPV or rifampicin.

Simplified table giving number of tablets of child-friendly solid formulations for once-daily dosing

Drug	Strength of tab/cap (mg)	Number of tablets or capsules by weight-band once daily					Strength of tab/cap (mg)	Number of tablets or capsules by weight-band once daily
		3 – 5.9kg	6 – 9.9kg	10 – 13.9kg	14 – 19.9kg	20 – 24.9kg		25 – 34.9kg
		Once daily	Once daily	Once daily	Once daily	Once daily		Once daily
SINGLE DRUGS								
EFV [a]	200 mg	NR	NR	1	1.5	1.5	200	2
ddI [b]	125 mg or 200 mg EC	NR	NR	1 (125 mg)	1 (200 mg)	2 (125 mg)	125 mg EC	2

[a] EFV is not recommended for children below 3 years and weighing less than 10 kg.

[b] ddI EC is not recommended for children weighing less than 10 kg; this dose is recommended only for those 10 kg and above.

NR = not recommended EC = enteric coated

ROUTINE FOLLOW-UP VISIT

INFANT OR CHILD ON ART PRESENTS FOR ROUTINE FOLLOW-UP VISIT

REVIEW INTERIM MEDICAL HISTORY	Assess for TB exposure.
ASSESS GROWTH AND NUTRITION	Weight; height; head circumference. Quality and quantity of infant feeding, child food intake.
PERFORM PHYSICAL EXAMINATION	Symptom directed.
ASSESS DEVELOPMENTAL PROGRESS	Ensure access to age-appropriate stimuli. Evaluate neurological symptoms/signs and watch for encephalopathy.
IDENTIFY CONCOMITANT CONDITIONS	Opportunistic infections; TB; pregnancy; and monitor increase or decrease in frequency of infections.
CONFIRM STAGE OF HIV DISEASE	New or recurrent stage 3 or stage 4 events?
CHECK ADHERENCE OF ART	Evaluate the child's and caregiver's understanding of the therapy.
CALCULATE ART DOSE	Recalculate dose at each visit.
REVIEW CONCOMITANT MEDICATIONS	Consider drug interactions; check cotrimoxazole preventive therapy and INH. Make dosage adjustments.
DISCUSS FINDINGS	Explain what is indicated by findings of the visit.
PROVIDE REFERRALS AS NEEDED	Support services; other clinical services; etc.
ADVISE AND GUIDE	Reinforce and support adherence to ART; nutrition; when to seek medical care; medication side-effects; etc.
SCHEDULE LAB TESTS IF INDICATED	Infants and children who were started on ART on the basis of a presumptive diagnosis of severe HIV disease should have HIV infection status confirmed as soon as possible.
SCHEDULE NEXT VISIT	Frequency of follow-up visits depends on the response to ART. At a minimum, after starting ART, follow-up visits should occur: • for infants: weeks 2, 4, 6, 8, then every 4 weeks for the first year • for children: weeks 2, 4, 8, 12, then every 2-3 months once the child has stabilized on therapy.

Laboratory parameters for monitoring infants and children at baseline, before and during ART

Laboratory tests for diagnosis and monitoring	Baseline (at entry into care)	At initiation of first-line or second-line ART regimen	Every six months	As required or symptom-directed
HIV diagnostic testing	✔			
Haemoglobin	✔	✔		✔
WBC and differential count				✔
%CD4+ or absolute CD4 cell count	✔	✔	✔	✔
Pregnancy testing in adolescent girls		✔		✔
Full chemistry (including, but not restricted to, liver enzymes, renal function, glucose, lipids, amylase, lipase and serum electrolytes)				✔
HIV VL measurement				✔
OI screening (where possible)	✔			✔

- Haemoglobin monitoring at week 8 after initiation of ART is recommended if AZT is used.
- HIV-infected children not yet eligible for ART should be monitored with CD4 count every six months. For infants and children who develop new or recurrent WHO stage 2 or 3 events, or whose CD4 count approaches threshold values, the frequency of CD4 measurement can be increased.%CD4+ is preferred in children <5 years of age.
- Pregnancy testing may be needed for adolescent girls prior to initiating a regimen containing EFV.
- For pregnant adolescent girls, provide prophylaxis or combination ART to those who are in need of it for their own health and/or to prevent vertical transmission. See Prophylaxis Section (page 131)
- Routine monitoring (every six months) of full chemistry, particularly lipid levels, liver enzymes and renal function, should be considered for infants and children on second-line drugs.
- At present, VL measurement is not a prerequisite for initiation or regular monitoring of ART in resource-limited settings. VL can be used to diagnose HIV infection, and to confirm clinical or immunological failure prior to switching treatment regimen.
- VL should be assessed in infants on NNRTI-based regimens who are known to have been exposed to NNRTIs intrapartum or through breastfeeding.

It is not until you become a mother that your judgment slowly turns to compassion and understanding.

Erma Bombeck

SIDE-EFFECTS OF ANTIRETROVIRAL DRUGS

SIDE-EFFECT	ARV/S RESPONSIBLE	SIGNS AND SYMPTOMS	INCIDENCE AND TIME OF ONSET AFTER INITIATING THERAPY	DIAGNOSIS	TREATMENT AND MANAGEMENT TIPS
HYPERSENSITIVITY	• Abacavir • Co-trimoxazole	Fever, rash, fatigue, abdominal or respiratory symptoms, malaise and elevated transaminase	**Abacavir:** **6-8%** (predominantly Caucasians) **2-3%** (African Americans) **0.2%** (In African population—ARROW Study) **Median Onset:** 11 days	• A rash alone, without systemic symptoms, is not sufficient to make the diagnosis. • Hypersensitivity is a multi organ event and symptoms include: - Fever, rash, constitutional, respiratory and/ or GIT symptoms	**Abacavir:** • Stop immediately, introduce supportive treatment and do not rechallenge Abacavir treatment • Once symptoms resolve, restart ART by substituting an alternative ARV for Abacavir **Co-trimoxazole:** Substitute with dapsone (be aware that dapsone could cause a similar reaction)
RASH		**Mild-to-moderate rash** Erythematous, maculopapular, confluent, most often on the body and arms, with no systemic symptoms **Severe rash** Extensive rash with moist desquamation, angioedema, or serum sickness-like reaction; or a rash with constitutional findings such as fever, oral lesions, blistering, facial oedema, conjunctivitis **Life-threatening Stevens–Johnson Syndrome** Toxic epidermal necrolysis	**Nevirapine:** 20 – 35% **Onset:** 4 – 6 weeks **Efavirenz:** Children experienced a higher incidence of rash (46% of children compared to 26% of adults) The incidence of grade 3 or 4 (moderate to severe) rash is 5% of children and 0.9% of adults **Onset:** Within 2 weeks– median onset is 8 days for children	• Observation of clinical signs and symptoms • Do ALT to exclude hepatic involvement	**Mild-to-moderate rash** ART can be continued without interruption but under close observation **Severe or life-threatening rash** Discontinue all ARVs until symptoms resolve Once symptoms resolve, restart ART by substituting an alternative ARV for NVP
PERIPHERAL NEUROPATHY	**Order of risk:** **NRTIs** ddI > d4t > AZT >ABC > 3TC > FTC	Numbness, tremor, gait imbalance, tingling, pain, crawling and pins and needles	15% - 30% of patients receiving Stavudine or Didanosine but less common in children **DOSE DEPENDANT**	• Screen motor functions against milestones - Difficult to diagnose in children	Withdraw causative drug and replace it with a NRTI less toxic and treat symptomatically with drugs such as carbamazepine or amitriptyline
LACTIC ACIDOSIS	**Order of risk:** **NRTIs** ddI > d4t > AZT >ABC > 3TC > FTC	Dyspnoea, nausea, vomiting and abdominal pain. Later on loss of energy. **Other symptoms include:** Weakness, hepatic dysfunction, hyperlactataemia and tachypnea	0.2%-2.5% (Uncommon in children) **Asymptomatic hyperlactataemia:** 29% - 32% **Median Onset:** 4 months (up to 20 months)	**Confirm clinical suspicion with:** • Serum lactate • Serum bicarbonate • Metabolic Acidosis	• All ARVs should be discontinued • Hospitalise the patient or refer to a specialised site • Initiate supportive treatment
HEPATOTOXICITY	**Order of risk:** ***NVP > EFV** Full dose RTV >> other PIs ddI > d4t > AZT >ABC > 3TC > FTC > TDF	Elevated liver enzymes, nausea, vomiting, abdominal pain, anorexia, diarrhoea, fatigue, jaundice * Increased risk if initiating therapy with a CD4 count >250 in females or >400 in males (adult data)	ARV-related elevations in transaminase appear to be common in children but rarely result in discontinuation of treatment **Onset:** < 6 months after initiation BUT 4-6 weeks for ABC and NVP	• Investigate for other causes e.g. viral hepatitis, TB or TB drugs • Clinical features of hepatitis • Transaminitis (≥5x ULN) • Signs of hypersensitivity	**Manage according to the grade of the event (See SA Paeds Guidelines, 2010)**
PANCREATITIS	**NRTIs** Increased risk with didanosine, stavudine and tenofovir	Vary from asymptomatic to shock or coma **Possible symptoms:** Acute and constant upper abdominal pain that may radiate to the back, nausea, vomiting, fever, tachycardia, abdominal tenderness and muscular guarding, distension, jaundice Increased lipase or amylase (>3x ULN)	*10% of patients receiving normal dosages of ddI develop acute pancreatitis (*Not well known in children) **Onset:** 6-9 months	• Observation of clinical signs and symptoms • Increased lipase or amylase (>3x ULN)	**Initial therapy** • Refer to a specialised institution or hospital • Stop causative drug • Give IV fluids (Avoid hemoconcentration) • Control pain (Often requires narcotics) **Initiate Nutritional Support**
HEPATIC STEATOSIS	**NRTIs** Increased risk with stavudine and didanosine and zidovudine	Can present together with lactic acidosis **Symptoms include:** Nausea, anorexia, dyspnoea, hepatomegaly and weight loss	**Onset:** > 6 months	• Observation of clinical signs and symptoms • Ultrasound • Increase cannalicular enzymes ALP and GGT	Refer to a specialised institution or hospital Consider switching ARV therapy **Advise to patients:** • Limit the amount of fat intake • Avoid junk food, cold drinks, traditional medicine, street drugs and alcohol
LIPODYSTROPHY	**NRTIs** Increased risk with stavudine and didanosine **PIs** e.g Lopinavir/ ritonavir	**Morphologic changes:** • Peripheral fat wasting (lipoatrophy) • wasting of subcutaneous fat in face (cheeks have sunken appearance and soft tissue loss in temples), limbs (legs often noticed first), upper trunk and buttocks • Fat accumulation - base of neck ("buffalo hump"), central fat disposition (truncal lipohypertrophy), breast hypertrophy • Prominent peripheral veins **Metabolic abnormalities e.g dyslipidaemia**	• Prevalence among HIV infected children range from 1 – 43% (adults: 2—84%). • These wide ranges reflect the lack of standardized definition of features of this syndrome. • Duration on treatment increase risk	• Observation of morphologic changes	• Switching ARV therapy—usually to abacavir in children or tenofovir in adults • Provide dietary advice • Encourage exercise • Address emotional symptoms • Hormonal therapy • Plastic surgery
HYPERCHOLESTEROLAEMIA/ HYPERTRIGLYCERIDAEMIA	• Protease Inhibitors (PIs) (excl ATZ and DRV)	The presence of raised or abnormal levels of lipids and/or lipoproteins in the blood	• 20%-50% children receiving HAART experience elevation of Total Cholesterol (TC) and LDL • **Onset of lipid abnormalities:** within 3 months of initiation of ARV's	**Biochemistry results:**	**Lifestyle Changes:** Dietary changes and exercise **Consider drug therapy if:** • >10 years old • High risk lipid abnormalities • Failing 6-12 months dietary management (LDL > 4.9mmol/l OR LDL > 4.13mmol/l with family history CVD or 2 risk factors)
GLUCOSE ABNORMALITIES	• Protease Inhibitors (PIs)	• Diabetes and glucose intolerance - Increased glucose levels • Metabolic syndrome - Central obesity, hypertriglyceridaemia, hypertension, low HDL and insulin resistance	**Insulin resistance** (FFA + lipodystrophy) – 33% in patients treated with PIs or d4t **New onset clinical type I diabetes mellitus:** rarely if treated with PIs **Onset:** Approximately 60 days after initiating PI therapy	• Symptoms of insulin resistance or diabetes • Random blood glucose (RBG) • Fasting blood glucose (FBG)	**Consider:** • Lifestyle changes • Drug therapy • Switching ARVs
ANAEMIA	• Zidovudine	Paleness of skin, fatigue, fainting, hypotension, angina, tachycardia, splenomegaly, change in stool colour, dyspnoea and haemoglobin deficiency	Up to 45% in patients treated with ZDV **Onset:** 2 to 6 weeks after initiation **DOSE-DEPENDENT**	**Children:** Hb 1-2 gram/dl lower than the average normal female count (>12g/dl)	**Manage according to the grade of the event (See SA Paeds Guidelines, 2010)**
CNS RELATED SIDE-EFFECTS	• Efavirenz	Nightmares, vivid dreams, hallucinations, confusion, dizziness, impaired concentration, amnesia, euphoria, psychosis	Very common (~50%) after starting Efavirenz **Onset:** within the first week of treatment but usually resolves within 4 weeks of treatment. Incidence increase when taken with a fatty meal	• Observation of signs and symptoms	• Take efavirenz on an empty stomach at bedtime • Avoid fatty meals • Exclude underlying CNS pathologies or psychiatric disorders • Avoid concomitant use with psychotropic drugs
GIT	Protease Inhibitors	Nausea, vomiting, abdominal discomfort and diarrhoea		• Observation of signs and symptoms	• Treat symptomatically if not persistent (for longer than 14 days)

Biochemistry results:

CATEGORY	FASTING TOTAL CHOLESTEROL	FASTING LDL CHOLESTEROL
Grade 3 toxicity	>7.7mmol/l	>4.91mmol/l
Grade 2 toxicity	6.20-7.77mmol/l	3.35-4.9mmol/l
Acceptable	< 4.4mmol/l	< 2.8mmol/l
Triglyceride levels <5.6mmol/l are considered acceptable		

Manage according to the grade of the event (See SA Paeds Guidelines, 2010)

	GRADE 1	GRADE 2	GRADE 3	GRADE 4
ALT (SGPT)	1.25 – 2.5 x ULN*	2.6 – 5.0 x ULN*	5.1 – 10.0 x ULN*	> 10.0 x ULN*
AST (SGOT)	1.25 – 2.5 x ULN*	2.6 – 5.0 x ULN*	5.1 – 10.0 x ULN*	> 10.0 x ULN*

Manage according to the grade of the event (See SA Paeds Guidelines, 2010)

	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Hemoglobin > 57 days old (HIV +ve only)	8.5 – 10.0 g/dL	7.5 – 8.4 g/dL	6.50 – 7.4 g/dL	< 6.5 g/dL

SIDE-EFFECTS OF
ANTIRETROVIRAL DRUGS

SIDE-EFFECTS OF
ANTIRETROVIRAL DRUGS

DRUG INTERACTIONS

WITH NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS

DRUG	INTERACTING DRUG	EFFECT OF THE INTERACTION	MANAGEMENT OF THE INTERACTION
Nucleoside Reverse Transcriptase Inhibitors			
Abacavir (ABC)	**Low potential for interaction**		
Lamivudine (3TC)	**Low potential for interaction**		
Stavudine (d4t)	Didanosine, Ethambutol, Ethionamide, Isoniazid and Dapsone	Concomitant use increase the risk of neuropathy and other mitochondrial toxicities	Avoid concomitant use if possible
Didanosine (ddI)	Tenofovir (not indicated for paediatric patients)	Didanosine plasma level increases	Didanosine dose adjustment required: >60kg 250mg once daily <60kg 200mg once daily
	Allopurinol		Monitor didanosine side-effects
	Tetracyclines	Decreased absorption due to buffer agent	Administer Didanosine 2 hours after or 6 hours before Tetracycline
	Ciprofloxacin		Administer 2 hours after Didanosine
	Lopinavir/ritonavir, Itraconazole, Ketoconazole, Dapsone	Decreased absorption due to buffer mediated increase in pH	Administer 2 hours after Didanosine
Zidovudine (AZT)	Stavudine	Antagonistic	Avoid concomitant use
	Valproic Acid	Increased Zidovudine level	Decrease Zidovudine dose in case of severe anaemia
	Myelosuppressive agents	Increase in haematological adverse events	Avoid combination if possible or adjust dosage accordingly
	Clarithromycin	Decreased Zidovudine level	Administer at least 2 hours apart
Nucleotide Reverse Transcriptase Inhibitor			
Tenofovir (TDF)	Didanosine	Didanosine plasma levels increases	See didanosine above
	Streptomycin	Increased toxicity	Use only if necessary and monitor renal function weekly

DRUG INTERACTIONS

WITH NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS*

DRUG	INTERACTING DRUG	EFFECT OF THE INTERACTION	MANAGEMENT OF THE INTERACTION
Non-Nucleoside Reverse Transcriptase Inhibitor			
Efavirenz (EFV)	Phenobarbital	Reduced drug level of EFV	Periodic monitoring of plasma levels should be conducted
	St. John's Wort		Do not co-administer
	Ergotamine, Pimozide	Increased drug level of interacting drug	Avoid concomitant use
	Warfarin		Monitor INR or PT
	Halofantrine, Lumafantrine		Monitor QT prolongation
	Midasolam & Triasolam		Avoid concomitant use
	Lopinavir/ritonavir	Reduced drug level of interacting drug	Increase Lopinavir/ritonavir dose
	Itraconazole & Ketaconazole		Consider alternative antifungal or a dose adjustment
	Voriconazole		Dose adjustments of both drugs
	Methadone, Ethosuximide, Felodipine, Nifedipine, Verapamil		Monitor and adjust dose
	Atorvastatin, Pravastatin, Simvastatin		Monitor cholesterol levels closely
	Oral contraceptives		Also use barrier contraceptives
	Phenytoin, Carbamazepine	Both drug levels are reduced	An alternative anticonvulsant treatment should be considered
Nevirapine (NVP)	Rifampicin	Reduced drug level of Nevirapine	Avoid concomitant use
	Phenytoin & Phenobarbital		Monitor drug level
	Itraconazole, Voriconazole		Consider alternative antifungal or a dose adjustment
	Carbamazepine, Clonazepam	NVP and interacting drug levels are reduced	Monitor drug level and consider dose adjustment
	Methadone, Amiodarone, Lignocaine, Ehosuximide, Nifedipine, Verapamil	Reduced drug level of interacting drug	Monitor and adjust dose
	Oral contraceptives		Also use barrier contraceptives
	St. John's Wort		Avoid concomitant use
	Warfarin		Monitor INR or PT
	Ketaconazole		Avoid concomitant use
	Fluconazole	Increased level of NVP	Monitor NVP side-effects
	Halofantrine, Lumefantrine	Increased drug level of interacting drug	

*Numerous clinically significant drug interactions may occur with the use of PI's and NNRTI's in combination with other medications therefore the tables are only a guide to managing some of the more significant interactions.

DRUG INTERACTIONS

WITH PROTEASE INHIBITORS*

DRUG	INTERACTING DRUG	EFFECT OF THE INTERACTION	MANAGEMENT OF THE INTERACTION
Protease Inhibitors			
Lopinavir/ritonavir (LPV/r) AND Ritonavir (RTV)	Rifampicin	Reduce drug level of LPV/r and RTV	Boost with Ritonavir
	Phenobarbital, Carbamazepine		Monitor closely or consider an alternative
	St. John's Wort		Avoid concurrent use
	Alprasolam, Triasolam, Midasolam, Diazepam and Zolpidem	Increased drug level of the interacting drug	Consider Lorazepam, Oxazepam or Temazepam
	Simvastatin and Lovastatin		**Avoid:** Use Pravastatin, Fluvastatin or low dose Atorvastatin
	Digoxin		Monitor closely
	Fluticasone, Budesonide		Dose reduction of steroid may be necessary – monitor systemic corticosteroid effects
	Ergotamine		**Avoid:** Substitute with a 5-HT agonist
	Nifedipine, Felodipine, Verapamil		Monitor and adjust dose accordingly
	Amitriptyline		Monitor and adjust Amitriptyline dose accordingly
	Ketaconazole and Itraconazole		Potential interaction – may require reduction in dosage or lower doses of antifungal
	Voriconazole		Avoid concomitant use
	Clarithromycin Erythromycin, Moxifloxacin		**Caution:** patients with impaired renal function Shown to prolong the QT interval.
	Warfarin	Reduced drug level of interacting drug	Monitor INR or PTI
	Theophylline, Lamotrigine, Phenytion, Methadone		Monitor and adjust doses accordingly
	Metronidazole	Disulfiram reaction with alcohol in oral solution	Avoid concomitant use with LPV/r or RTV oral solution
	Amiodarone, Clozapine, Dextropropoxyphene, Pethidine, Ppimozide, Quinidine, Halofantrine	Potential for life threatening adverse event	Avoid concomitant use

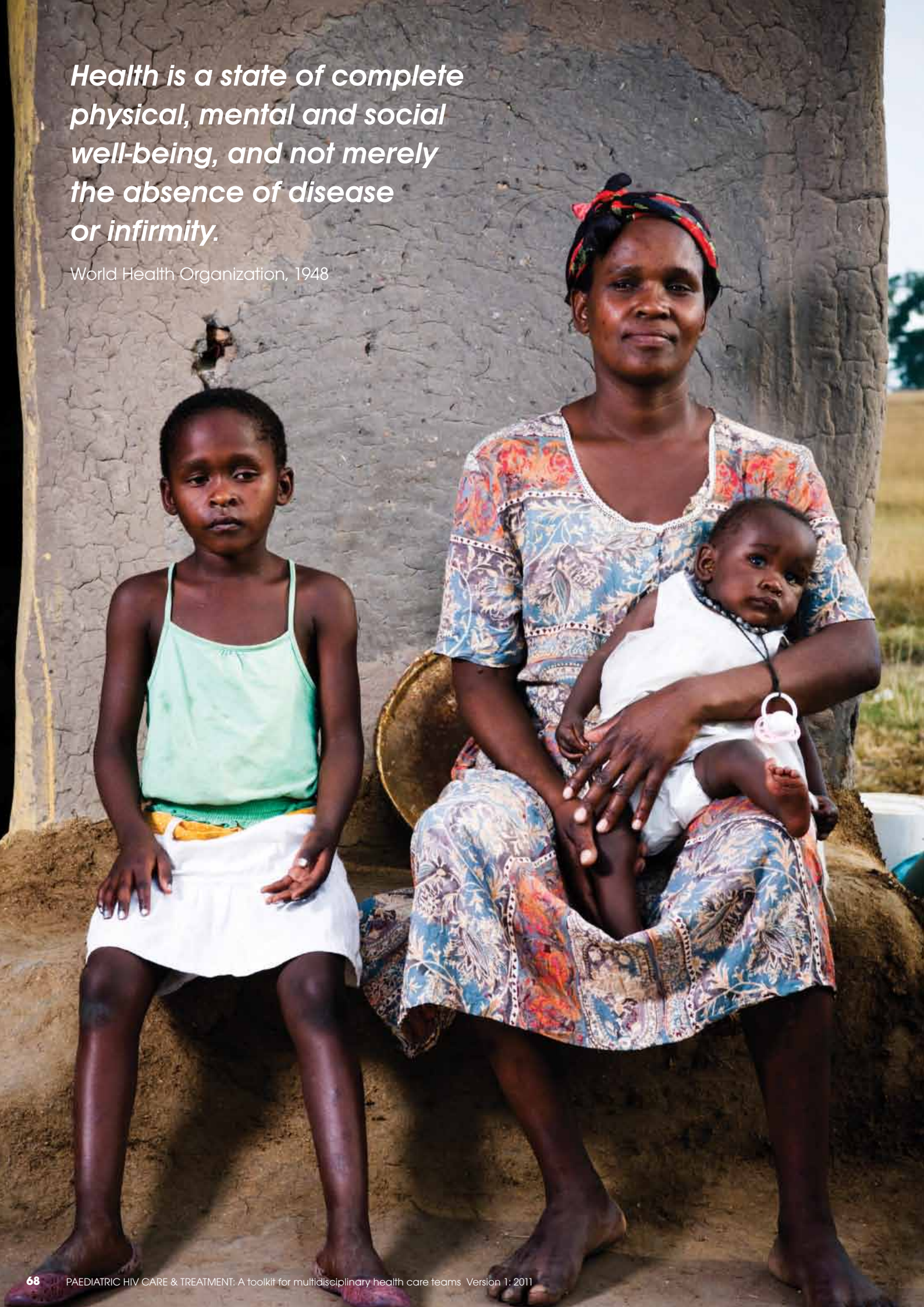
* Numerous clinically significant drug interactions may occur with the use of PI's and NNRTI's in combination with other medications therefore the tables are only a guide to managing some of the more significant interactions.

ARV & FOOD

INTERACTIONS AND REQUIREMENTS

DRUG	FOOD REQUIREMENTS & INTERACTIONS	OTHER INFORMATION	TO AVOID
NRTI's			
Lamivudine (3TC)	**No interactions:** Take with or without food	Fewer gastrointestinal (GI) side effects when taken with some food	
Abacavir (ABC)	**No interactions:** Take with or without food	Fewer GI side effects when taken with some food	Alcohol
Zidovudine (AZT)	**No interactions:** Take with or without food	Very high fat meals may reduce drug concentration in blood	Limit Alcohol
Didanosine (ddI)	**Food impairs absorption: Take on empty stomach,** 1 hour before or 2 hrs after food. Poor solubility at low pH results in significant degradation, which is slightly overcome by buffered formulations.	Food alters absolute bioavailability by 50%, most likely due to increased medication breakdown and delayed gastric emptying	Alcohol
Emtricitabine (FTC)	**No interactions:** Take with or without food		
NNRTI's			
Efavirenz (EFV)	**Take with or without food.** Fat increases absorption. **Avoid very high fat meals** if experiencing side effects (82g fat bioavailability with 50%) **Best taken on an empty stomach at bedtime**	Associated with increased levels of side effects when taken with a high fat meal	Alcohol / psychotropic agents
Nevirapine (NVP)	**No interactions:** take with or without food		St John's Wort
Etravirine	**Take with food**		
PI's			
Lopinavir /ritonavir (LPV/r)	**Take with a large meal** - food significantly increases absorption **(Kaletra Solution + Capsules) With or without food (Aluvia Tablets)**	Best drug concentrations achieved with meal containing at least 500Kcal with 25% fat content	St John's Wort
Ritonavir (RTV)	Food increases absorption of the capsule. Food decreases the absorption of the liquid **BOTH NOT SIGNIFICANT**	Provide tips on how to improve taste of oral solution	St John's Wort

DRUG	FOOD REQUIREMENTS & INTERACTIONS	OTHER INFORMATION	TO AVOID
PI's			
Nelfinavir (NFV)	**Food increases absorption:** must be taken with a meal or light snack	Must be taken with 300 Kcal or more	St John's Wort
Atazanavir (ATZ)	**Food significantly increases absorption:** take with a large meal	Best concentrations achieved with at least 500Kcal or 25% fat	
Indinavir (IDV)	**Take on an empty stomach** - 1 hr before or 2 hrs after meal or light low fat snack (max 2g fat, 300Kcal)	**Plenty of fluids** (4 large glasses for adults) to reduce risk of developing kidney stones	St John's Wort, grape fruit juice
Darunavir	**Food increases absorption:** take with a meal or snack	Drug concentration increases as meal size increases	
Fosamprenavir	**Food significantly increases absorption:** take with meal or snack	Must be taken with 300 Kcal or more	
Saquinavir (SQV) (hard gel capsule)	**Food significantly increases absorption:** take with meal or snack.	Fasted state reduces concentration by 70% and grapefruit juice drug concentration 2 fold	St John's Wort, garlic
Saquinavir SQV (soft gel capsule)	**Food increases absorption:** take with meal or snack		St John's Wort, garlic
NtRTI			
Tenofovir	**No interactions:** take with or without food	Bioavailability increase when taken with a high fat meal	Nephrotoxic agents
Fusion Inhibitor			
Enfurvitide	**No interactions:** take with or without food		
CCR5 Antagonist			
Maraviroc	**No interactions:** take with or without food		
Integrase Inhibitor			
Raltegravir	**No interactions:** take with or without food		



Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.

World Health Organization, 1948

MONITOR FOR ADVERSE EVENTS
RELATED TO ART

EVALUATION

Key Notes:

- Most drugs have side effects, especially at the beginning of the therapy, although in the majority of cases these are mild and self limiting.
- If children and their caregivers know about possible side effects it is easier to deal with them.
- All side effects of ARVs must be graded on a scale of 1 (mild toxicity) through to 4 (life-threatening toxicity). Clinical management of the ARV regimen depends upon this grading system.
- Some signs and symptoms, such as laboratory values, are easily quantified and graded
- Grading other signs and symptoms (e.g. lipodystrophy and skin rashes) depends on clinical judgement following a careful history and physical assessment.

Grading the Severity of Paediatric Adverse Reactions
(Based on DAIDS grading of Adverse Events)

FEATURE	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Haematology				
Haemoglobin Infant 1-21 days	12.0 - 13.0 g/dL	10.0 - 11.1 g/dL	9.0 - 9.9 g/dL	< 9.0 g/dL
Haemoglobin Infant 22-35 days	9.5 - 10.5 g/dL	8.0 - 9.4 g/dL	7.0 - 7.9 g/dL	< 7.0 g/dL
Haemoglobin Infant 36-56 days	8.5 - 9.4g/dL	7.0 - 8.4 g/dL	6.0 - 6.9 g/dL	< 6.0 g/dL
Hb greater than 57 days (HIV-positive only)	8.5 - 10.0 g/dL	7.5 - 8.4 g/dL	6.5 - 7.4 g/dL	< 6.5 g/dL
Absolute neutrophil count Infant 1 day	4.0 - 5.0 x 10^9/l	3.0 - 3.9 x 10^9/1	1.5 - 2.9 x 10^9/1	< 1.5 x 10^9/1
Absolute neutrophil count Infant 2-7 days	1.25 - 1.5 x 10^9/1	1.0 - 1.24 x 10^9/1	0.75 - 0.99 x 10^9/1	< 0.75 x 10^9/1
Absolute neutrophil count Children older than 7 days	1.0 - 1.3 x 10^9/1	0.75 - 0.9 x 10^9/1	0.5 - 0.7 x 10^9/1	< 0.5 x 10^9/1
Platelets (cells/mm^3)	100 000 - 124 999	50 000 - 99 999	25 000 - 49 999	< 25 000 or bleeding

FEATURE	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Gastro-intestinal (N=Normal)				
Bilirubin	1.1 - 1.5 x N	2.0 - 2.9 x N	3.0 - 7.5 x N	> 7.5 x N
AST	1.25 - 2.5 x N	2.6 - 5.0 x N	5.1 - 10.0 x N	> 10.0 x N
ALT	1.25 - 2.5 x N	2.6 - 5.0 x N	5.1 - 10.0 x N	> 10.0 x N
***y*GT**	1.1 - 4.9 x N	5.0 - 9.9 x N	10.0 - 15.0 x N	> 15.0 x N
Pancreatic Amylase	1.1 - 1.5 x N	1.6 - 2.0 x N	2.1 - 5.0 x N	> 5.0 x N
Diarrhoea adult and paediatric age 1 year or older	Transient or intermittent episodes of unformed stools OR increase of 3 stools or less over baseline per 24 hour period	Persistent episodes of unformed to watery stools OR increase of 4 - 6 stools over baseline per 24 hour period	Bloody diarrhoea OR increase of 7 stools or more per 24 hour period OR IV fluid replacement indicated	Life-threatening consequences (e.g. Hypotensive shock)
Diarrhoea paediatric less than 1 year of age	Liquid stools (more unformed than usual) but usual number of stools	Liquid stools with increased number of stools OR mild dehydration	Liquid stools with moderate dehydration	Liquid stools resulting in severe dehydration with aggressive rehydration indicated OR hypotensive shock
Constipation	NA	Persistent constipation requiring regular use of dietary modifications, laxatives or enemas	Obstipation with manual evacuation indicated	Life-threatening consequences (e.g. obstruction)
Nausea	Transient (less than 24 hours) or intermittent nausea with no or minimal interference with oral intake	Persistent nausea resulting in decreased oral intake for 24 - 48 hours	Persistent nausea resulting in minimal oral intake for more than 48 hours OR aggressive rehydration indicated (e.g. IV fluids)	Life-threatening consequences (e.g. hypotensive shock)
Vomiting	Transient or intermittent vomiting with no or minimal interference with oral intake	Frequent episodes of vomiting with no or mild dehydration	Persistent vomiting resulting in orthostatic hypotension OR aggressive rehydration indicated (e.g. IV fluids)	Life-threatening consequences (e.g. hypotensive shock)
Allergic/Dermatological				
Acute systemic allergic reaction	Localized urticaria (wheals) with no medical intervention indicated	Localized urticaria with medical intervention indicated OR mild angioedema with no medical intervention indicated	Generalized urticaria OR angioedema with medical intervention indicated OR symptomatic mild bronchospasm	Acute anaphylaxis OR life-theratening bronchospasm OR laryngeal oedema
Cutaneous reaction skin rash	Localized macular rash	Diffuse maculopapular rash OR morbilliform rash OR target lesions	Diffuse macular, maculopapular or morbilliform rash with vesicles or limited number of bullae OR superficial ulcreations of mucous membrane limited to one site	Extensive or generalized bullous lesions OR Stevens-Johnson syndrome OR ulceration of mucous membrane involving two or more distinct mucosal sites OR toxic epidermal necrolysys (TEN)

FEATURE	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Nervous system				
Developmental delay - Paediatric younger than 16 years	Mild developmental delay, either motor or cognitive, as determined by comparison with a developmental screening tool appropriate for the setting	Mild developmental delay, either motor or cognitive, as determined by comparison with a developmental screening tool appropriate for the setting	Severe developmental delay, either motor or cognitive, as determined by comparison with a developmental screening tool appropriate for the setting	Developmental regression, either motor or cognitive, as determined by comparison with a developmental screening tool appropriate for the setting
Neuromuscular weakness (including myopathy & neuropathy)	Asymptomatic with decreases strength on exam OR minimal muscle weakness causing no or minimal interference with usual social & functional activities	Muscle weakness causing greater than minimal interference with usual social and funtional activities	Muscle weakness causing inability to perform usual social and functional activities	Disabling muscle weakness causing inability to perform basic self-care functions OR repiratory muscle weakness impairing ventilation
Neurosensory alteration (including paresthesia and painful neuropathy)	Asymptomatic with sensory alteration on exam or minimal paresthesia causing no or minimal interference with usual social & functional activities	Sensory alteration or paresthesia causing greater than minimal interference with usual social & functional activities	Sensory alteration or paresthesia causing inability to perform usual social and functional activities	Disabling sensory alteration or paresthesia causing inabilty to perform basic self-care functions
Other				
Clinical symptoms not otherwise specified above	No therapy, monitor condition	May require minimal intervention and monitoring	Requires medical care or possible hospitalisation	Requires active medical intervention, hospitalisation or hospice care

MANAGEMENT

Mild toxicity (Grade 1)

- Continue ARV therapy. Stress maintenance of adherence despite mild toxicity
- Symptomatic treatment e.g. antihistamines for mild rash
- Assess how adherence may be affected and provide support and reassurance to family

Moderate toxicity (Grade 2)

- Continue ARV therapy as long as feasible.
- Repeat lab tests and reassess clinically in 2 weeks.
- If the patient does not improve on symptomatic therapy within 2 weeks, consider single-drug substitutions.
- For a few moderate toxicities (e.g. peripheral neuropathy or lipodystrophy) single drug substitution needs to be considered as soon as they appear.

Severe toxicity (Grade 3)

- Lab tests should be repeated in 1 week and if still grade 3, stop ALL ARV drugs and seek expert medical advice
- May require single ARV drug switch and not discontinuation of all ARV drugs
- ABC must be stopped immediately and permanently if a hypersensitivity reaction occurs.

Severe life-threatening toxicity (Grade 4)

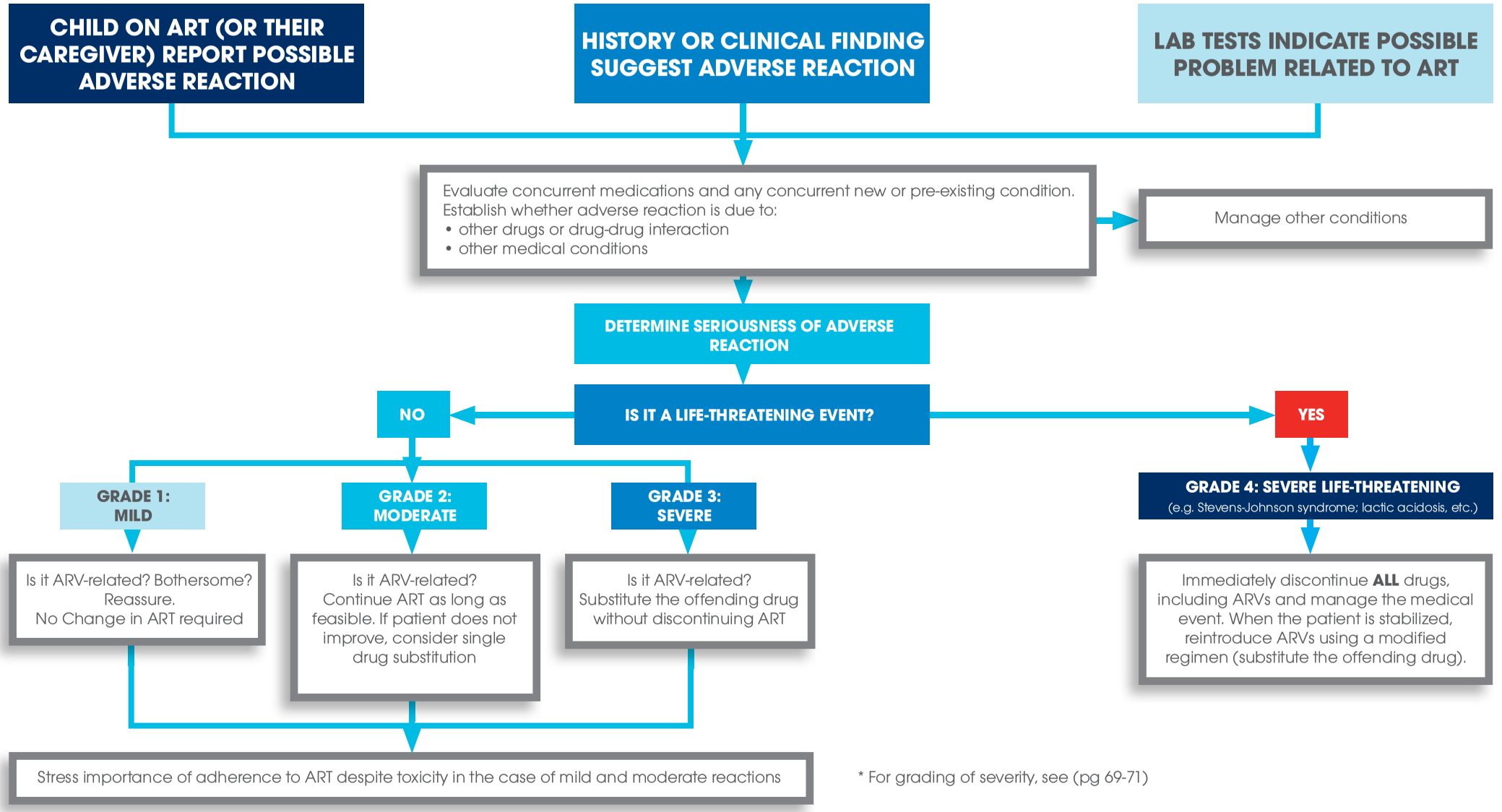
- Discontinuation of all ARV drugs immediately
- Appropriate supportive therapy
- Substitution of likely implicated drug once patient is stabilised and toxicity resolved
- Decisions should be made on an individual basis and discussed with experts as required.

General:

- Complete Adverse Drug Reaction (ADR) form
- Submit form to local pharmacy service

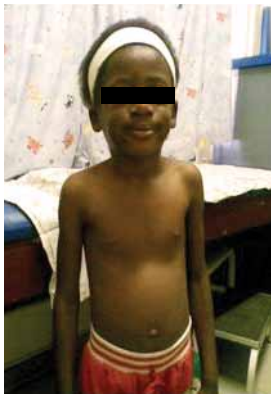
MANAGING ARV TOXICITY

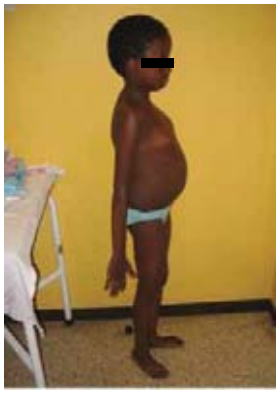
Consider other medications and diseases, including opportunistic infections, immune reconstitution inflammatory syndrome (IRIS), or other illnesses.



* For grading of severity, see (pg 69-71)

LIPODYSTROPHY





SIGNS AND SYMPTOMS

Body changes:

- Peripheral fat wasting (lipoatrophy)
- Wasting of subcutaneous fat in face (cheeks have sunken appearance and soft tissue loss in temples), limbs (legs often noticed first), upper trunk and buttocks
- Fat accumulation
- Base of neck ('buffalo hump'), central fat disposition (truncal lipohypertrophy), breast hypertrophy
- Prominent peripheral veins
- Metabolic abnormalities (e.g. dyslipidemia and insulin resistance)

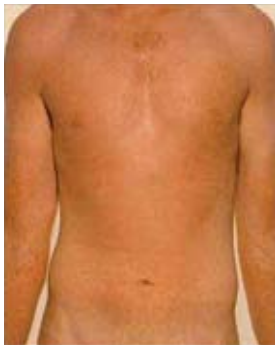
TREATMENT

- Switching ARV therapy if able, stavudine and lopinavir/ritonavir typically causative
- Hormonal therapy
- Address emotional symptoms
- Encourage exercise

DIAGNOSIS

Observation of body shape changes

ABACAVIR HYPERSENSITIVITY REACTION



SIGNS AND SYMPTOMS

At least two of the following:

- Fever
- Rash – mild, often unnoticed by patients
- GIT – nausea, vomiting, diarrhoea, abdominal pain
- Constitutional – fatigue, myalgia, general malaise
- Respiratory – dyspnoea, cough, pharyngitis

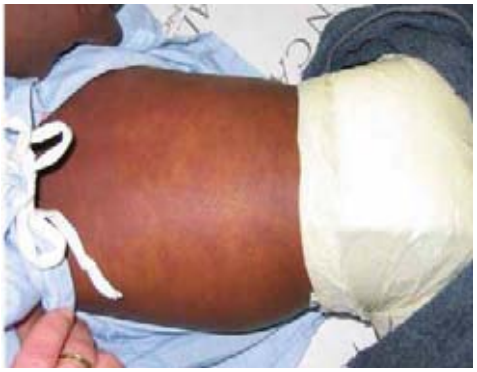
TREATMENT

- Counsel caregivers of risk at initiation of therapy and what to do if suspected. Should not stop treatment without consulting an experienced health care professional.
- If fits criteria for Abacavir Hypersensitivity Reaction, stop Abacavir immediately.
- Never re-start Abacavir if stopped for suspected hypersensitivity reaction – can precipitate fatal cardio-respiratory collapse

DIAGNOSIS

- Clinical signs and symptoms; exclusion of other causes of symptoms
- History of accentuation and worsening of symptoms with each dose
- Multi-organ process – **not only rash**
- HLA genotyping (not widely available)

NNRTI DRUG RASH



SIGNS AND SYMPTOMS

Mild-to-moderate rash

- Erythematous, maculopapular, confluent, most often on the body and arms, with no systemic symptoms

Severe rash

- Extensive rash with moist desquamation, angioedema, or serum sickness-like reaction; or a rash with constitutional findings such as fever, oral lesions, blistering, facial oedema, conjunctivitis

Life-threatening Stevens–Johnson syndrome

- Toxic epidermal necrolysis (TEN), extensive skin peeling

TREATMENT

Mild-to-moderate rash

- ART can be continued without interruption but under close observation

Severe or life-threatening rash

- Discontinue all ARVs and non-ARV drugs until symptoms resolve
- Once symptoms resolve, restart ART by substituting an alternative ARV for suspected offender

DIAGNOSIS

- Observation of clinical signs and symptoms
- Do ALT to exclude hepatic involvement

MONITOR EFFICIENCY
OF ART TREATMENT

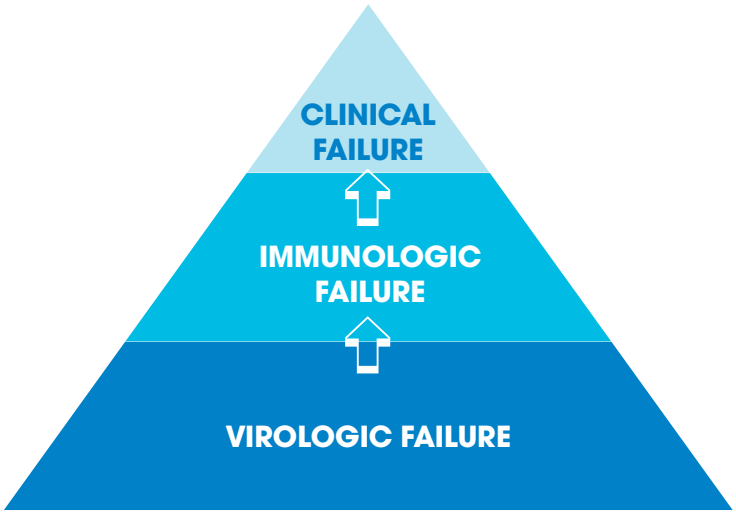
TREATMENT SUCCESS

Defined as such if the following are achieved within 6 months of treatment initiation:

- Improved clinical status, including
    - Improved or normal growth
    - Improved or normal neurological development
    - No new opportunistic infections
    - Fewer intercurrent illnesses
- Improved or stabilised immune status (CD4)
- An undetectable viral load

TREATMENT FAILURE

Defined as deterioration in the clinical, immunological or virologic status of the child after at least 24 weeks of continuous triple drug ART with good adherence.

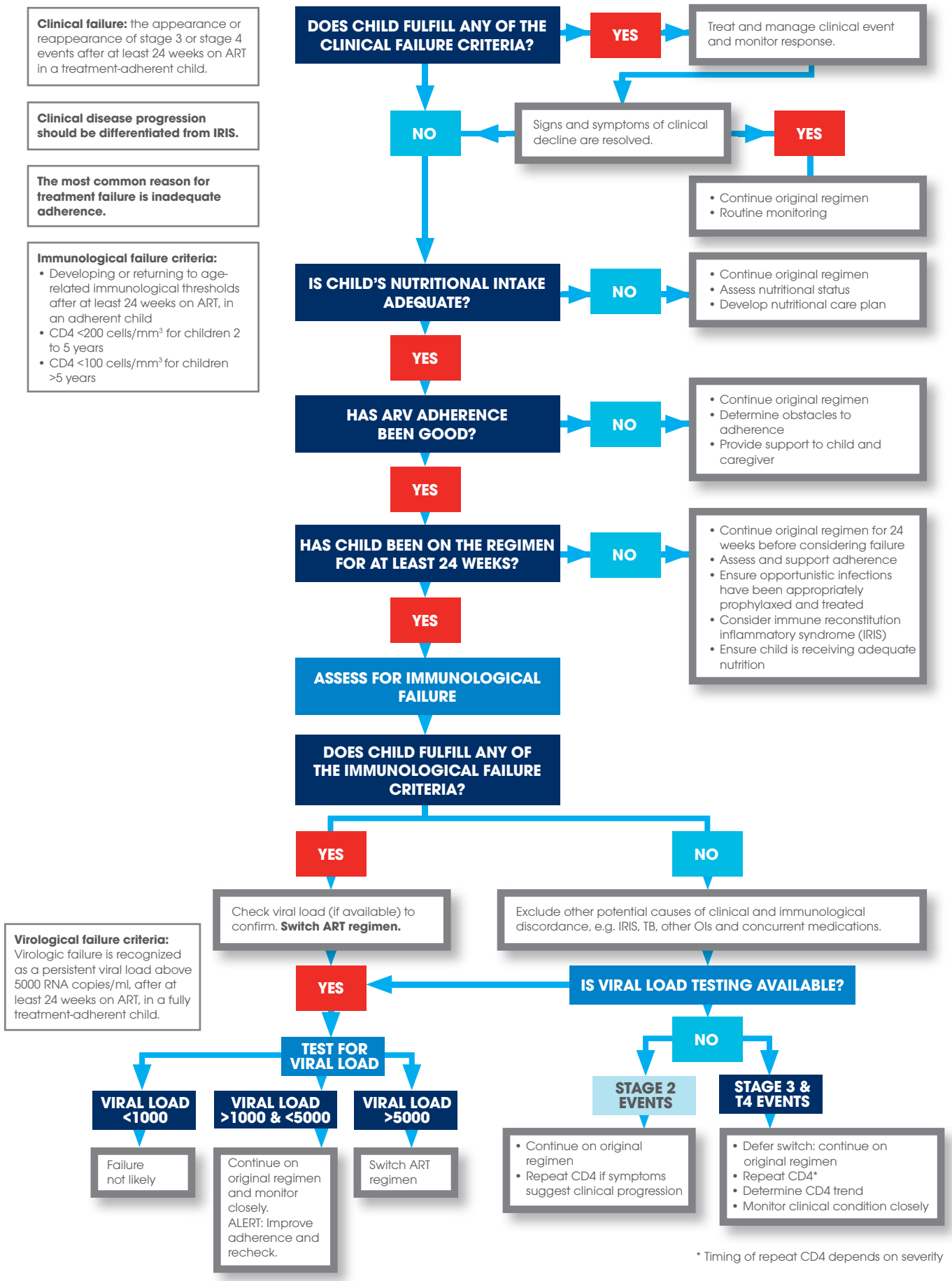


KEY NOTES:

- CD4 and viral load measurements should not be performed during intercurrent infections but preferably 4 - 6 weeks after they have resolved
- At least 2 measurements of CD4 count should be performed and adequate adherence should be ensured before considering a change in therapy
- If treatment failure is due to non-adherence, do not switch to second line until adherence to first line therapy is well-established and treatment failure is still evident.
- Check that dosing is adequate. Growth should be monitored at every visit and medication doses adjusted as needed.
- Ask caregiver about use of other medications, including treatments from traditional healers and/or "natural" therapies.
- Consider immune reconstitution inflammatory syndrome (IRIS) as a cause of paradoxical clinical deterioration during first 3 - 6 months after starting ART.

MANAGING TREATMENT FAILURE WHEN CD4 TESTING IS AVAILABLE

INFANT OR CHILD ON ART PRESENTS FOR FOLLOW-UP VISIT WITH SIGNS OR SYMPTOMS SUGGESTING CLINICAL OR IMMUNOLOGICAL DECLINE



* Timing of repeat CD4 depends on severity

MANAGING TREATMENT FAILURE WHEN CD4 TESTING IS **NOT** AVAILABLE

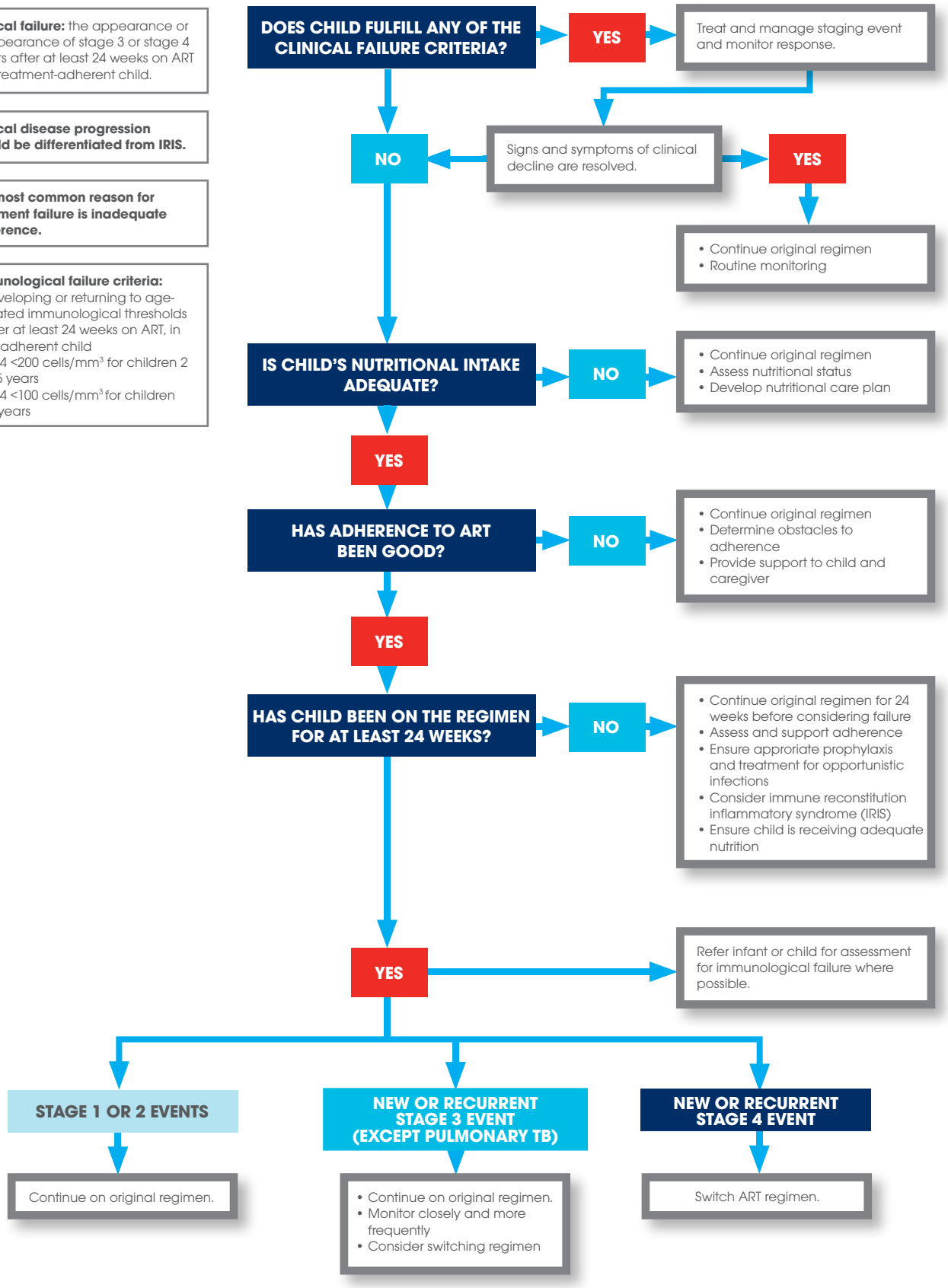
INFANT OR CHILD ON ART PRESENTS FOR FOLLOW-UP VISIT WITH SIGNS OR SYMPTOMS SUGGESTING CLINICAL OR IMMUNOLOGICAL DECLINE

Clinical failure: the appearance or reappearance of stage 3 or stage 4 events after at least 24 weeks on ART in a treatment-adherent child.

Clinical disease progression should be differentiated from IRIS.

The most common reason for treatment failure is inadequate adherence.

Immunological failure criteria:
- Developing or returning to age-related immunological thresholds after at least 24 weeks on ART, in an adherent child
- CD4 <200 cells/mm^3 for children 2 to 5 years
- CD4 <100 cells/mm^3 for children >5 years



Recommended second-line regimens in infants and children in the event of treatment failure of first-line regimens

RECOMMENDED SECOND-LINE REGIMEN: BOOSTED PI COMPONENT + TWO NRTI COMPONENTS			
	PREFERRED SECOND-LINE REGIMEN		
FIRST-LINE REGIMEN AT FAILURE	RTI COMPONENTS (NRTI/NNRTI) [a]		PI COMPONENT
2 NRTIs + 1 NNRTI: AZT- or d4T-containing	ABC + 3TC or ABC + ddI	PLUS	**LPV/r[c]**
or ABC-containing	AZT + 3TC or AZT + ddI		**LPV/r[c]**
Triple NRTI	ddI[l] + EFV[b] or NVP		

[a] Continuation of 3TC in second-line regimens may be considered.

[b] EFV is currently not recommended for children <3 years of age, and should be avoided in postpubertal adolescent girls who are either in the first trimester of pregnancy or are sexually active and not using adequate contraception.

[c] LPV/r is available as solid and liquid co-formulations.

IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME (IRIS)

This appears as a paradoxical clinical deterioration after starting ARV therapy. It is caused by the improving immune system interacting with organisms that have colonized the body.

PRESENTATION

- Usually presents during the first 6 weeks to 3 months after starting ARV therapy
- More common with severe immune suppression at initiation of treatment and subsequent rapid drop in viral load and increase in CD4 after initiation of treatment
- Clinical presentations vary depending on the causative organism and the organ-system that is involved
- Causative organisms may be:
    - Mycobacteria –Tuberculosis, MAC, BCG (M. Bovis)
    - Fungi – Pneumocystis pneumonia, Cryptococcus neoformans
    - Viruses – CMV, Varicella Zoster, HSV, Molluscum contagiosum, PML (rare in children), Hepatitis B/C

DIAGNOSIS

- Identify specific organism

Major criteria

- Atypical presentation of opportunistic infections or tumours in patients on ART
    - Exaggerated inflammatory response (fever, painful lesions)
    - Atypical inflammatory response in affected tissues (granulomas, suppuration, necrosis)
    - Progression of organ dysfunction or enlargement of pre existing lesions after definite clinical improvement with specific opportunistic infection therapy and exclusion of toxicity prior to starting ART (Tuberculomas, Kaposi's, new onset CMV retinitis or CMV uveitis)
- Reduction in Plasma HIV RNA by > 1 log 10 copies/ml

Minor criteria

- Increase in CD4 T-lymphocyte count
- Increase in specific immune responses to the pathogen
- Spontaneous resolution of the disease without specific therapy with continued antiretroviral therapy

MANAGEMENT

- Most resolves within a few weeks
- Manage with anti-microbial treatment specific to the causative organism
- Continue ART unless symptoms are life-threatening
- In severe cases, steroids and/or temporary discontinuation of ART may help.

If in doubt, refer the child to the next level of care for evaluation

Frequently Asked Questions:

What side-effects can we expect?

- The side effects differ from one ARV drug to another
- Most children **will not get side-effects**
- The most **common** side-effects when starting treatment, includes: **diarrhoea, nausea and vomiting** (it will clear up with time)
- Sometimes children can get more **serious side effects** such as:
  - **Stomach pain**
  - **Fast or difficulty breathing**
  - **Pain in feet**
  - **Thinning of face and arms**
  - **Rash in the mouth and if widespread on the body**
  - ***Severe* vomiting and diarrhoea**

NB! All other *serious side-effects will be monitored by the doctor or the nurse*

If a child is experiencing any of the above, take them to the clinic as soon as possible!

Short term side-effects:

- Dizziness, nightmares, drowsiness and confusion caused by Efavirenz, Stocrin®
- Vomiting and Diarrhoea—if it lasts more that 2 days bring the child to the clinic

Always bring your child to the clinic if he/she has a FEVER!

For more information:

ECHO

(Enhancing Children's HIV Outcomes)

4th Floor, TMI Building
Joubert Extension Street
Braamfontein

www.witsecho.org.za
Tel: 011 547 5000

ISBN 978-0-620-45040-9

WITS PAEDIATRIC HIV CLINICS

GIVING MEDICINE TO CHILDREN

What The Caregiver Should Know

USAID FROM THE AMERICAN PEOPLE

Medication

In most cases, a child will take at least 5 types of medications:

- **Multivitamin in the morning**
- **Co-trimoxazole (Bactrim®) daily**
- **A combination of 3 ARV medicines**

It is important to know:

1. The **name** of each medicine
2. **When** and how **often** to give each
3. How **much** of each to give (this may **change** at almost every visit)

Administering Medicines

- The amount of medicine to give appears on the label
- If the label states for example to give 4ml, you will do as follows:

1. Place the tip of the syringe in the liquid medicine
2. Draw liquid until the plunger is in line with the correct number on the syringe e.g. 4
3. Flick the syringe to move any bubbles in the liquid towards the tip—then push the plunger to remove the bubbles
4. Repeat steps 1 and 2 if necessary
5. Give this amount to the child in their mouth e.g. 4ml

Never mix medicines in a syringe

Frequently Asked Questions:

What do I do if the child vomits after taking the medicine?

- If the child vomits **within 30 minutes** of giving the medication - **give it again**
- If it happens **after 30 minutes** - **do not give it again until the next dose**

What must I do if I forgot to give the medicine?

For 12 hourly doses:

- If you remember **within 6 hours** - **give it**
- If it is **more than 6 hours – skip the dose**

For once daily doses:

- If you remember **within 12 hours** - **give it**
- If it is **more than 12 hours – skip the dose**

NEVER GIVE A DOUBLE DOSE!

When is the best time to give the medication?

- The time that **suits** you and the child's routine
- For twice daily doses— give the doses **12 hours apart** or as close to 12 hours as possible

Helpful Reminders

Give meds the same time as:

- **Daily activities**
- **Favorite TV programs**

- **Set alarm clock / cell phone alarm**
- **Use a diary card / pillbox**

Frequently Asked Questions:

Can I give the medication with food?

Not all medication is the same; therefore the following should be followed:

Medicine with no food restrictions (meaning you can give it with or without food):

Lamivudine (3TC) - Zidovudine (AZT)
Stavudine (d4t) - Nevirapine (NVP)
Abacavir (ABC) - Aluvia®
Tenofovir (TDF)

Taken with food:

Kaletra® solution

Avoid fatty foods

Efavirenz (Stocrin®) – **best given at bedtime**

Taken on an empty stomach (1 hour before food or two hours after food)

Didanosine (ddI)

Can I give the medication with other medication?

Always **ask a pharmacist** before taking any other medication!

Even natural or traditional medication might not go well with the medicine!

Where must I keep the medicine?

Always keep medicine in a **cool, dry and dark** place.

- Avoid keeping medicine in the kitchen or in the bathroom

Some medicines need to be kept in the fridge:

- Stavudine liquid
- Kaletra® Solution (can be outside for 42 days)

HOW TO MANAGE IT?

1. Make sure your adherence is excellent

2. The doctor/nurse will look for other diseases that can cause the viral load to go up and the CD4 % (count) to drop

3. The doctor may have bloods taken to check if the treatment is working

4. The treatment may be changed

REMEMBER

There are not a lot of options available and you should try and prevent treatment failure to ensure a long and healthy future!

FOR MORE INFORMATION

ECHO (enhancing childrens HIV Outcomes)

4th Floor, CMI building
Joubert extension street
Braamfontein

www.witsecho.org.za
Tel: 011 547 5000

echo
enhancing childrens HIV outcomes

TREATMENT FAILURE

What the caregiver should know

USAID
FROM THE AMERICAN PEOPLE

VERSION 1: 2011

WHAT IS IT?

TREATMENT FAILURE MEANS THAT THE TREATMENT IS NOT WORKING ANYMORE

It may be detected by:

1. Falling CD4 % (or count)
2. Return of CD4% (or count) to what it was before the child started ARVs
3. A rising viral load
4. Return of symptoms or illness as it was before starting ARVs
5. Worsening health e.g. Loss of weight despite eating enough food, tiredness, oral thrush, diarrhoea that does not get better.

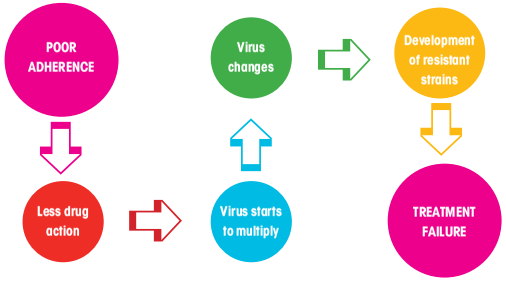
WHAT CAUSES IT?

THE MOST COMMON CAUSE IS:

POOR ADHERENCE

This means not giving the child medicine correctly or every day at the right time, as agreed

How does this happen?



Other causes may include:

- Incorrect doses
- Interaction with other medicines
- Infection with a resistant virus

HOW TO PREVENT IT?

Give the medicines

Every Day

Twice a day (if necessary)

On time

MONTH _____

YEAR _____

3TC	Kal	NVP	Bactrim
d4t	AZT	ABC	Multivite
EFV	ddI	RTV	TB Meds

Date			Date		
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16					

Taken: ✔

Late Dose: L

Missed Dose: ✖

IMPORTANT DATES 2 Remember!

Clinic Visit

Pharmacy

1. _____
2. _____
3. _____

Soldier Cell (CD4)

Previous Result ____(dd/mm/yy)

Next Test (dd/mm/yy)

Viral Load

Previous Result ____(dd/mm/yy)

Next Test (dd/mm/yy)

Counselling

ISBN 978-0-620-44941-0

This Cool Diary Card Belongs to:

Name:

Surname:

Date of Birth:

Hospital Number:

Caregiver Name:

Cell Number:

For more information or to change appointment dates contact:

MONTH _____

YEAR _____

3TC	Kal	NVP	Bactrim
d4t	AZT	ABC	Multivite
EFV	ddI	RTV	TB Meds

Date			Date		
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16					

Taken: ✔

Late but still taken: L

Missed Dose: ✘

MONTH _____

YEAR _____

3TC	Kal	NVP	Bactrim
d4t	AZT	ABC	Multivite
EFV	ddI	RTV	TB Meds

Date			Date		
1			17		
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12			28		
13			29		
14			30		
15			31		
16					

Taken: ✔

Late but still taken: L

Missed Dose: ✘

MONTH _____

YEAR _____

3TC	Kal	NVP	Bactrim
d4t	AZT	ABC	Multivite
EFV	ddI	RTV	TB Meds

Date			Date		
1			17		
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11			27		
12			28		
13			29		
14			30		
15			31		
16					

Taken: ✔

Late but still taken: L

Missed Dose: ✘

COUNSELLING CHECKLIST

FOR DISPENSING ARVS

MEDICATION	
Names	
Colour coding	
Frequency of doses	
Dose (ml/mg)	

TOOLS	
Syringe	
Marked	
Demonstrate	
How to read	
How to clean	
Practical	
Diary	
Explain the use	
How it works	

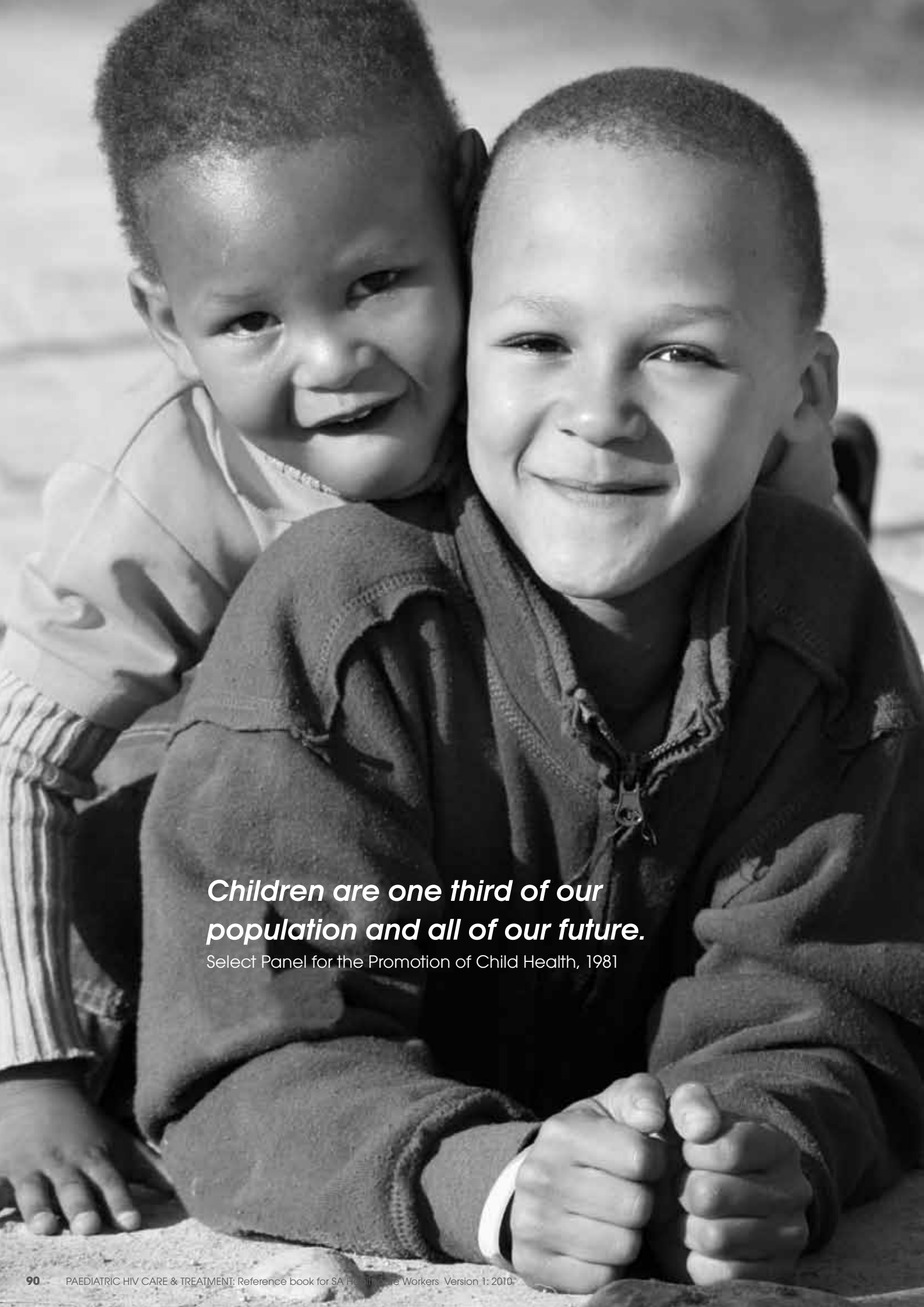
ADHERENCE	
Routine / Time	
Importance	
Pill/bottle count	

SIDE-EFFECTS	
Probability	
Possible side-effects	
Dangerous side-effect	
Vomiting	

DRUG INTERACTION	
Traditional medication	
OTC medication	

PROBLEMS	
Late / missed doses	
Number in case of emergency	
Questions	

ADMIN	
Bring all meds back	
To come back date	



Children are one third of our population and all of our future.

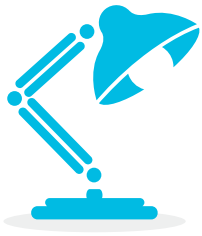
Select Panel for the Promotion of Child Health, 1981

PICTIONARY OF WHO STAGING CONDITIONS

PICTIONARY OF PAEDIATRIC WHO STAGING

Physical diagnosis is an essential skill for the evaluation and ongoing monitoring of HIV-infected children. This pictionary serves as a job aide to assist the visual recognition of paediatric WHO staging conditions. It also includes additional information on the clinical findings, diagnostic investigations and possible referral steps needed. Even though diagnosis of some conditions may be complex and outside one's scope of practice, all healthcare workers providing care to HIV-infected children should be aware of the clinical warning signs with which these conditions may present and consult when necessary.

WHO Staging is an important aspect of determining ART eligibility and of monitoring a patient's clinical status over time. Stages range in severity from Stage 1 representing none or mild symptoms, to Stage 4 representing AIDS-defining conditions.



KEY MESSAGE:

All children should be assigned a baseline WHO Stage at the time of HIV diagnosis.

KEY MESSAGE:

Monitoring for any new WHO staging conditions is an important aspect of chronic care for both children on ART and those not yet eligibile.

WHO
STAGING CONDITIONS

WHO STAGE 1

- Asymptomatic
- Persistent generalized lymphadenopathy

WHO STAGE 2

- Unexplained persistent hepatosplenomegaly
- Papular pruritic eruptions
- Extensive wart virus infection
- Extensive molluscum contagiosum
- Fungal nail infections
- Recurrent oral ulcerations
- Unexplained persistent parotid enlargement
- Linear gingival erythema
- Herpes zoster
- Recurrent or chronic upper respiratory tract infections (otitis, sinusitis or tonsillitis)

WHO STAGE 3

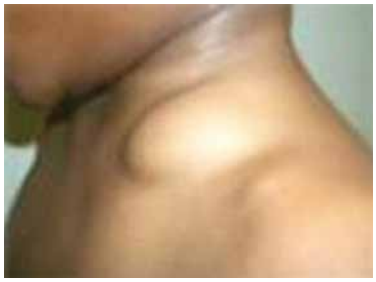
- Unexplained moderate malnutrition not responding to standard therapy
- Unexplained persistent dairrhoea
- Unexplained persistent fever
- Persistent oral thrush (outside neonatal period)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis or periodontitis
- Lymph node tuberculosis
- Pulmonary tuberculosis
- Severe recurrent bacterial pneumonia
- Symptomatic lymphoid interstitial pneumonitis
- Chronic HIV-associated lung disease including bronchiectasis
- Unexplained anaemia, neutropaenia and/or thrombocytopaenia

WHO STAGE 4

- Unexplained severe malnutrition not responding to standard therapy
- Pneumocystis pneumonia
- Recurrent severe bacterial infections
- Chronic herpes simplex infection
- Extrapulmonary tuberculosis
- Kaposi's Sarcoma
- Oesophageal candidiasis
- Central nervous system toxoplasmosis
- HIV encephalopathy
- Cytomegalovirus infection with onset at age older than one month
- Cryptococcal meningitis
- Chronic cryptosporidiosis
- Chronic isosporiasis
- Cerebral or B-cell non-Hodgkin's lymphoma
- Progressive multifocal leukoencephalopathy
- Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy
- HIV-associated rectovaginal fistula

***NOTE: Disseminated endemic mycosis and disseminated non-tuberculous mycobacterial infections are additional Stage 4 conditions that are not included in this Pictionary.**

PERSISTENT GENERALISED LYMPHADENOPATHY
WHO STAGE 1



SIGNS AND SYMPTOMS

- Multiple, enlarged lymph nodes (glands)
- Present for more than a month
- At 2 or more node sites (neck, axilla, groin, etc.)
- Usually painless and firm

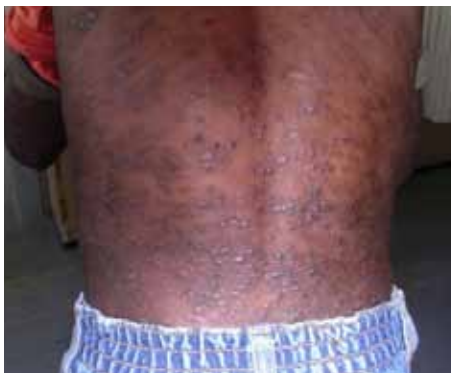
TREATMENT

- No treatment if related to HIV Stage 1
- Exclude other causes and treat accordingly

DIAGNOSIS

Persistent enlarged lymph nodes >1cm at two or more sites without known cause

PAPULAR PRURITIC ERUPTIONS
WHO STAGE 2



SIGNS AND SYMPTOMS

- Papular (bumpy) lesions
- May be at different stages of hyperpigmentation
- Very itchy
- Usually appear on arms, chest, face, scalp, axillae and thighs

TREATMENT

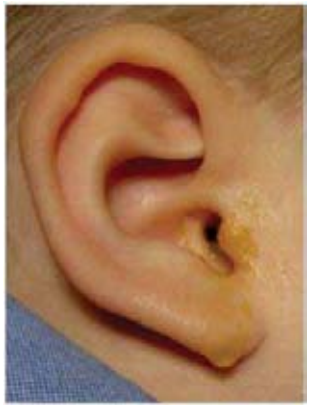
- Chlorpheniramine orally 0.1 mg/kg/dose 6 - 8 hrly (not for children < 12 mo of age), or
- Cetirizine at night:
  - ≥14-25kg-5mg/dose
  - ≥25-55kg-10mg/dose
- Hydrocortisone acetate 1% cream apply twice daily
- Emollients

DIAGNOSIS

Papular pruritic vesicular lesions as described above

RECURRENT OR CHRONIC UPPER RESPIRATORY TRACT INFECTIONS - OTITIS MEDIA DESCRIBED HERE

WHO STAGE 2



SIGNS AND SYMPTOMS

- Pain in the ear
- Loss of hearing
- Fever
- Inflamed or perforated ear drum
- Pus discharge from the ear

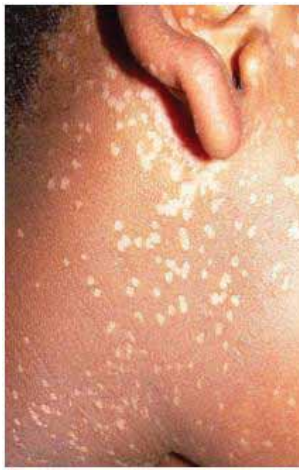
TREATMENT

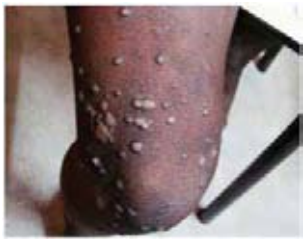
- Analgesics for pain
- Antibiotics: If acute, treat with Amoxyl 25-30 mg/kg/dose three times daily for 7 days
- If the discharge is offensive, add metronidazole 7.5mg/kg/dose 8 hrly for 7days
- For chronic draining otitis, ear wicking is essential
- If persistent, refer for hearing evaluation
- Refer urgently if swelling and redness behind ear

DIAGNOSIS

Symptoms as above with either persistent ear discharge or two or more acute episodes in the past 6 months qualifies as WHO Stage 2

EXTENSIVE WART VIRUS INFECTION
WHO STAGE 2





SIGNS AND SYMPTOMS

- Cutaneous benign skin growths caused by the human papillomavirus.
- Raised warts appear as excessively thickened skin with black dots. Vary in size from solitary lesions to grouped, cauliflower-like lesions
- Flat warts may be lighter or darker than the surrounding skin, often found forming lines.
- It is widespread and persistent in patients who are immunocompromised

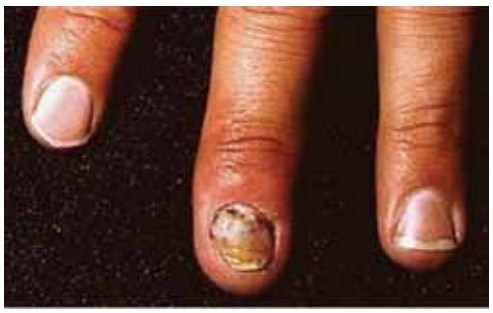
TREATMENT

- It is based on the age, the size, number and location of warts.
- Most warts in children resolve spontaneously within two years
- Some persist and become large and painful
- The extremely cold and painful liquid nitrogen is not well tolerated by children and it causes scarring
- Imiquimod cream, podophyllin to apply on the lesions
- They can be scraped, burned by laser or excised
- If severe, ART may improve the condition

DIAGNOSIS

Lesions as described above that cover 5% or more of the body surface area, or are disfiguring

FUNGAL NAIL INFECTION
WHO STAGE 2



SIGNS AND SYMPTOMS
- Begins at distal end spreading towards the nail bed
- Nails become hardened and crumble
- Colour may change to opaque, white, black or of normal shine

TREATMENT
- Often improves once on ART
- Antifungal treatment requires systemic administration, often with side effects that outweigh cosmetic concerns
- If severe, consider referral.

DIAGNOSIS
Clinical signs and symptoms

UNEXPLAINED PERSISTENT HEPATOSPLENOMEGALY
WHO STAGE 2

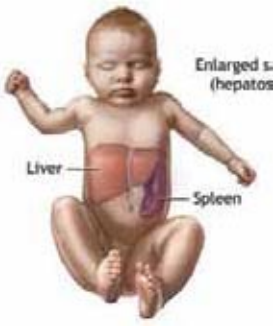


Photo courtesy of the Baylor International Paediatric AIDS Initiative

SIGNS AND SYMPTOMS
- Enlarged liver and spleen
- May have distended abdomen
- May have jaundice

TREATMENT
- Depends on the cause

DIAGNOSIS
Enlarged liver and spleen without obvious cause

RECURRENT ORAL ULCERATIONS
WHO STAGE 2

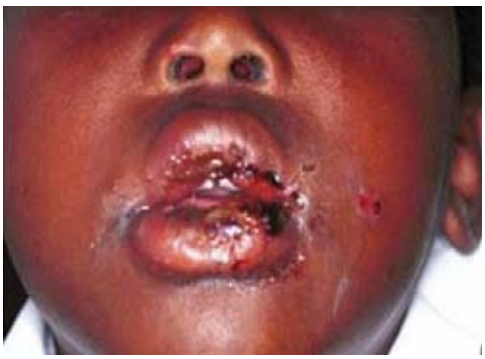


Photo courtesy of the Baylor International Pediatric AIDS Initiative

SIGNS AND SYMPTOMS

- Recurrent episodes usually begin with itching, tingling, or burning at the site of infection
- A red bump or cluster of bumps form on the skin
- They rapidly progress to fluid- or pus-filled blisters.
- A few days later scabs form and the lesions heal usually within 8 days
- The blisters may spread extensively
- Lesions are painful and may be associated with fever

TREATMENT

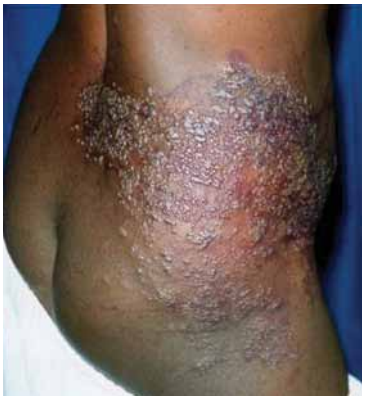
- Oral antiviral medications like acyclovir may be given to treat recurrent episodes within 72 hrs of appearance:
  - 2yrs & older: 400mg every 8 hours x 5 days
  - Under 2yrs: 200mg every 8 hours x 5 days
    (refer young infants)
- Paracetamol syrup for pain as directed
- Keep the area around a sore clean either with soap and water or antiseptic solution
- Refer if disseminated infection suspected or dehydration

DIAGNOSIS

Lesions as described above with two or more episodes in the past 6 months

If persists for longer than 1 month or disseminated herpes, classify as a stage 4 condition.

HERPES ZOSTER
WHO STAGE 2



SIGNS AND SYMPTOMS

- Low grade fever
- General malaise
- Mild to severe pain, burning, redness and discomfort in the area of the affected nerve distribution (dermatome) on one side of the body
- Followed by appearance of groups of small papules which rapidly change to vesicles filled with a cloudy fluid on the affected site a few days later
- The lesions form a scab and heal in about a week
- In those severely immunocompromised more than one dermatome can be affected

TREATMENT

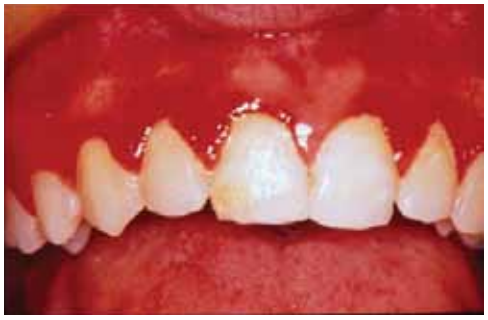
For new vesicles:

- Oral acyclovir 20mg/kg (maximum 800mg/dose) 4 x daily x 5 days within 24 hrs of appearance of the rash
- Analgesics for pain and post-herpetic neuralgia
- Calamine lotion to apply on the lesions to soothe the area
- Give antibiotic if becomes super-infected
- Refer if any facial involvement or signs of dissemination

DIAGNOSIS

From history and examination

LINEAR GINGIVAL ERYTHEMA
WHO STAGE 2



SIGNS AND SYMPTOMS

- Intense inflammation and swelling of gum margin occurring in a band-like distribution
- There may be pus formation
- Often there is gum recession

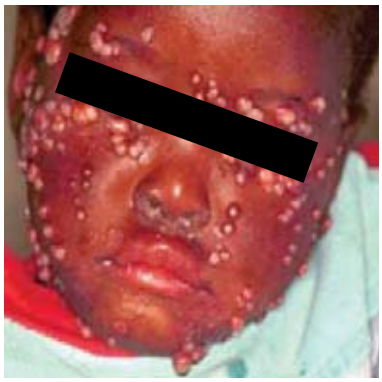
TREATMENT

- Encourage good oral hygiene (brushing, flossing, mouth rinses)
- Chlorhexidine gluconate mouth wash
- Antifungals, such as nystatin, may be helpful
- For painful and severe acute lesions, refer to a dental provider for thorough examination and possible antibiotic therapy.

DIAGNOSIS

Clinical signs and symptoms

EXTENSIVE MOLLUSCUM CONTAGIOSUM
WHO STAGE 2



SIGNS AND SYMPTOMS

- Small lumps which are pearly-white or slightly pink.
- Looks like a small wart and is round, firm and umbilicated on the top of each lesion
- Sometimes they develop over various parts of the skin and occur in clusters
- Any part of the body can be affected but it is rare on the palms and soles.
- Giant or widespread lesions especially involving the face could be a marker of an underlying immune deficiency
- Most occur in children aged 1 - 4 years.

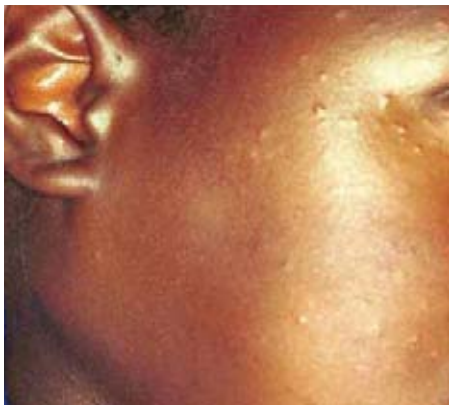
TREATMENT

- Many of the treatments can be painful or cause scarring.
- Allow to heal spontaneously if few in number or consider tincture of iodine BP applied to the core of individual lesions, otherwise consider referral for liquid nitrogen or curettage.

DIAGNOSIS

Lesions as described above that cover 5% or more of the body surface area, or are disfiguring

BILATERAL PAINLESS PAROTID SWELLING
WHO STAGE 2



SIGNS AND SYMPTOMS

- Swelling on both sides of face
- Palpable lumps in front of ears
- There is loss of the angle of the jaw
- Present for more than a month
- Firm on palpation
- Painless
- Mostly appear when there is HIV infection
- May be associated with lymphoid interstitial pneumonitis (LIP), see LIP – Stage 3

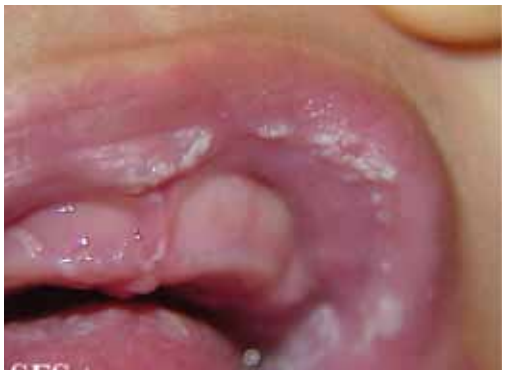
TREATMENT

- ART may improve the condition
- Reassure

DIAGNOSIS

Physical findings in association with confirmed HIV infection.

ORAL THRUSH - PERSISTANT OR RECURRENT
WHO STAGE 3



SIGNS AND SYMPTOMS

- Creamy white patch on the tongue and/or mucous membrane of the mouth that can be scratched off, often with red base
- Can be painful

TREATMENT

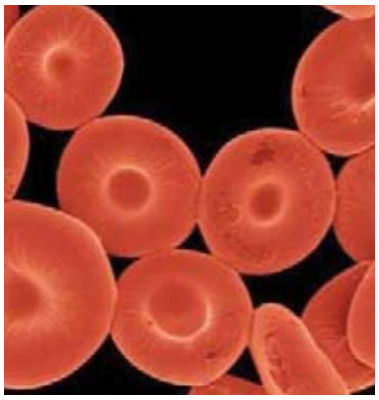
- Nystatin suspension orally 1ml after each feed x 7 days minimum, continue for 2 days after resolves.
- Older children 2ml swish and swallow 4 times a day x 7 days minimum.
- Or, gentian violet 0.5% aqueous solution applied in the mouth 3 x a day, extend for 2 days after cure
- Treat refractory oral candidiasis and suspected oesophageal candidiasis with fluconzole 3mg/kg/day for up to 21 days
- ART eligible
- Analgesia – Paracetamol 15mg/kg/dose 4-6 hourly

DIAGNOSIS

Characteristic oral lesion described above that is persisting or has recurred in a child 2 months of age or older qualifies as WHO Stage 3

Consider Oesophagel Candidiasis in infant or child with oral thrush and food refusal, drooling, difficulty swallowing – this is a stage 4 condition.

ANAEMIA, NEUTROPAENIA & THROMBOCYTOPAENIA
WHO STAGE 3



SIGNS AND SYMPTOMS

- Anaemia:
  - Lethargy
  - Pallor
  - Exertional dyspnoea
  - Tachycardia
  - Palpitations
- Neutropaenia: Increased risk for sepsis and serious infection.
- Thrombocytopaenia: Active bleeding and/or petechiae

TREATMENT

- Depends on the cause
- Anaemia: If Hb < 6 g/dL, refer urgently for possible transfusion. If Hb 6 g/dL or higher, give iron, counsel iron-rich foods, treat for worms and repeat Hb in 14 days.
- Neutropaenia and Thrombocytopaenia: Physician review recommended
- ART eligible

DIAGNOSIS

Blood tests show the following:

- Low haemoglobin (< 8 g/dL)
- Low neutrophil count (< 0.5 x 10^9 per litre)
- Low platelet count (< 50 x10^9 per litre)
- Only assign WHO Stage 3 if of unexplained cause

PERSISTENT OR RECURRENT DIARRHOEA
WHO STAGE 3

SIGNS AND SYMPTOMS

- Passing loose /watery stools >3 times a day
- There may be abdominal pain
- Nausea
- Loss of appetite
- Low grade fever
- Signs of dehydration, the primary cause of morbidity and mortality in children e.g.
  - lethargy
  - sunken fontanelle
  - sunken eyes
  - loss of skin turgor
  - dry mouth and lips, no tears when crying, anuria, tachycardia and unconsciousness

TREATMENT

- Prevention: Vitamin A supplementation every 6 months in all HIV-infected infants and children aged 6 months to 5 years (6-12 months of age - 100 000 IU; > 12 months of age 200 000 IU)
- Re-hydrate: orally or intravenously if necessary
- Refer to hospital if the child is severely dehydrated
- Elemental zinc supplementation:
  - up to 10kg – 10mg daily for 14 days
  - > 10 kg – 20 mg daily for 14 days
- Multivitamin supplementation for 14 days
- If bloody diarrhoea – Ciprofloxacin 15mg/kg daily for 3 days
- ART indicated if confirmed HIV-infected

Some infectious causes of persistent diarrhoea among HIV+ patients may represent a Stage 4 condition, such as cryptosporidium & isospora.

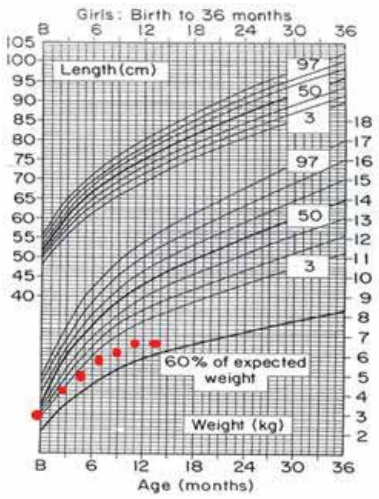
DIAGNOSIS

3 or more loose, watery, non-bloody stools daily for 14 days or longer.

Consider the following investigations:

- Stool for MC&S
- FBC

UNEXPLAINED MODERATE MALNUTRITION
WHO STAGE 3



SIGNS AND SYMPTOMS

- Weight loss with flattening or decline of weight curve
- There may be visible wasting
- Palmer pallor
- Hair colour and texture abnormalities

TREATMENT

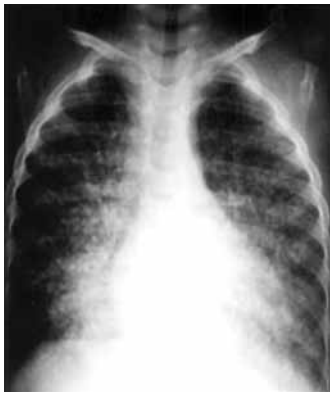
- Nutritional supplementation & counselling
- Multivitamin syrup daily
- Vitamin A and deworming
- Treat any active infections
- ART if no response to standard therapy
- Refer if poor appetite or clinical danger signs

DIAGNOSIS

Plot weight & height on growth chart

- Weight for height Z score -2 to -3
- Concerning if flattening of the growth curve, weight for age < 3%ile
- Other causes such as food insecurity and TB have been ruled out.

LYMPHOID INTERSTITIAL PNEUMONITIS (LIP) - SYMPTOMATIC **WHO STAGE 3**



SIGNS AND SYMPTOMS

- Chronic cough
- Slow progressive shortness of breath
- Lethargy
- Enlarged parotids
- Clubbing
- Hepatosplenomegaly
- Generalised lymphadenopathy
- May progress to bronchiectasis and right heart failure

TREATMENT

- ART
- Exclude TB
- Trial of salbutamol for symptom relief
- If very symptomatic, Prednisone 1mg/kg/day x 2 weeks, tapering the dose for a further 4 - 6 weeks
- Refer if signs of right heart failure

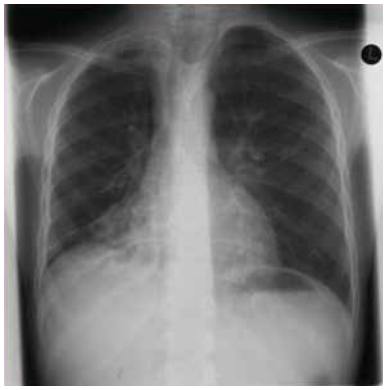
DIAGNOSIS

Persistent cough and clinical findings, tends to occur in school-age HIV-infected child.

Chest X-ray :

- Reticular, reticular-nodular or nodular infiltrates
- Lymphadenopathy

CHRONIC HIV-ASSOCIATED LUNG DISEASE
WHO STAGE 3



SIGNS AND SYMPTOMS

Chronic lung disease is an endpoint of several different causes in HIV-infected children, perhaps prior TB, recurrent pneumonias or LIP.

- Chronic cough not improving with standard treatments
- Susceptible to recurrent pneumonia, i.e. acute worsening against background chronic cough

TREATMENT

- Assess symptom severity and look for hypoxia
- Hospital referral for severe symptoms, oxygen
- Consider specialist consultation for chronic care plan
- Start ART
- Treat acute pneumonia early and aggressively
- Consider trial of salbutamol for symptom relief
- Steroids may be used in severe cases and when no TB

DIAGNOSIS

- **Clinical:** History of chronic cough, perhaps productive, with or without clubbing, crepitations and/or wheezing on auscultation.
- **X-ray:** Honeycomb appearance as seen in bronchiectasis and /or persistent areas of opacification, fibrosis and decreased lung volumes.

UNEXPLAINED PERSISTENT FEVER
WHO STAGE 3

SIGNS AND SYMPTOMS

- Temperature of >37.5° taken axillary, >38°C orally
- Skin hot to touch

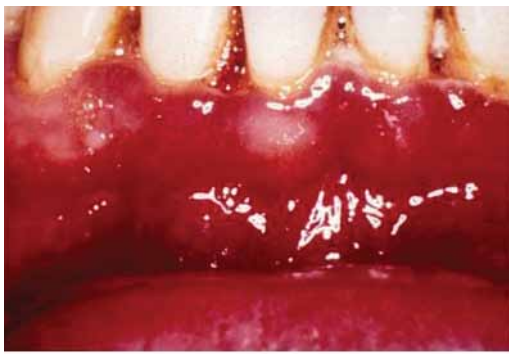
TREATMENT

- Undress to bare minimum of clothing
- Give paracetamol syrup as directed
- Investigate cause and treat accordingly
- ART eligible

DIAGNOSIS

- Thermometer registering from >37.5°C
- Intermittent or daily for 1 month or longer
- Other infectious causes have been ruled out

NECROTIZING ULCERATIVE GINGIVITIS OR PERIODONTITIS - ACUTE **WHO STAGE 3**



SIGNS AND SYMPTOMS

- May partly or totally affect gums and single teeth
- Swollen gums
- Later become inflamed and ulcerate
- Grey-white membrane on affected area
- Halitosis
- May have cervical lymphadenopathy

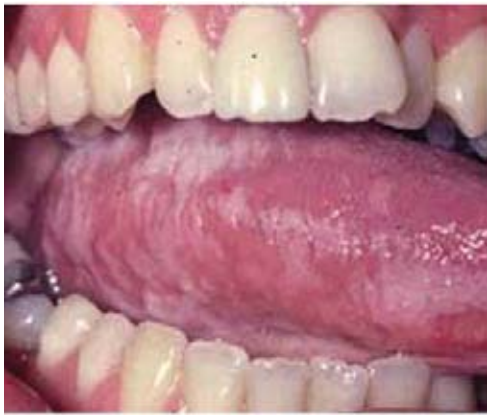
TREATMENT

- Encourage good oral hygiene
- Metronidazole 7.5mg/kg/dose, 8 hrly x 5 days
- Chlorhexidine gluconate mouth wash
- Refer to dentist
- ART eligible

DIAGNOSIS

Clinical signs and symptoms

ORAL HAIRY LEUKOPLAKIA
WHO STAGE 3



SIGNS AND SYMPTOMS

- Benign white vertical ridges on the sides of the tongue
- Unilaterally or bilaterally
- Hard and painless
- Cannot be scrapped off

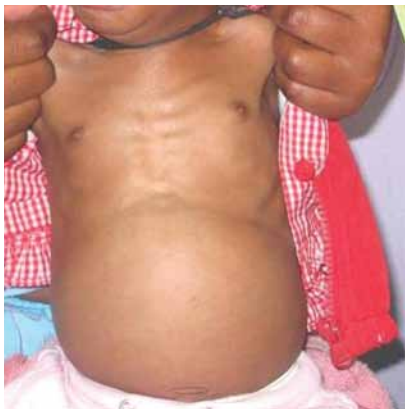
TREATMENT

- Acyclovir 250mg/m^2/dose 3 - 5 x per day x 10 days if there is discomfort
- ART may clear the lesions

DIAGNOSIS

Presence of Epstein-Barr virus in tissues

RECURRENT SEVERE BACTERIAL PNEUMONIA
WHO STAGE 3



SIGNS AND SYMPTOMS

- Ill child with a high fever
- Tachypnoea (Rapid breathing)
- Tachycardia
- Grunting
- Productive cough on history or during examination
- Intercostal and subcostal recession
- Flaring nostrils
- There may be scattered crepitations and wheezes in one or more lobes
- Difficulty with feeding
- Vomits when coughing

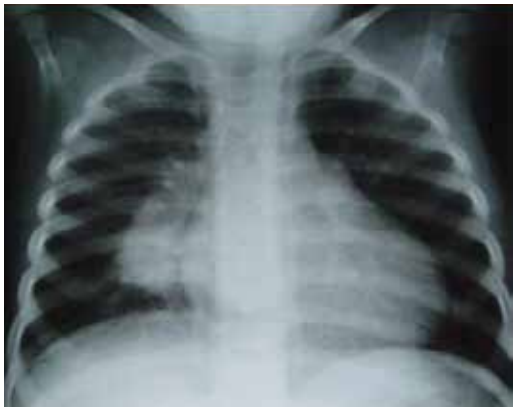
TREATMENT

- Oxygen and hydration as indicated
- Paracetamol syrup orally 15mg/kg/dose 4 - 6 hourly
- First- line antibiotics: Ampicillin (or penicillin) plus gentamicin ivi
  OR Ceftriaxone 50-80mg/kg imi
  PLUS Cotrimoxazole 10mg/kg ivi before transfer to hospital (in HIV-infected or exposed infants 2-12 months old)
- Consider TB & PCP
- ART eligible

DIAGNOSIS

- Two or more episodes over the past 6 months
- Clinical findings with chest x-ray to confirm when available.

PULMONARY TUBERCULOSIS AND TB LYMPHADENITIS
WHO STAGE 3



SIGNS AND SYMPTOMS

NB - SCREEN AT EACH VISIT

- Persistent cough > 2 weeks
- Loss of weight or failure to thrive in last 3 months
- Fatigue or reduced playfulness
- Persistent fever >2 weeks
- Lymphadenopathy – painless mass > 2 x 2cm without local cause; usually in neck

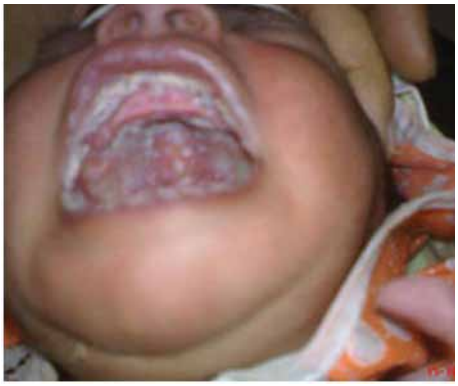
TREATMENT

- Infection control in clinic
- NOTIFY
- Start TB treatment immediately - doses and duration of treatment as for HIV-uninfected children. See TB/Malaria chapter for guidance
- Start ART 2 weeks after starting TB treatment. See TB/Malaria chapter for guidance on drug regimens and dose adjustments

DIAGNOSIS

- History of TB contact and symptoms
- Physical examination
- Mantoux ≥5 mm in HIV+ patients
- CXR
- Microscopy and culture – sputum or gastric aspirates

OESOPHAGEAL CANDIDIASIS
WHO STAGE 4



Severe oral thrush

SIGNS AND SYMPTOMS

- Suspect in a child with severe oral thrush and oesophageal symptoms:
  - Refuses feeds
  - Has difficulty in swallowing
  - Drools
  - Hoarse voice or stridor

TREATMENT

- Intravenous fluconazole 3mg/kg/day x 21days
- Give orally when child is able to tolerate feeds
- ART

DIAGNOSIS

- Often clinical diagnosis based on findings of oral thrush in combination with oesophageal symptoms.
- Definitive diagnosis requires endoscopy.

KAPOSI'S SARCOMA
WHO STAGE 4

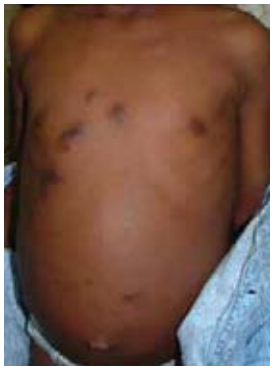


Photo courtesy of the Baylor International Pediatric AIDS Initiative

SIGNS AND SYMPTOMS

- Can occur at any CD4 count, more aggressive at low counts
- Multifocal, firm and purple-to-brown vascular plaques or nodules in the skin or internal organs.
- Can occur in any location but frequently on the face, oral mucous membranes and lower extremities.
- Usually painless
- Can invade lymph nodes and cause limb swelling

TREATMENT

- ART
- Systemic chemotherapy, refer to cancer treatment centre

DIAGNOSIS

From clinical signs and symptoms with confirmation by biopsy pathology and staining for human herpesvirus – 8 (HHV-8).

CRYPTOCOCCAL MENINGITIS
WHO STAGE 4

SIGNS AND SYMPTOMS

- Onset over days to weeks, can be very subtle early in the disease
- Headache, nausea, fever ,vomiting
- Confusion, seizures
- Focal neurological signs, especially cranial nerve palsy (note facial droop in photo)
- Usually older child with severe immunocompromise
- May occur as a result of IRIS

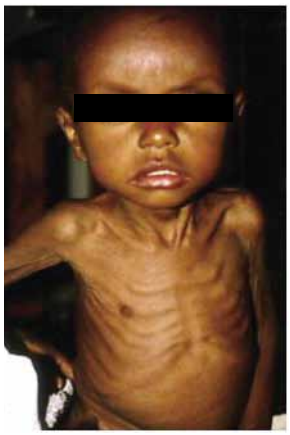
TREATMENT

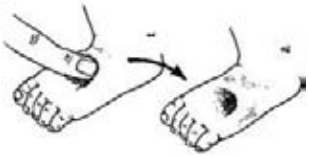
- All patients should be admitted
- Amphotericin B IV for 14 days followed by Fluconazole 12-15mg/kg/day for 8 weeks, then Fluconazole 6-10mg/kg/day secondary prophylaxis
- Therapeutic lumbar punctures may be needed to relieve symptoms of increased intracranial pressure
- ART

DIAGNOSIS

- Culture – of CSF a definite diagnosis
- Cryptococcal antigen test in serum - >95% sensitivity in AIDS. Good marker for HIV associated cryptococcal meningitis

UNEXPLAINED SEVERE MALNUTRITION
WHO STAGE 4





SIGNS AND SYMPTOMS

- Hair discoloration, visible bones, rashes and ulcerations
- Distended abdomen in kwashiorkor.
- Danger signs include:
  - Dehydration
  - Lethargy
  - Hypothermia
  - Jaundice
  - Shock
  - Hypoglycaemia

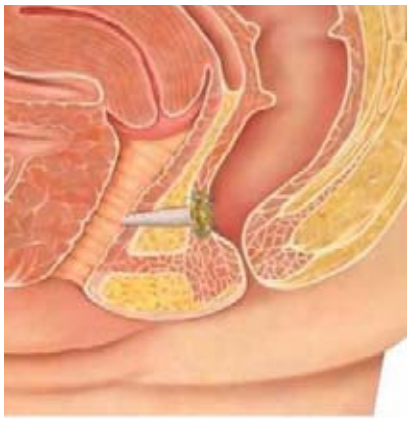
TREATMENT

- Stabilise before URGENT referral for admission, follow IMCI stabilization.
  - Keep warm
  - Check glucose
  - Treat infection
  - Rehydrate but be cautious not to over hydrate
  - Start ART once stabilised

DIAGNOSIS

- **Marasmus:** Severe wasting with wt/ht Z score -3 or lower or MUAC < 11.5. Weight for age is often <60% expected.
- **Kwashiorkor:** Malnutrition with bilateral oedema

RECTO-VAGINAL FISTULA
WHO STAGE 4



SIGNS AND SYMPTOMS

- Flatulence and faeces through the vagina
- There is faecal incontinence

TREATMENT

- Drainage of any abscesses
- Topical antibiotic therapy to treat acute rectovaginal fistulas
- Dietary modification and supplemental fibre can greatly reduce symptoms
- ART if confirmed infected
- Surgical repair once on ART with immunologic improvement

DIAGNOSIS

Clinical signs and symptoms

CYTOMEGALOVIRUS (CMV) INFECTION
WHO STAGE 4

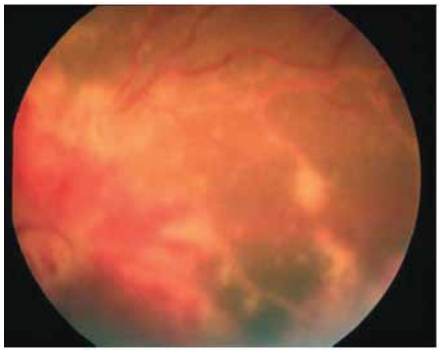


Photo courtesy of the Baylor International Pediatric AIDS Initiative

SIGNS AND SYMPTOMS

Depends upon the affected organ. Occurs in setting of severe immunocompromise. May present as:

Retinitis: Blurry vision, perceived flashing lights and progressive vision loss leading to blindness.

Pneumonitis: Severe pneumonia, may co-infect with PCP.

GI Disease: Hepatitis or colonic ulcers with bloody diarrhoea.

TREATMENT

- Only antiviral effective against CMV is gancyclovir.
- Consultation by specialist team at a tertiary hospital
- Referral for dilated eye exam in patients with suspected retinitis.
- ART

DIAGNOSIS

Can be challenging, often clinical findings with supportive laboratory CMV viral tests. CMV testing can confirm infection, but not necessarily that the illness is due to that infection. Consult when needed. CMV disease is Stage 4 if onset occurs in a child older than one month.

HIV ENCEPHALOPATHY
WHO STAGE 4

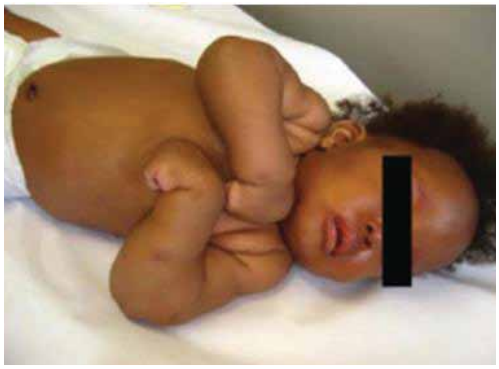


Photo courtesy of the Baylor International Pediatric AIDS Initiative

SIGNS AND SYMPTOMS

Symptoms vary from mild to severe, often begin during infancy if perinatally infected. Developmental monitoring and head circumference measurements for children <2yrs are important to help make the diagnosis.

Motor deficits on exam will be symmetrical, often with increased tone in the legs and progressing to involve the arms in severe cases. Pathological reflexes, ataxia and gait disturbances may be present.

TREATMENT

- Start ART
- Occupational and physical therapist consultation
- Ongoing developmental monitoring
- Social service support for caregivers
- Educational support services for the school-age child

DIAGNOSIS

At least one of the following, progressing over at least two months in the absence of other illness:

- Failure to attain, or loss of, developmental milestones
- Acquired microcephaly, flattening of head circumference curve
- Acquired symmetrical motor deficit

PNEUMOCYSTIS (PCP) PNEUMONIA
WHO STAGE 4

SIGNS AND SYMPTOMS

Severe pneumonia symptoms:

- Respiratory distress with indrawings
- Rapid breathing
- Fever, may or may not be present
- Poor feeding
- Cyanosis (blue oral mucosa)

Chest may sound clear despite severe respiratory symptoms.

TREATMENT

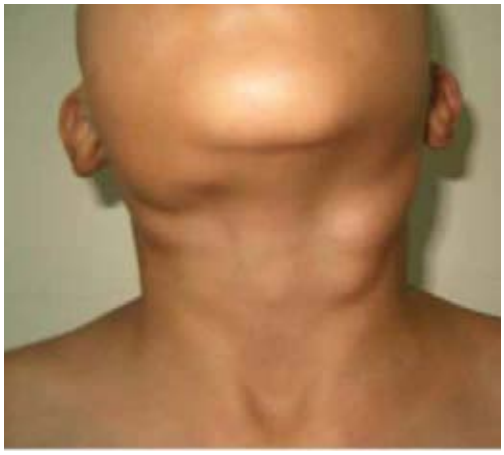
- Oxygen while awaiting transfer to hospital
- Cotrimoxazole – load immediately with 10mg/kg ivi; continue with 5mg/kg/dose 6 hourly ivi for 5 days. Can change to oral preparation once improved to complete 21 days
- Remember to treat for acute bacterial pneumonia also (Ampicillin and Gentamicin OR Ceftriaxone (Corticosteroids – NO LONGER RECOMMENDED due to possible exacerbation of CMV Pneumonitis co-infection)
- ART

DIAGNOSIS

Requires bronchoalveolar lavage or lung biopsy, often not practical. Suspect in any HIV-infected or exposed child, especially infants, with severe pneumonia symptoms.

CXR: May appear normal, but often shows bilateral perihilar infiltrates. Pneumothorax or pneumo-mediastinum may develop.

CEREBRAL OR B-CELL NON-HODGKIN'S LYMPHOMA
WHO STAGE 4



SIGNS AND SYMPTOMS

Depends upon the cancer location.

Cerebral: Mass lesion causing headache, confusion, focal neurologic deficits. May be similar to toxoplasmosis.

Burkitt's: Rapidly enlarging lymph node mass, often occurring around the jaw (see picture)

Other lymphoma: Variable. More gradual lymph node enlargement, often with non-specific symptoms of fever, weight loss, fatigue

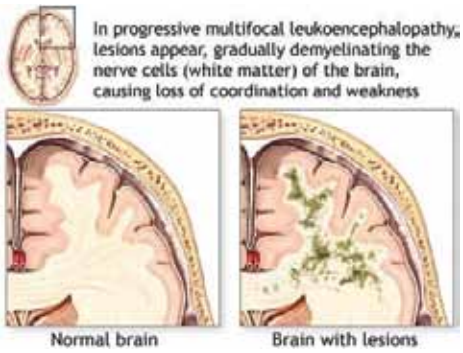
TREATMENT

- Oncology specialist consultation
- Specialist ART management

DIAGNOSIS

- Central nervous system imaging or biopsy of a relevant specimen.
- Other causes of symptoms (eg. TB) should be considered and ruled out.

PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY (PML) **WHO STAGE 4**



Source: www.hivandhepatitis.com

SIGNS AND SYMPTOMS

- Slow in onset
- Speech and vision impairment
- Mental retardation
- Advanced stages – limb paralysis, cortical blindness

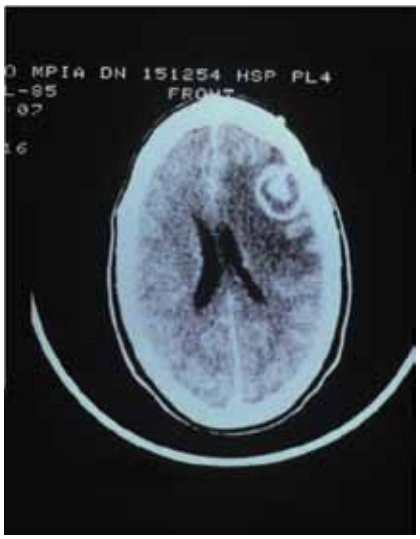
TREATMENT

- ART is the only effective therapy

DIAGNOSIS

- Clinical features
- CSF – to exclude infective causes of presentation e.g. TBM or Cryptococcal Meningitis
- MRI – to make definitive diagnosis

CENTRAL NERVOUS SYSTEM TOXOPLASMOSIS **WHO STAGE 4**



SIGNS AND SYMPTOMS

- Headache
- Confusion and behaviour change
- Focal motor deficits
- Rare in children

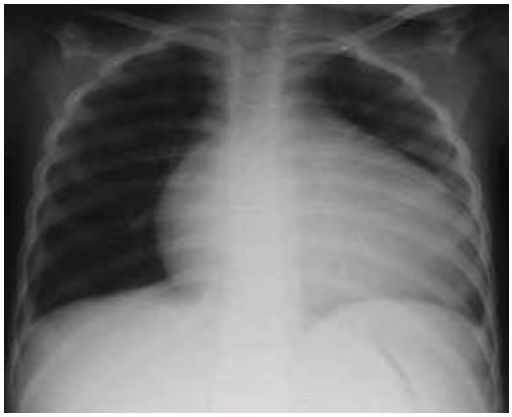
TREATMENT

- Specific treatments limited, neurology and infectious diseases specialist consultation recommended
- ART
- Refer to rehabilitation therapists

DIAGNOSIS

- Neuroimaging shows ring enhancing lesion(s)
- CSF PCR for toxoplasmosis
- Blood and CSF serologies

HIV-ASSOCIATED CARDIOMYOPATHY
WHO STAGE 4



SIGNS AND SYMPTOMS

- Failure to thrive
- Tiring on feeds, lethargy
- Signs of cardiac failure:
  - Infants – tachypnoea, tachycardia, low peripheral pulse volume, displaced apex beat, hepatomegaly
  - Older children – as for infants plus pedal oedema, raised JVP

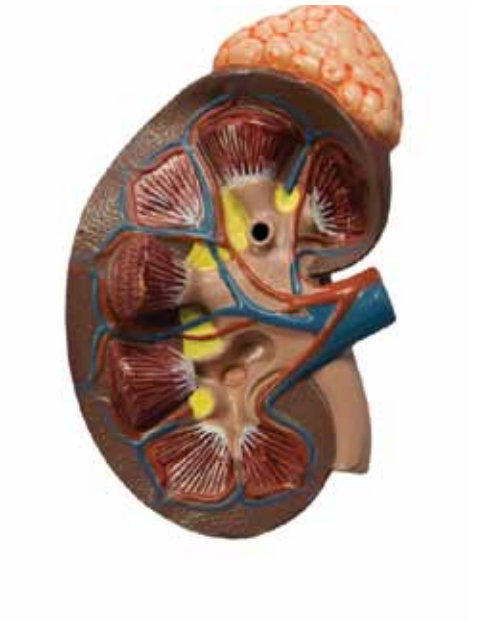
TREATMENT

- ART
- Anti-failure therapy including diuretics and low-dose ACE inhibitors; rarely digoxin (only on cardiologists advice)

DIAGNOSIS

- Clinical signs and symptoms
- CXR – cardiomegaly
- Echocardiography
- Exclusion of all other causes of cardiomyopathy

HIV-ASSOCIATED NEPHROPATHY
WHO STAGE 4



SIGNS AND SYMPTOMS

- Often asymptomatic
- Once reach nephrotic range (proteinuria >3g/L/day) pedal and periorbital oedema, ascites

TREATMENT

- ART
- ACE Inhibitors if >1g/L/day of proteinuria
- Corticosteroids and cyclosporine used only with Nephrologists advice

DIAGNOSIS

Presence of nephropathy is supported by:

- Screening urine dipstix: If > 1+ protein or blood – exclude UTI (sterile urine-microsocpy and culture)
- If UTI exluded – send random urine sample for protein/ creatinine ratio (pr/cr)
- If abnormal pr/cr (<2yrs - >0.5; >2yrs - >0.2) refer to tertiary centre
- If normal – repeat pr/cr in 3 - 6 months
- HIV as a potential cause is often a diagnosis of exclusion

RECURRENT SEVERE BACTERIAL INFECTIONS
WHO STAGE 4

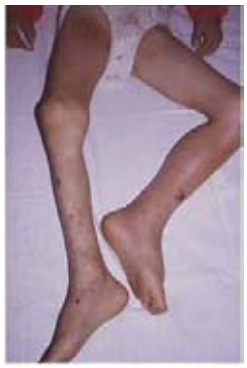


Photo courtesy of the Baylor International Pediatric AIDS Initiative

INCLUDES:

- Empyaema (pus around lungs)
- Bone and joint infections
- Pyomyositis (muscle infection)
- Meningitis

Does NOT include pneumonia

SIGNS AND SYMPTOMS

- Fever
- Signs and symptoms specific to site of infection
  - Empyaema: respiratory distress
  - Bone, joint, muscle: swelling, tenderness, pseudoparalysis, abnormal posture
  - Meningitis: vomiting, neck stiffness, altered level of consciousness

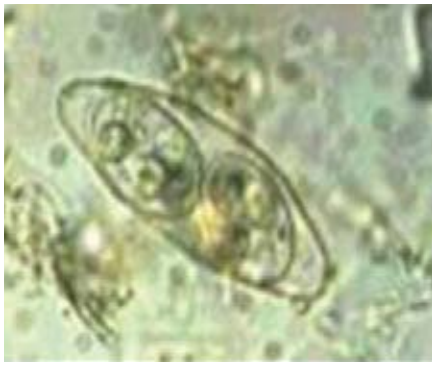
TREATMENT

- Choice of antibiotic and duration will depend on site of infection
- Analgesia and antipyretics
- ART

DIAGNOSIS:

- 2 episodes in 6 months
- Culture specimen from specific site

CHRONIC ISOSPORIASIS
WHO STAGE 4



SIGNS AND SYMPTOMS

- Chronic diarrhoea
- Associated fever, abdominal pain
- Wasting

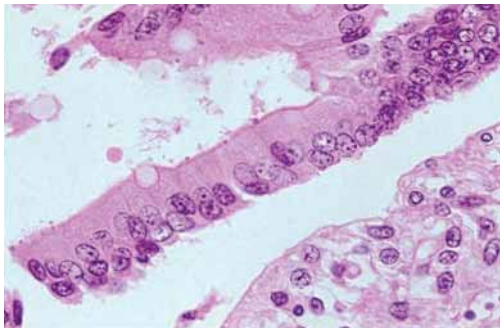
TREATMENT

- Prevention: hygiene
- Support hydration and nutrition
- Cotrimoxazole – 5mg/kg (TMP) 4 x per day for 10 days followed by lifelong prophylaxis
- Ciprofloxacin – an alternative if allergic to cotrimoxazole
- ART

DIAGNOSIS:

- Clinical course
- Stool microscopy
  - organism seen
  - specifically request
  - send 3 stool samples

CHRONIC CRYPTOSPORIDIOSIS
WHO STAGE 4



SIGNS AND SYMPTOMS

- Severe in those with low CD4 counts
- Diarrhoea > 28 days; secretory; often fulminant
- Accompanying fever, malaise, nausea
- Associated malabsorption common
- Complications:
  - Cholecystitis (jaundiced)
  - Pneumonia

TREATMENT

- Prevention: hygiene
- Maintain hydration and nutrition
- Azithromycin 12mg/kg/day for at least 2 weeks (will need tertiary referral for treatment)
- ART

DIAGNOSIS

- Clinical course
- Stool microscopy
  - organism seen
  - specifically request
  - send 3 stool samples

EXTRA-PULMONARY TUBERCULOSIS
WHO STAGE 4

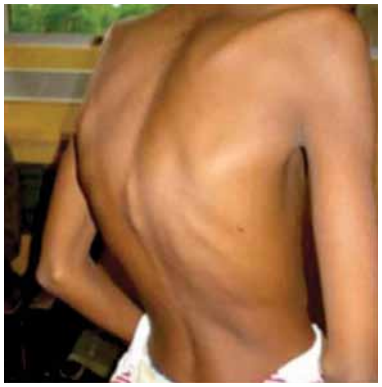


Photo courtesy of the Baylor International Pediatric AIDS Initiative

SIGNS AND SYMPTOMS

REQUIRES HOSPITAL REFERRAL

- Headache, change in activity level, irritability, drowsiness, neck stiffness, convulsions (TB Meningitis)
- Hepatosplenomegaly (Disseminated TB)
- Breathlessness and peripheral oedema (Pericardial effusion or severe respiratory disease and malnutrition)
- Distended abdomen + Ascites (TB Abdomen)
- Angulation of spine (Gibbus/TB Spine) - see picture

TREATMENT

ALWAYS 7 DAYS A WEEK AS DOTS

- All forms of EPTB except TB meningitis and osteoarticular TB – HRZE x 2 months; HR x 4 months
- TB Meningitis and Osteoarticular TB – HRZE x 2 months; HR x 10 months
- Steroids – TB meningitis, TB pericarditis, severe airway obstruction
- ART – to start 2 weeks after initiating TB treatment (see TB/Malaria chapter for guidance)

DIAGNOSIS

- TB Pleural Effusion
- Miliary TB
- TB Meningitis
- Osteo-articular TB
- TB Pericarditis/Pericardial Effusion
- Abdominal TB
- Disseminated TB

PROPHYLAXIS

PROPHYLAXIS

- Paediatric HIV is a preventable disease.

- More than 95% of all children are infected with HIV through mother to child transmission (MTCT).

- Significant progress is being made in the global scale-up of prevention of mother-to-child transmission of HIV (PMTCT). For the first time, the elimination of mother-to-child transmission of HIV (MTCT) is now considered a realistic public health goal and an important part of the campaign to achieve the millennium development goals.

- To maximize prevention of HIV transmission and maternal and infant survival, it is critical that care of both the mother and the infant is optimized. The mother's health is the determining factor in the child's health and survival. Children born to HIV infected mothers have a 3-5 times higher risk of death regardless of their status.

- A key issue in deciding what ARV regimen to choose for an HIV-infected pregnant woman is whether the ARVs are being provided for treatment of the woman's HIV disease or solely for prophylaxis of MTCT.

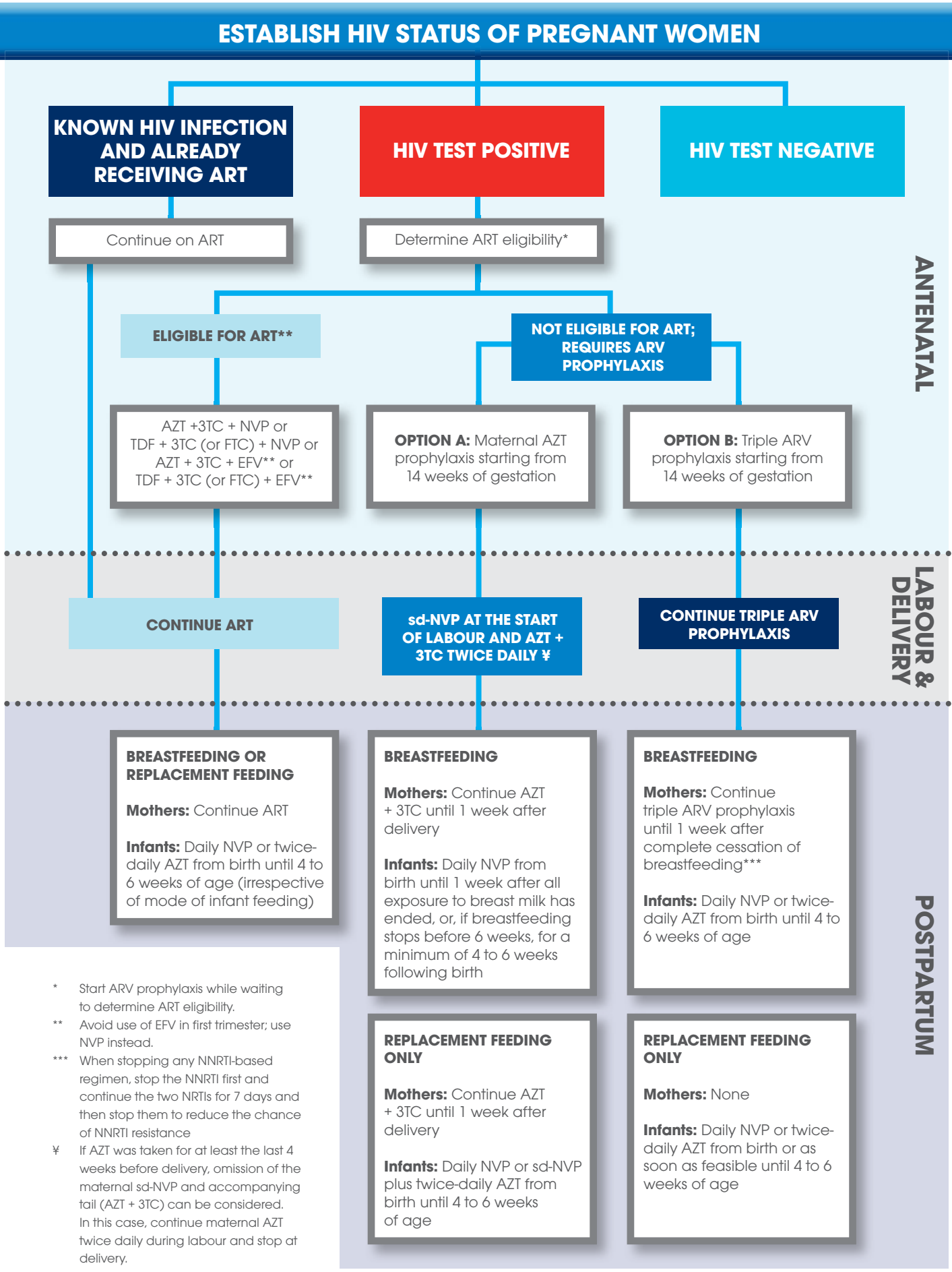
- In the former case, treatment means that ARVs are started during pregnancy and continued throughout life, whereas ARVs given solely for prophylaxis are stopped when the risk of MTCT is no longer present.

- In both cases, effective linkages between PMTCT services and HIV care and treatment programmes are needed.

KEY MESSAGE:

It's never too late to start PMTCT interventions; late in the pregnancy for mother or after birth for the baby.

2010 PMTCT WHO RECOMMENDATIONS



* Start ARV prophylaxis while waiting to determine ART eligibility.

** Avoid use of EFV in first trimester; use NVP instead.

*** When stopping any NNRTI-based regimen, stop the NNRTI first and continue the two NRTIs for 7 days and then stop them to reduce the chance of NNRTI resistance

¥ If AZT was taken for at least the last 4 weeks before delivery, omission of the maternal sd-NVP and accompanying tail (AZT + 3TC) can be considered. In this case, continue maternal AZT twice daily during labour and stop at delivery.

MATERNAL AND INFANT ARV PROPHYLAXIS TO PREVENT MTCT FOR HIV-INFECTED PREGNANT WOMEN WHO DO NOT NEED TREATMENT FOR THEIR OWN HEALTH*

** Mothers need treatment for their own health if clinical stage 3 or 4 or CD4 <350*

Eligibility for ARV prophylaxis

HIV-infected pregnant women who are not in need of ART for their own health require effective ARV prophylaxis to prevent HIV infection in their infants. ARV prophylaxis should be started from as early as 14 weeks of gestation (second trimester) or as soon as feasible during pregnancy, labour and delivery or thereafter.

What ARV prophylaxis regimen to give women and their infants

Two options are recommended for HIV-infected pregnant women who are not eligible for ART: option A is maternal AZT + infant ARV prophylaxis; option B is maternal triple ARV prophylaxis.

Option A: maternal AZT + infant ARV prophylaxis

For HIV-infected pregnant women who are not in need of ART for their own health, ARV prophylaxis option A consists of antepartum twice-daily AZT, plus sd-NVP at the onset of labour [1], plus twice-daily AZT + 3TC during labour and delivery and continued for 7 days postpartum.

In breastfeeding infants, daily administration of NVP to the infant from birth until 1 week after all exposure to breast milk has ended, or for 4 to 6 weeks if breastfeeding stops before 6 weeks (but at least 1 week after the early cessation of breastfeeding), is recommended.

In infants receiving only replacement feeding, daily administration of NVP from birth or sd-NVP at birth plus twice-daily AZT from birth until 4 to 6 weeks of age is recommended.

Option B: maternal triple ARV prophylaxis + infant ARV prophylaxis

For HIV-infected pregnant women who are not eligible for ART for their own health, ARV prophylaxis option B consists of antepartum daily triple ARV prophylaxis until delivery, or, if breastfeeding, until 1 week after all exposure to breast milk has ended. Recommended regimens include AZT + 3TC + LPV/r, AZT + 3TC + ABC, AZT + 3TC + EFV, or TDF + 3TC (or FTC) + EFV.

In infants, regardless of infant feeding practices (breastfeeding or replacement feeding), the maternal triple ARV prophylaxis should be combined with the daily administration of NVP or twice-daily AZT to the infant from birth until 4 to 6 weeks of age.

1 sd-NVP and the AZT + 3TC intrapartum and postpartum tail can be omitted if the mother received more than 4 weeks of AZT during pregnancy; in this case continue maternal AZT twice daily during labour and stop at delivery.

Extended simplified infant NVP dosing recommendations

INFANT AGE	NVP DAILY DOSING
Birth to 6 weeks** • Birth weight 2000–2499 g • Birth weight ≥2500 g	 10 mg once daily 15 mg once daily
>6 weeks to 6 months	20 mg once daily
>6 months to 9 months	30 mg once daily
>9 months to end of BF	40 mg once daily

** Low birth weight infants should receive mg/kg dosing, suggested starting dose is 2 mg/kg once daily. Therapeutic drug monitoring is recommended

Adapted from: Mirochnick M. et. al. (66).

Simplified infant AZT dosing recommendations*

INFANT AGE	AZT DAILY DOSING
Birth to 6 weeks** • Birth weight 2000–2499 g • Birth weight ≥2500 g	 10 mg twice daily 15 mg twice daily

* Low birth weight infants should receive mg/kg dosing based on gestational age.

COTRIMOXAZOLE

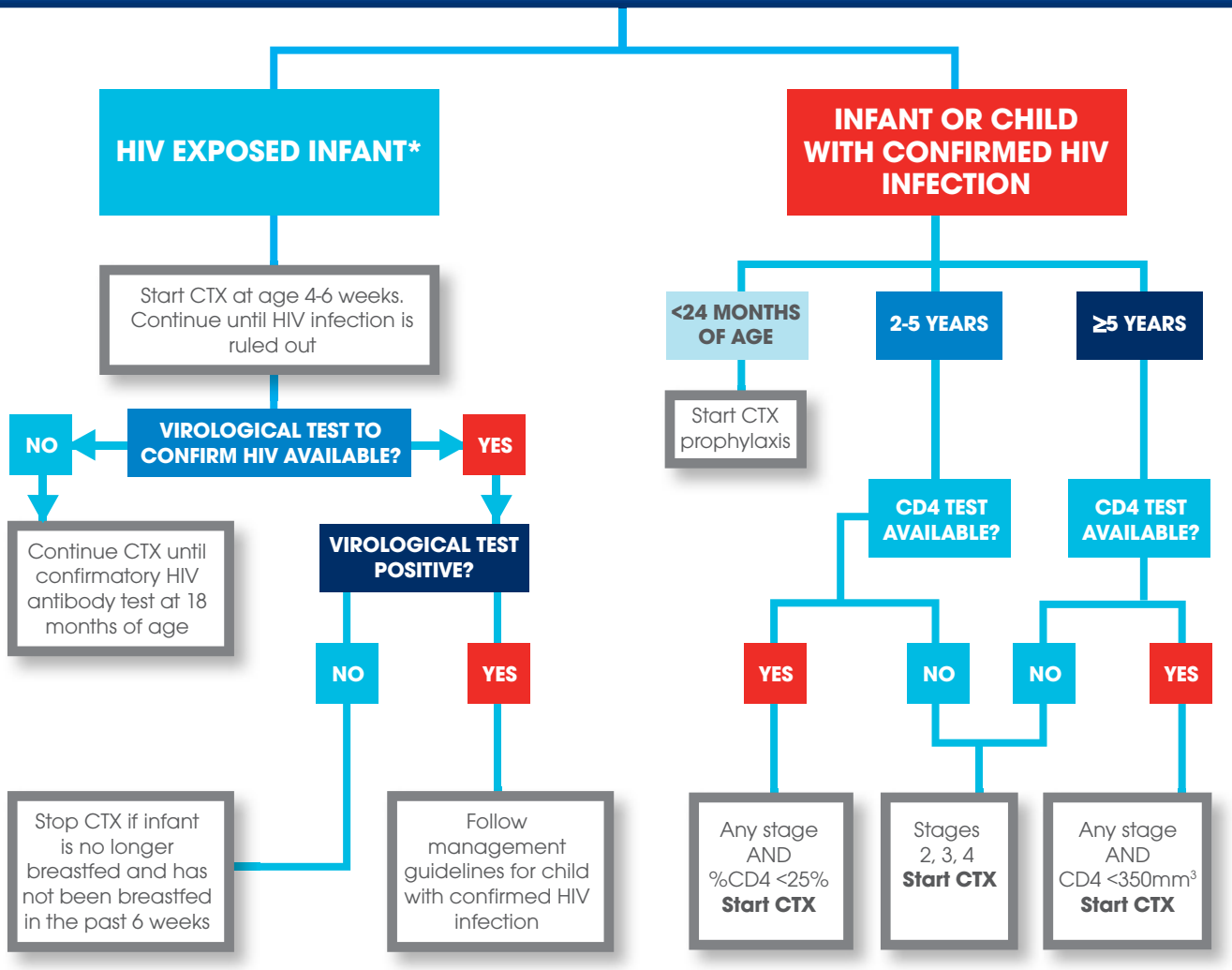
PROPHYLAXIS

- To reduce the risk of pneumocystis pneumonia (PCP), all HIV-infected and HIV-exposed infants must receive cotrimoxazole prophylaxis from six weeks of age.
- Cotrimoxazole must be continued, unless the child is proven to be HIV negative.
- Cotrimoxazole may be stopped in children on ART who are over one year of age and where there is evidence that the immune system is functioning well.
- In order to stop cotrimoxazole, the child must have two CD4 counts greater than 15% or 500 cells/mm^3, taken at least three months apart.
- HIV infected child with previous PCP pneumonia should only stop cotrimoxazole prophylaxis if age 5 years or older and if two CD4 counts greater than 15% or 500 cells/mm^3, taken at least three months apart

- See dosing table page 136

INITIATING COTRIMOXAZOLE PROPHYLAXIS

INDICATIONS FOR COTRIMOXAZOLE (CTX) PROPHYLAXIS



* An infant born to a mother infected with HIV and exposed to HIV during pregnancy, children or breastfeeding.

Contraindications to cotrimoxazole include:
- Sulpha allergy
- Severe liver disease
- Severe renal insufficiency

Discontinue CTX prophylaxis if:
- Stevens-Johnson syndrome
- Severe liver disease
- Severe anaemia
- Severe pancytopenia
- Negative HIV status

Universal option for CTX prophylaxis may be considered in settings such as in TB programmes with high prevalence of HIV and limited health infrastructure.

COTRIMOXAZOLE DOSE

FOR PROPHYLAXIS

AGE OR WEIGHT OF CHILD	DOSE	SUSPENSION 5ML 200MG SMX 40MG TMP	SINGLE STRENGTH TABLET 400MG SMX 80MG TMP	DOUBLE STRENGTH TABLET 800MG SMX 160MG TMP
< 6 months or < 5 kg	100mg SMX/ 20mg TMP	2.5ml	¼ tablet	–
6 months - 5 years or 5 – 15 kg	200mg SMX/ 40mg TMP	5ml	½ tablet	–
6 – 14 years or 15 - 30kg	400mg SMX/ 80mg TMP	10ml	1 tablet	½ tablet
>14 years or > 30kg	800mg SMX/ 160mg TMP	–	2 tablets	1 tablet

TB/MALARIA

TB/MALARIA

Children living with HIV are at high risk for developing tuberculosis (TB). In many parts of Africa, the TB and HIV epidemics go hand-in-hand. Therefore, it is essential that a child's HIV status be investigated at the time of TB diagnosis and conversely, TB screening be performed routinely as a part of chronic HIV care.

TB is also the most common cause of the Immune Reconstitution Inflammatory Syndrome (IRIS) among children recently started on ART in TB-endemic areas. This can be avoided by starting TB treatment prior to ART initiation among those screened and diagnosed with TB.

KEY MESSAGE:

Children become infected with TB from adults, therefore a paediatric case must prompt investigation and treatment of adult contacts.

In screening for TB, healthcare workers must keep in mind that TB can infect many different organs or produce a sepsis-like illness as in miliary TB. Therefore, the prominent symptoms may vary depending upon TB disease location, such as pulmonary, lymph node or meningitis. Children may not present with the classic symptoms associated with adult TB, such as night sweats and bloody sputum. It is for this reason that TB symptom score cards have not been well validated in children as compared to adults.

KEY MESSAGE:

At every contact with an HIV-infected child enquire about new TB contacts and new TB symptoms.

National TB programme guidelines and the WHO and IUATLD "Guidance for national tuberculosis and HIV programmes on the management of tuberculosis in HIV-infected children: Recommendations for a public health approach" provide more detailed guidance.

TB Definitions:

- **TB exposure:** A child comes into close contact with an infectious TB patient. The child may have a positive tuberculin skin test (TST), but a positive TST is not necessary to prove exposure.
- **TB infection:** The child inhales the aerosol droplet containing the TB organism. TB infection is usually indicated by a positive TST; however, there are limitations to the test. Children with M. tuberculosis infection, but without active disease, are not ill and do not have symptoms suspicious of TB.
- **TB disease:** A small percentage of children who inhale the TB organism develop TB disease and become ill; certain groups are at far greater risk than others, including very young children and those with immune system abnormalities (e.g. from HIV or severe malnutrition).

TB SCREENING

History and physical examination

- Has the child had close contact with someone diagnosed with tuberculosis?
- Has the child had any household contact with TB symptoms (e.g. cough for more than 2 weeks, weight loss, fever, night sweats)?
- Does the child have any symptoms?
- Indications requiring hospitilization/referral:
    - Severe forms of PTB and EPTB for further investigation and initial management
    - Severe malnutrition for nutritional rehabilitation
    - Signs of severe pneumonia (i.e. chest in-drawing) or respiratory distress
    - Other co-morbidies eg. severe anaemia
- Referral should also be considered if:
    - Diagnostic uncertainty requiring further investigation at referral level
    - Necessary for HIV-related care e.g. to commence ART
- There are no specific features on clinical examination that can confirm TB.
    - Weight faltering, especially after implementing nutritional interventions, is a good indicator of chronic disease in children, of which TB may be the cause.
    - A painless, enlarged mass of matted lymph nodes in the neck, without a visible local cause on the scalp, and which does not respond to a course of antibiotics, is highly suggestive of TB cervical adenitis.
- Some signs, although uncommon, are highly suggestive of extrapulmonary TB (TB outside the lungs). Many other abnormalities can indicate extrapulmonary TB, including those consistent with meningitis, pleural effusion, ascites and a non-painful enlarged joint.

Tuberculin Skin Test (TST)

- The TST may be used as a screening test in order to evaluate whether a patient has had prior infection with M. tuberculosis.
- A negative result never rules out M. tuberculosis infection completely, especially in HIV infected patients.
- The Mantoux test is the preferred TST. It measures the delayed hypersensitivity response to purified protein derivative (PPD), also known as tuberculin.

STRICT SYMPTOM CRITERIA FOR TB SCREENING IN CHILDREN

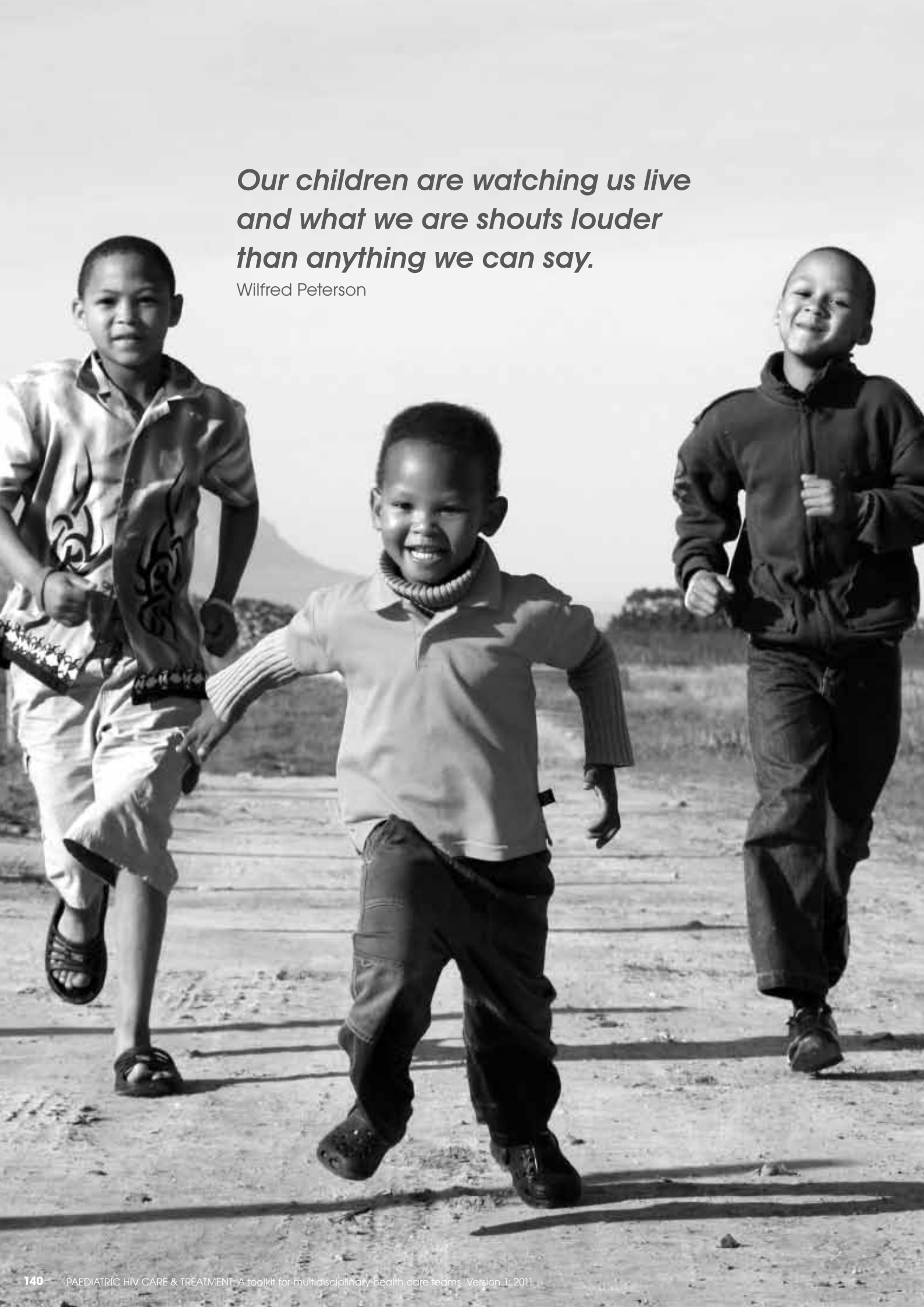
- Persistent, non-remitting cough or wheeze for more than 2 weeks not responding to standard therapy
- Documented loss of weight or failure to thrive during the past 3 months especially if not responding to food and/or micronutrient supplementation, OR severe malnutrition
- Fatigue/reduced playfulness
- Persistent fever > 10 days

Two or more of these symptoms are highly suggestive of TB disease

TB DIAGNOSIS

When TB screening suggests possible infection, further diagnostic investigations are often indicated in children. These may include:

- Gastric aspirates for younger children
- Expectorated or induced sputum for microscopy and culture. Typically at around age 8 years a child may be able to produce a quality expectorated sputum sample
- Microscopy and culture of other body fluids or biopsy specimen as indicated
- X-ray or ultrasound
- Drug sensitivities on cultures when an MDR or XDR contact is suspected

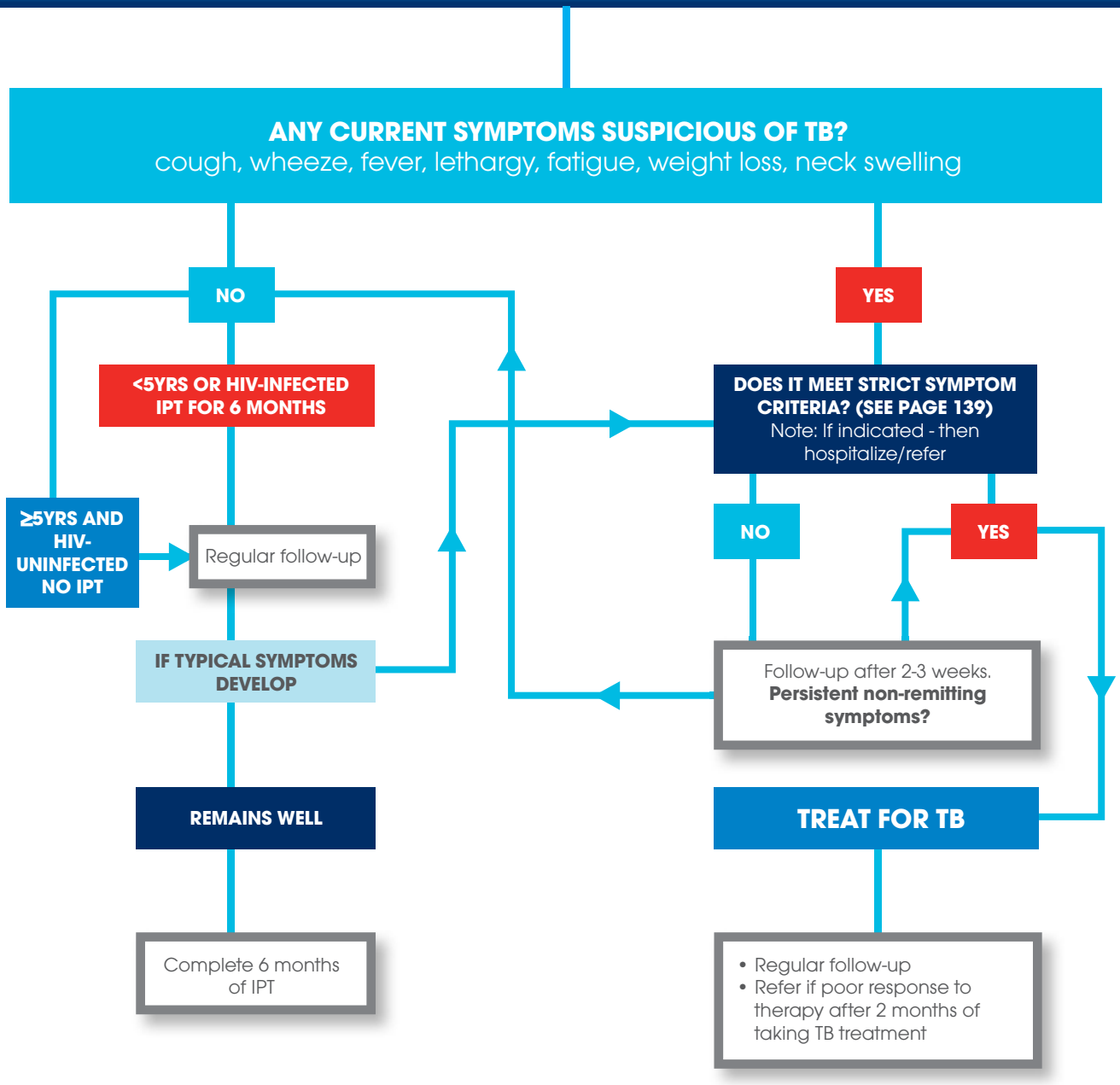


Our children are watching us live and what we are shouts louder than anything we can say.

Wilfred Peterson

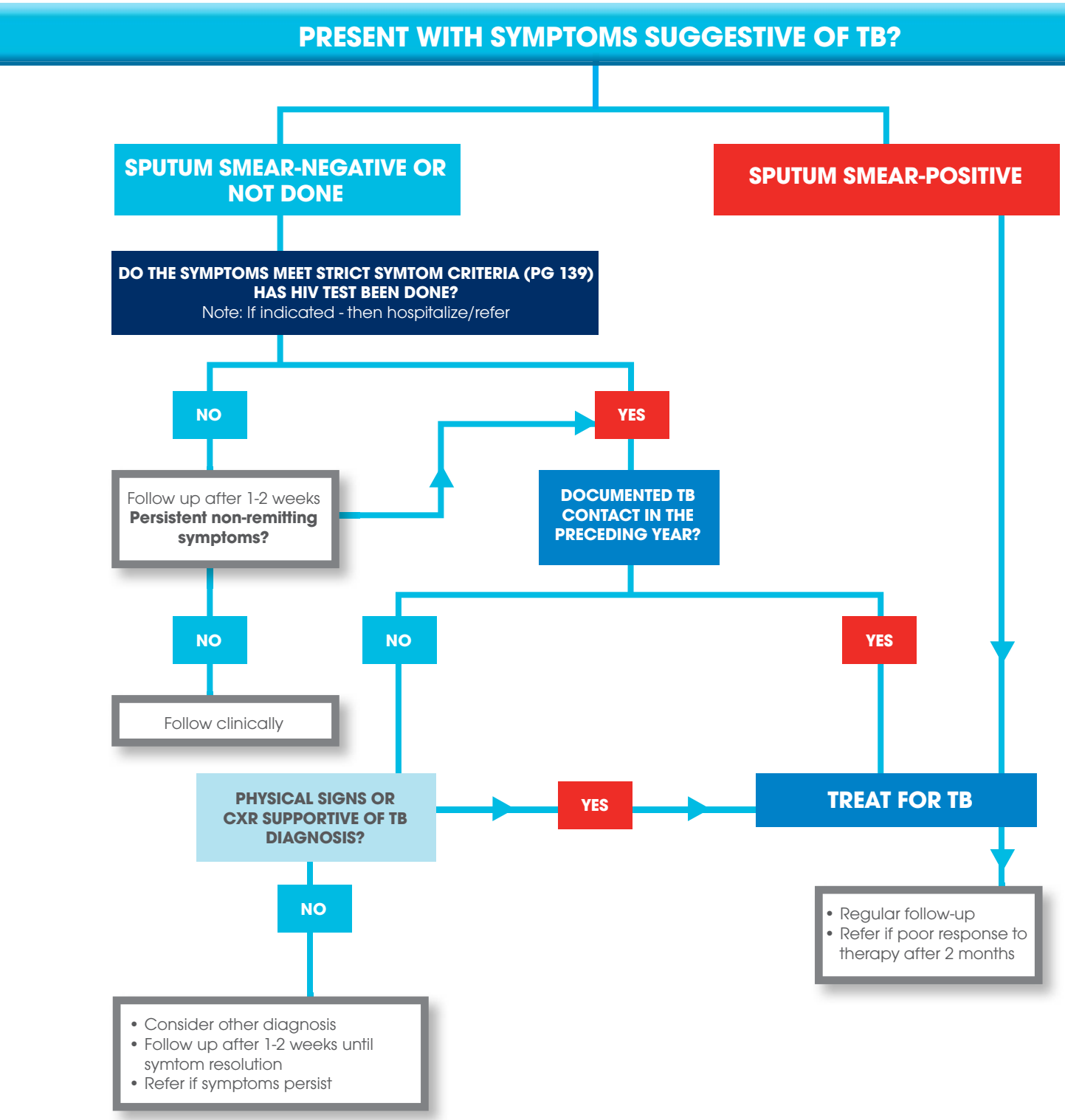
GUIDANCE FOR THE SCREENING OF CHILDREN IN CLOSE CONTACT** WITH AN ADOLESCENT OR ADULT WITH NEWLY DIAGNOSED PULMONARY TB

DOCUMENTED TB EXPOSURE, AGE AND HIV STATUS OF CHILD



** **Close contact** is defined as living in the same household as, or in frequent contact with (e.g. child minder, school staff), a source case with PTB.

GUIDANCE FOR THE DIAGNOSIS OF CHILDREN WHO PRESENT WITH SYMPTOMS SUGGESTIVE OF TB



STEPS TO PLACING AND READING

THE TUBERCULIN SKIN TEST

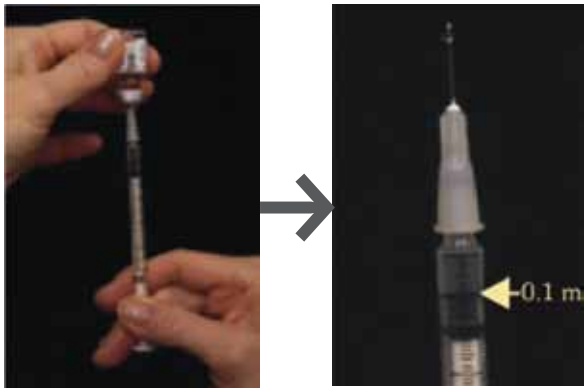
1. ADMINISTRATION

For each patient, conduct a risk assessment that takes into consideration recent exposure, clinical conditions that increase risk for TB disease if infected, and the program's capacity to deliver treatment for latent TB infection to determine if the skin test should be administered.

2 to 4 inches below elbow joint

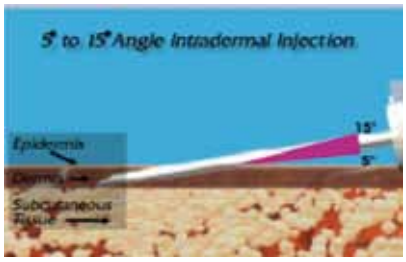
1. LOCATE AND CLEAN INJECTION SITE

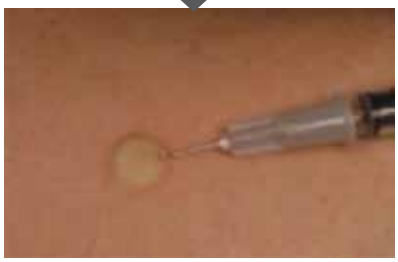
- Place forearm palm side up on a firm, well-lit surafce
- Select an area free of barriers (e.g. scars, sores) to placing and reading
- Clean the area with an alcohol swab



2. PREPARE SYRINGE

- Check expiration date on vial and ensure vial contains tuberculin (5 TU per 0.1 ml)
- Use a single-dose tuberculin syringe with a ¼- to ½-inch, 27-gauge needle with a short bevel
- FIll the syringe with 0.1 ml of tuberculin





3. INJECT TUBERCULIN

- Insert slowly, bevel up, at a 5 - 15 degree angle
- Needle bevel can be seen just below skin surface
- After injection, a tense, pale wheal should appear over the needle

4. CHECK SKIN TEST

- Wheal should be 6 to10 mm in diameter. If not, repeat test at a site at least 2 inches away from original site

5. RECORD INFORMATION

- Record all the information required for documentation by your institution (e.g., date and time of test administration, injection site location, lot number of tuberculin)

2. READING

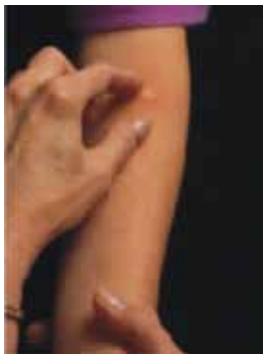
The skin test should be read between 48 and 72 hours after administration. A patient who does not return within 72 hours will probably need to be rescheduled for another skin test.

Erythema (reddening of the skin) - do not measure

Induration (hard, dense, raised formation)

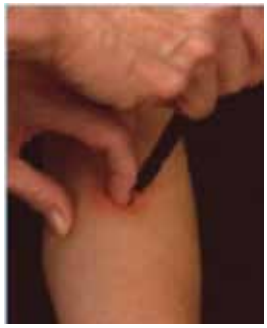
1. INSPECT SITE

- Visually inspect site under good light



2. PALPATE INDURATION

- Use fingertips to find margins of induration



3. MARK INDURATION

- Use fingertip as a guide for marking widest edges of induration across forearm

4. MEASURE INDURATION (NOT ERYTHEMA)

- Place "0" ruler line inside left dot edge
- Read ruler line inside right dot edge (use lower measurement if between two gradations on mm scale)

5. RECORD MEASUREMENT OF INDURATION IN mm

- If no induration, record as 0 mm
- Do not record as "positive" or "negative"
- Only record measurement in mm

INTERPRETATION OF

PPD/ MANTOUX / TST

	PREVIOUS BCG	NO BCG	HIV POSITIVE
Mantoux	≥ 10 mm	≥ 10 mm	≥ 5mm

Note:

- A positive TST denotes TB infection not necessarily TB disease but in HIV positive patients it is more likely TB disease.
- Any measurement equal to or above 5 mm in a HIV positive child denotes TB infection.
- A negative TST does not exclude TB – false negative causes could include:
    - Acute viral infection eg. Measles
    - Recent immunisation with live attenuated vaccines
    - Overwhelming TB infection
    - Incorrect PPD technique
    - Immunosuppressive therapies
    - HIV infection
    - Malnutrition

TB TREATMENT

Once the decision is made to treat a patient for TB, the entire regimen duration must be completed in order to achieve a cure. Direct observed therapy is the standard approach. Caregivers should receive accurate and detailed information about the course of treatment and possibility of other family members requiring investigations. Healthcare workers should never use a "trial" of TB medication as a means to assist a difficult diagnosis.

Recommended treatment regimens for the new patient in HIV endemic setting (WHO,2010)

TB DISEASE CATAGORY	RECOMMENDED REGIMEN	
	INTENSIVE PHASE	CONTINUATION PHASE
All forms of PTB and EPTB except TBM and osteoarticular TB	2 HRZE	4 HR
TB meningitis Osteoarticular TB	2 HRZE	10 HR

H=isoniazid **R**=rifampicin **Z**=pyrazinamide **E**=ethambutol

Numeral refers to number of months of the regimen e.g. 2 HRZE refers to two months of daily isoniazid, rifampicin, pyrazinamide and ethambutol.

NOTE:

- Streptomycin no longer recommended for new patients
- Intermittent regimens not recommended in HIV endemic setting

Recommended dosages according to weight (WHO,2010)

DRUG	DAILY DOSAGE IN mg/kg RANGE (MAXIMUM)
Isoniazid (H)	10 - 15 (300 mg)
Rifampicin (R)	10 - 20 (600 mg)
Pyrazinamide (Z)	30 - 40 (2000 mg)
Ethambutol (E)	15 - 25 (1200 mg)

ADDITIONAL TREATMENT CONSIDERATIONS

- Give paracetamol or tilidine to all children with meningitis for relief of headache (See pain management below)
- All HIV-infected children should receive pyridoxine if they are on TB treatment:
  - < 5 years 12.5 mg daily
  - > 5 years 25 mg daily
- HIV infected children may need to be treated for TB for longer than 6 months if they do not respond well to treatment.
  - In these children MDR and XDR TB must also be considered
- All HIV-infected children (on or off ART) on treatment for tuberculosis should receive prophylactic co-trimoxazole (at least until CD4-count is >25%)

TB PROPHYLAXIS

WHO Recommendations for Isoniazid preventive therapy (IPT):

- All HIV-infected infants and children exposed to TB through household contacts, but with no evidence of active disease, should begin IPT.
- Children living with HIV (> 12 months of age and including those previously treated for TB), who do not have signs or symptoms of active TB and are not known to be exposed to TB, should receive 6 months of IPT as part of a comprehensive package of HIV care.
- Infants living with HIV, who are unlikely to have active TB and are not known to be exposed, should not receive IPT as part of a comprehensive package of HIV care

KEY MESSAGE:

All children with HIV infection, irrespective of age, are at high-risk of developing TB disease following exposure to a contact. They require a 6 month course of IPT after EVERY documented exposure to TB, regardless of how recently they completed a previous course of IPT or TB treatment.

Simplified, weight-based dosing for isoniazid 10mg/kg/day

WEIGHT RANGE (kg)	NUMBER OF 100 mg TABLETS OF INH TO BE ADMINISTERED PER DOSE	DOSE GIVEN (mg)
<5	½ tablet	50
5.1 – 9.9	1 tablet	100
10 – 13.9	1 ½ tablet	150
14 – 19.9	2 tablets	200
20 – 24.9	2 ½ tablets	250
>25	3 tablets or one adult tablet	300

ANTIRETROVIRAL THERAPY IN TB-HIV CO-INFECTED CHILDREN

All HIV-infected children with any form of TB are eligible for ART if they are not already receiving it.

Successful TB treatment relies on rifampicin being included in a multi-drug regimen. Rifampicin however interferes with the metabolism of many ARVs, and speeds up the break down of especially lopinavir, efavirenz and nevirapine.

Adjustments therefore need to be made to ARV regimens and doses while TB treatment is being given.

Principles of TB-HIV co-infection treatment:

- TB Treatment takes preference and must be started immediately at diagnosis.
- ART, if not already received, should be commenced 2 weeks after starting TB treatment. Delaying ART in the presence of TB worsens the outcome.
- When using an EFV or NVP containing regimen, the doses do not need to be increased but it is important that the appropriate weight-based dose adjustments are made to maintain therapeutic levels.
- LPV/r is formulated in a 4:1 ratio. When using LPV/r in the presence of TB treatment, additional RTV must be added to the LPV/r to achieve a 1:1 ratio of LPV: RTV. This is achieved by adding 0.75mls of RTV syrup for every 1 ml of LPV/r syrup given.
- Be aware of overlapping side-effects of drugs and the potential of IRIS.
- Review TB-HIV co-infected children at 2 weeks and 4 weeks following commencement of anti-TB treatment and then monthly thereafter.

Choice of ART Regimen:

The choice of ART regimen to use will be determined by the age of the child, previous NNRTI exposure through vertical transmission prevention efforts and locally available drugs.

	ART REGIMEN	CONDITIONS
Under 3 years of age No NNRTI Exposure	2 NRTI's + NVP 3 NRTI's	NVP should be commenced at full dose, foregoing dose-escalation. NVP to be kept at upper end of dosing range. Must include ABC.
Under 3 years of age Previous NNRTI Exposure	2 NRTI's + Super-boosted PI	Equivalent amounts of LPV and RTV (1:1) until 2 weeks after completion of RMP.
3 years and older AND 10 kg's and above	2 NRTI's + EFV	No dose adjustment of EFV required

BCG DISEASE

In TB-endemic areas the BCG immunization is given at birth to all infants regardless of HIV exposure. However, there should be close follow-up of infants known to be born to HIV-infected mothers who receive BCG at birth in order to provide early identification and treatment of any BCG complication.

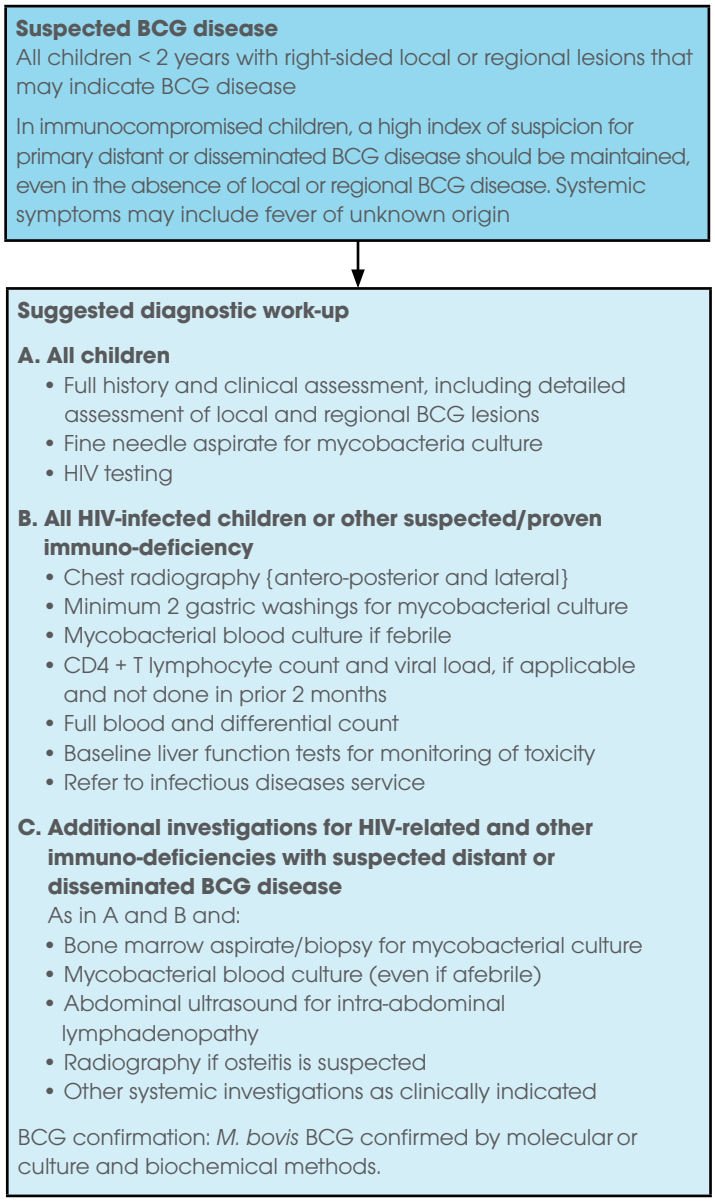
BCG disease occurs mostly in severely immunocompromised infants. Early ART can prevent this disease process from occurring. BCG disease requires multi-drug treatment in addition to ART. See figures 1 and 2 for diagnosis and management guidance.

BCG IRIS is different from BCG disease and occurs during immune reconstitution in an HIV - infected child within 3 months of initiation of ART and usually does not require additional treatment as for BCG disease.

Diagnostic Evaluation & Management

The diagnostic work-up and management of BCG disease is not extensively covered in recent international guidelines, therefore consultation with specialists is recommended. Paediatric infectious disease specialists have developed the following to assist providers:

Figure 1:
Diagnostic guidance for BCG disease in children



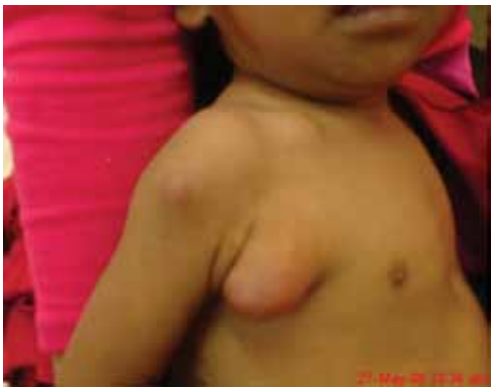


Photo:

Child with regional BCG adenitis.

Figure 2:
Guidance on the management of BCG disease in children

Suspected or confirmed BCG disease

Suspected BCG disease: All children < 2 years with right-sided local or regional lesions that may indicate BCG disease

In immunocompromised children, a high index of suspicion for primary distant or disseminated BCG disease should be maintained, even in the absence of local or regional BCG disease. Systemic symptoms may include fever of unknown origin.

Confirmed BCG disease: BCG confirmation: *M. bovis* BCG confirmed by molecular or culture and biochemical methods.

HIV-uninfected children

A. Local or regional disease

- Observe
- Consider therapeutic aspiration or excision biopsy in the following: fluctuant node or abscess, persistent, rapidly enlarging node or fistula formation, or in the presence of a large injection site abscess
- Report as vaccine-related adverse event to EPI

B. Suspected or confirmed distant or disseminated disease

Treat medically:

- Isoniazid 15 - 20 mg/kg/day
- Rifampicin 20 mg/kg/day
- Pyrazinamide 20 - 25 mg/kg/day (2 months, or until tuberculosis excluded)
- Ethambutol 20 - 25 mg/kg/day
- Ofloxacin 15 mg/kg/day or Ciprofloxacin 30 mg/kg/day

- Refer to infectious diseases and immunology service; screen immune function
- Monitor for drug toxicity
- Report as vaccine-related adverse event to EPI

HIV-infected children or immunocompromised children

A. Local or regional disease

Treat medically:

- Isoniazid 15 - 20 mg/kg/day
- Rifampicin 20 mg/kg/day
- Pyrazinamide 20 - 25 mg/kg/day (2 months, or until tuberculosis excluded
- Ethambutol 20 - 25 mg/kg/day
- Ofloxacin 15 mg/kg/day or Ciprofloxacin 30 mg/kg/day

- Consider therapeutic aspiration if node fluctuant
- 2 - 4 weekly follow-up: if no improvement, or deterioration of adenitis after 6 weeks antituberculosis therapy, consider excision biopsy
- If on HAART, ensure HAART is antituberculosis-drug compatible
- Refer to infectious disease service
- Monitor for drug toxicity
- Report as vaccine-related adverse event to EPI

B. Suspected or confirmed distant or disseminated disease

- Treat medically as above
- Consider expedited initiation of HAART
- Monitor for drug toxicity
- Report as vaccine-related adverse event to EPI

C. Local or regional disease not conforming to EPI criteria regional CG IRIS with no suspected dissemination

- Observe, follow regularly for progression
- Report as vaccine-related adverse event if progression to EPI case definition

Source: Hesseling, AC, et al. Bacille Calmette-Guerin Vaccine-Induced Disease in HIV-Infected and HIV-Uninfected Children. Clinical Infectious Diseases, 42, 548-58, 2006.

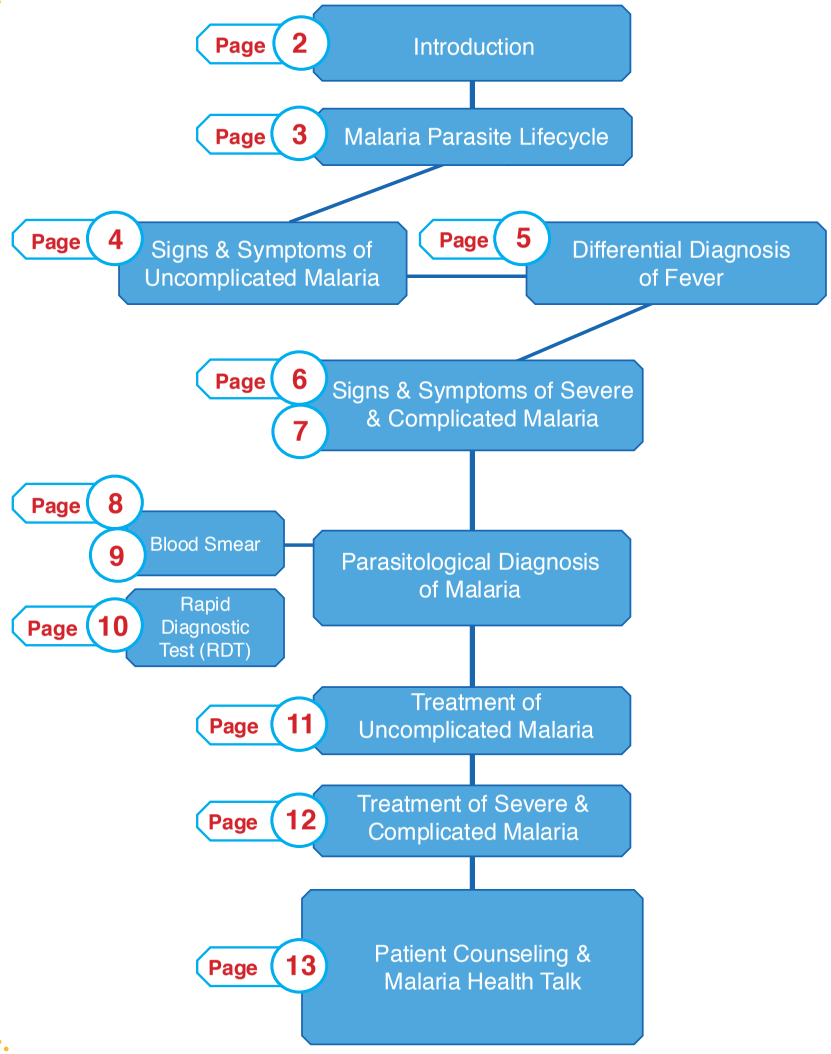
Hugs can do great amounts of good, especially for children.

Princess Diana

Malaria Diagnosis & Treatment Tool for Primary Care

August 2011

Malaria Flowpath



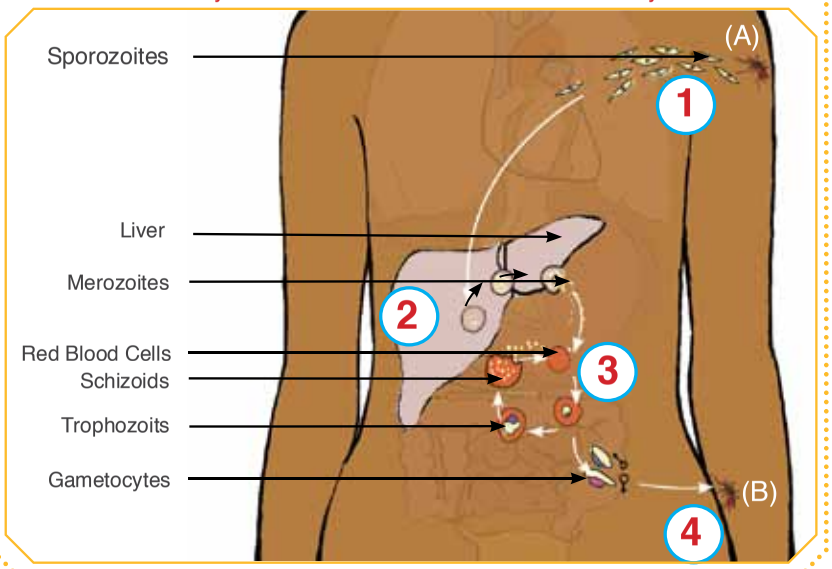
Introduction

In areas with high transmission, malaria is a major cause of death in children. Malaria case management remains a vital component of malaria control strategies; with an integrated approach of prevention and treatment at all healthcare levels required to eliminate malaria.

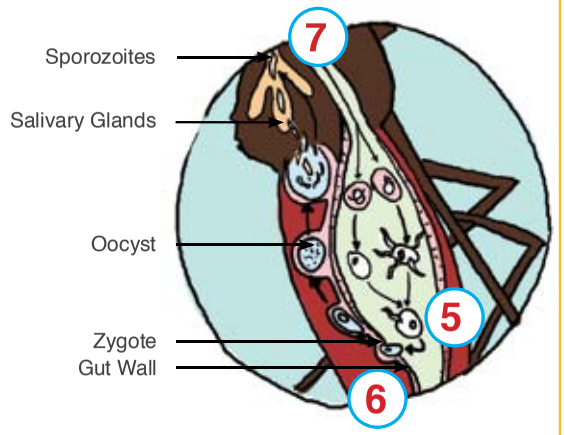
Role of the **National Malaria Control Programme and Ministry of Health**	◊ Distribution of long-lasting insecticide-treated nets (LLINs) in malarious regions ◊ Provision of efficacious insecticides and drugs and quality assurance of malaria diagnostics ◊ Disease surveillance, outbreak monitoring, and epidemic preparedness and response ◊ Indoor residual spraying (IRS) in malarious regions
Role of **Healthcare Workers**	◊ **Test before you treat!** ◊ Provision of treatment for confirmed malaria cases ◊ Education of the communities ◊ Accurate and prompt recording and reporting ◊ Inventory management and proper storage of malaria diagnostics and drugs
Role of **Those Residing in Malarious Regions**	◊ Understanding of malaria signs and symptoms ◊ Seeking early diagnosis and treatment ◊ Acceptance of indoor residual spraying (IRS) ◊ Treatment of stagnant water to reduce vector breeding sites ◊ Education of family, neighbours, and friends ◊ Use of appropriate prophylaxis and preventive measures when going to a malarious regions
Role of the **Malaria Patient**	◊ Completion of the prescribed course of treatment, taking the correct dose ◊ Return to health facility if condition does not improve within 3 days

The Lifecycle of Malaria

Lifecycle of the Parasite Inside the Human Body



Lifecycle of the Parasite Inside the Mosquito

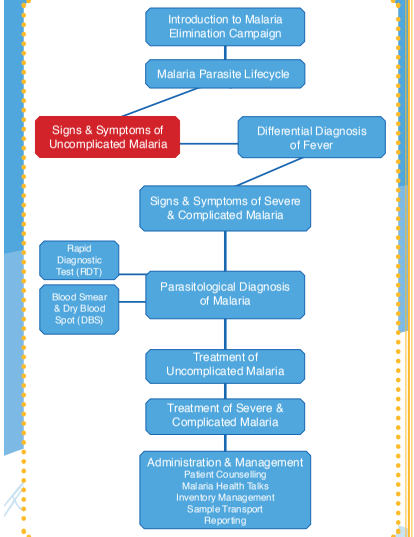


Timing of Malaria Symptoms

Note that patients are asymptomatic during the liver stage (steps 1 and 2). Symptoms of malaria appear during the blood stage (step 3) which generally occurs 1-3 weeks after being bitten by an infected mosquito.

1. *Plasmodium*-infected mosquito (A) bites a person, injecting sporozoites into the bloodstream, which migrate to the liver.
2. In the liver, the sporozoites mature into merozoites and multiply. Thousands of merozoites are released into the bloodstream.
3. Once in the bloodstream, the merozoites penetrate the red blood cells and undergo maturation (first into trophozoits and then into schizoids) and multiplication. This causes the red blood cells to burst, releasing merozoites into the bloodstream, which can then reinfect other red blood cells. Fever is associated with the bursting of the red blood cell.
4. Some merozoites, however, develop into sexual forms called gametocytes. At this stage, mosquito (B) can become infected if it bites this person and sucks up blood containing gametocytes.
5. Inside the gut of the mosquito, the gametocytes go through a sexual cycle resulting in a zygote.
6. The zygote penetrates the gut wall and develops into an oocyst.
7. Within the oocyst, repeated division takes place giving rise to sporozoites. This causes the oocyst to rupture, allowing the sporozoites to migrate to the salivary glands of mosquito (B). Here, sporozoites mature and are transmitted to another person the next time the mosquito bites.

Signs & Symptoms of Uncomplicated Malaria



When assessing the patient, also consider:

- Travel History
  - Travel to At-Risk areas
  - Timing of Travel
- Seasonality of Transmission
- Exposure to Vectors

Test Before You Treat!

Clinical diagnosis is highly inaccurate because the signs and symptoms of malaria are non-specific. Therefore, when malaria is suspected, confirm with RDT or microscopy.

Treatment solely on the basis of clinical suspicion should be considered only when a parasitological diagnosis is not accessible.

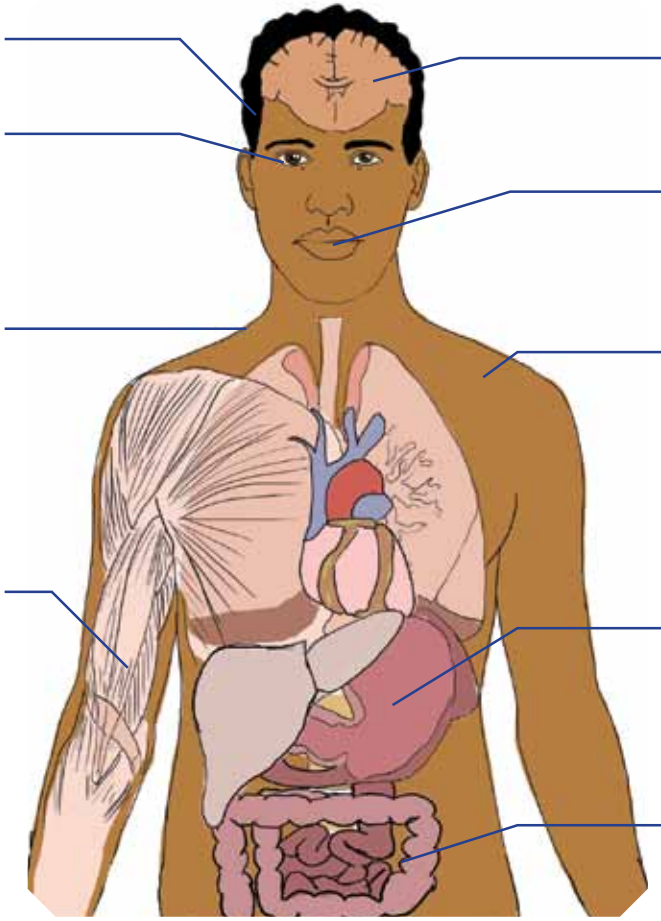
Fatigue

Anaemia
(Conjunctiva and Nail Beds Demonstrate Pallor)

Back Pain

Motor Weakness

Joint Pain



Headache

Thirst

Poor Appetite

Fever

Chills

Sweating

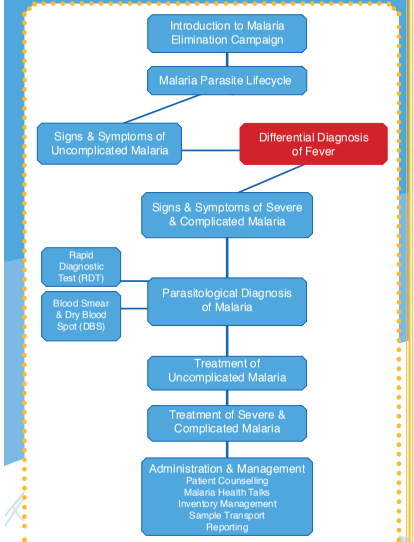
Abdominal Pain

Nausea

Vomiting

Diarrhoea

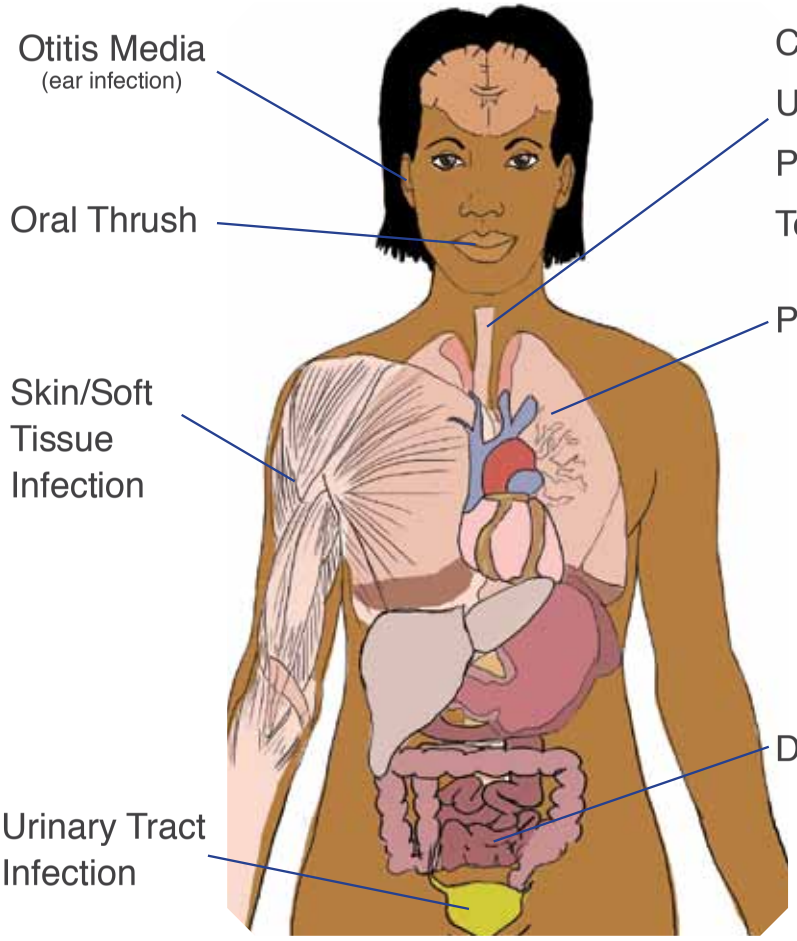
Differential Diagnosis of Fever

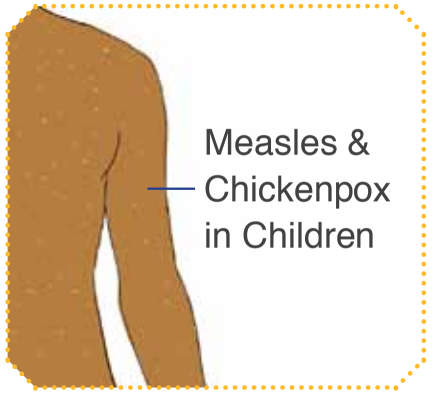


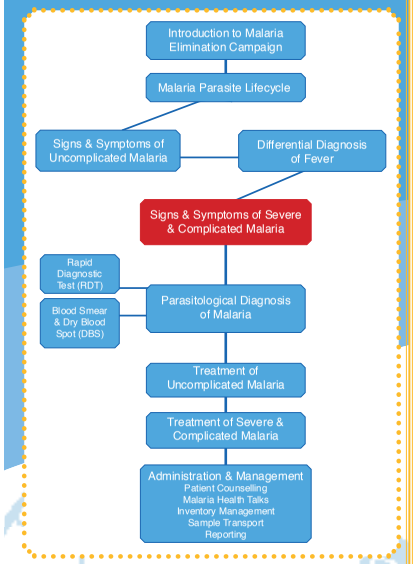
Be Mindful of Viral and HIV Induced Opportunistic Infections

Many fevers are a symptom of viral illnesses, or in the case of HIV, opportunistic infections. Opportunistic infections due to HIV should be considered at all times.

Use all opportunities to offer testing for HIV.







Signs & Symptoms of Severe & Complicated Malaria Indicating Need for Immediate Referral

Whenever malaria is suspected, healthcare workers must assess patient for signs of severe and complicated malaria.
Only uncomplicated malaria is managed at the clinic level.
Patient with signs of severe disease should be referred to a hospital or health centre urgently.

Ask **Look** **Listen** **Feel**

Ask

- ◊ Has the patient got a fever or had a history of fever in the last 48 hours?
- ◊ Is the patient able to drink?
- ◊ Has the patient had convulsions (fits)?
- ◊ Does the patient vomit repeatedly?
- ◊ How much urine does the patient pass?
  - Very little?
  - None at all?
  - Is it dark?

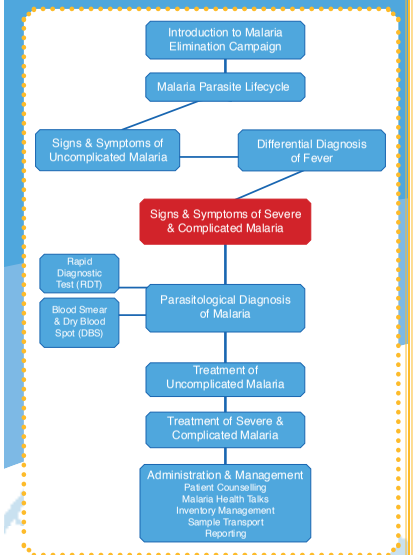
Look, Listen, Feel

- ◊ Is the patient abnormally sleepy, finds it difficult to wake up, or is confused?
- ◊ Is the patient unresponsive to pain (coma)?
- ◊ Does the patient have shortness of breath or difficulty breathing (respiratory distress or signs of pulmonary oedema)?
- ◊ Does the patient have a weak rapid pulse?
- ◊ Does the patient have severe anaemia (paleness of lower eyelids, palms, and tongue)?
- ◊ Does the patient have yellow eyes (jaundice)?
- ◊ Does the patient have severe dehydration? Look for:
  - Sudden weight loss
  - Loose skin
  - Sunken eyes
  - Dry mouth
- ◊ Is the patient bleeding with no known cause?
- ◊ Is the patient unable to stand or sit?

If the patient has fever or history of fever in the past 48 hours and the answer to any of these questions is yes, the patient has severe febrille illness, possibly severe and complicated malaria.
Any febrile coma, bulging fontanelle or stiff neck is malaria until proven otherwise in areas of high malaria transmission.
Urgent pre-referral treatment and referral is required.
The patient's life is in danger. Urgent treatment is needed to save the patient's life.

6

Signs & Symptoms of Severe & Complicated Malaria



Note:

A prior diagnosis of HIV means that the patient is more susceptable to malaria.

In addition to the signs and symptoms of uncomplicated malaria...

Shock

Respiratory Collapse

Difficulty Breathing

Pulmonary Oedema

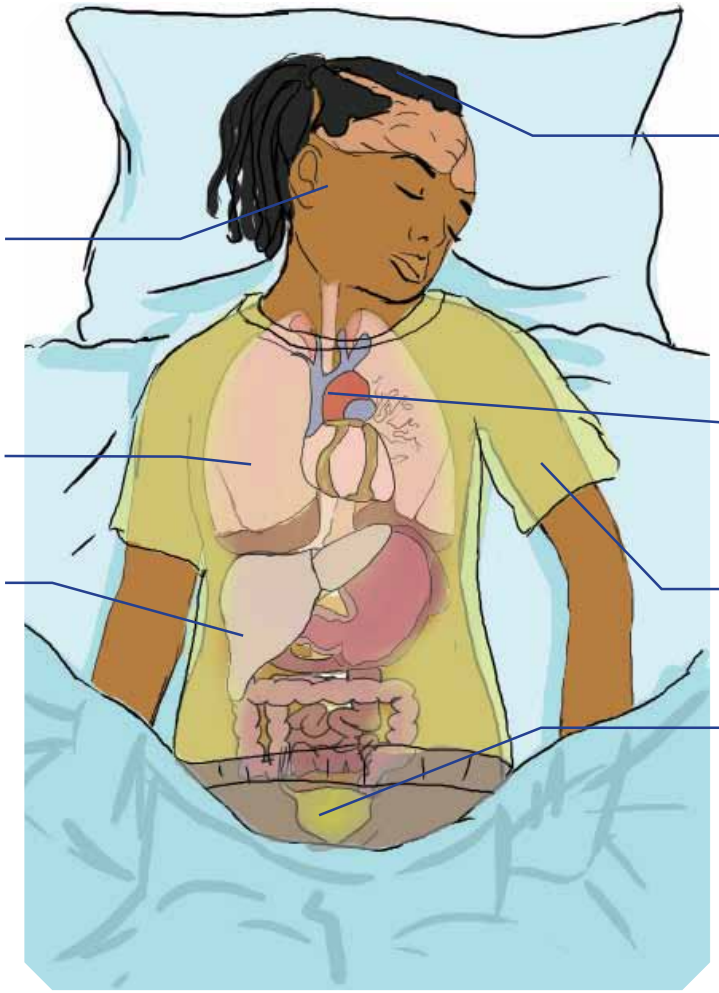
Jaundice

Hypoglycaemia

Abnormal Bleeding

Severe Pallor

Severe Dehydration
(Sudden Weight Loss, Loose Skin, Sunken Eyes, Dry Mouth)



Bulging fontanelle if under 18 months

Impaired Consciousness

Multiple Convulsions

Stiff neck

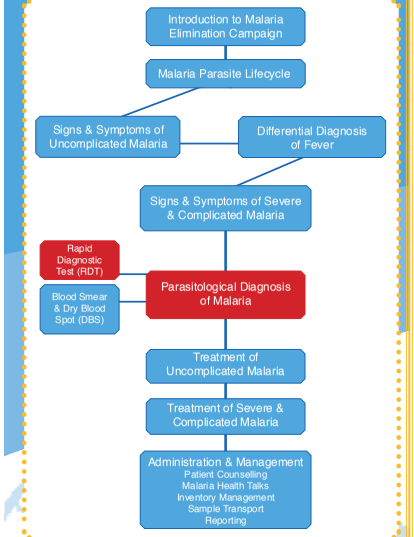
Circulatory Collapse
(Weak Rapid Pulse)

Extreme Weakness
(Unable to Sit or Stand)

Haemoglobinuria

Decreased Urine Output

Diagnosis of Malaria: Rapid Diagnostic Test (RDT)



Getting Good Blood Flow

When the weather is cold, warm the patient's hand (e.g., submerge patient's hand in warm water, or instruct the patient to rub their hands together) to obtain good blood flow for finger prick. Apply same methodology to the foot when collecting blood from a heel or big toe.

'The diagnosis of malaria is based on clinical suspicion and on the detection of parasites in the blood. The two methods routinely used for parasitological diagnosis are light microscopy of a blood smear and rapid diagnostic tests (RDTs).RDTs are commercially available in different formats; e.g. dipstix, cassettes or cards. They are relatively simple to perform and to interpret and they do not require electricity or special equipment. RDTs for malaria can be used to confirm diagnosis of malaria at a health facility where microscopy is not available, or in facilities with laboratory services to reduce the workload of microscopy. Most RDTs detect malaria species-specific antigens produced by parasites present in the blood of infected individuals. As RDTs does not detect antibodies due to the immunological reaction, the result is not affected by impaired immunity (i.e. HIV or malnutrition).'

1 Materials Needed

Prepare the above materials (lancet, alcohol swab, pipette, RDT, and buffer) as well as gloves, the correct waste disposal containers, and labelling and reporting materials. Do not use test kit if it has expired or if the packaging is damaged.

2 Finger Pricking

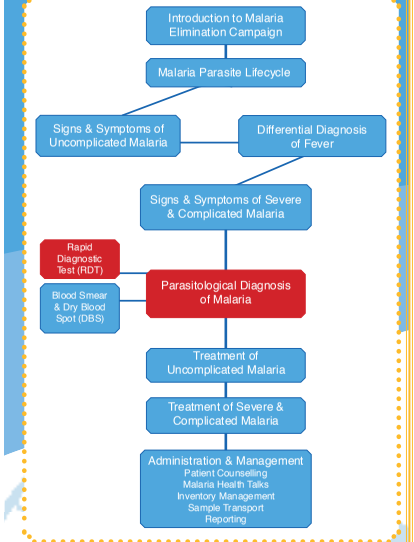
The finger pricking device needs to be loaded. Hold the body of it firmly in one hand and push the protective tab in. Listen for a click.

3

Aim for the side of the finger or toe. Avoid pricking the top of the digit or back of the heel.

4 Disposal

Lancets are not re-usable and should be disposed in a sharps container.



Example of Cassette Format RDT (First Response)*

Refer to local guidelines for preferred RDT kit and refer to product leaflet for specifications for use.

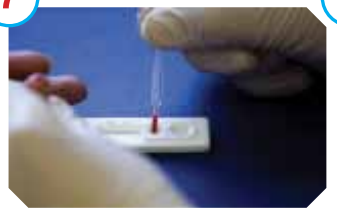
5 Performing the RDT

Wipe away first drop of blood with a dry piece of cotton wool. Apply gentle pressure to the finger until a new blood drop appears.

6

Squeeze the top of the pipette, immerse the open end in the blood drop. Gently release the pressure drawing blood into the tube, up to the raised plastic ring near the bottom of the pipette.

7



Transfer two (2) drops of blood from the pipette to the sample well (the small well) on the RDT by squeezing the top of the tube.

8

Holding the buffer bottle vertically, add two (2) drops of buffer into the buffer well. Take care with this process and add no more than 2 drops. Squeezing the bottle may result in dispensing too much.

9 Interpreting RDT Results

Read the RDT result in 20 minutes. Do not read the results before or after the set time.

Negative

The presence of just the control band, at the C mark indicates a negative result for *P. falciparum* malaria.

Positive

The presence of both the control band at the C mark and the test band at the T mark indicates a positive result for *P. falciparum* malaria.

Invalid

If the test does not show the control band at the C mark, even if there is a reaction on the T band, the test is INVALID. Perform another RDT.

Important Note

Any faint line at the T mark, together with a line at the C mark, must be taken to mean that the malaria test is positive and the patient should be given the relevant care and treatment.

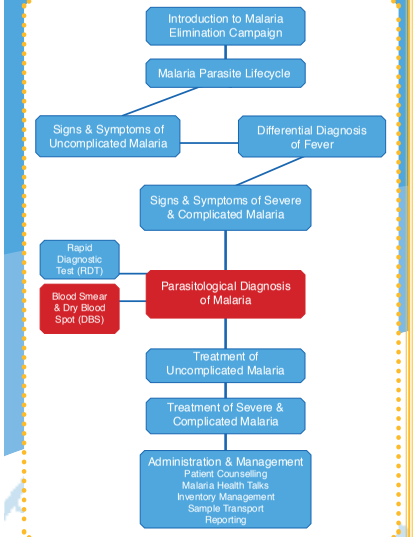
10 Recording

Record the RDT result and the prescribed treatment in the clinic, OPD, or ward register.

11 Disposal of the RDT

The used RDT should be discarded in the bio-hazardous waste.

Diagnosis of Malaria: Blood Smear & Light Microscopy

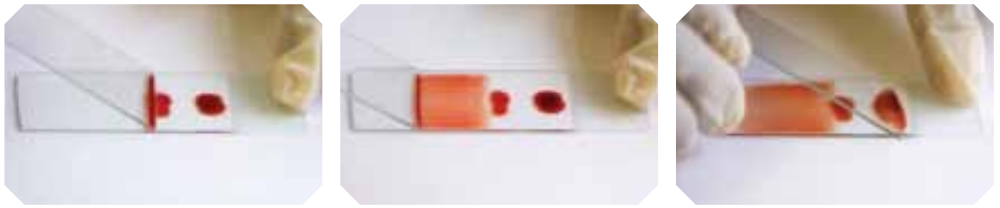


In the diagnosis of severe malaria cases, microscopy is the preferred option; as it is also useful in assessing other important parameters like quantification of malaria parasites and identification of the infecting species. It is considered the 'field standard' against which the sensitivity and specificity of other methods are assessed.

1 Blood Smear Collection

Wipe the slide clean with a lint-free cloth prior to use. Using the same pipette from the RDT kit, carefully position two drops of blood on the end of the slide, closest to where the label will be. Once the blood has been positioned on the slide, work quickly to avoid blood coagulation.

2 Blood Smear Preparation

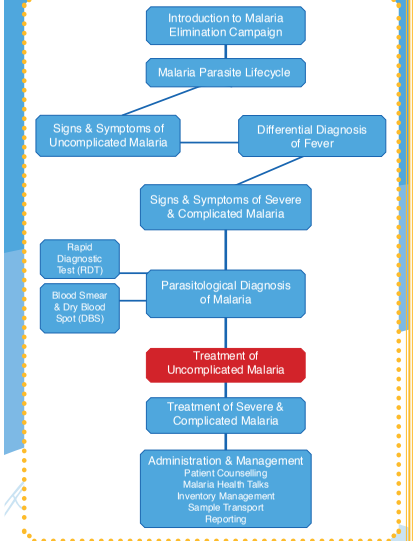


Ensure the slide with the blood drops is on a flat, firm surface. Using another clean slide as a spreader, touch the small drop with the spreader, and allow the blood to run along its edge. Pull the spreader firmly along the slide away from the largest drop, keeping the spreader at a 45° angle. Make sure that the spreader is in even contact with the surface of the slide while the blood is being spread. Using the corner of the spreader, quickly spread the large drop to make an even, thick film approximately 1 cm^2 in area.

Tips for Effective Blood Collection

Blood can coagulate quickly on the slide. To prevent this, set up your work station with all required materials for slide collection before you prick the patient. Work quickly to collect blood. In the rare case that an adequate quantity of blood cannot be collected from the first prick, prick the patient again with a new lancet.

Treatment of Uncomplicated Malaria



- ◊ Prompt parasitological confirmation by microscopy or alternatively by RDTs is recommended in all patients suspected of malaria before treatment is started.
- ◊ Artemisinin-based combination therapies (ACTs) are the recommended treatments for uncomplicated P.falciparum malaria in infants and young children.
- ◊ The choice of ACT in a country or region will be based on the level of resistance of the partner medicine in the combination. The following ACTs are recommended: artemether plus lumefantrine, artesunate plus amodiaquine, artesunate plus mefloquine, and artesunate plus sulfadoxine-pyrimethamine.
- ◊ Artemesinin and its derivitives should not be used as monotherapy.
- ◊ Pay attention to accurate dosing and ensure that the administrated dose is retained.

- ◊ Give the first dose of co-artemether in the clinic and observe for one hour. If the child vomits within an hour repeat the dose.
- ◊ 2nd dose at home after 8 hours.
- ◊ Then twice daily for further two days as shown below.
- ◊ Co-artemether should be taken with food.

Weight (age)	Co-artemether tablets (20 mg artemether and 120mg lumefantrine)					
	0hr	8hr	24hr	36hr	48hr	60hr
5 - <14 kg (5 months up to 3 years)	1	1	1	1	1	1
14 - <19 kg (3 years up to 5 years)	2	2	2	2	2	2

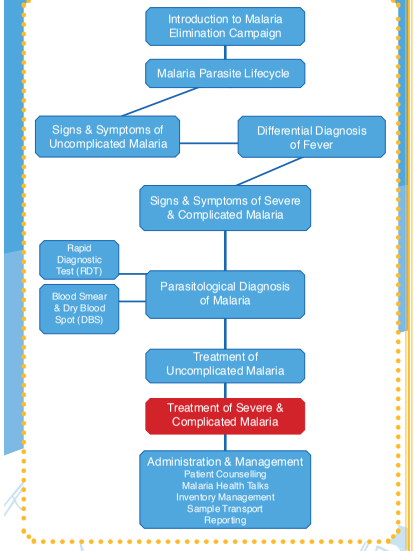
Supportive Treatment for Uncomplicated Malaria

High fever (>39°C) and body aches
- ◊ Give paracetamol and advise patient to receive tepid sponging and fanning to bring fever down

Dehydration or diarrhoea
- ◊ Give oral rehydration solution (ORS)
- ◊ Advise to take increased amounts of water or other fluids
- ◊ In the case of infants, encourage mothers to provide extra breastfeeding
- ◊ Give zinc for 14 days

Anaemia
- ◊ Take elemental iron for 3 months
- ◊ Refer severe anaemia to a higher level health facility

Treatment of Severe & Complicated Malaria



Guidelines for Treatment of Severe and Complicated Malaria at Clinic Level

Pre-referral Antimalarial Treatment
Immediately administer intramuscular (IM) Quinine (10 mg/kg, IM Quinine should be diluted to at least 60 mg/ml) while organising transport to higher-level healthcare facility.

Antibiotics
Administer at the clinician's discretion.

Hydration and Glucose
The patient may have low blood sugar from the infection. In addition IM Quinine can lower blood sugar levels. If the patient can swallow, give sugar water or oral rehydration salt (ORS) and for babies, expressed milk. Where there is a qualified staff member, administer 5% glucose IV.

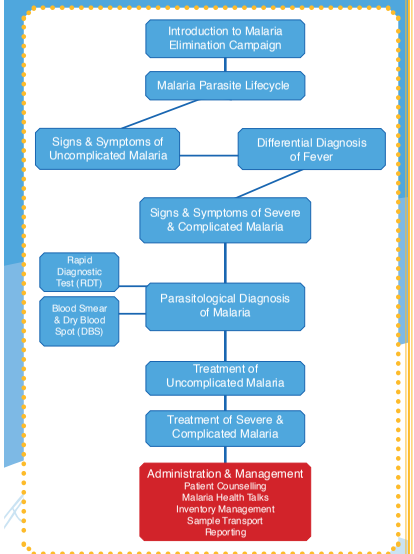
Fever Management
Encourage the caretaker to undertake sponging along the journey to keep the temperature down. Paracetamol can be used if patient is able to take oral medication.

Parasitological Diagnosis
If an RDT can be performed without delay, it should be performed and the results noted in the referral letter.

Referral Documentation
Record all findings and drugs given in the referral letter.

- ◊ Severe malaria is a medical emergency. After rapid assessment and confirmation of the diagnosis, full doses of parenteral antimalarial treatment should be started without delay with whichever effective antimalarial is first available.
- ◊ For children, use artesunate IV or IM
- ◊ Artemether or Quinine is an acceptable alternative if parenteral Artesunate is not available.
- ◊ Give parenteral antimalarials in the treatment of severe malaria for a minimum of 24 hrs, and thereafter complete treatment by giving a complete course of an ACT.
- ◊ If complete treatment of severe malaria is not possible, patients should be given pre-referral treatment and referred immediately to an appropriate facility for further treatment. The following are options for pre-referral treatment: rectal Artesunate, Quinine IM, Artesunate IM, Artemether IM.

Patient Counselling & Malaria Health Talk



To ensure adherence to treatment, the first treatment dose for all patients should be directly observed and the following counselling messages should be provided...

- ◊ Explain the dosing schedule and use probing questions to confirm the patient's understanding
- ◊ Emphasize that all doses must be taken even if the patient feels better after a few doses
- ◊ Recommend paracetamol for symptoms of fever and body aches
- ◊ If vomiting occurs within 30 minutes after receiving the drug orally, the dose should be repeated; if vomiting occurs after this time, continue with planned dosing schedule
- ◊ Coartem® is best absorbed when taken with fatty foods or dairy (e.g., milk)
- ◊ Advise patients to go immediately to the nearest health facility if the condition deteriorates at any time or if symptoms have not resolved after three days

Educate your family and friends on how to implement prevention of malaria


Seek care within 24 hours if sick and insist on a malaria test


Accept indoor residual spraying in homes and other buildings


Sleep under an insecticide-treated net every night


Take prophylaxis when travelling in malaria areas


Treat or clear away stagnant water


Place screens on all windows and doors that lead outside


Wear long-sleeve tops and bottoms in the evening time


Use mosquito coils and insect repellent as prevention

We would like to thank the Malaria Research Programme of the Medical Research Council of South Africa for their assistance in the production of the photographs used in this training tool.

Adapted by Zoë-Life and South to South Program for Comprehensive Family HIV Care & Treatment (2011)

Designed and Produced by SMT Health Solutions cc T/A Zoë-Life 2010

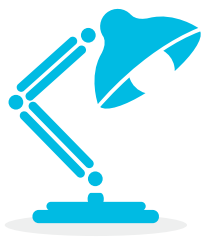
NUTRITION

NUTRITION

Nutrition assessment and support is an essential aspect of care for HIV exposed infants and HIV infected children. HIV and opportunistic infections increase the body's energy needs above average daily requirements. Every healthcare provider caring for families living with HIV should familiarize themselves with nutrition issues and know when to refer for additional support. The materials in this chapter cover a broad range of topics from infant feeding support for the HIV exposed infant to nutritional management of HIV-related complications.

Considerations for the nutrition for HIV-infected infants and children

1. HIV-infected children should be assessed routinely for nutritional status, including weight and height at scheduled visits, particularly after the initiation of ART.
2. HIV-infected children on or off ART who are symptomatic, have conditions requiring increased energy (e.g. TB, chronic lung disease, chronic OIs or malignancies) or have weight loss or have evidence of poor growth, should be provided with 25 – 30% additional energy.
3. HIV-infected children who are severely malnourished should be managed as per the guidelines for uninfected children and provided with 50 – 100% additional energy.
4. HIV-infected children should receive one recommended daily allowance (RDA) of micronutrients daily. If this cannot be assured through the diet, or there is evidence of deficiency, then supplementation should be given.
5. HIV-infected infants and children should receive high-dose vitamin A supplementation every 6 months between 6 and 59 months of age, as per the guidelines for uninfected children.
6. HIV-infected children who have diarrhoea should receive zinc supplementation as a part of management, as per the guidelines for uninfected children.



KEY MESSAGE:

Growth and nutrition is a good marker of HIV disease progression and response to ART.

Core Measurements

Every HIV exposed infant and HIV infected child should have the following measurements obtained during every clinical review visit:

- Weight (kg) measured without shoes and minimum clothing
- Length or height (cm)
- Head circumference (cm) if less than 3 years of age

Growth Charts

Included in this chapter are sample growth charts from the South African Road to Health Booklet (based on the WHO guidelines) as well as the actual WHO growth charts. Growth charts are an essential tool for the provision of quality paediatric HIV services. Growth measurements should be plotted and interpreted using the appropriate growth chart.

These growth charts use the Z-score measurement which may be new to some. The Z-score is a simple way of establishing thresholds for the departure from median, expected growth which is defined as zero. The growth charts also now include weight-for-height charts which are an ideal way of assessing acute malnutrition. You will note text next to the South African growth curve providing guidance on the interpretation of the Z-score.

In caring for HIV infected children you will note that stunting or shorter height than average is very common. Observing improvements in growth and nutrition following ART initiation is rewarding and a visible way of celebrating successful adherence with caregivers.

INFANT FEEDING RECOMMENDATIONS FOR HIV-POSITIVE MOTHERS

All women should be provided with infant feeding information counselling during antenatal care to ensure that they are properly informed and supported to make the best decision for their situation. Assess and educate the mother on her infant feeding options and important steps she can take to minimise HIV transmission while promoting overall feeding safety and healthy infant outcomes.

KEY MESSAGE:

It is important to interpret the growth curve by looking at the shape, pattern and location on the chart.

All HIV-positive pregnant women should receive infant feeding counselling at least 4 times antenatally.

UP TO 6 MONTHS OF AGE:

- The main feeding recommendation for HIV-positive women not on lifelong ART is:
  - Exclusive breastfeeding (EBF) for the first 6 months of life PLUS
  - Infant Nevirapine throughout the breastfeeding period until 1 week after breastfeeding stops
- The main feeding recommendation for HIV-positive women on lifelong ART is:
  - Exclusive breastfeeding (EBF) for the first 6 months of life PLUS
  - Infant Nevirapine for 6 weeks post delivery
- Breastfeed exclusively as often as the child wants, day and night – feed at least 8 times in 24 hrs
- Do not give other foods or fluids

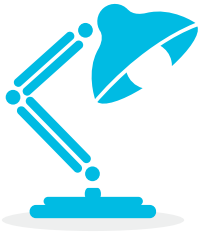
Exceptions to the above recommendations are mothers in whom formula feeding can be given safely **(Group 1 on left where AFASS criteria apply)** or breastfeeding is completely non-feasible **(Group 2 on right)**.
It is recommended that these women:

- Exclusively formula feed for the first 6 months of life PLUS
- Infant Nevirapine for 6 weeks post delivery

GROUP 1: **Mother is clinically well and AFASS* Criteria applies**	**GROUP 2:** **EBF is not feasible**
• Safe water and sanitation are assured at the household level and in the community, AND • The mother or caregiver can reliably provide (buy) sufficient infant formula milk to support normal growth and development of the infant, AND • The mother/caregiver can frequently prepare it hygienically so that it carries no risk of diarrhoea and malnutrition, AND • The mother/caregiver can, in the first 6 months exclusively formula feed, AND • The family is supportive of this practice	• Mother is terminally ill with full blown AIDS and a high viral load that is not responding to lifelong ART, OR • Mother has demised, OR • Mother has/will be unable to care for the infant herself or will give the infant up for adoption – thus no breastmilk will be available

* See page 173

- **Formula feeding:**
  - Ensure exclusivity for 6 months – other foods or fluids are not necessary
  - Prepare formula as directed on tin – start with sterilization of bottle and make up feeds to correct strength
  - Use milk within an hour and discard leftovers
  - Cup feeding is safer than bottle feeding
  - Use a cup which can be kept clean i.e. not one with a spout



KEY MESSAGE:

Mixed feeding in the first 6 months of life carries the highest risk of HIV transmission

6 MONTHS UP TO 12 MONTHS

- HIV infected women (on or not on lifelong ART) who have been exclusively breastfeeding, should continue breastfeeding until the infant is one year old, whilst continuing on prophylaxis, and start introducing solids.
- Infants that have thus far been exclusively formula fed (Group 1 and 2) should continue being given formula or 3 cups of full cream cow's milk (from 9 months of age) together with solids.
- Start giving 2-3 teaspoons of soft porridge, and begin to introduce fruit and vegetables.
- Gradually increase the amount and frequency of feeds. Children between 6 - 8 months should have two meals a day, by 12 months this should have increased to 5 small meals per day.
- Give locally available protein daily. Examples include egg (yolk), beans, dhal, meat, fish, chicken / chicken livers, mopani worms.
- For malnourished children, mix margarine, fat, or oil with porridge.

Gradual weaning at 1 year:

- It is recommended that HIV-infected mothers opting to breastfeed do so for a period of one year with prophylaxis, and gradually wean their infants over a period of one month.
- Nevirapine should be given to a baby for one week after breastfeeding has stopped in cases where the mother is not on ART
- Abrupt weaning is not recommended

Help mother prepare for transition:

- Mother should discuss weaning with her family if possible.
- Express milk to practice cup feeding.
- Ensure a regular supply of formula or full cream cow's milk (if child older than 9 months).
- Learn how to prepare and store milk safely at home.

Help mother make the transition:

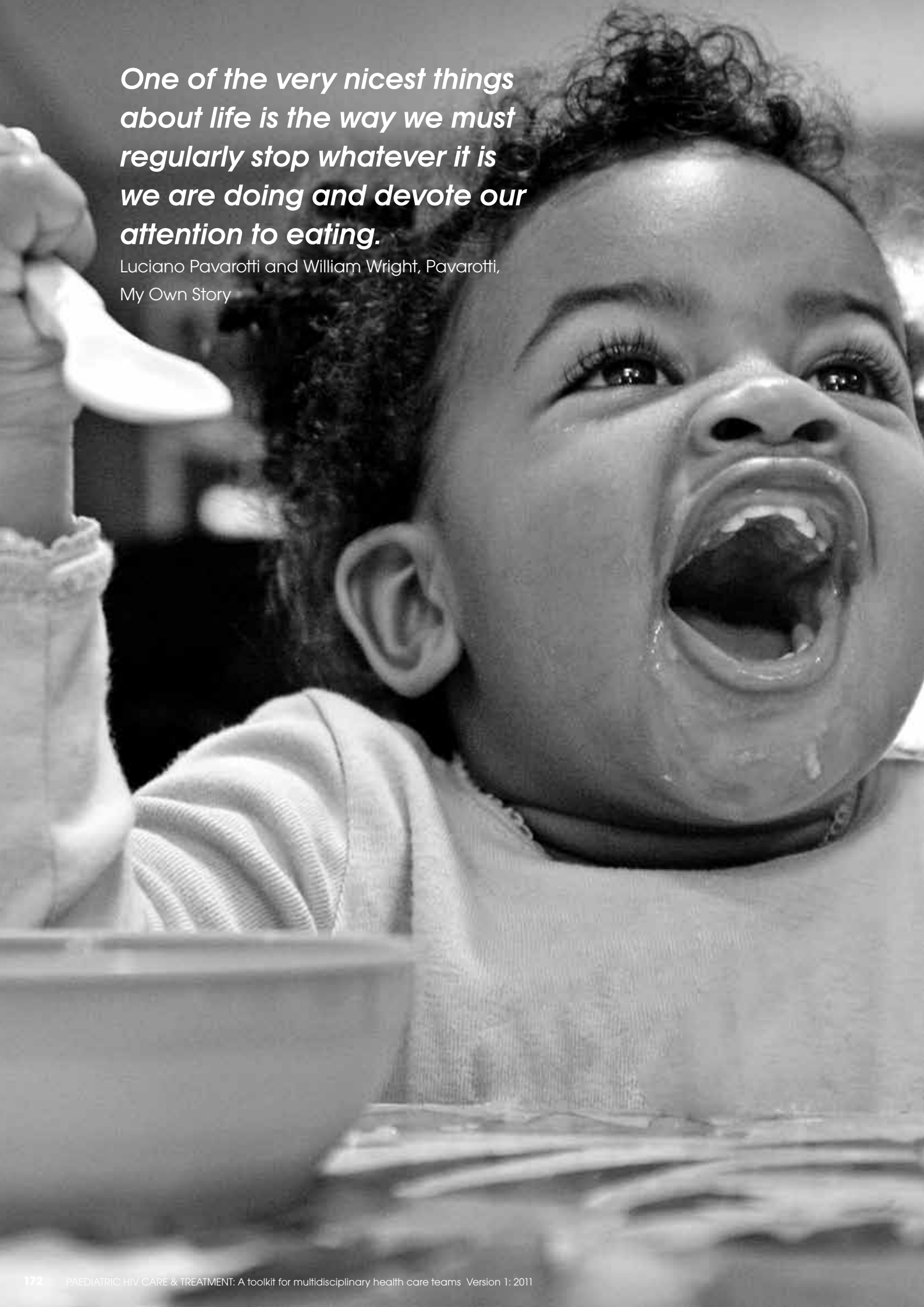
- Teach mother to cup feed her baby.
- Clean all utensils with soap and water.
- Start giving only formula or cow's milk (if child older than 9 months).

Stop breastfeeding completely:

- Express and discard some breastmilk, to keep comfortable until lactation stops

12 MONTHS UP TO 2 YEARS

- Give at least 5 adequate nutritious family meals per day.
- Provide at least 2 cups of a nutritionally adequate and safe feed (e.g. cow's milk or formula) daily.
- Give locally available protein at least once a day. Examples include: egg, beans, dhal, meat, fish, chicken/chicken livers, mopani worms.
- Give fresh fruit or vegetables at least twice every day.
- Give foods rich in iron, and vitamins A and C.
- Feed actively from the child's own bowl.



One of the very nicest things about life is the way we must regularly stop whatever it is we are doing and devote our attention to eating.

Luciano Pavarotti and William Wright, Pavarotti, My Own Story

THE AFASS CRITERIA

FOR INFANT FORMULA FEEDING

ALWAYS PERFORM AN AFASS ASSESSMENT BEFORE ADVISING WOMEN NOT TO BREASTFEED

Ensure that infant formula feeding is:

A **ACCEPTABLE**
No cultural or social barriers, or fear of stigma or discrimination, must be present

F **FEASIBLE**
The carer must have adequate time, knowledge, skills and resources to feed the child and cope with outside pressures

A **AFFORDABLE**
The family must be able to afford infant formula without compromising their spending on food and health

S **SUSTAINABLE**
The carer must have access to a continuous, uninterrupted supply of formula, especially when the clinic runs out of stock

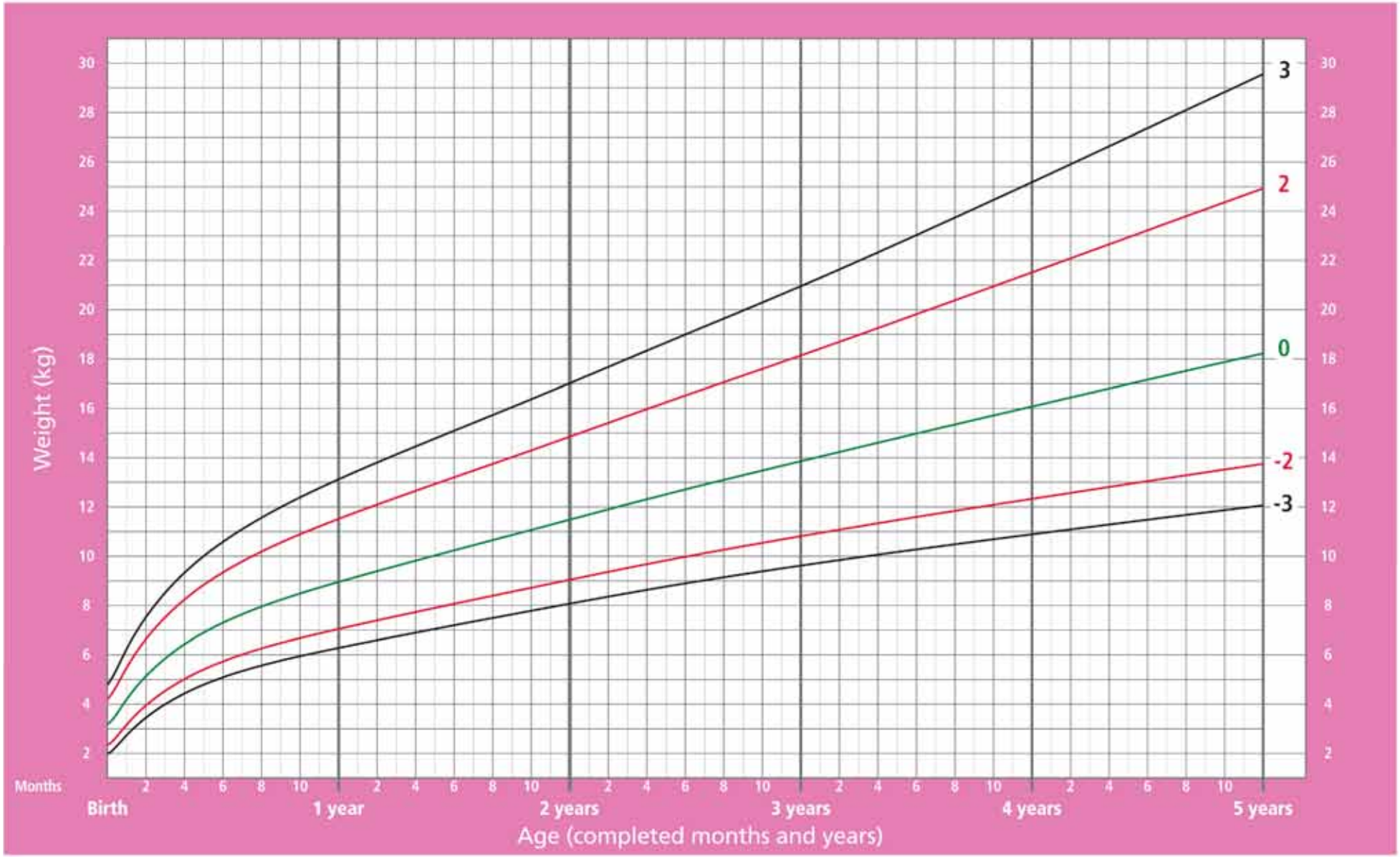
S **SAFE**
The infant formula must be hygienically prepared and stored under sanitary conditions

The WHO Guidelines on Infant Feeding for HIV-infected Women
All mothers who are known to be HIV-infected, either on lifelong ART or not, who exclusively breastfeed their infants should do so for the first 6 months, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life. (WHO 2009)

Weight-for-age GIRLS

Birth to 5 years (z-scores)

World Health Organization

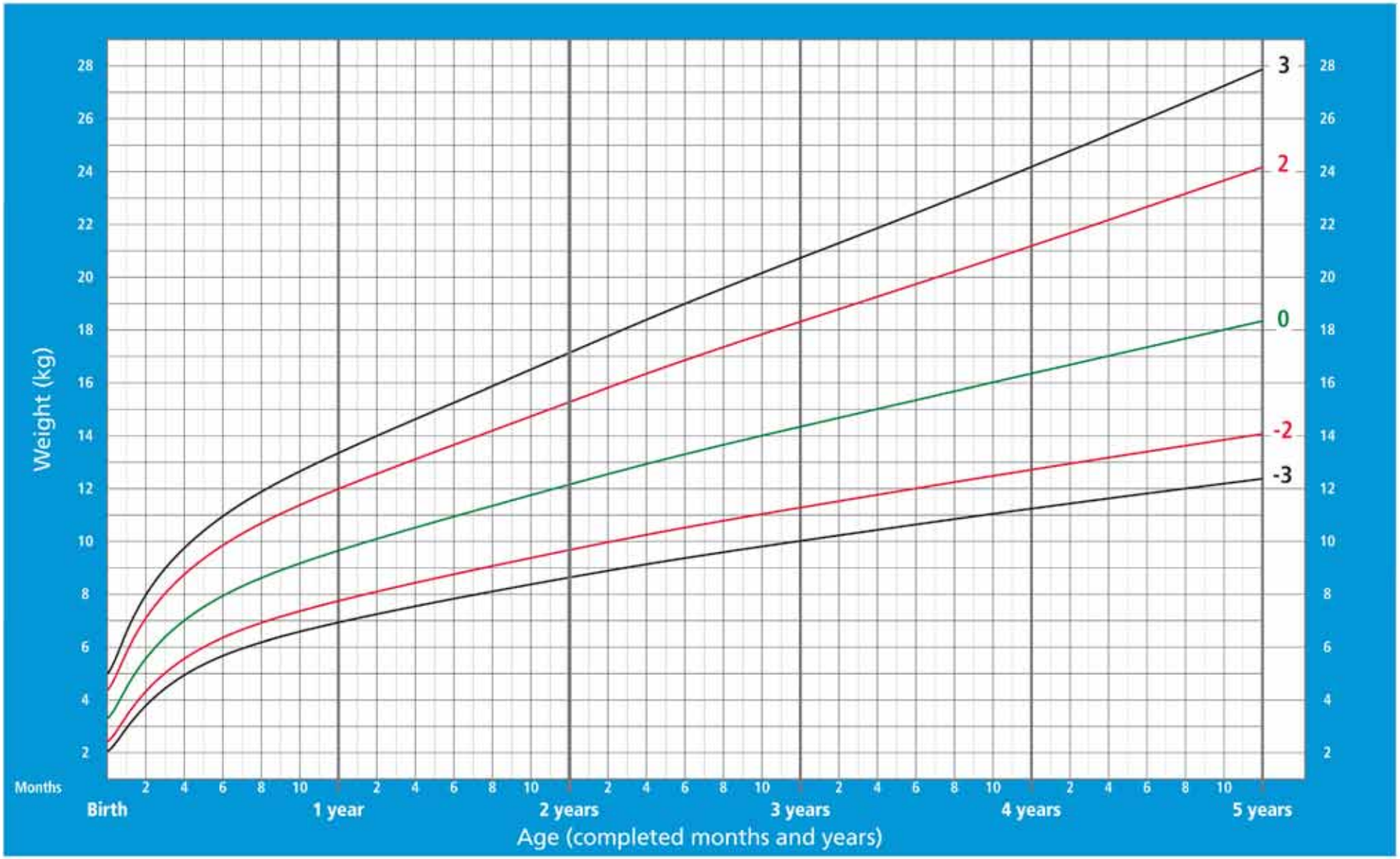


WHO Child Growth Standards

Weight-for-age BOYS

Birth to 5 years (z-scores)

World Health Organization

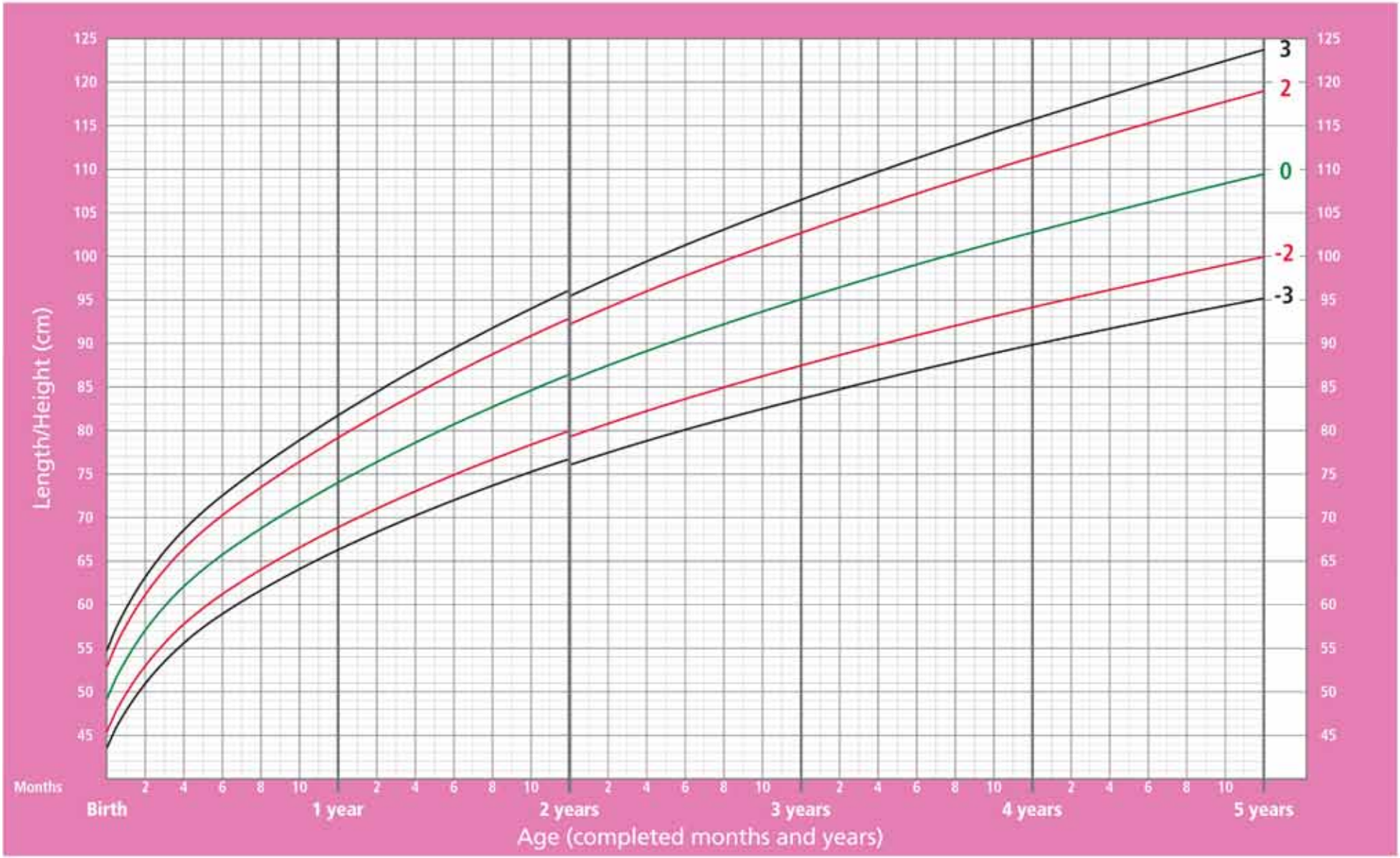


WHO Child Growth Standards

Length/height-for-age GIRLS

World Health Organization

Birth to 5 years (z-scores)

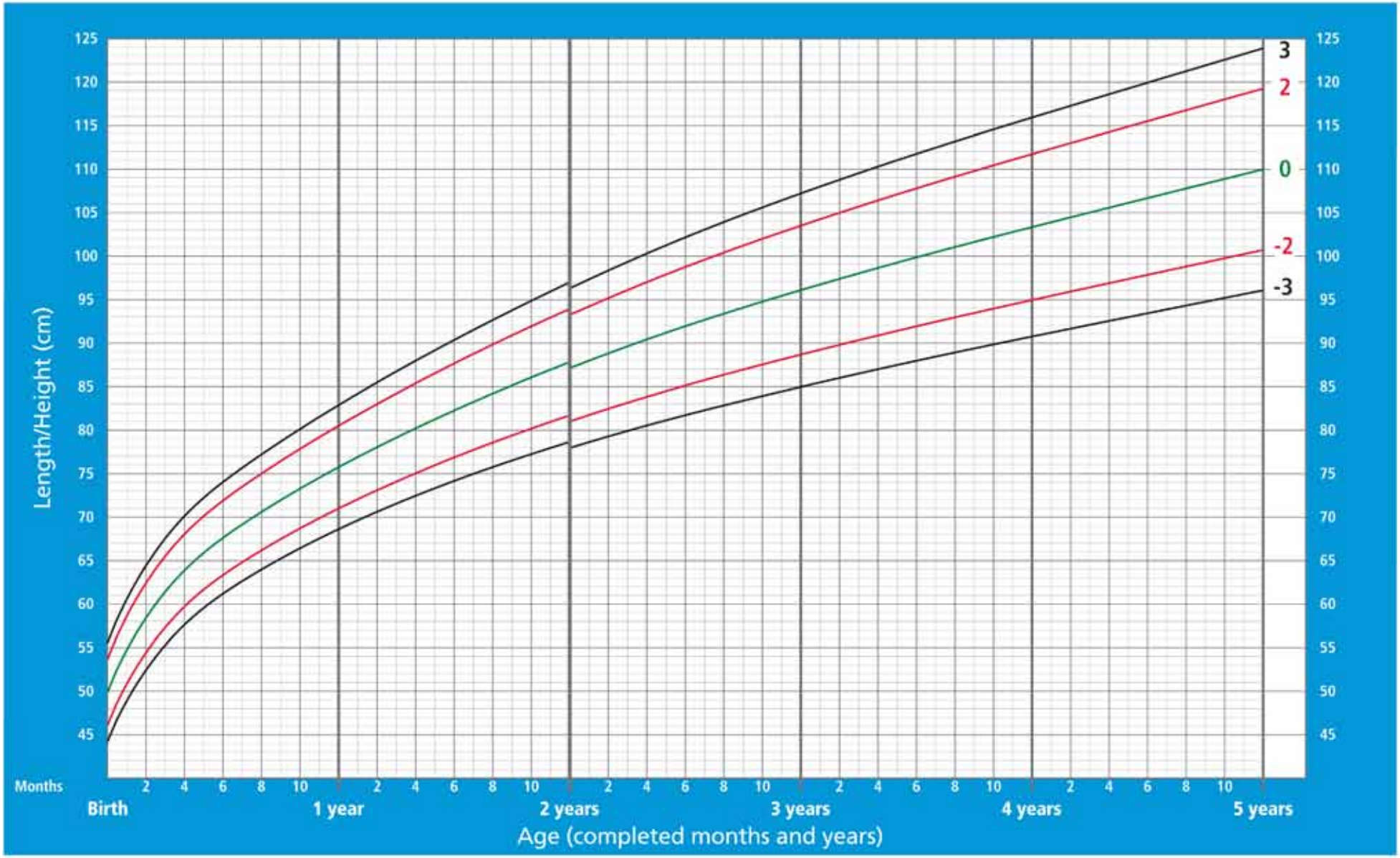


WHO Child Growth Standards

Length/height-for-age BOYS

World Health Organization

Birth to 5 years (z-scores)

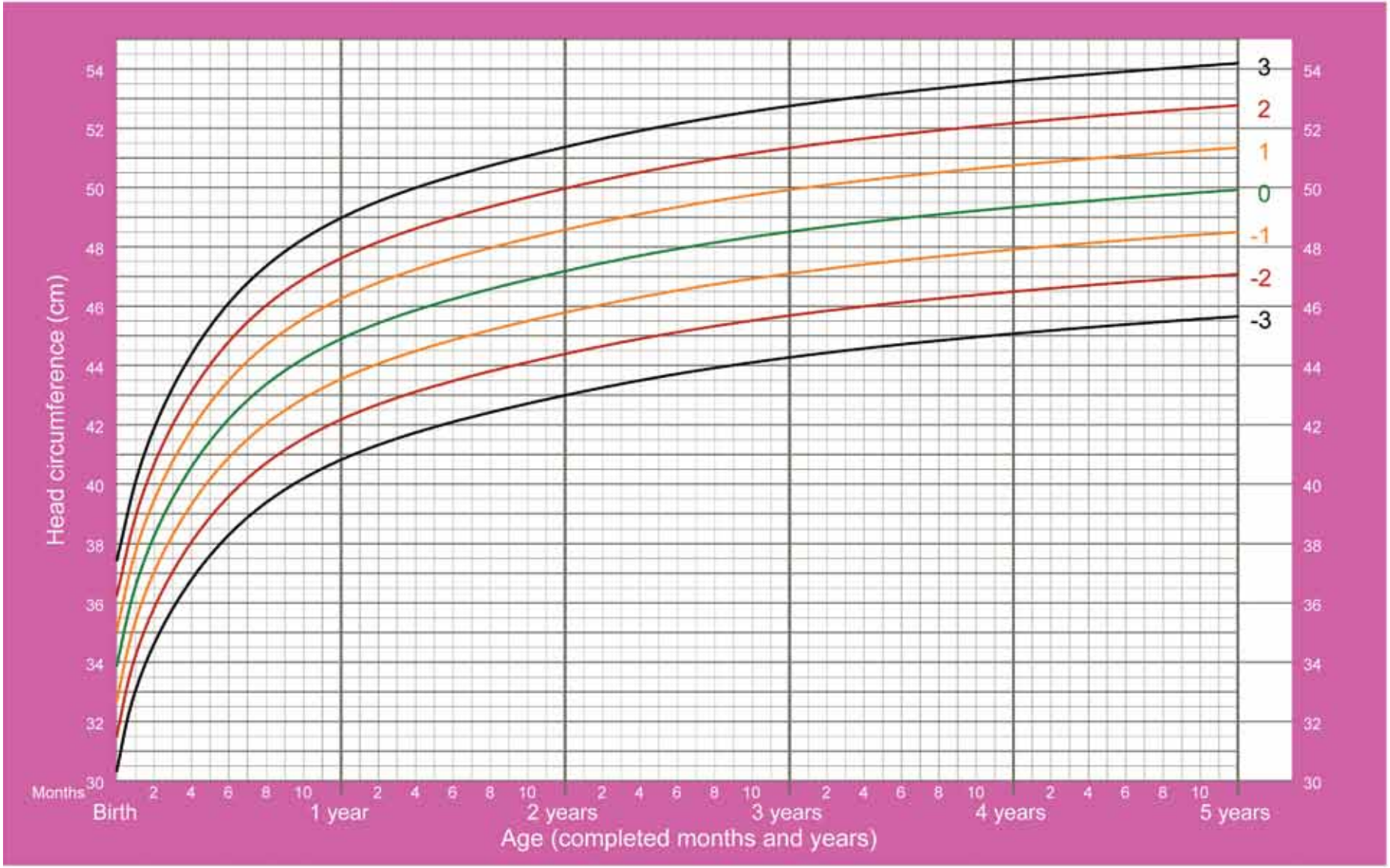


WHO Child Growth Standards

Head circumference-for-age GIRLS

World Health Organization

Birth to 5 years (z-scores)

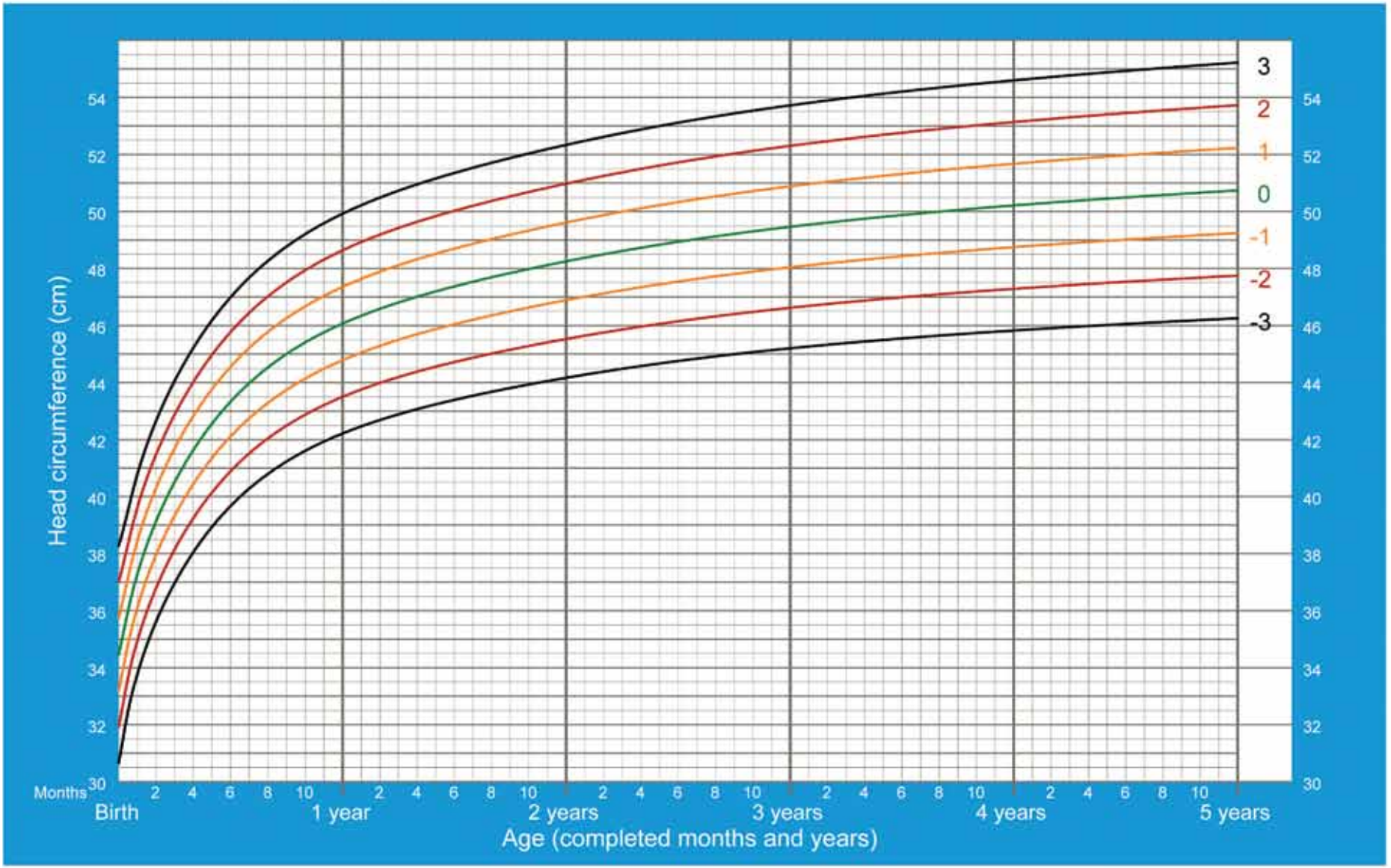


WHO Child Growth Standards

Head circumference-for-age BOYS

World Health Organization

Birth to 5 years (z-scores)

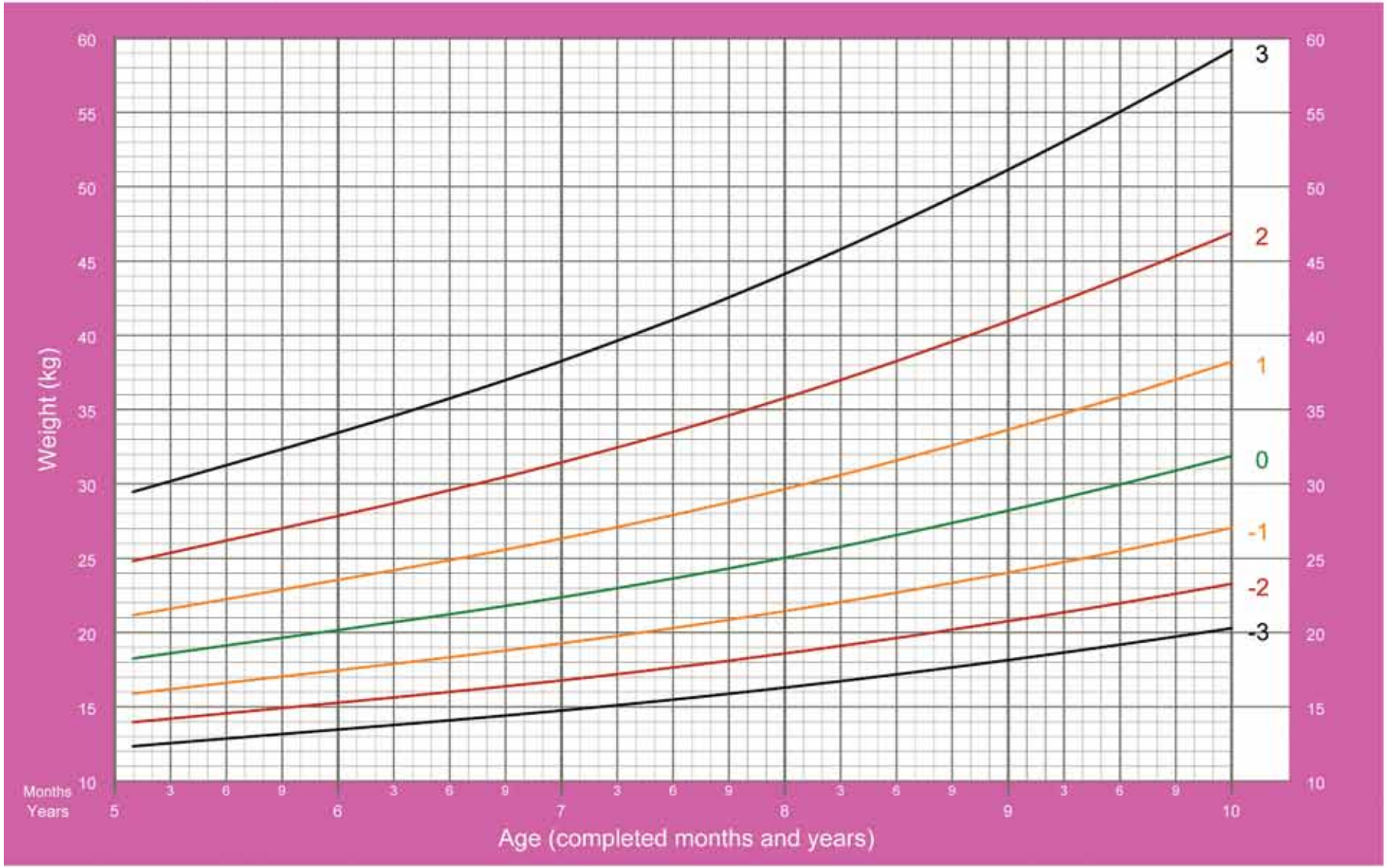


WHO Child Growth Standards

Weight-for-age GIRLS

World Health Organization

5 to 10 years (z-scores)

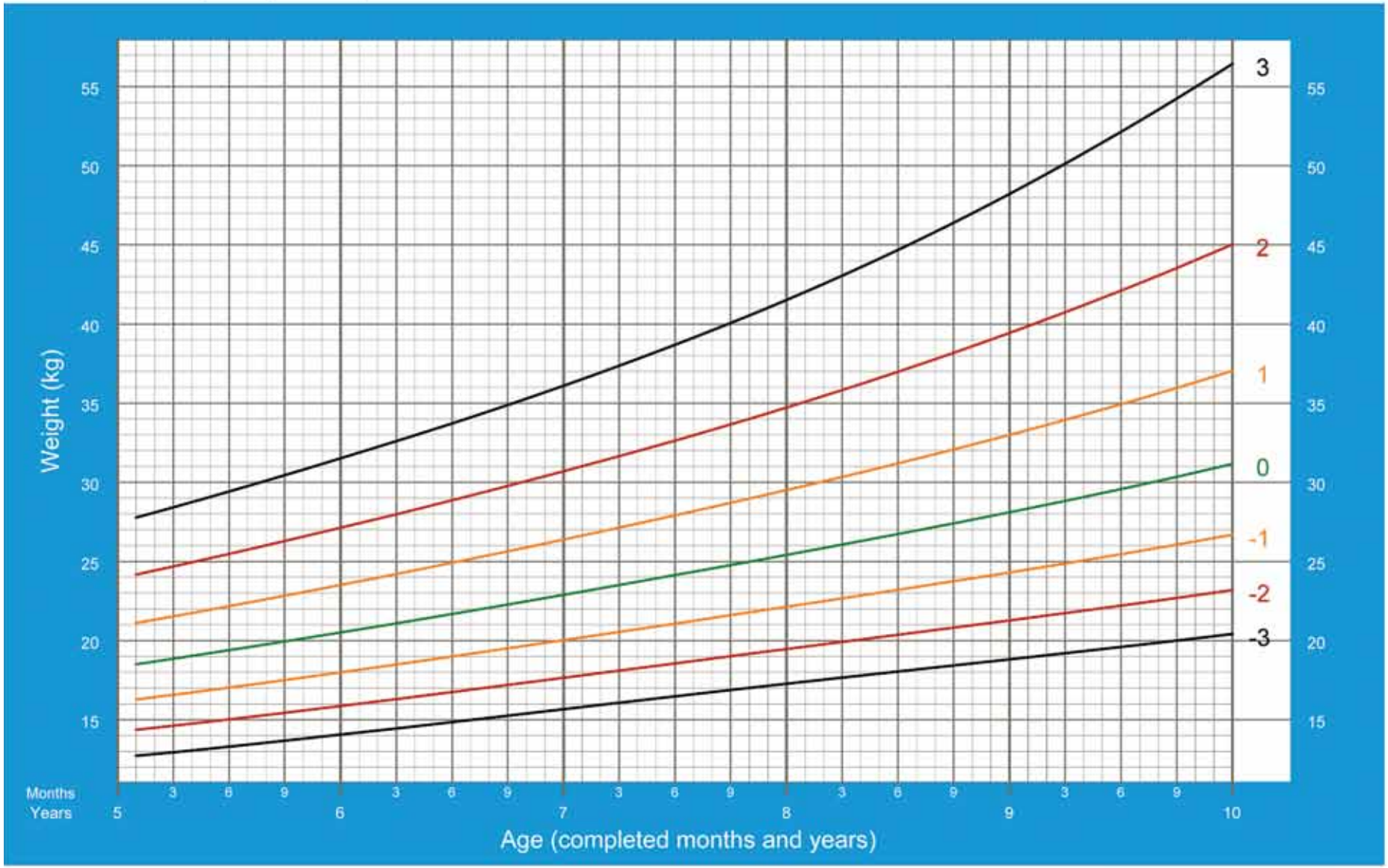


2007 WHO Reference

Weight-for-age BOYS

5 to 10 years (z-scores)

World Health Organization

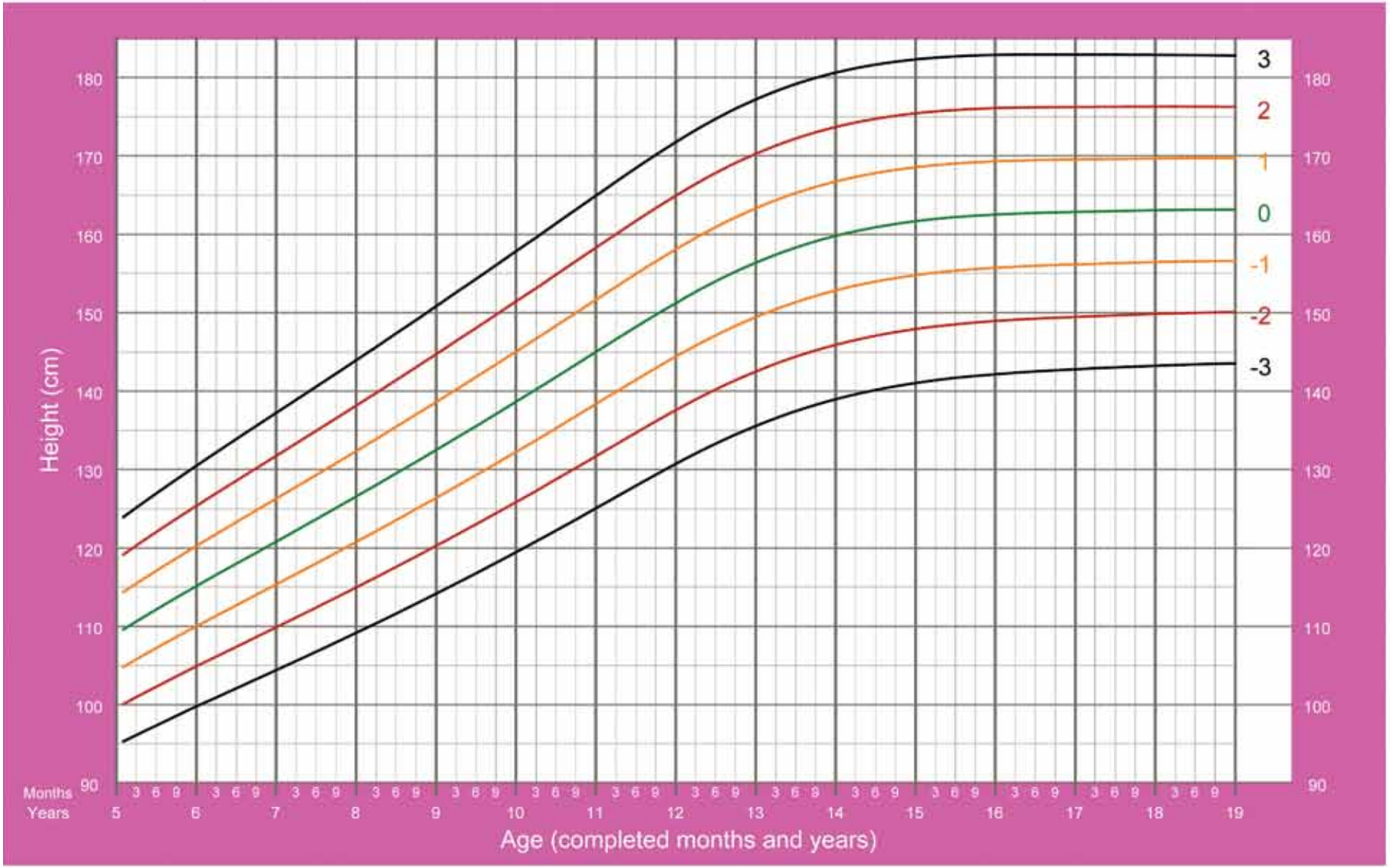


2007 WHO Reference

Height-for-age GIRLS

5 to 19 years (z-scores)

World Health Organization

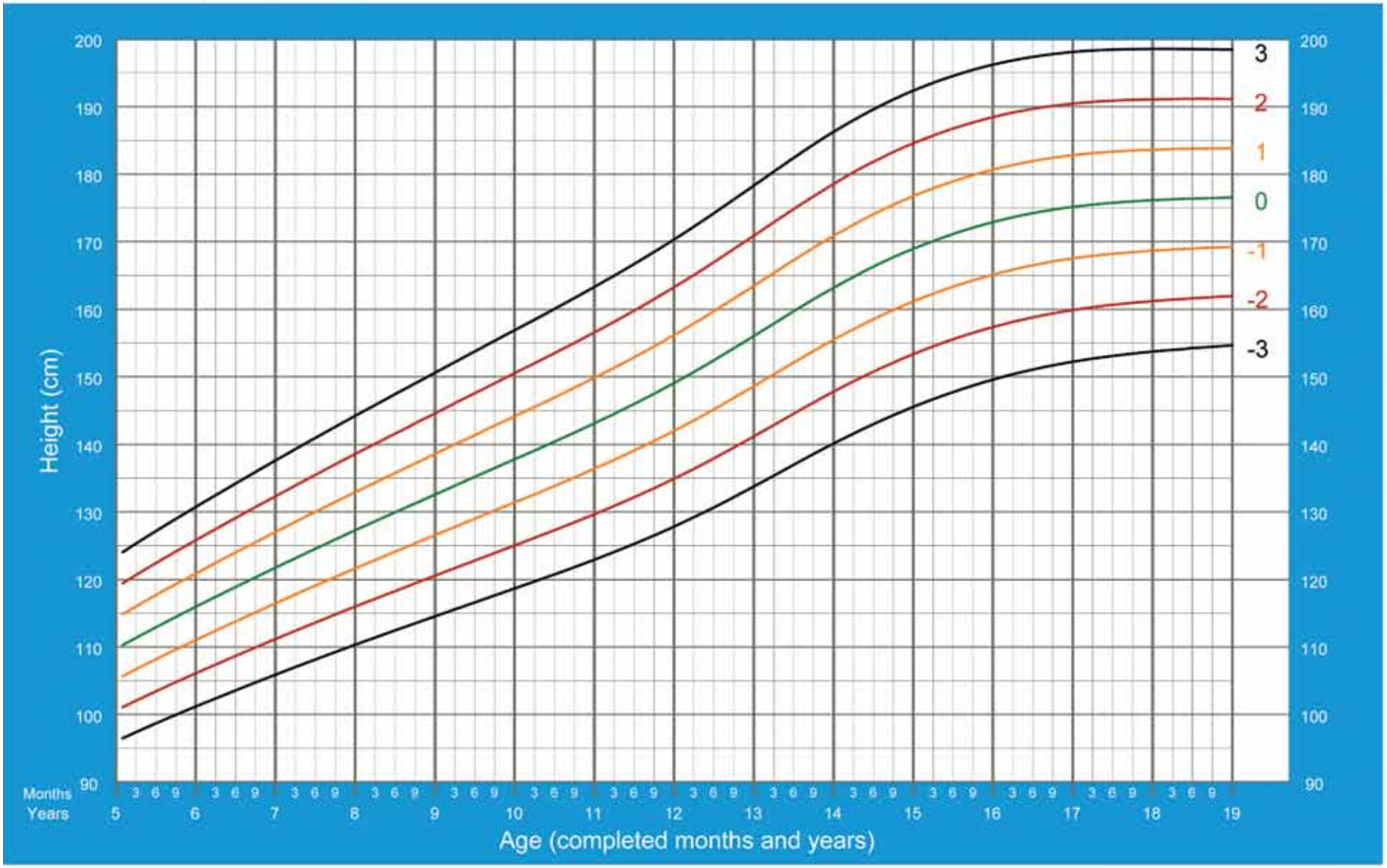


2007 WHO Reference

Height-for-age BOYS

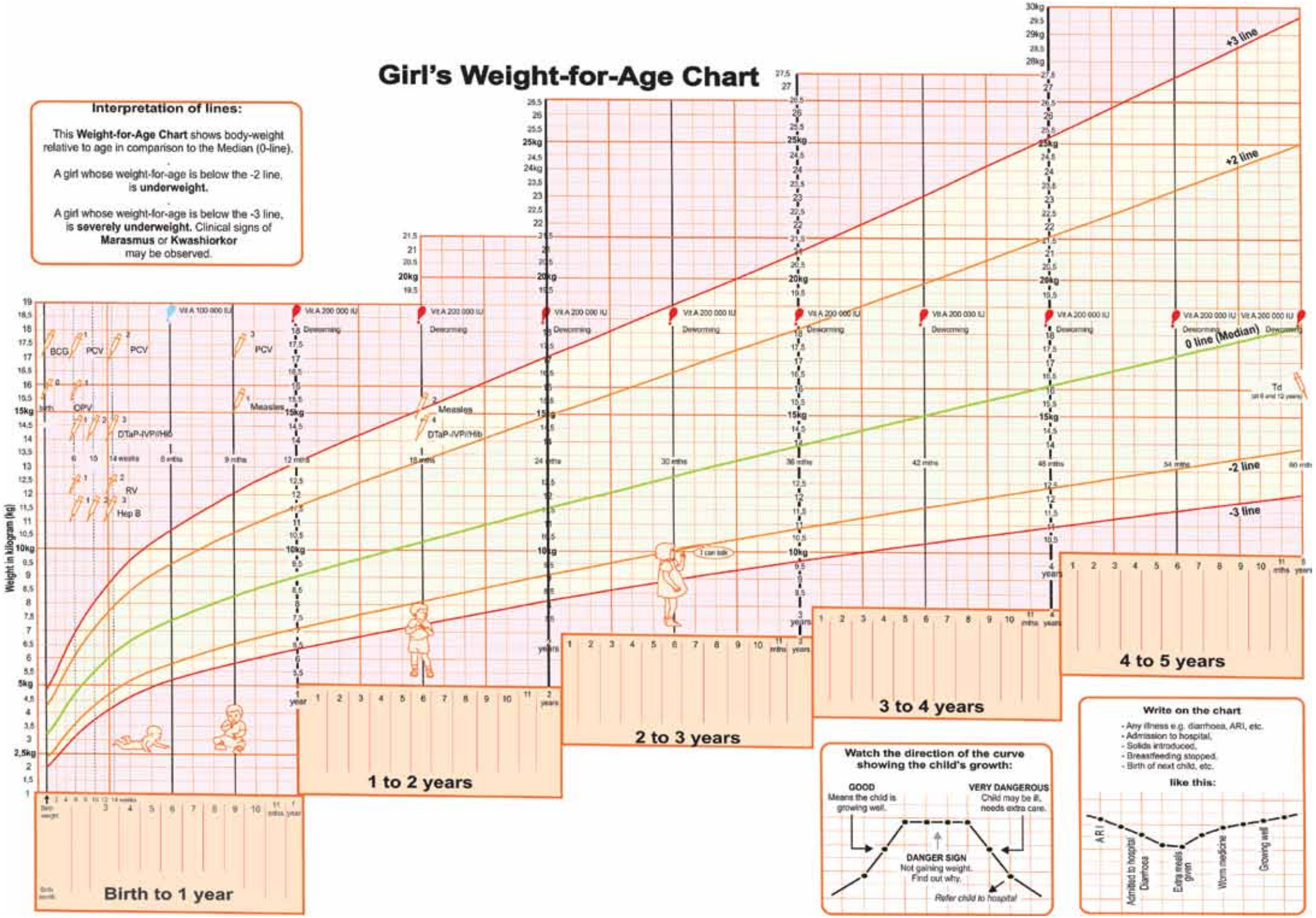
5 to 19 years (z-scores)

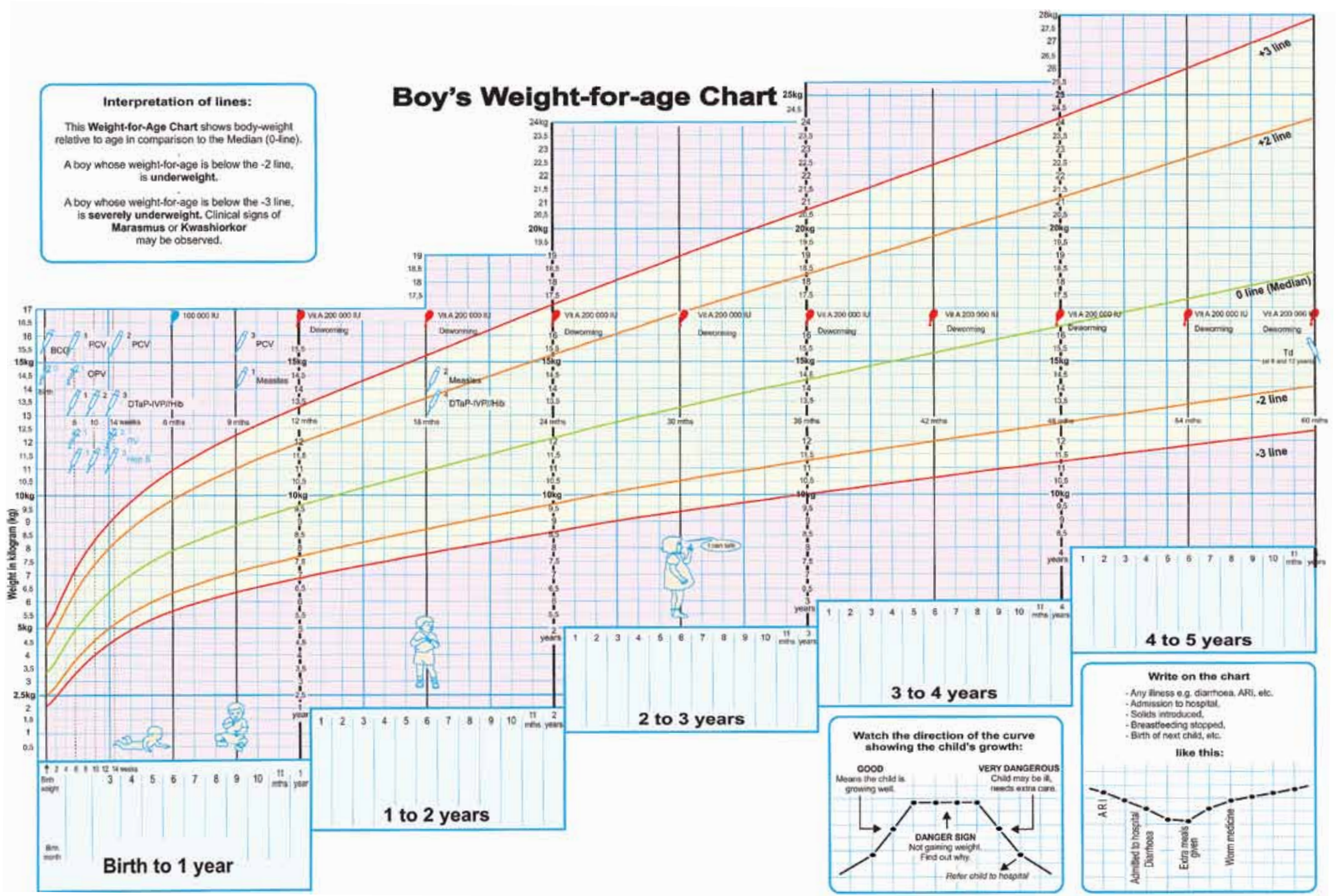
World Health Organization

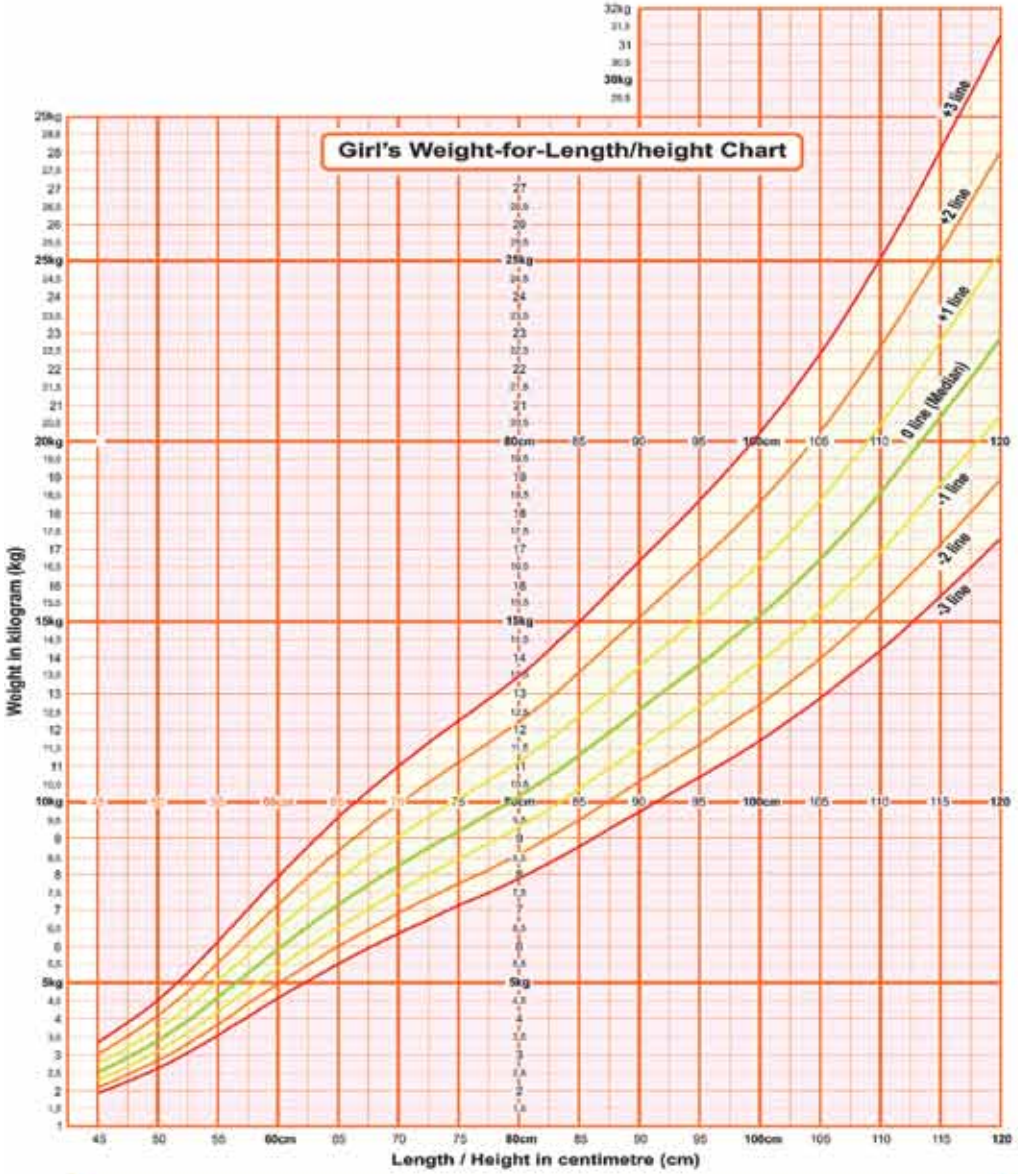


2007 WHO Reference

Girl's Weight-for-Age Chart




Boy's Weight-for-age Chart
Interpretation of lines:
This Weight-for-Age Chart shows body-weight relative to age in comparison to the Median (0-line).
A boy whose weight-for-age is below the -2 line, is underweight.
A boy whose weight-for-age is below the -3 line, is severely underweight. Clinical signs of Marasmus or Kwashiorkor may be observed.
+3 line
+2 line
0 line (Median)
-2 line
-3 line
Weight in kilogram (kg)
Birth to 1 year
1 to 2 years
2 to 3 years
3 to 4 years
4 to 5 years
Write on the chart
- Any illness e.g. diarrhoea, ARI, etc.
- Admission to hospital,
- Solids introduced,
- Breastfeeding stopped,
- Birth of next child, etc.
like this:
ARI
Admitted to hospital
Diarrhoea
Extra meals given
Worm medicine
Watch the direction of the curve showing the child's growth:
GOOD
Means the child is growing well.
VERY DANGEROUS
Child may be ill, needs extra care.
DANGER SIGN
Not gaining weight.
Find out why.
Refer child to hospital



This **Weight-for-Length/height Chart** shows body-weight relative to length/height in comparison to the Median (the 0 z-score line).

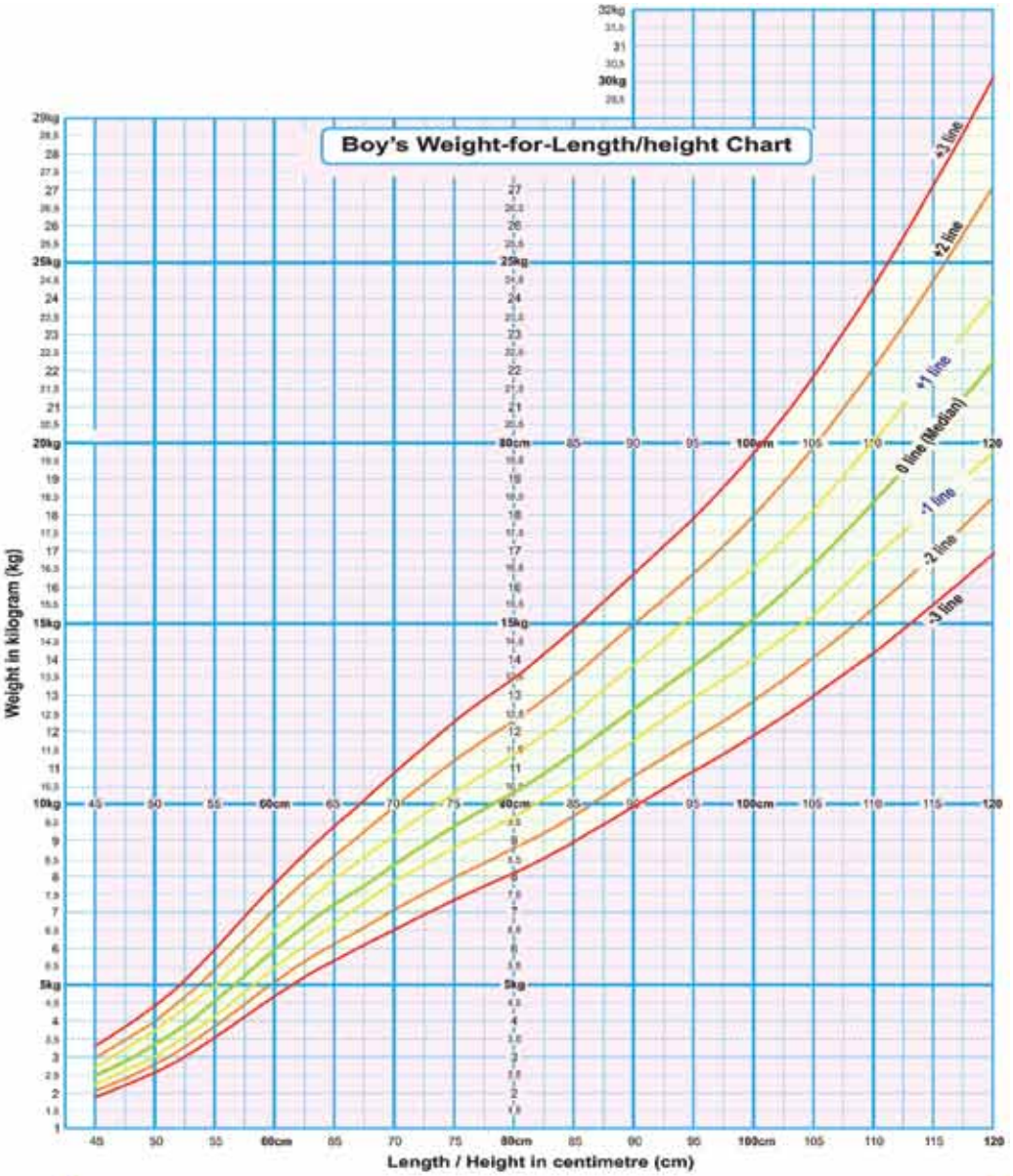
A girl whose weight-for-length/height is above the +3 line, is **obese.**

A girl whose weight-for-length/height is above the +2 line, is **overweight.**

A girl whose weight-for-length/height is above the +1 line, shows possible risk of **overweight.**

A girl whose weight-for-length/height is below the -2 line, is **wasted.**

A girl whose weight-for-length/height is below the -3 line, is **severely wasted. Refer for urgent specialised care.**



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A boy whose weight-for-length/height is above the +3 line, is **obese.**

A boy whose weight-for-length/height is above the +2 line, is **overweight.**

A boy whose weight-for-length/height is below the -2 line, is **wasted.**

A boy whose weight-for-length/height is below the -3 line, is **severely wasted. Refer for urgent specialised care.**

NUTRITION RISK SCORE - USED IN SOUTH AFRICA

CHILDREN: BIRTH – 14 YEARS

COLUMN 1 NUTRITION RISK SCORE

Is this child malnourished?

1. Present Weight

0-3 years (RTHC)

Following a curve on the RTHC	0
Inadequate weight gain, growth faltering	2
≤3rd percentile or Z score -2 to -3	4
≤60% of expected weight or Z score -3 or less	6

2-14 years (BMI)

≥50th percentile	0
<50th percentile	2
≤25th percentile	4
< 3rd percentile	6

2. Appetite

Good (5 complete meals daily)	0
Poor (less than 3 full meals daily)	2
Unable to eat (No food eaten in 2 days)	4

3. Ability to Eat

No problems	0
Mild vomiting/diarrhoea	1
Difficulty swallowing/chewing	2
Severe vomiting/diarrhoea	4

4. WHO Stage of Infection

Stage 1	0
Stage 2	1
Stage 3	2
Stage 4	3

5. Other Problems

None	0
TB & other infections	2
Social problems	2

Go to Column 2 →

COLUMN 2 ASSESSMENT

If the score is →

0-3 Primary Intervention (Nutrition Education)

- Exclusive breastfeeding for 6 months

Or

- Exclusive formula feeding
- Appropriate eating practices to meet daily energy, protein and micronutrient requirements (nutrient density of meals and the amount to be eaten per meal)
- Food-drug interaction
- Safe food preparation

4-5 Nutrition "At risk"

- Start with primary intervention as above
- Monitor weight monthly
- Poor weight gain for >1 consecutive visit go to column 3
- Good weight gain for 3 months go to column 4

>6 Food Supplementation

- Start with primary intervention as above
- Reassess monthly

Go to Column 3 →

COLUMN 3 SUPPLEMENTATION

Nutritional supplement (1/3 of daily RDA)

Children: Macronutrient supplement

0 — 6 months
Exclusive breastfeeding or Exclusive Formula

6 months — 1 year
30g enriched maizemeal/day (530kJ) = 1kg/month

1 – 6 years
100g enriched maizemeal/day (1765kJ) = 3kg/month

7 —12 years
150g enriched maizemeal/day (2648kJ) = 4kg/month

12 —14 years
200g enriched maizemeal/day (3530kJ) = 6kg/month

Multivitamin Supplementation

As needed, do not exceed 100% RDA

Go to Column 4 →

COLUMN 4 FOLLOW-UP OR EXIT CRITERIA

If score > 4 arrange follow-ups regularly, according to patients ARV schedule

Monitor and evaluate closely

At each follow-up, repeat Column 1 for the Nutrition Risk Score

Stop nutritional supplements if the score is:

0-3 score

Or

4-5 score plus good weight gain for 3 months

Go to Column 5 →

COLUMN 5 REFERRAL

Checklist

- Nutrition care chart completed
- Nutrition Risk score recorded
- Follow-up date

Check appropriate grants

- Pension
- Child support grants
- Care-dependency grant
- Foster care grant

Available food support

- Food vouchers
- National food energy program
- DACEL starter packs
- Food gardens

NUTRITIONAL MANAGEMENT

OF HIV-RELATED SYMPTOMS

SYMPTOM/SIDE-EFFECT	POSSIBLE CAUSES	MANAGEMENT
Nausea and Vomiting	Opportunistic Infections Acute Retroviral Syndrome (ARS) Illness due to poor hygiene Food Intolerance/s Medications ARVs: Zidovudine, Combivir, Didanosine	• Provide small, frequent meals • Feed foods such as soups, unsweetened porridge, and fruits such as bananas • Provide lightly salty and dry foods such as crackers and toast • Avoid spicy and fatty foods • Avoid carbonated drinks – opt for herbal teas with mint or fresh ginger • Provide liquids such as clean boiled water, diluted fruit juices and lemon water between meals and not with meals • Avoid taking medication on an empty stomach • Avoid child lying down immediately after eating • Encourage rest between meals • Cold foods may be better tolerated than warm ones • Sour/salty food may be better tolerated than sweet foods • Avoid cooking smells and foods with strong aroma such as garlic & onions • For the breastfed child, continue breastfeeding • Teach the caregiver how to maintain good hydration by using oral rehydration solution
Loss of Appetite/Weight Loss	Chronic infection (HIV, TB) Medications Malnutrition Anxiety and depression Oral sores Changing or starting treatment	• Try to stimulate appetite by offering favourite foods often • Avoid strong-smelling foods • If appetite loss is a result of illness, seek medical attention for treatment • Provide high energy, high protein liquids and fruit juices during the day and not with their meals • Children with a poor appetite should be encouraged to drink frequently; for example, sour milk, milk, custard, yoghurt, drinking yoghurt, soup or fruit juice • Make the food look and taste good, using colour and different texture to make the food more interesting • A child can be encouraged to eat by offering different foods and by making eating fun and a family occasion. Children that are left alone to eat do not eat as well as children that have company • Offer small, frequent meals to the child as often as needed throughout the day. Meal times do not need to be adhered to • High energy snack can be offered to the child e.g. fruit, dried fruit, peanuts, yoghurt or Mageu • Increase nutrient density of foods without visibly increasing volume of meal by adding peanut butter, skimmed milk powder, or eggs in soups or porridge

SYMPTOM/SIDE-EFFECT	POSSIBLE CAUSES	MANAGEMENT
Diarrhoea	Opportunistic Infections Common at initiation of treatment Non-HIV conditions (IBD, ulcerative colitis) Poor absorption of and intolerance to nutrient	• Ensure correct hygiene • Provide adequate fluids (soups, diluted fruit juices, boiled water, rice water and light herbal teas) to avoid dehydration • Avoid strong citrus fruits (orange, lemon) because they may irritate the stomach • Promote consumption of foods rich in soluble fibre (millet, potatoes, banana, peas, and lentils) to help retain fluids • Consume fermented foods such as porridges, maas and yogurt instead of milk • Consume easily digestible foods such as rice, bread, millet, maize porridge, potato, sweet potato, and crackers • Eat small amounts of food frequently and continue to eat after illness to recover weight and nutrient loss • Omit gas-forming food such as cabbage, onions, carbonated soft drinks (sodas) • Avoid insoluble fibre such as that in whole grain foods and beans
Oral Candidiasis(Thrush)/ Oral Sores	Infection Immunosuppression Antibiotic therapy	• Try soft, non-irritating foods such as scrambled eggs, custard, pureed pumpkin, paw-paw or porridge • Fermented food like maas & yoghurt may provide relief • Suck lump of ice or have ice cold drink or ice lollies before a meal • Practice good oral hygiene • Appropriately add custard to reduce acidity • Avoid sticky or dry foods such as peanut butter, popcorn, roasted nuts or dry toast • Avoid sweet or sugary drinks • Avoid acidic foods such as citrus fruit, vinegar, salty and spicy food • Eat cold or room-temperature foods • Provide plenty of liquids using a straw to avoid contact with affected part of mouth • Seek medical attention for treatment • Rinse mouth with boiled warm salt water after eating to reduce irritation and keep infected areas clean so yeast cannot grow • Continue breastfeeding where applicable • Continue exclusive cup feeding where applicable • Give paracetamol half an hour before solid feeds or try topical anaesthetic • Give cold puree enriched soups that are bland in taste

SYMPTOM/SIDE-EFFECT	POSSIBLE CAUSES	MANAGEMENT
Constipation	Inadequate fibre or fluid intake Antibiotics Iron supplementation	• Increase dietary fibre by increasing consumption of wholegrain products, fruit and vegetables • Increase water intake to at least 4 glasses per day • Provide frequent small meals • Encourage physical activity
Anaemia	Acute illnesses i.e. malaria Nutritional deficiency Opportunistic infections Drugs (cotrimoxazole, Zidovudine and other ARVs) Auto-immune haemolysis, parvovirus infections and direct effect of HIV infection on the bone marrow	• Eat more iron-rich foods such as animal products (eggs, fish, meat, and liver) green leafy vegetables (collard greens, spinach), legumes (beans, lentils, groundnuts), nuts, oil seeds and fortified cereals • Take iron supplements • If available, take one iron tablet once a day with some food. Take with a source of vitamin C such as tomatoes or orange juice to help with absorption • Drink fluids to avoid constipation • Treat malaria and hookworm • Avoid giving dairy products, tea and bran with meals rich in iron, as these reduce iron absorption

Enjoy A Balanced Lifestyle

- Be as active as you can
- Enjoy a variety of food
- Make starchy foods the basis of most meals
- Eat vegetables and fruits daily
- Drink lots of clean, safe water
- Eat fat in moderation
- Use salt sparingly
- Eat beans, lentils and soya regularly
- You can eat meat, chicken, fish and eggs everyday
- **DO NOT** drink alcohol
- **DO NOT** smoke

For more information:
ECHO (Enhancing Children's HIV Outcomes)
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ISBN 978-0-9814369-3-7

Eating When Pregnant And Breastfeeding

health
Department:
Health
REPUBLIC OF SOUTH AFRICA
USAID
FROM THE AMERICAN PEOPLE

It is important to eat correctly when you are pregnant because your **baby gets essential nutrients from you**.

Some Important Tips For Your Diet:

- Eating breakfast is important
- Avoid skipping meals
- Drink 8 glasses of water daily. It will help prevent constipation and bladder infections
- Eat well, but remember you are **NOT** eating for two - being overweight when you are pregnant may cause problems
- Eat foods rich in iron, calcium and vitamin C such as green leafy vegetables, liver, low-fat dairy products, vegetables and fruit

It is recommended that all pregnant and breastfeeding woman include the following in their diet:

- An additional 60g of protein per day such as half a cup of dried beans, a small piece of chicken or fish, a tablespoon of peanut butter or grated cheese or yogurt
- An additional 1200 kJ (300 calories) which is equal to one slice of bread with margarine
- Increase calcium intake by drinking an extra glass of low-fat milk per day

DEALING WITH COMMON PROBLEMS

The following are some common complaints during pregnancy. Adjusting your diet may help.

Nausea And Vomiting

- Eat dry ginger, ginger biscuits or a piece of bread when you wake up
- Have water and other drinks between meals
- Avoid being around during the preparation of food if this makes you nauseous
- Reduce fatty, rich meals and rather eat cold snacks instead of warm food

Heartburn

- Eat small meals more often during the day and avoid large meals
- Avoid fried, fatty and spicy food
- Be a clever cook! Prepare meals using little or no fat by steaming, baking or grilling food instead of frying
- Do not lie down soon after eating

Constipation

- Drink lots of clean, safe water every day
- Eat plenty of fresh vegetables and fruit
- Eat lots of fibre-rich foods such as whole-wheat bread, dried beans, and high-fibre cereals
- Do moderate exercise for 30 minutes 3 times per week
- Avoid using laxatives

Cravings

- Strange cravings for certain foods or other substances like sand, ash or pencils are usually due to a lack of a nutrient in your body. You must eat a varied, healthy diet
- Do not eat harmful non-food products

WHEN BREASTFEEDING

Eating healthily while breastfeeding will give you energy, make sure your breast milk has all the nutrients for your baby and help with your recovery after the pregnancy.

- Eat in response to hunger and include healthy snacks
- Drink water and fruit juices in response to thirst

Types of Breast Milk

- **Colostrum:** A yellow, sticky fluid that comes out in the first few days after birth. This is very good for your baby's immunity and it is very important that the baby should drink it!
- **Fore milk** (first milk during feed) quenches your baby's thirst
- **Hind milk** (produced after the fore milk with each feed) helps your baby gain weight and grow

Always **first empty one breast** before feeding from the other!

When Breastfeeding

- You may express your breast milk and leave it in a closed container for someone else to feed your baby with a cup or a spoon

- **Expressed breast milk will stay fresh for 8 hours at a cool temperature outside the fridge**
- Babies are likely to develop nipple confusion when given the breast **and** a bottle with a teat. This may cause you to struggle with breastfeeding later on

IMPORTANT

Breastfeeding needs patience and practice

For more information:

ECHO (Enhancing Children's HIV Outcomes)

4th Floor, CMI Building

Joubert Extention

Braamfontein

Tel: 011 547 5000

ISBN 978-0-9814369-4-4

Breastfeeding Your Baby

health

Department: Health

REPUBLIC OF SOUTH AFRICA

USAID

FROM THE AMERICAN PEOPLE

Breast Milk Is A Complete Feed And Offers Many Benefits For You And Your Baby

What Milk Does My Baby Need?

- From birth to 6 months all your baby needs is breast milk
- If your baby is **exclusively breastfed** this means **ONLY** breast milk and **NO:**
  - water
  - infant formula
  - food
  - baby porridge
  - rooibos tea
  - gripe water

A baby who is exclusively breastfed will feed at least **8-12 times in 24 hours**, including night feeds. Feed your baby often and do not time the feeds.

IMPORTANT

If you are HIV infected and you are breastfeeding, it is very important that you do so EXCLUSIVELY!

Remember to discuss ARV's for you and/or your baby with your health worker!

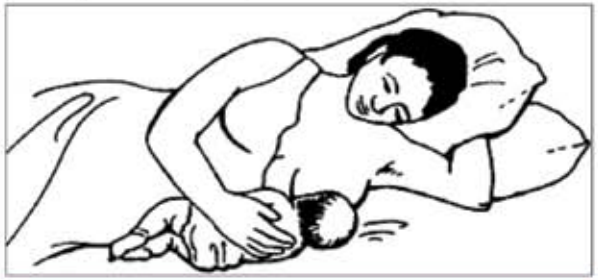
How Do I Hold My Baby When I Breastfeed?

The Cradle Hold

- Cradle the baby's head in the bend of your arm
- Use a chair or pillows for support
- Tuck the baby's arm under yours

The Underarm Hold

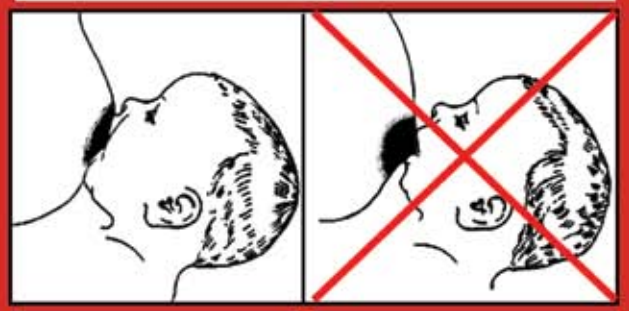
- The baby faces you with nose level to your nipple and feet pointing to the back
- Use a pillow and support the baby's shoulders, neck and head with your hand



The Lying Down Hold

- For support, use pillows for your back
- Try to keep body straight and do not bend forward
- Bring your baby as close to the breast as possible so that he/she does not stretch to reach your nipple
- This is a less painful position if you have had a caesarean delivery

Where Should My Baby's Mouth Be On My Breast?



Good attachment	Poor attachment

Good Attachment

- Make sure that the baby takes the **nipple AND areola** (brown area around the nipple) into the mouth
- Less of the areola should be showing below the baby's mouth than above it
- The baby's mouth must be wide open
- The baby's chin must be touching the breast
- The baby's nose must be against the breast
- The baby's lips should be curled outward
- Baby taking slow deep sucks and feeding comfortably
- Suckling should be comfortable and without pain

Introduce Solid Foods At 6 Months

This becomes necessary when a baby starts to need milk plus food to support its growth and should start at **6 months** and **NOT before then.** See the pamphlet called "*Introducing Solid Foods to My Baby At 6 Months*".

If You Have Been Exclusively Formula Feeding:

Continue to give the formula by cup and slowly start to add solid foods.

If You Have Been Exclusively Breastfeeding:

Continue to breastfeed with Nevirapine prophylaxis for your baby, and slowly add solid foods. Continue to breastfeed until your baby is 1 yr and you can provide a nutritionally safe milk substitute such as cow's milk or formula. Once these are available stop breastfeeding over 1 month. Continue giving Nevirapine prophylaxis to your baby for 1 week after you have stopped breastfeeding.

Important:

- Take ARV's for your health if prescribed by your health worker
- Test your baby for HIV at 6 weeks and 18 months unless he/she is sick—In which case test **earlier**
- Once you stop breastfeeding do not give any breast milk again

For more information:

ECHO (Enhancing Children's HIV Outcomes)

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ISBN 978-0-9814369-8-2

How Should I Feed My Baby If I Am HIV Positive?

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

USAID
FROM THE AMERICAN PEOPLE

Uninfected mothers and mothers who do not know their HIV status are encouraged to exclusively breastfeed their babies for the first 6 months and to continue until the child is 2 years or older.

EXCLUSIVE BREASTFEEDING means ONLY breast milk is given

NO water, food or traditional medicine is allowed!

How Should I Feed My Baby If I Am HIV Positive (HIV+)?

This is a very important decision which only you, as the mother, can make after consultation with your health worker. Your decision must be based on your home circumstances, family and community support. There is no absolutely safe way to feed your baby as:

- Formula feeding can make a baby very sick if not made or given safely and correctly
- **HIV is found in breast milk and can be transmitted to your baby**. This may cause your baby to become HIV+. Mothers on ARV's and who breastfeed exclusively have a very small chance of passing HIV to their babies compared to those who **mix feed without ARV's**

Mixed feeding means feeding your baby breast milk **as well as** infant formula or any other foods or liquids at the same time!

Your decision about how you are going to feed your baby should be based on your ability to give infant formula safely within your individual circumstances.

Answer Yes **(Y)** or No **(N)** to the following questions. Your answers will help you to choose either exclusive breastfeeding or exclusive formula feeding:

QUESTION	Y	N
Will you be able to cope with the stigma or discrimination from family or your community who might see formula feeding as proof that you are HIV+ or as an unusual way to feed your baby?		
Will you be able to safely and correctly prepare formula feeds?		
Do you always have enough time to safely and correctly prepare formula feeds?		
Will you always be able to buy the formula even if the clinic runs out?		
Is there a shop nearby where you can buy the formula in an emergency?		
Do you always have the following: clean tap water close to your home, a method of boiling water, soap for washing your hands and sterilizing feeding utensils (cups/bottles)?		
Do you have a working refrigerator inside your home to store prepared feeds?		

If you answered NO to ANY of the questions, it is recommended that you exclusively breastfeed for the first 6 months of the babies life.
Ask your health workers about Nevirapine prophylaxis for your baby during breastfeeding.

Remember that breast milk is the perfect food for a baby and babies that are breastfed do not get sick as often as babies that are formula fed.

If you answered YES to ALL of the questions, you may opt to exclusively formula feed for the first 6 months of the child's life.
Your baby still needs Nevirapine prophylaxis for 6 weeks.

Regardless of how you are feeding your baby, discuss ART for your own health with your health worker.

What Should I Do If My Baby Has Already Tested HIV+?

- It is best to **exclusively breastfeed** for the **first 6 months** and to continue to breastfeed even once you start giving solid foods at 6 months. Continue breastfeeding until your baby is 2 years old
- If you have been formula feeding, you may choose to start breastfeeding again because breast milk is healthier for your baby
- Follow Guidelines for HIV-positive infants and **start ART as soon as possible**

This pamphlet is NOT a substitute for infant feeding counselling.
Your health worker remains responsible for helping you to make an informed choice!

Should you use a bottle for mixing the formula, ensure that all your utensils are cleaned and sterilised as described:

Step 1: Wash bottles, teats and caps thoroughly with soap and **warm** water.

Step 2: Use salt or sugar to clean the teat by placing it in the teat and rubbing.

Step 3: Now boil all the utensils in water for 10 minutes. Boil the teat for 5 minutes only. Allow the utensils to stand and air dry on a clean surface. **Do not use a cloth to dry!**

Step 4: Pour in the correct amount of previously boiled water. Allow to cool.

Always add the water before the powder

Step 5: Scoop the powder with the scoop provided in the tin. Level the powder by scraping the back of a clean knife over the scoop

Step 6: Close the bottle and close the lid. Shake until the powder is completely dissolved

Tip: You may mix the formula in a bottle and then use a cup to feed it to the baby!

For more information:

ECHO (Enhancing Children's HIV Outcomes)
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Tel: 011 547 5000

ISBN 978-0-9814369-5-1

Cup Feeding Is Safer Than Bottles!

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

USAID
FROM THE AMERICAN PEOPLE

Mothers are encouraged to give their babies only breast milk for the **first 6 months** and to continue giving breast milk until the baby is 2 years or older.

CUP FEEDING

Mothers may decide to **cup feed**, rather than bottle feed, for various reasons:

- Cups are **easier to clean** than bottles and the chance of the baby getting sick from germs is a lot less
- **Someone else can cup feed** your expressed breast milk to the baby when you are not available
- Mothers often **pay more attention** to their babies while cup feeding than while bottle feeding
- Using a cup causes **less feeding confusion** for the baby because there is no confusion between the nipple and the bottle teat
- Your **baby can decide** how fast or slow he/she would like to drink when using a cup

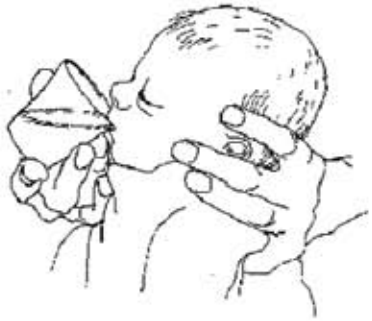
Even very small babies can feed well from a cup

Step 1: Expressing your breast milk

Wash your hands and the container. Sit comfortably and relax. Feel for little lumps on the edge of the dark part of the breast with your forefinger and thumb. Gently press back on the lumps and squeeze the milk toward the nipple. Do not let your fingers rub or slide over the skin. Rotate your fingers to empty the whole breast.

Step2: Feeding by cup

- Ensure that the baby is awake enough to be fed
- Wrap the baby so the cup will not be knocked out of your hand by the baby
- Support the baby in an upright sitting position
- Place the rim of the cup on the baby's lower lip, with the edges just touching the upper lip
- Tip the cup slowly so that the milk is just touching the baby's upper lip



- The baby usually automatically sips the milk
- Allow time for the baby to swallow
- Allow the baby to rest between sips, but don't remove the cup from this position
- **Do not pour the milk into the baby's mouth, let the baby take it by itself**

It is better for your baby to receive expressed breast milk or formula with a cup.
Cup feeding is safer than bottle feeding!

FORMULA FEEDING

If you have decided not to breastfeed your baby for any reason, it is important that you prepare your baby's formula **safely** and **correctly**.

- Babies often get **diarrhoea** and may even die when utensils are not properly washed and sterilised
- If the formula is not mixed correctly it can cause a baby to not grow and develop adequately

Ensure that the cup is washed with soap and hot water just before feeding.

A measuring cup is useful for both making formula and feeding it!

Making Baby Food Is Cheap And Easy!

IMPORTANT
Baby food bought at the shop is expensive and not always better than making your own

- Choose any vegetable or fruit
- Wash, peel if needed, remove pips, and cut into small pieces
- Place into a pot and cover with water
- Cook until soft
- Use a fork to mash or push it through a sieve to make a puree. You may use an electric blender if you have one
- If you have a freezer, you may freeze the food for use on another day by placing it in an ice tray, covering it with plastic wrap and putting it in the freezer or freezer compartment of your fridge
- You can later defrost the amount you need and heat it before feeding it to your baby
- Make eating time fun and interesting; smile and praise your baby during feeding so that you both enjoy it!

For more information:
ECHO (Enhancing Children's HIV Outcomes)
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ISBN 978-0-9814369-6-8

Introducing Solid Foods To My Baby At 6 Months

health
Department:
Health
REPUBLIC OF SOUTH AFRICA
USAID
FROM THE AMERICAN PEOPLE

After the first **6 months** breast milk or formula alone is no longer enough for a baby. Your baby now needs **solid foods and other fluids** too.

IMPORTANT

Before 6 months,
all a baby needs is breast milk,
or for special reasons, infant formula.
This means **no water, baby porridge, baby food or any other foods are needed, except for prescribed medicines!**

If you have been breastfeeding:

Are you HIV negative or do not know your HIV status? Continue breastfeeding even after solid foods have been introduced and continue this for up to 2 years. If you are infected with HIV, refer to the pamphlet called "*How should If feed my baby if I am HIV positive?*"

If you have been formula feeding:

Formula should be continued **until 1 year** and followed by the introduction of full cream cow's milk and other dairy products

HOW TO START GIVING SOLID FOODS

- Give the breast or some formula first, then offer some food
- Start with a teaspoonful of food
- This is new for your baby so he/she may turn his/her head away
- Do not force the baby to eat, be patient!
- Introduce only one food at a time. Once your baby knows the taste of that food, you may move on to the next food

WHAT TO BEGIN WITH

- All foods must be mashed or pureed for children from 6 months to one year
- Start with soft porridge like maize meal or oats porridge (baby cereals are also fine, but expensive), seasonal vegetables and fruit such as pumpkin, carrots, potato, butternut, banana and grated apple
- Start giving vegetables before fruit because fruit has natural sugars that are sweeter than vegetables. This may cause a baby to refuse vegetables after first having tasted fruit

SOME HANDY TIPS

- Keep foods bland. Do not flavour with sugar, salt or herbs and spices
- Prepare small portions
- Do not expect your baby to finish a bowl of food every time
- From about **8 months** you can begin to give more coarse foods, i.e. bread and meat (cut into cubes or minced). This is important so that your baby gets used to different textures of food and learns to chew
- Fruit juice must be diluted - ¼ cup of juice with ¼ cup of water

FOODS TO AVOID

- **Before 1 year:**
  - ◊ Cow's milk (full cream, low-fat, 2% or fat-free) must **not** to be given
  - ◊ Rooibos tea must **not** be given
  - ◊ It is better to introduce fish, cow's milk, peanut butter and egg white **after 1 year** because these foods may cause allergies if given too early
- Sweets, fizzy drinks, biscuits, crisps and chocolates should not be given as a reward
- Coffee and tea must not be given

Tips For Feeding Children

- Be patient and do not force the child to eat
- Provide small meals with favourite foods and give these often
- Prepare foods that are soft, moist and easy to chew especially when the child has mouth sores
- Feed liquids and soups using a straw when the child has thrush
- Give yogurt, buttermilk or *maas* instead of milk, if the child has diarrhoea
- Make meals attractive and include foods of different colours
- Supplements that you get from the clinic should not replace meals, but add to them
- If the child is fed formula, make sure you know how to mix the formula safely and correctly

REMEMBER

Breastfeeding is best for ALL children!

For more information:

ECHO (Enhancing Children's HIV Outcomes)

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Braamfontein

Tel: 011 547 5000

ISBN 978-0-9814369-7-5

Feeding The HIV Positive Child

health

Department: Health

REPUBLIC OF SOUTH AFRICA

USAID

FROM THE AMERICAN PEOPLE

It is important for caregivers to make sure that children with HIV, and other infections and illnesses, **eat well and often**. Looking after their diet is one of the ways to help them feel healthier and better sooner.

Start Early With Good Nutrition

- It is far harder to regain good health than to keep it; therefore start to feed the child healthy food as early as possible (from 6 months onwards)

Eat A Variety Of Foods

- No single food is either good or bad by itself
- It is best to eat many different types of food as each one has different nutrients that are needed by the body

Make Starchy Foods The Basis Of Every Meal

- Starchy foods are relatively cheap and supply plenty of energy
- Foods in this group include bread, porridges, rice, sweet potatoes, *pap*, samp and pasta
- Other food groups should be eaten with the starchy foods to provide a balance

Provide Plenty Of Vegetables and Fruit

- These foods are especially important as they help fight against infections
- Aim to eat **5 portions** of vegetables or fruit per day and include a variety of them

Eat Meat And Dairy Products Daily

- Eat a variety of animal protein such as meat, chicken, fish, eggs, milk, cheese and other dairy products
- These foods provide the body with proteins to build muscle and keep the body strong

Eat Vegetable Sources of Protein Often

- Eat foods such as peanuts, peanut butter, dried beans, soya beans, peas and lentils regularly
- These vegetable sources of protein are cheaper than animal protein and may be used to replace meat and dairy products

Sugars, Fats And Oils Add Energy

- **Children living with HIV need more food and energy to stay healthy**
- Add oil, butter, margarine and peanut butter to foods to make them more energy rich, especially if the child is sick and has a fever
- These foods may be included to enrich the diet but should be used sparingly if the child is overweight

Use Salt Sparingly

- Use salt as little as possible when cooking
- Many foods such as chips, Aromat, and tinned foods have hidden salt so always read food labels
- Use lemon juice, vinegar, fresh herbs and spices to flavour food instead of salt

Provide Plenty Of Safe, Clean Water

- Children should drink 2-4 glasses of water per day and more when it is very hot
- Water from taps is usually safe in our country
- If water from a borehole, river or well is used, it needs to be boiled first

Use the bleach method to make water safe if it cannot be boiled:

- Add one teaspoon of bleach to 25 litres of water
- Mix well and let it stand for at least 2 hours before drinking

RULES OF FOOD SAFETY

- Always wash fruit and vegetables with clean water before eating them
- If possible, use only pasteurised milk bought from a shop
- Throw away mouldy cheese or left-over food that is no longer fresh or left out of the fridge for too long
- Do not eat **raw** eggs, meat, chicken or fish and ensure cooking until well done
- Keep cold foods cold and hot foods warm
- Make sure that cooked food bought on the street is from a clean and safe source

For more information:
ECHO (Enhancing Children's HIV Outcomes)
4th Floor, CMI Building
Joubert Extention
Braamfontein

Tel: 011 547 5000

ISBN 978-0-9814369-1-3

Food Hygiene And Safety

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

USAID
FROM THE AMERICAN PEOPLE

IT STARTS WITH YOU!

- **Always** wash hands thoroughly with soap and water before preparing food, especially after using the toilet, sneezing or touching pets
- Bath or shower everyday to ensure personal hygiene
- Cover wounds and sores with a bandage or plaster before touching food

ALWAYS DRINK AND USE CLEAN, SAFE WATER

In South Africa, tap water is generally safe to drink

Use the **bleach method** to make water safe if it cannot be boiled

The Bleach Method:

- Add **one teaspoon of bleach** to 25 litres of water
- Mix well and let it stand for at least **2 hours** before using

CARRYING FOOD HOME

- Always place food in clean bags, containers or trolleys
- Do not put cleaning materials such as bleach or soap powder in the same bag as food
- Get bought food to where you will store it as soon as possible
- Place frozen/chilled foods together and separate them from other unfrozen food
- Handle perishable products with greater care as they can spoil easily. Keep them cool, refrigerated or frozen where necessary
- To keep food cold during transportation, it may help to wrap it in a newspaper or to carry a cooler bag

FOOD FIRST

- Always check the expiry date of food before purchasing it

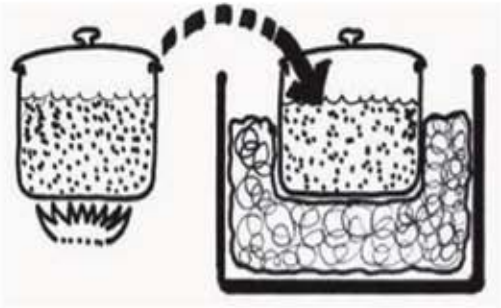
- Wash all dishes and kitchen surfaces with hot, soapy water
- Use a separate chopping board when cutting raw meat, fish and chicken. If you only have one, then make sure you wash it in-between cutting different foods.
- Store leftovers in the fridge. If you do not have a fridge only prepare small amounts of food that does not have to be stored
- **Do not store raw and cooked food together**, e.g. raw chicken and cooked chicken should be stored separately
- Keep food left outside covered so that flies and germs cannot not get in

Save Fuel With A Hay Box

A hay box is a clever, healthy and cheap way to prepare foods that need to be cooked for a long time. It is a great way to save on fuel as you only have to cook the food for a short while and then place the hot food inside the box for the cooking to continue.

Follow these easy steps to make your own hay box:

- Use a box made of wood or a hard material that will not melt
- Line with straw, newspaper, foam, old blankets or scrap material
- Heat your food in a pot with a lid until it starts to boil and cook for 5 minutes
- Without opening the lid, place the pot inside the box and cover until snug and well-wrapped to continue cooking
- Place a lid on the box
- Leave until food is cooked. It is important when cooking meat to heat it on the stove before serving



For more information:

ECHO (Enhancing Children's HIV Outcomes)

4th Floor, CMI Building

Joubert Extention

Braamfontein

Tel: 011 547 5000

ISBN 978-0-9814369-2-0

Healthy Eating Does Not Have To Be Expensive!

health

Department: Health

REPUBLIC OF SOUTH AFRICA

USAID

FROM THE AMERICAN PEOPLE

You can be proud of yourself for making an effort to live well by following a healthy diet! By following some easy tips, **you do not have to spend a lot of money to eat healthily.**

Here are some guidelines to consider:

Plant Your Own Vegetables And Fruit

- With seeds you can start your own vegetable garden so that your family has a supply of different vegetables
- This may be a new income because you can sell excess produce in your community

- If you don't have a large garden, plant seeds in any available container such as an old bath tub or old tyres cut in half!

Protein From Sources Other Than Meat

- If meat is too expensive to buy, **try other healthy protein sources** such as dried beans, lentils, soya mince, chickpeas, eggs, milk, peanuts and peanut butter
- You can also cook a little meat and add beans or soya to make it go further!

Forget Junk Food

- Take-away and junk food is expensive and **many of these are not healthy**
- Rather use your money to buy cheaper, healthier foods that everyone in the family can share

Buy In Bulk

- When meat is on sale, buy more than usual and store in a fridge or freeze if necessary
- The same may be done with products that stay fresher for longer such as certain tinned foods
- **Always check the expiry date!**

Share Food With A Neighbour Or Friend

- It is a good idea to buy food in bulk and then to cook and share with a friend
- This way is cheaper as you can share the costs

Buy Food From Local Vendors Or Buy No-Name Brands

- Branded products are usually more expensive than no-name brands and the **quality is just as good**

Use Leftovers

- If you do not have a fridge, cook food in small amounts for one meal at a time
- A fridge is useful in storing leftover food to keep it fresh
- Be creative with leftovers, e.g. use leftover fruit to make fruit juice or add milk to make a milkshake

Plan Ahead

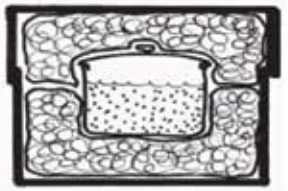
- It is useful to plan meals ahead of time as this will help you shop around for the best price and buy only what you need

Healthy, Balanced Eating Need Not Be Expensive

- A healthy diet means eating lots of vegetables, fruit, low-fat proteins (see Protein From Sources Other Than Meat), and high-energy carbohydrates like rice, *pap*, bread and pasta
- **Do not spoil children with sweets, chips and junk foods as these are expensive and not healthy**

Use Cheaper, Healthier Cooking Methods

- Cook food without oil or butter where possible and **rather steam foods**
- Use methods that save fuel such as a hay box



Eat Food And Drinks Containing Sugar Sparingly And Not Between Meals

- Most people love sugar, sweets and everything that is sweet
- **Too much sugar is not good for us!**

- Make a habit of not taking food and beverages containing sugar often - **save them for special occasions!**

If You Drink Alcohol, Drink It Sensibly

- Alcoholic drinks provide no nutrients for the body
- **Drinking in excess is not good for your health**
- If you do drink, do so in **moderation** and when you are **not going to drive**

- **Pregnant and breastfeeding women should not drink at all!** Alcohol is very dangerous to the baby

For more information:

ECHO (Enhancing Children's HIV Outcomes)

4th Floor, CMI Building

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Braamfontein

Tel: 011 547 5000

ISBN 978-0-9814369-0-6

South African Guidelines For Healthy Eating

health

Department: Health

REPUBLIC OF SOUTH AFRICA

USAID

FROM THE AMERICAN PEOPLE

Food is used inside our bodies for energy and to help the body repair itself. It is therefore important for all of us to take care of what we eat.

These guidelines are best for all persons older than 7 years and who are healthy and well. Make them part of your life to feel healthier and better!

Enjoy A Variety Of Foods

- No single food provides all the nutrients we need and it is best to enjoy many different foods

Be Active

- Regular activity helps us to stay fit, to control our weight and to keep our hearts and body healthy
- You don't have to join a gym!
- Aim to do at least **30 minutes** of exercise **every day** by taking brisk walks, doing house or garden work, or doing a fun-filled activity like dancing

Drink Lots Of Clean, Safe Water

- Did you know that every part of our bodies contains large amounts of water?
- Water is the best and cheapest drink around
- It is important so drink **6 - 8 glasses of clean, safe water every day**

Make Starchy Foods The Basis Of Most Meals

- Starchy foods provide the body with energy and other important nutrients
- Starchy foods, like maize meal (or *pap*), samp, bread, rice, pasta, potatoes and sweet potatoes can be enjoyed daily in moderation!

Eat Plenty Of Vegetables And Fruit Every Day

- Most people know that **eating vegetables and fruit have many benefits**, and yet don't eat enough of them
- These foods are especially important as they provide **vitamins** that help the body fight against illness
- Where possible, enjoy them raw and unpeeled in salads and with other food
- **Always wash before eating!**
- Aim to eat **different types and colours** of vegetables and fruit every day
- Aim for at least **5 portions** of either vegetables or fruit daily

Eat Dried Beans, Peas, Lentils, Peanuts Or Soya Regularly

- Eat foods such as peanuts, peanut butter, jugo beans and soya beans, **regularly**
- These are good sources of plant protein and are cheaper than animal protein and may be used instead of meat

Chicken, Fish, Meat, Milk Or Eggs Can Be Eaten Daily

- These are all animal-based foods and are good sources of protein
- **Be sure to remove the skin from chicken and visible fat from meat!**

Eat Fats Sparingly

- Fats are very concentrated sources of energy and may easily exceed your requirements
- Fatty food are also very tasty and it is easy to eat too much
- **Steam, grill or bake food using little or no fat instead of frying in oil or butter**
- Some foods contain healthier fats and may be included, eg: pilchards, tuna, nuts, avocado, olives and vegetable oil (use or eat small amounts)
- **Avoid lots of animal fats**, e.g.: butter and cream
- Some foods contain hidden fats, e.g. coffee creamer, sauces, processed and junk foods

Use Salt Sparingly

- Use salt as little as possible in cooking
- Remember that many foods, like chips, peanuts, tinned foods and instant soups and sauces, contain hidden salt
- Always read food labels
- Use lemon juice, vinegar, fresh herbs and spices to flavour food instead of salt

DEVELOPMENT

DEVELOPMENT

The celebration of childhood involves witnessing the many developmental milestones a child achieves over time. Developmental milestones are the skills children gain as they grow and play. Children develop skills in language, fine motor function, gross motor function and in tasks they need to master in order to achieve independence. Unfortunately, HIV can have very negative impacts on this process from both direct and indirect causes. An estimated 40-60% of HIV-infected children have some degree of developmental impairment due to neurological involvement. These can range from mild cognitive disorders to severe and debilitating psycho-motor impairments. Any neurological involvement due to HIV is a WHO Stage 4 disease, therefore children with delayed milestones, brisk reflexes in the lower limbs and microcephaly are eligible for ART. Detection and early intervention are essential to ensure children reach their fullest potential.

KEY MESSAGE:

Monitoring developmental achievements is an essential part of paediatric HIV care & support.

Caregivers are experts in taking care of their children. A developmental milestone assessment should include a discussion about the child's development with the caregiver. Always take caregiver developmental concerns seriously as they know their child best. This chapter contains age-appropriate screening job aides which provide sample questions to guide this discussion. It is also important to ask questions about all developmental areas.

Assessing the child begins with observing the child as they enter your consultation room. Being familiar with normal development will assist you in identifying delays or abnormalities. Take note of the child's activities, behaviour, motor skills, as well as verbal and non-verbal communication with the caregiver. The age-appropriate screening job aides included in this section will assist you to assess the different developmental areas, namely:

- Gross motor
- Fine motor
- Communication
- Personal/Social

Assessment of school performance in older children can provide insight into possible cognitive learning disorders. Questions about play (how, when and with whom) can give insight into possible behavioural difficulties.

Finally, remember to obtain, document and interpret the head circumference in children less than 3 years of age. Head circumference is a proxy measurement for brain growth. Children with HIV encephalopathy often present with acquired microcephaly, or small head size for age.

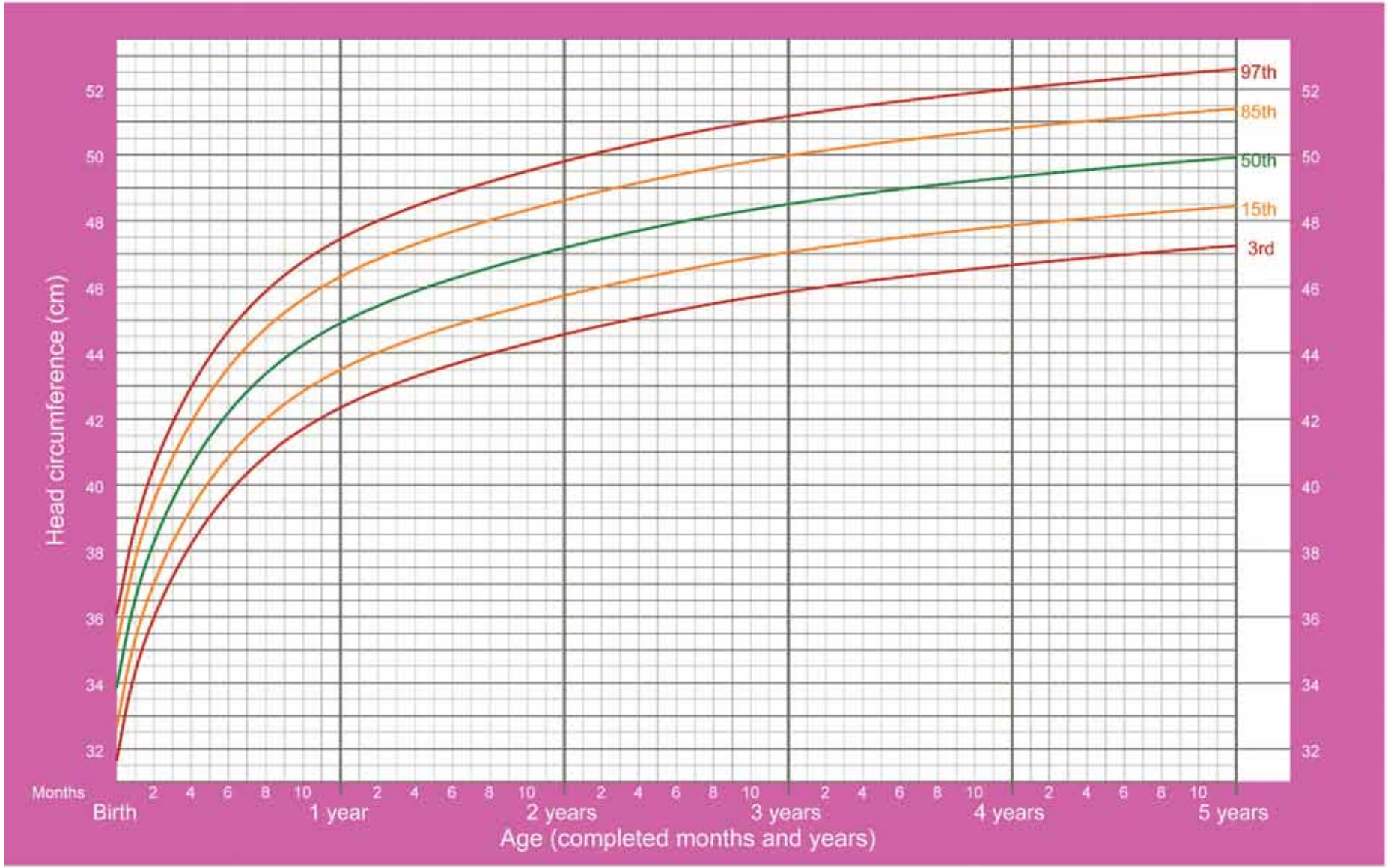
KEY MESSAGE:

Early referral of children with developmental delay to the rehabilitation team could improve the child's development and prevent disabilities. Remember that occupational and physiotherapy consultants can play an important role in supporting HIV infected children with developmental concerns. If in doubt, refer for an assessment.

Head circumference-for-age GIRLS

World Health Organization

Birth to 5 years (percentiles)

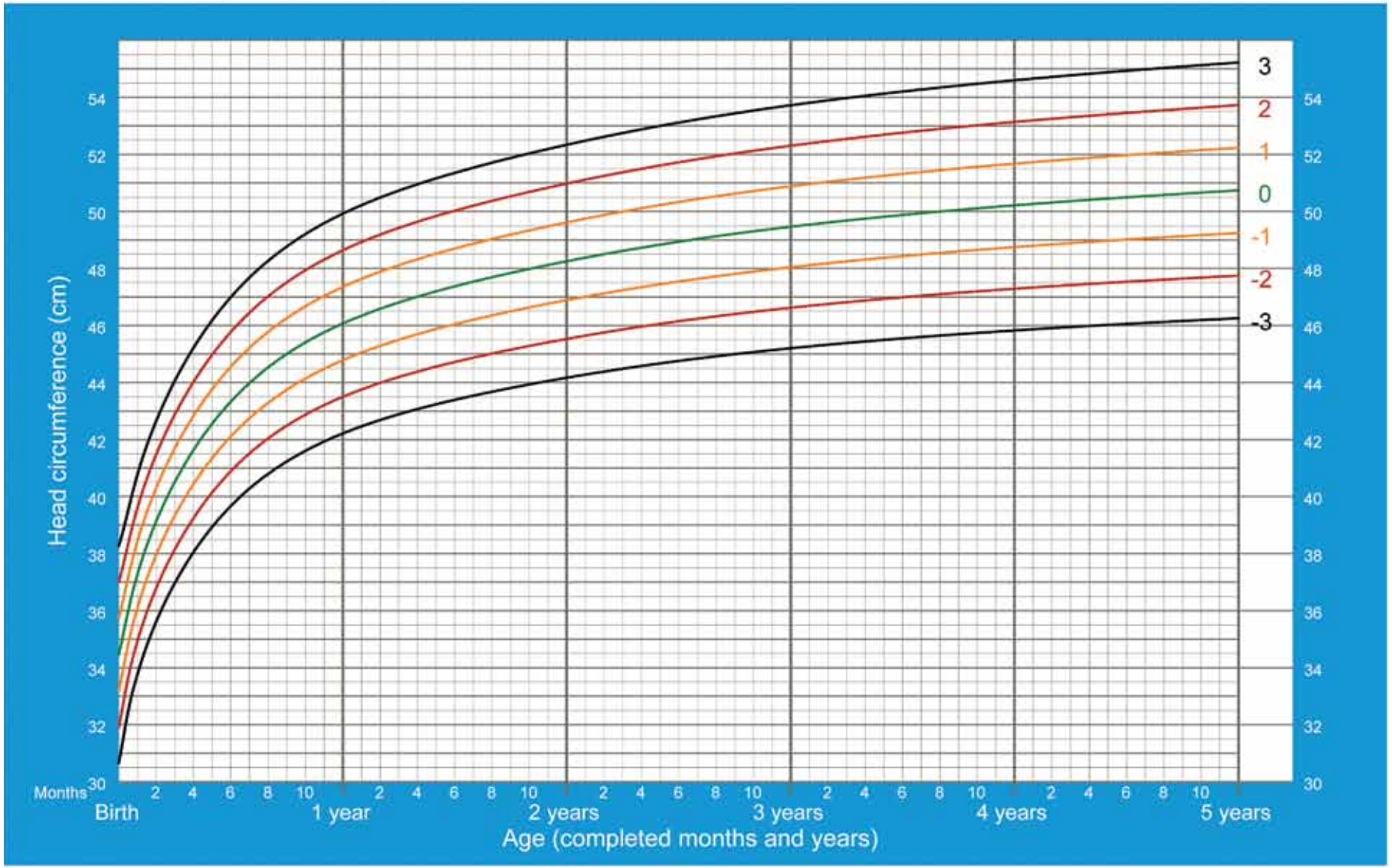


WHO Child Growth Standards

Head circumference-for-age BOYS

World Health Organization

Birth to 5 years (z-scores)



WHO Child Growth Standards

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
6 Weeks	Poor hearing	Does your child get frightened by loud sounds?		refer
		Does your baby move or turn his head when you talk to him?		
	Poor vision	Have you noticed a white spot on your child's eyes?	refer	
		Is your baby looking at your face during feeding?		
	Floppy	Does your baby try to lift his head up when you hold your baby against your shoulder?		refer
		Are there any body parts that look different than other children's?		
	Deformities present	Health Care Worker should undress and examine baby for any deformities		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

Date:

These developmental milestones and the lack thereof represent the RED FLAGS of child development. The age linked to the milestones leave some leeway for the slow developer. If all the grey boxes representing the same Red Flag are ticked: Do provider initiated counselling and testing for HIV. The child should immediately be referred to a doctor for a comprehensive neurological assessment and referred as indicated. If an Occupational Therapist is available on primary level, refer.
JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
3 months	No visual fixation or following	Does the baby follow you when you move? /Follow a toy with his eyes?		refer
		Does your baby look at you during feeding?		refer
		Have you noticed a white spot on your baby's eyes?	refer	
	Poor hearing	Does your baby respond to sounds by turning, blinking or stop sucking?		refer
	Asymmetry of tone or movement	Does your child prefer to use one side (left or right) more than the other?		
		Is the child moving his arms more than his legs or vice versa?		
	Floppy/stiff	Do you struggle to change your baby's nappy, because the legs are stiff?		
		Is the baby reminding you of a rag doll or a new born baby?		
	Consistent fisting	Does your child open his hands to take your finger or a rattle?		
	Unable to turn or lift head	Is the baby able to turn his head sideways when lying on his tummy?		
		Is the baby able to lift his head when lying on his tummy?		refer
	Failure to smile	Does your baby smile when you talk or play with him?		refer
	Poor sucking and swallowing	Does your baby struggle with feeding e.g. struggle to suck the nipple/dummy?		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
6 months	Floppiness and poor head control	Can your baby sit if you hold his hands or put pillows around him?		refer
		Is the baby able to lift his head with his upper body when pulled to sit?		
	Baby is not rolling	Does your baby role over from his tummy to his back and vice versa?		
	Asymmetrical movements e.g. failure to use both hands	Does your baby help to hold his bottle or the breast with both hands?		
		Does your baby pick up and play with a rattle or another toy? Both hands		refer
		Does your child lift both his feet and play with them with both hands?		refer
	Squint or blindness	Are you worried about your child's vision? Squint?	refer	
		Does the baby follow an object from one side to another?		refer
	Hearing: failure to turn to sound	Does your baby turn his head to sounds?		refer
		Does your baby babble to get attention?		
	Poor response to people	Does your baby cry differently when he is hungry, tired or sick?		refer
		Does the baby laugh out loud?		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

Date:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
9 months	Unable to sit	Is your baby able to sit without support?		
		Is your baby able to lean forward and sit up again without falling over?		
	Not developing the crawling position	Can your baby roll over from his back or sides to his stomach?		refer
		Is your baby standing on his hands and knees, swaying forwards and backwards?		
	Hand preference	Does your child mostly use one hand?		
		Is your child able to bring both hands together in the middle of the body?		
		Can your baby pass a toy from one hand to the other?		refer
	Fisting	Do you struggle to open your baby's hands to clean them or to cut the nails?		
		Does your child reach out and pick up a toy with any given hand?		
	Squint or blindness	Are you worried about your child's vision? Squint?	refer	
		Does the baby follow an object from one side to another?		refer
	Hearing and speech	Does your baby stop and turn when you call his name?		refer
		Does your baby babble using different sounds like "dadada" or "bababa"?		refer
	Persistence of primitive reflexes	Evaluate the Grasp reflex and the Routing reflex: Is it present?		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

Date:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
12 months	Unable to bear weight on legs	If you hold your child, feet touching the ground: Is your child standing?		
		Does your child carry an equal amount of weight on both legs?		
	Not yet crawling and pulling to stand	Is your child crawling?		
		Does your child crawl to a chair and then pull himself up to standing?		
	Abnormal grasp	Can your child hold a block or a stone in each hand at the same time?		
		Can your child pick up a button or a small stone from the floor?		
	Failure to respond to sound	Do you have a very quiet child?		
		Does your baby imitate sounds and babbles "ma-ma-ma"?		
		Does your child start to understand the meaning of some words? "No" "Bye"		
	Feeding: Unable to start with solids independently	Does your child struggle to swallow mashed solids?		
		Is your child able to pick up firm cooked food and eat it? Cooked carrots, chips		

Comments:	Referred to: ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service	Signature: Date:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
15 months	Unable to bear weight on legs	If you hold your child, feet touching the ground: Is your child standing?		
		Does your child carry an equal amount of weight on both legs?		
	Not yet walking	Is your child walking forward if held by one hand?		
		Is your child able to give a few steps independently (even if he is unsure)?		
	Struggle to change between positions	If your child is sitting on the floor, does he turn to reach toys behind him?		
		Can your child sit down unaided from standing?		
	Abnormal grasp	Are you worried about how your child's hands look?		
		Is your child able to release a toy (an object) if you ask him to?		
		Can your child hold a toy and play with it with the other hand?		
	Abnormal posture: floppy/spastic	Are you worried that your child doesn't look like other children the same age?		
		Do you think your child struggles to move freely? Legs scissoring, arms stiff		
		Do you think your child is floppy, reminding you of a rag doll?		
	Failure to respond to sound	Do you have a very quiet child?		
		Does your child turn to the sound when you talk to him if he did not see you?		
	Not yet talking	Is your child saying at least 3 words with meaning?		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

Date:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
18 months	Failure to walk	Is your child able to walk (even if it is with a broad base)?		refer
	Struggle to change between positions	Can your child squat and stand up again?		
		Is your child able to walk, and then stop to bend over to pick something up?		
	Poor vision	Are you worried about your child's vision?	refer	
	No pincer grip (Unable to pick up small objects)	Is your child able to pick up a button between the thumb and another finger?		refer
		Is your child able to put a lid on a plastic container (e.g. lunchbox)?		
	Abnormal posture: floppy/spastic	Are you worried that your child doesn't look like other children the same age?		
		Do you think your child struggles to move freely? Legs scissoring, arms stiff		
		Do you think your child is floppy, reminding you of a rag doll?		
	Poor hearing	Does your child have any problem with hearing?	refer	
	Inability to understand simple commands	Does your child respond to a simple command like "Don't touch it!"?		refer
		Does your child understand what "up", "down" or "under" mean?		
	Not yet talking	Is your child able to say 5 different words with meaning?		refer
		Does your child use one word sentences? (2 or more word sentences are good)		

Comments:

Referred to:
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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
24 months (2years)	Unable to understand simple commands	Does your child respond to a simple command like "Don't touch it!"?		
		Does your child understand what "up", "down" or "under" mean?		
	Cognition (learning) not developing	Do you sometimes worry that your child is not learning new things?		
		Can your child point to at least 5 body parts if you ask him to?		
	Not yet talking	Is your child using 2 word sentences e.g. "Mommy bottle"?		
		Does your child ask for food, drink or his favourite toy?		
	Poor gross motor coordination	Has your child started running? (If not running ask if the child is walking)		
		Can your child throw and catch a big ball? (thrown directly to the child)		
	Poor fine motor development * Tell mother to stimulate and reassess at next visit	Can your child open a wrapped sweetie with little help? (Not using teeth)		
		Does your child scribble with crayons on paper?		*

Comments:	Referred to: ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service	Signature: Date:

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
36 months (3years)	Using only single words (or not yet talking)	Was your child previously able to speak but can no longer do so?		
		Is your child using 3 word sentences e.g. "Mommy give bottle"?		
		Is your child able to have a simple conversation with you?		
	Cognition (learning) developing slowly	Do you sometimes worry that your child is not learning new things?		
		Does your child know his own name, gender and age (use finger to indicate age)		
	Ataxia (HCW must assess) Failure of muscle co-ordination resulting in irregular and jerky movements	Are you worried about the way your child moves?		
		Is your child moving like someone that drank too much?		
	Poor fine motor development	Can your child open a wrapped sweetie with little help? (Not using teeth)		
		Can your child draw a man with 4 parts?		
	Poor gross motor coordination	Can your child walk on a straight line forwards and backwards?		
		Can your child throw and catch a big ball? (thrown directly to the child)		
	Child still completely dependent	Does your child start to help with his own dressing?		
		Can your child eat with a spoon on his own?		

Comments:	**Referred to:** ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service	**Signature:** **Date:**

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JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
48 months (4years)	Speech difficult to understand because of poor articulation or omission or substitution of consonants	Was your child previously able to speak but can no longer do so?		
		Do you and /or other people struggle to hear or understand your child?		
		Can your child say his own name, gender and age?		
	Poor fine motor development 	Can your child draw the basic shapes? (See pictures on the left)		
		Can your child draw a man with 8 parts?		
	Poor gross motor development	Can your child run comfortably?		
		Can your child play a clapping game crossing one hand to the opposite side?		
	Cognition (learning) developing slowly	Do you sometimes worry that your child is not learning new things?		
		Does your child often just sit doing nothing, not interested in any play?		
		Can your child concentrate on one activity for 5-10 minutes?		
	No interest in play	Is your child sitting in the house and not playing with his friends?		
		Does your child play with children much younger than him/her?	Refer to OT	

Comments:	Referred to: ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service	Signature:
		Date:

These developmental milestones and the lack thereof represent the RED FLAGS of child development. The age linked to the milestones leave some leeway for the slow developer. If all the grey boxes representing the same Red Flag are ticked: Do provider initiated counselling and testing for HIV. The child should immediately be referred to a doctor for a comprehensive neurological assessment and referred as indicated. If an Occupational Therapist is available on primary level, refer.
JULY 2010

DEVELOPMENTAL MILESTONE RED FLAG SCREENING FOR PRIMARY HEALTH CARE

Name of child: _____ Date of Birth: _____ File No: _____ Clinic: _____

AGE GROUP	DEVELOPMENTAL MILESTONE RED FLAGS	QUESTIONS TO ASK THE MOTHER/CARE GIVER	YES	NO
60 months (5years)	Speech difficult to understand because of poor articulation or omission or substitution of consonants	Is your child speaking fluently?		
		Can your child ask and answer relevant questions?		
		Is the child able to name basic body parts?		
	Poor fine motor development 	Able to colour in fairly neatly between the lines of a picture		
		Can your child draw the basic shapes? (See pictures on the left)		
		Can your child draw a man with all basic parts and clothes?		
	Poor gross motor development	Able to catch and throw a ball?		
		Is your child clumsy? (constantly having mishaps)		
		Able to march?		
	Cognition (learning) developing slowly	Do you sometimes worry that your child is not learning new things?		
		Does your child sometimes just sit doing nothing, not interested in any play?		
		Can your child concentrate on one activity for 5 -10 minutes?		
	Emotional immaturity	Are you worried that your child is not ready to go to school?	Refer to OT	
		Does your child cry easily, have emotional outbursts when there is no reason?		

Comments:

Referred to:
ART clinic, Doctor, Speech Therapist, Occupational Therapist, Physiotherapist, Eye care service

Signature:

Date:

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DEVELOPMENTAL MILESTONES MONITORING

FOR ART CLINICS

Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
3 months Date:_____	**Supine:** ☐Pull to sit: 45° head lag still present **Sitting: Propped up** ☐Flexed/C -position ☐Hold head steady **Prone:** ☐Bears weight on flexed arms ☐Lifts head 45° & turn head to side	**Eyes:** ☐Follows through 90° in lying ☐Discover hands **Hands:** ☐Open for longer ☐Shake a rattle when it is placed in the hand (not intentional) ☐Mouthing begins	☐Coos and chuckles ☐Identifies familiar voices ☐Make noises & smile when spoken to ☐Cries less ☐Turn head towards sound	☐ Excited when fed, looks at mother's face ☐ Smiles selectively **Independence:** ☐ Better routine **Play:** ☐ Brief interest in toys & sounds ☐ Plays with own body	☐ No visual fixation or following ☐ Asymmetry of tone or movement ☐ Floppy/stiff ☐ Consistent fisting ☐ Unable to turn or lift head ☐ Failure to smile ☐ Poor sucking & swallowing
	Comments:			**Signature:**	
6 months Date:_____	**Supine:** ☐Pull to sit, no more head lag ☐Plays with feet ☐Rolls from back to tummy **Sitting: Unaided** ☐Sit, supported by arms **Standing:** ☐Bears weight on legs, equal both sides **Prone:** ☐Props self on straight arms, legs extended, toes turned outwards	**Eyes:** ☐Follows through 180° in lying ☐Focus on small objects **Hands:** ☐Hands to midline ☐Banging blocks against the table ☐Reaches and attains object at will ☐Hold and actively plays with rattle	☐Babbles to get attention ☐Makes simple sounds ☐Laughs aloud ☐Turns to mother's voice ☐Responds to his name	☐ Holds out arms to be picked up ☐ Examines the face of the person holding him **Independence:** ☐ Start eating solid food off a spoon Starts to hold the bottle **Play:** ☐ Puts everything in mouth	☐ Floppiness ☐ No head control ☐ Failure to use both hands ☐ Asymmetrical movements ☐ Squint ☐ Failure to turn to sound ☐ Poor response to people
	Comments:			**Signature:**	
9 months Date:_____	**Sitting:** ☐Sits without support ☐Lean forward and sit up again without losing balance **Standing:** ☐Remain standing for a few seconds by holding onto an object, falls down again **Prone:** ☐Baby start to crawl	**Eyes:** ☐Extremely accurate vision **Hands:** ☐Can pick up an button ☐Holds a block in each hand ☐Points	☐Babbles "ma-ma" ☐Imitates sounds ☐Understands "no" / "bye-bye"	☐ Stranger anxiety **Independence:** ☐ Dependent on mother ☐ Holds bottle independently **Play:** ☐ Enjoys playing "peek- a-boo"	☐ Unable to sit ☐ Failure to use both hands ☐ Fisting ☐ Squint ☐ Persistence of primitive reflexes
	Comments:			**Signature:**	

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Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
12 months Date:_____	**Sitting:** ☐ Turns around to reach toys next to him ☐ Sit down unaided from standing **Standing: (Walking)** ☐ Walks forward if held by one hand ☐ Walks around furniture sideways-cruising **Prone: (Crawling)** ☐ Crawl ☐ Pull up to standing by holding onto object ☐ Bear walking	**Eyes:** ☐ Looks for toys when out of sight **Hands:** ☐ Able to pick up a button with his thumb and index finger (Pincer grasp) ☐ Release on request ☐ Hold with 1 hand and play with the other ☐ Throw things into a container and take it out again	☐ Knows own name ☐ 1 Word sentences ☐ 2 Words with meaning ☐ Understand simple commands ☐ Copies words he hears a lot	**Independence:** ☐ Finger feeds ☐ Drinks from cup ☐ Pushes arms into sleeves ☐ Take own socks off **Play:** ☐ Throw a ball, but loses balance in process ☐ Like to fit things into one another (Nesting toys) ☐ Throw an object on the floor for pleasure	☐ Unable to bear weight on legs ☐ Not yet crawling and pulling to stand ☐ Abnormal grasp ☐ Failure to respond to sound ☐ Unable to start with solids independently
	Comments:			**Signature:**	
15 months Date:_____	**Sitting:** ☐ Stand up from sitting ☐ Will climb on a chair and sit down **Standing: (Walking)** ☐ Bend over to pick up an object ☐ Squat and stand up again ☐ Walks alone, broad base with arms in the air **Prone: (Crawling)** ☐ Able to crawl fast and manage obstacles e.g. stairs	☐ Hold the crayon in a fist when scribbling ☐ Turn pages of a book roughly ☐ Hold 2 small toys in 1 hand ☐ Put lid back on container	☐ Jabber with expression ☐ 2–6 words ☐ Points to known object on request ☐ Understand what the word "up" and "down" mean ☐ Respond to a simple command e.g. "Fetch the ball"	**Independence:** ☐ Picks up, drinks and puts down a cup ☐ Indicates wet nappy ☐ Bring spoon up to his mouth during feeding tends to lick it upside down **Play:** ☐ Examines everything ☐ Enjoys the company of other children, but prefer to play by himself	☐ Unable to bear weight on legs ☐ Not yet walking ☐ Abnormal grasp ☐ Abnormal posture: floppy/spastic ☐ Failure to respond to sound ☐ Not yet talking
	Comments:			**Signature:**	
18 months Date:_____	☐ Walk with more confidence ☐ Walk, squat and pick up something, stand up and walk again ☐ Start running, often falls.	☐ Build a 3 cube tower ☐ Scribbles ☐ Hold the crayon in a fist ☐ Turn pages of a book	☐ 6–20 words ☐ Understand 15 words ☐ Points to known object on request ☐ Use gestures to indicate his needs ☐ Point out body part on himself and another person	☐ Mood swings **Independence:** ☐ Handles spoon well ☐ Takes off shoes and socks **Play:** ☐ Interested in own mirror image	☐ Failure to walk ☐ Unable to pick up small objects e.g. buttons ☐ Abnormal posture Inability to understand simple commands ☐ Not yet talking
	Comments:			**Signature:**	

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Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
24 months (2 years) Date:_____	☐ Take few steps backwards ☐ Runs and change direction easily ☐ Jump off step with 2 feet together ☐ Stand and kick a ball ☐ Able to throw a ball	☐ Page through a book page by page ☐ Obvious hand preference ☐ Uses lines: I, _ ,O ☐ Complete 3 piece puzzle ☐ Open a sweet with little help	☐ <50 words ☐ 2 word sentences ☐ Ask for food, drink, toilet ☐ Point to at least 5 body parts Name 3 body parts ☐ Able to place objects with the same colour together ☐ Can count up to 3 ☐ Able to orientate self in relation to another object e.g. 'Stand behind /on top of/in front of the chair"	☐ Has a strong will of his own "I'll do it myself!" ☐ Temper tantrums ☐ Likes to give hugs ☐ Shy towards strangers **Independence:** ☐ Spoon feeds without mess ☐ Take off own clothes ☐ Toileting: Clean during day, start indicating his need **Play: Pretend play** ☐ Want to help with house chores and copy the parents	☐ Unable to understand simple commands ☐ Poor co-ordination
	Comments:			**Signature:**	
36 months (3 years) Date:_____	☐ Walk forward and backward ☐ Walks on tip toes ☐ Walk on straight line ☐ Jump 2 feet together ☐ Able to climb on chair ☐ Catch a big ball (hugging against chest) ☐ Hold ball above head and throws ☐ Run and kick a ball	☐ Copies the following shapes: _, I, O,T ☐ Start colouring in , go over the lines ☐ Pencil grip: ☐ Holding crayon to draw (still developing) ☐ Builds a 9 block tower ☐ Thread big beads on a shoelace ☐ Draw-a-man: at least 4 parts	☐ Produce all consonants and vowels correct. ('R', 'S' not perfect) ☐ Talks constantly and can have a simple conversation with you ☐ Knows own name and gender ☐ Show his age by using his fingers ☐ Can identify all parts of face ☐ Identify circle, square and triangle if you name them ☐ Fit basic colours together (blue, red, yellow)	☐ More co-operative temperament ☐ Understand what is socially acceptable **Independence:** ☐ Want to go to the toilet by himself ☐ Dress with supervision ☐ Eat with a spoon ☐ Washes and dries hands **Play: Parallel play** ☐ Play close to other children ☐ Build a 3 piece puzzle ☐ Enjoy listening to stories ☐ Focus for 10 minutes on one game	☐ Using only single words ☐ Ataxia
	Comments:			**Signature:**	

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Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
48 months (4 years) Date: _____	☐ Walk heel-toe with good balance ☐ Walk on tip toe ☐ Stands on 1 leg for 3 seconds ☐ Hop on 1 leg ☐ Jump with 2 feet together forward ☐ Can catch and throw a ball ☐ Catch a bouncing ball direct	☐ Draw-a-man: at least 8 parts ☐ Able to copy:  ☐ Able to pick up a button with thumb and index finger (2 Point pincer grip) ☐ Build a 10 block tower ☐ Able to do own buttons	☐ Full name and age ☐ Give the names of 4 colours if you point to it ☐ Point to most of his body parts if asked to ☐ Count up to 10 ☐ Know the difference between big and small ☐ Able to orientate self in relation to another object e.g. 'Stand behind /on top of the chair" ☐ Listen to a longer story	☐ Sometimes silly and like to show off ☐ Get involved in fights **Independence:** ☐ Eats with spoon ☐ Carry a cup without wasting water ☐ Want to go to the toilet by himself **Play: Make believe play** ☐ Enjoy playing with other children ☐ Able to play alone ☐ Identify pictures of shapes:  ☐ Complete a puzzle (15 piece at most)	☐ Speech difficult to understand because of poor articulation or omission or substitution of consonants ☐ Not able to draw basic shapes ☐ Doesn't show an interest to play
	Comments:			**Signature:**	

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Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
60 months (5 years) Date: _____	☐ Stand on 1 leg (8-10seconds) Walk heel-toe with good balance ☐ Walk on tiptoe ☐ Hop on one leg (3times) ☐ Jump with 2 feet together ☐ Able to march ☐ Able to catch and throw a ball ☐ Catch and throw a bouncing ball with both hands	☐ Able to build a 10 block tower ☐ Able to cross his midline during a clapping game ☐ Copies square and triangle ☐ Draw a man: all the basic parts of a man with clothes ☐ Copy the following shapes on paper  ☐ Colour in fairly neatly within the lines of a picture ☐ Hold pencil like an adult ☐ Able to thread beads	☐ Fluent speech ☐ Able to talk about the world around him ☐ Ask a lot of questions ☐ Able to point to basic body parts if asked to ☐ Able to name body parts if you point to them ☐ Able to give his first and last names ☐ He knows where he lives: street name/ residential area and city	☐ Choose and make friends ☐ Able to take turns ☐ Temperament: gentle and friendly ☐ Trust and like adults ☐ Obedient to caregivers (open to social norms and authority) **Independence:** ☐ Dresses and undresses alone ☐ Fasten and loosen buttons ☐ Can wash himself ☐ Toilet trained: he can clean himself ☐ Able to eat with spoon ☐ Able to butter bread **Play: Fantasy** ☐ Play with sticks and stones ☐ Build a puzzle (20 piece at most)	☐ Emotional immaturity e.g. acting out, disruptive ☐ Poor concentration Unable to play in a group ☐ Poor posture during table top activities
	Comments:			**Signature:**	

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Name of child: _____ Date of Birth: _____ File No: _____

AGE	GROSS MOTOR	FINE MOTOR	COMMUNICATION	PERSONAL / SOCIAL	WARNING SIGNS
72 months (6 years) Date:_____	☐ Sits up without using hands ☐ Stand on 1 leg for at least 10 counts ☐ Long jump keeping his feet together ☐ Make a star jump ☐ Catch a ball with his hands (not against his chest) ☐ Bounce a tennis ball and catch it again	☐ Follow moving object fluently with his eyes ☐ Rhythmical clapping across the midline(Play clap game) ☐ Able to build a 10 block tower ☐ Colour in well within the lines of a picture ☐ Draw a man: Detailed picture of a human with clothes ☐ Hand dominance established ☐ Able to copy the following shapes: 	☐ Able to point to all body parts if asked to (choose 3) ☐ Able to give the names of all body parts (choose 3) ☐ Able to point to circle, triangle and rectangle if asked to ☐ Able to name all the circle, triangle and rectangle ☐ Able to point to blue, green, red and yellow ☐ Able to give the names of blue, green, red and yellow on request ☐ He can count 13 objects ☐ Identify numbers 1 to 10 ☐ Able to lift his left hand and right hand when requested	☐ Make and keep friends,play in groups ☐ Open to social norms prescribed by his culture ☐ Respect others ☐ Able to express his feelings ☐ Self-confident to talk in front of people **Independence:** ☐ Able to use a knife ☐ Able to wash dishes ☐ Go to bed on his own ☐ Dress and undress himself ☐ Fasten his own buttons and belt **Play: (Cooperative play)** ☐ Able to place 1 block in relation to another block e.g. in front of, behind ☐ Thread beads ☐ Able to build a puzzle with ease (30 piece at most) ☐ Enjoy to repeat a story	☐ Clumsy ☐ Poor posture ☐ Poor pencil grip ☐ No hand dominance
	Comments:			**Signature:**	

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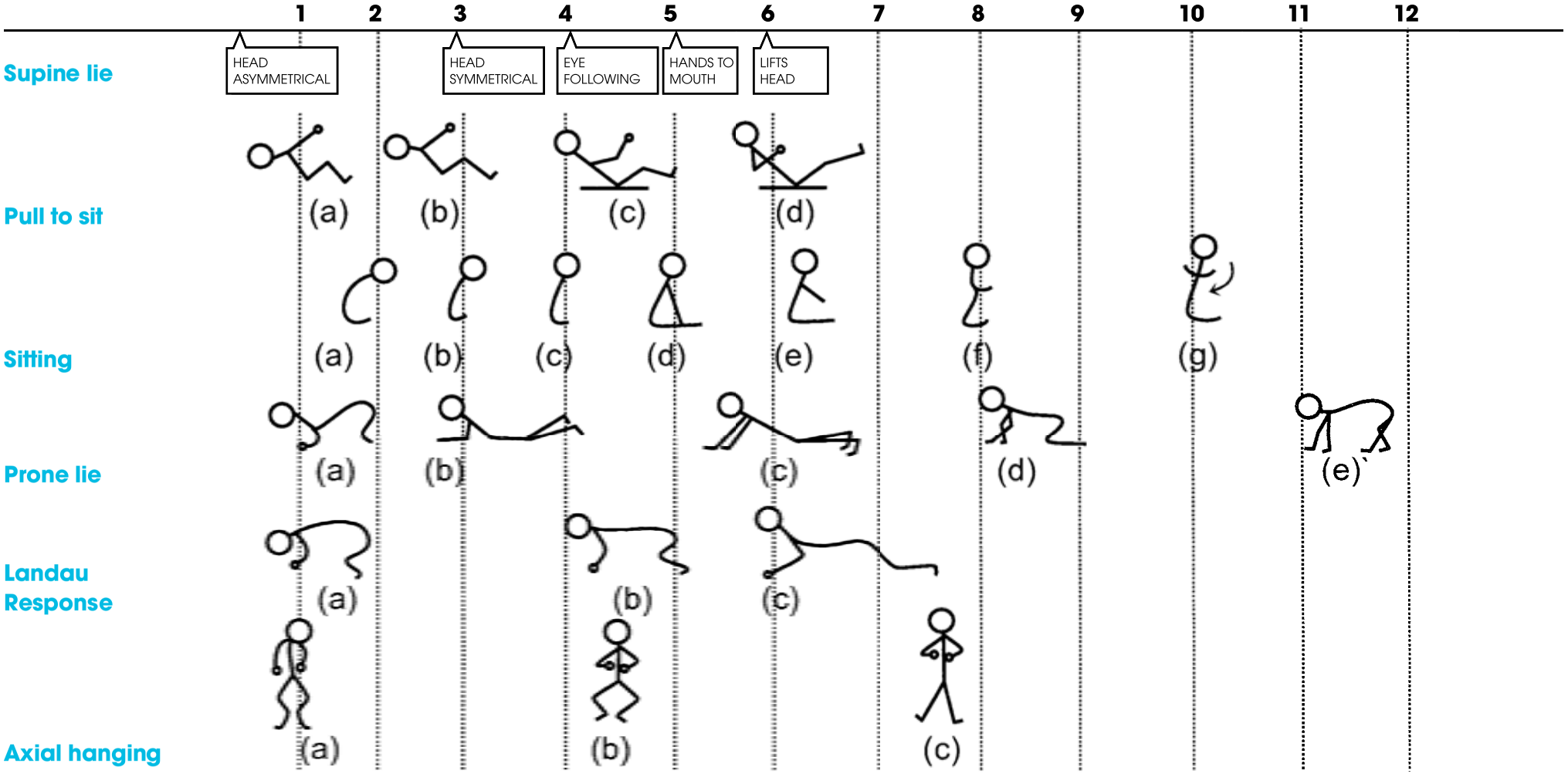
Compiled by Annemadelein Scherer
Occupational Therapist

BASIC INFANT NEUROMOTOR ASSESSMENT

THE SIX TEST POSITIONS



PALLIATIVE CARE AND HIV

PALLIATIVE CARE AND HIV

FOREWORD

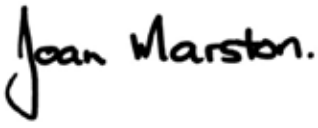
No health care professional enjoys watching a child suffer from pain or other distressing symptoms, when there could be effective management of these symptoms – physical, spiritual, and emotional. Palliative care, provided by health care workers educated and skilled in holistic pain and symptom management, and provided within the context of the child's development; effective communication with the child and family, and understanding of each child's unique needs, relieves suffering and improves quality of life.

The children's palliative care movement began in the UK in 1976 with the establishment of Helen House in Oxford UK by Sr Frances Dominica; and in Africa in Bloemfontein, South Africa in the early 1990's . Despite this, very few health care workers in Africa are trained in palliative care for children, palliative care drugs, including opioids, are often not freely available (and seldom in paediatric formulations), and very few children's palliative care programmes have been developed. Only South Africa has a network of services throughout the country. However, there are exciting developments in a number of African countries, and materials and training curricula developed for palliative care of the child in Africa.

Anti-retroviral therapy is reaching an increasing number of children with HIV , and the improvement in prevention of vertical transmission is very encouraging. Despite this, many children still suffer from pain and other distressing symptoms, and exhibit spiritual and emotional distress. Children with HIV may also have other life-limiting conditions such as cancer, genetic anomalies, severe malnutrition, disabilities or neuro-degenerative conditions. Sadly, there is still a large number of children not receiving ART. The quality of life of all of these children would benefit from palliative care provided by skilled, informed and compassionate health care workers.

I am excited by the commitment of PATA to provide palliative care to these most vulnerable children, and believe that the extensive PATA network will become a leader in taking this care to where it is most needed. We all look forward to the time when, working together in the best interest of the child, each life-limited or life-threatened child has access to palliative care across Africa, and every health care provider is equipped to provide palliative care.

With warm good wishes and congratulations to the members of PATA; and all who make use of this excellent resource.



Chief Executive:
International Children's Palliative Care Network.
www.icpcn.org.uk

RESOURCES

1. Guidelines and Assessment Tools for Children's Palliative Care in South Africa.
   Hospice Palliative Care Association of South Africa (HPCA)
2. Booklet 2: Guidelines for Managing Pain in Children.
   Hospice Palliative Care Association of South Africa (HPCA)
3. Sunflower Children's Hospice, Bloemfontein, South Africa

Palliative care is the care of patients who have an incurable disease. It begins at the time of diagnosis and addresses all the patients' physical, emotional, social and spiritual needs. It also involves giving support to the family.

KEY MESSAGE:

Although HIV can't be cured, HIV infection has become a chronic, manageable condition.

KEY MESSAGE:

The aim of palliative care for children and their families or guardians, is to promote quality of life, maintain dignity, and ameliorate suffering.

PAIN IN HIV INFECTED CHILDREN

"Pain is inevitable, suffering is optional" Anonymous

It may be more difficult to assess physical pain in children than in adults. Different pain rating scales have been developed for different ages and levels of development in both non-verbal and verbal children. These are used for establishing a baseline and for measuring response to pain treatment:

- FLACC Scale Pain Intensity Instrument
- Revised Faces Pain Scale
- Numeric/Word Pain Scale
- Eland Colour Scale

KEY MESSAGE:

Pain is not just physical; it has psychological, spiritual, cultural and social components.

PAIN AT INITIAL ASSESSMENT

FLACC SCALE
PAIN INTENSITY INSTRUMENT

INDICATIONS FOR USE: Infants and Children (2 months -7 years) unable to validate the presence of, or quantify the severity of pain.

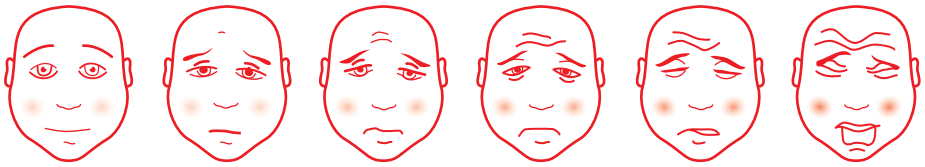
DATE /TIME:							
FACE: 0 - No particular expression or smile 1 - Occasional grimace or frown, withdrawn, disinterested 2 - Frequent to constant quivering of chin, clenched jaw							
LEGS: 0 - Normal position or relaxed 1 - Uneasy, restless, tense 2 - Kicking, or legs drawn up							
ACTIVITY: 0 - Lying quietly, normal position, moves easily 1 - Squirming, shifting back and forth, tense 2 - Arched, rigid or jerking							
CRY: 0 - No cry (awake or asleep) 1 - Moans or whimpers; occasional complaint 2 - Crying steadily, screams or sobs, frequent complaints							
CONSOLABILITY: 0 - Content, relaxed 1 - Reassured by occasional touching, hugging or being talked to, distractible 2 - Difficult to console or comfort							
DATE /TIME: **SCORE:**							

INSTRUCTIONS FOR USE:

1. Each of the five(5) categories is scored from 0-2, which results in a total score between 0 and 10
   - (F) Faces
   - (L) Legs
   - (A) Activity
   - (C) Cry
   - (C) Consolability
2. The interdisciplinary team in collaboration with the patient/family can determine appropriate interventions in response to the FLACC scale scores.

Reference: Merkek, SI., Voepel-Lewis, T., Shayevitz, JR.,Malviya,S.(1997):The FLACC:a behavioural scale for scoring post-operative pain in young children. Paediatric Nursing, 23(3): 293-297

REVISED FACES PAIN SCALE

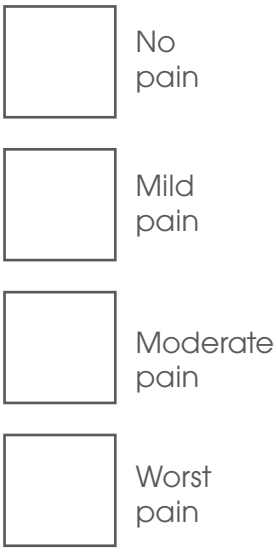


- Use in children over 4 years
- Ask them to point to the face that best depicts their level of pain

NUMERIC/WORD PAIN SCALE

0	1	2	3	4	5	6	7	8	9	10
No pain		Little pain			Medium pain		Large pain			Worst possible pain

ELAND COLOUR SCALE

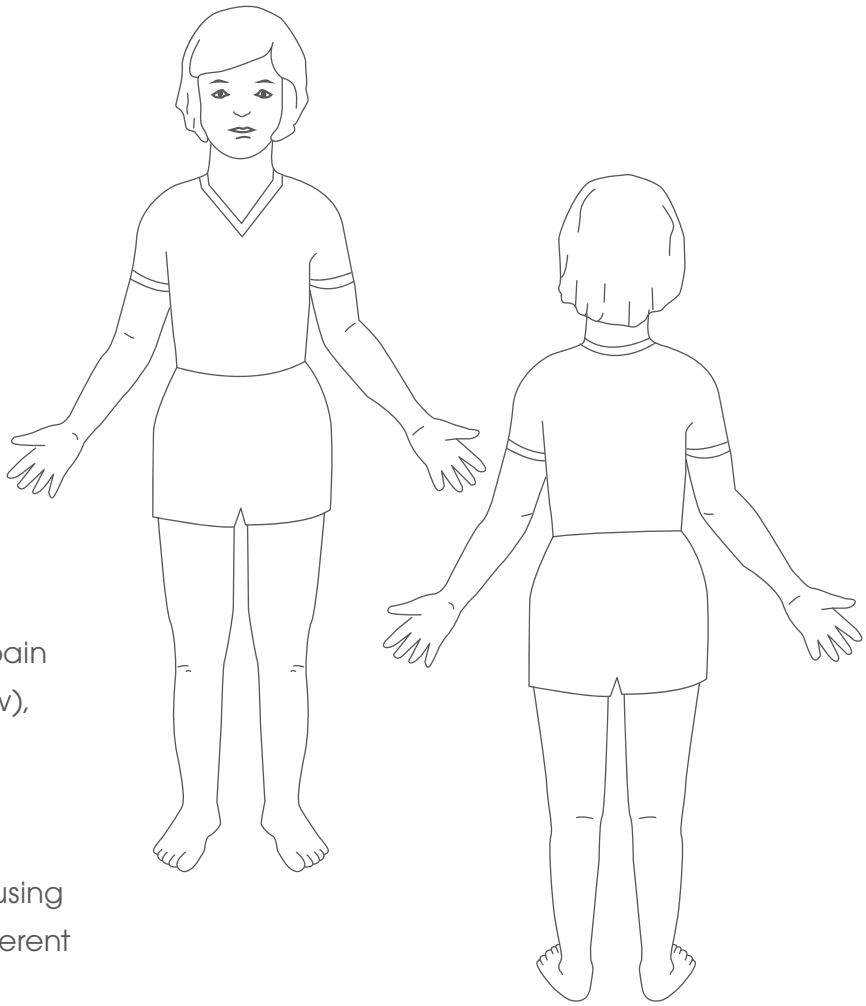


No pain

Mild pain

Moderate pain

Worst pain



INSTRUCTIONS:

get child to assign colours to no pain (e.g. green), Little pain (e.g. yellow), Moderate pain (eg orange) and severe pain (e.g. red).

Ask them to colour in the bodies using the different colours to depict different levels of pain in different areas.

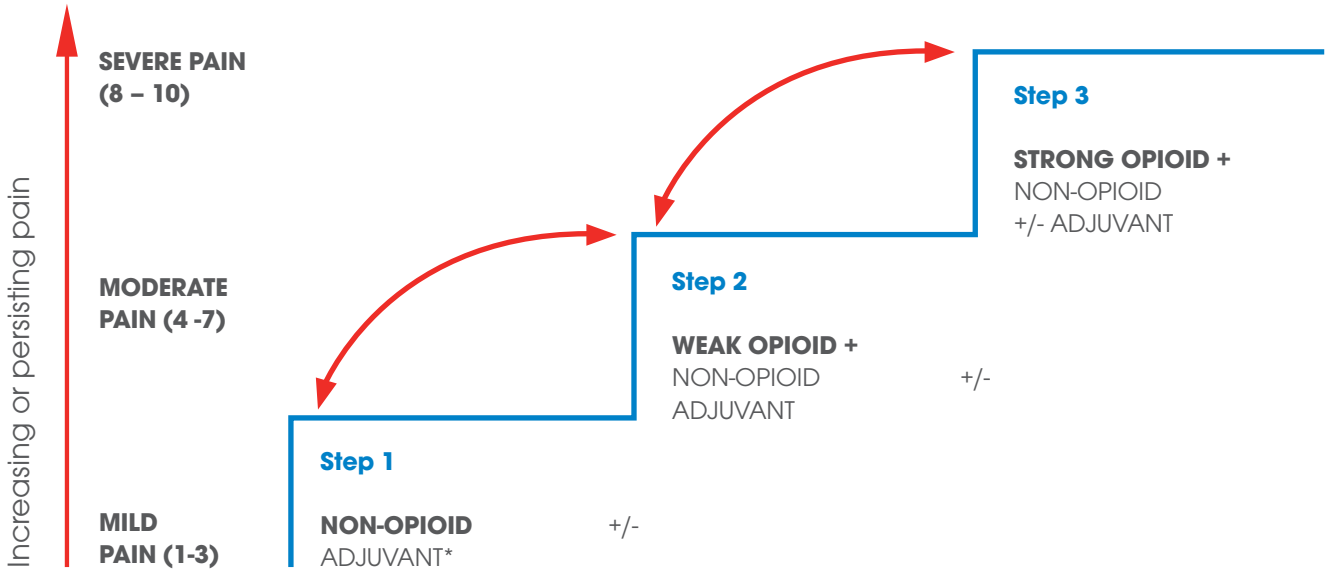
BASIC PRINCIPLES OF PAIN MANAGEMENT

- The correct use of the correct analgesic will relieve most pain in children
- Reverse the reversible (treat the underlying cause)
- Use both drug and non-drug measures
  - Non-drug measures can be used for both acute and chronic pain e.g. distraction (blowing bubbles, counting) during procedures (acute pain) or touch/massage
- Address associated psychosocial distress (e.g. separation anxiety)
- Continually re-evaluate pain and its response to treatment

The broad principles of analgesic use in children (WHO):

- By the clock (regular rather than prn dosing)
- By the correct route for the type of pain (preferably oral, avoid IMI)
- By the child (individualize treatment)
  - Remember to calculate the dose based on the child's weight
- By the WHO pain ladder
  - A stepwise approach to manage pain based on severity
  - Continually re-evaluate pain and its response to treatment
  - Adjust pain management accordingly

The WHO pain ladder



Commonly used drugs in the ladder: (see local guidance for drug indications & dosing)

NON-OPIOID	WEAK OPIOID	STRONG OPIOID	ADJUVANT* Drugs with a primary indication other than pain that have analgesic properties in some painful conditions. Only use after consultation.
Paracetemol NSAID's (Ibuprofen, Diclofenac)	Codeine phosphate Tilidine (Valoron) Tramadol	Morphine Methadone Fentanyl	Prednisone Carbamazepine Amitriptyline

SPIRITUAL PAIN

Common spiritual concerns of children include

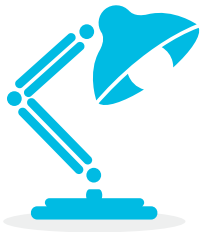
- Unconditional love
- Forgiveness
- Hope
- Safety and security
- Legacy – knowing that their lives have made a difference
- Loneliness and separation
- Loss of wholeness and the ability to do what they want to do

A spiritual assessment centres on

- Understanding the meaning of the child's life to the child and family
- Understanding things that are important
- Child's hopes and dreams for the future – whether realistic or not
- Transcendent relationships
- Review of the child's hopes, dreams, values
- Role of prayer, rituals
- Beliefs regarding death

To foster a child's spiritual growth

- Respect the way spirituality changes with age
- Provide opportunities for participation in religious observance at age-appropriate level
- Support growth and maintenance of trusting, secure and loving relationships
- Provide support at times of crisis and despair
- Allow time for questioning as part of a child's normal spiritual development
- Refer child to culturally appropriate spiritual care provider
- Offer to explain child's illness to spiritual care provider with family's permission
- Allow time for the child and family to reflect on life's meaning and purpose
- Provide compassionate, constant and developmentally appropriate support
- Respect the child and family's beliefs



KEY MESSAGE:

Children and adolescents are spiritual beings with concerns about the purpose and the meaning of their lives, and transcendent relationships with their mothers when young, and often later with God or a higher power. Spirituality is developmentally defined and involves an understanding of children's approaches to understanding life.

SPIRITUAL ASSESSMENT OF
A CHILD OR ADOLESCENT

Child's name:_____
Date of birth:_____ **Age:**_____
Language:_____
Parent or Guardian:_____
Religious affiliation (if any):_____
Name of Spiritual care provider/Chaplain:_____
Contactdetails:_____

- **Use age-appropriate language during the assessment and sit at the child's level**
- **Allow the parent or guardian to sit with the child if appropriate.**
- **You may need to ask the smaller child to draw themselves and their family to show whether they feel as though they belong, and are as important as everyone else.**

For small babies who cannot talk:

Is there a constant caring adult who cares for the child? Yes / No
If not, who cares for the child?_____
Where does the child live?_____

For small children with minimal communication skills:

Is there a constant, caring adult who cares for the child? Yes /No
If, not where is the child cared for?_____
Ask the child the following questions:
1. Who do you love? _____
2. Who do you go to when you are sad?_____
3. What makes you happy?_____
4. Who makes you feel special or happy?_____
5. What do you like to do? _____

Positive answers to these questions will indicate that the child finds meaning and value in life; has a caring adult to go to, and feels secure.

FOR OLDER CHILDREN AND ADOLESCENTS

Safety and security.

1. Do you have someone special who loves you?
2. Do you have someone special you love?
3. Who do you go to when you are happy?
4. Who do you speak to when you are sad or angry?

Self-image, meaning in life

5. Tell me about yourself – what do you like about yourself? What can you do well?
6. Do you have a special friend/friends?

Future hopes and dreams

7. What would you like to do in the future?
8. If you could be or do anything, what would that be?

Faith or Religious beliefs

9. Do you belong to a church or other religious group?
10. Do you attend services, and / or take part in activities?
11. Do you enjoy the services and activities?
12. Do you believe in God, Allah, a Higher Being?
13. Do you ever say prayers? When do you say them?
14. What do you think happens when someone dies? (ask this question carefully and only when relevant)
15. Do you have a pastor, chaplain, priest, Rabbi, Imam , spiritual advisor, you talk to ?
16. Do you enjoy yourself – every day? – often? – sometimes? - hardly ever?

Comments by Assessor

_____

_____

_____

_____

_____

_____

Signature:_____Date:_____

Child referred to spiritual advisor or Chaplain Yes / No

Name of Spiritual advisor / Chaplain:_____

Date of referral:_____

Result of referral on follow-up assessment

_____

_____

_____

_____

_____

_____

Signature:_____Date:_____

Sun*f *ower Children's Hospice

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A CLASSIFICATION SYSTEM DETERMINING THE LEVEL OF PALLIATIVE CARE INTERVENTION REQUIRED

The Soweto "Cares Score"

Most South Africa hospices use the PEPFAR palliative care class I-III classification system. In this system Class I patients are asymptomatic but are living with a life-threatening illness. Class II patients are symptomatic but independent and Class III patients are symptomatic and dependent/bedbound and require assistance with activities of daily living. This categorization helps to determine the frequency of palliative care visits required.

The PEPFAR Palliative care classes were developed for adults and pose several problems when applied to the paediatric population. Most young children (even healthy ones) require assistance with activities of daily living by virtue of their developmental immaturity. Also all infants and young children need to be looked after by caregivers and vulnerability is dependent on the capacity of their caregiver to meet their needs.

The "CARES score for children" was proposed and tested in the Soweto Hospice Paediatric Palliative Care Pilot site, South Africa.

Soweto Cares Score Classification

Level I: All green
Level II: Any orange, some green, no red
Level III: Any red

- If red for C1, R1, E1, E2, S1 or S2 : immediate notification of the relevant authorities (child welfare, child protection services etc) is required with consideration of possible removal of the child due to extreme vulnerability.
- If red for C2 or C3 consultation with a healthcare professional is required and hospitalisation or admission to an in-patient unit may need to be considered if the symptoms cannot be controlled.
- Suggested frequency of palliative care intervention
    - **Level I:** monthly.
    - **Level II:** 2 weekly.
    - **Level III:** weekly to daily. Consider in-patient unit admission if possible.

KEY MESSAGE:

"Effective palliative care requires a broad multidisciplinary approach and makes use of available community resources; it can be successfully implemented even if resources are limited. It can be provided in tertiary care facilities, in community health centres and even in children's homes." (World Health Organisation 2002)

THE SOWETO CARES SCORE

ASPECT REQUIRING EVALUATION		GREEN: Class I	ORANGE: Class II	RED: Class III
C- Comfort	C1: Basic needs: food, shelter, warmth (clothing)	Completely met	Adequately met but at risk of not being adequate if challenged by stressor (eg: mother hospitalized, grant not collected, winter weather etc).	Not met (child often misses meals, clothing or shelter inadequate, homeless etc)
	C2: Pain	None	Mild-moderate	Severe
	C3: Symptoms other than pain	None	Mild-Moderate	Severe
A- Access	A1: Transport	Own vehicle, transport always available	Reliant on public transport but would be able to access transport in an emergency	No transport services, no money for transport
	A 2: Healthcare	Easily accessible, good level of care	Average access, reasonable level of care	Not accessible (too far or very poor healthcare facilities)
R- Resources	R 1: Primary caregiver	Good caregiver, responsible, loving, caring	Satisfactory caregiver but may need extra help in a crisis	Not satisfactory, caregiver not coping, elderly grandparent, childheaded household
	R 2: Financial resource	well sourced	Adequate but could become a problem if challenged by an unforeseen crisis	Inadequate
E- Emotional needs	E 1: Child (the patient)	Happy, content	Coping but elements of stress, anxiety or depression observed	Uncontained, suicidal
	E 2: Caregiver	Happy, content	Coping but elements of stress, anxiety or depression observed	Uncontained, suicidal
S- Safety	S1: Abuse/neglect	None	Suspicion of abuse/neglect/ exploitation	Confirmed abuse/neglect/ exploitation
	S2: Environment	Safe	Elements of concern but not life threatening	Unsafe living environment posing a threat to survival

PSYCHOSOCIAL SUPPORT AND DISCLOSURE FOR CHILDREN & ADOLESCENTS

PSYCHOSOCIAL SUPPORT AND DISCLOSURE FOR CHILDREN & ADOLESCENTS

KEY MESSAGE

HIV has profound effects on an individual's physical, emotional, social, and economic well-being, and addressing these dimensions of life is an integral part of HIV care.

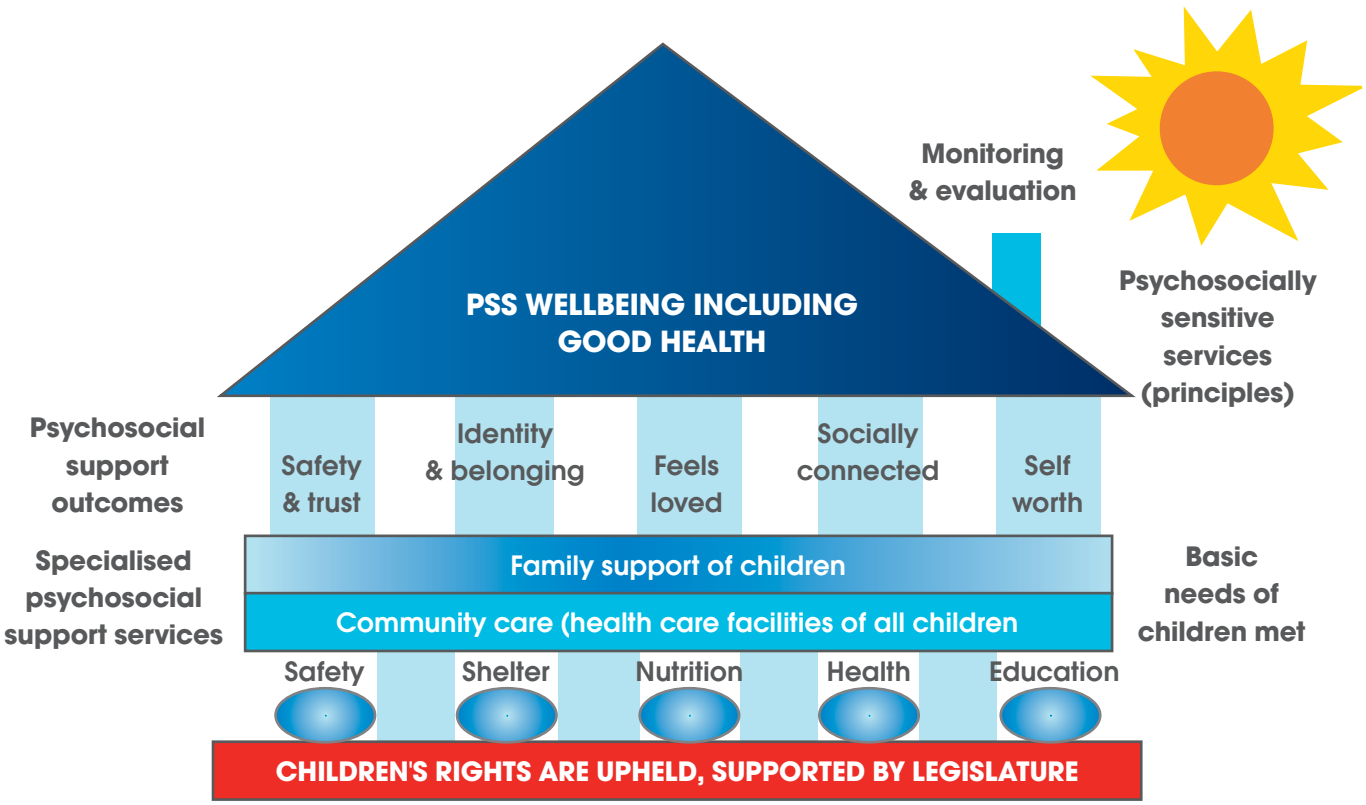
Effective HIV treatment programmes provide far more to patients than medication, and take into account a broad range of issues, including: psychological, spiritual, and psychosocial support, as well as, the need for community mobilisation.

This collection of services – ranging from counselling to practical assistance – is loosely termed "psychosocial support," and may include:

- Individual, family, and/or group counselling
- Disclosure support
- Identification, assessment, and treatment of mental health problems related to HIV
- Respite for caregivers
- Community and recreational activities for children and families
- Referral for practical assistance (food parcels, nutritional supplements, vocational counselling, employment opportunities, microfinance projects, etc.)
- Referral for spiritual / religious support
- Referral for legal advice

HIV has moved from an acute, fatal disease to one that can be managed with medication. Today, children will grow up living with HIV as a chronic disease. Thus it is important for children to learn about their disease in a way that they can understand so that they can take an active role in their own treatment and care.

Key Components For Understanding Psychosocial Support (PSS) Needs Of Children And Adolescents Infected And Affected By HIV And AIDS



REPSSI. 2009. Psychosocial Care and Support Mainstreaming Guide.

Children and adolescents, infected and affected, by HIV, mostly share common problems and concerns. They also experience unique challenges highlighted in the illustration above.

- Children's psychosocial well-being rests on having legislation and policies which protects the rights of the child, and offers guidance regarding the different needs of the child.
- Such support includes meeting the basic needs of children, such as safety, shelter, nutrition, health and education, the building blocks for children's well-being.
- Communities and families are at the frontline of providing basic needs and psychosocial care and support, to children.
- Where there are gaps in psychosocial support offered by communities and families, specialized psychosocial services may be introduced to provide better care for children.
- Health care providers should ensure that children's basic needs (safety, shelter, nutrition, health, and education) are met. Where gaps exist, appropriate referrals should be made.

COMMUNICATING WITH CHILDREN

KEY MESSAGE

Excellent communication skills are vital when working with all people, including children and adolescents. There are however some important skills and practices that assists in effective communication and building relationships with both children and adolescents.

THE CHILD FRIENDLY CLINICIAN

WITH THE CAREGIVER

- **Be relaxed and open**
- **Think about your body language:** Lean towards them
  Keep your face neutral & friendly
  Maintain eye contact
  Sit close by & on the same side of the desk
- **Remember that you are trying to develop a long term supportive relationship**

WITH THE CHILD

WHAT WORKS?

Get down to the child's eye level: Let the child see your eyes and read your intentions.

Speak softly and directly to the child: Children respond better when you address them and not just the caregiver.

Smile and play: A smiling face makes a huge difference and will help your interaction with the child, and remember that for young children play is very important. If they leave laughing, they will look forward to come back.

Be honest: Hiding the truth from a child leads to loss of trust.

Allow and respect normal emotions: Crying is okay and so is anger – be patient with the child.

Start with the least invasive activity: Keep the child on the caregivers lap as much as possible and don't start with painful or invasive activities such as ear examination or blood drawing.

Give the child choices: Choices provide a sense of control. Let the child choose whether you examine the left or the right ear first, whether to have juice or water with medication.

Engage the child: Talk about things of interest to him or her such as school or friends or hobbies.

Support the parent/child relationship: Parents are the experts on their own children and even teens need their parents.

Maintain your own self-control: If you find yourself "losing it", take a break or get someone else to work with the child.

Operate a "3 needle maximum" policy: If you can't get blood the third time, and its not essential, leave it until the next visit.

WHAT DOESN'T WORK?

Avoid comparing the child to others: Each child is a person with his or her own individuality.

Be careful when you touch children: Physical affection is OK, and you must examine the child for medical reasons, but wait until the child is ready, and don't treat the child like a pet!

Don't forget the child is in the room: If you have to have a private conversation, make a separate appointment with the caregiver. This is especially important when discussing disclosure. Children always understand more than you think.

Don't Pity: Children need love, support and care but not pity.

Don't infantilize the older child: Treat children appropriately for their age.

Try not to say "Be a good boy/girl": Children do the best they can, and making them feel inadequate will not help build a good relationship.

All children are not raised the same: Approaches to child rearing and discipline are never the same in two families. Don't expect your experience to be the same as someone else's.

Stop yourself before you threaten the child: Making the child fear you will not build trust or confidence.

Don't be grumpy: A positive attitude and humor is especially effective with children and adolescents. If you are too serious, children will feel depressed about their illness and their visits to the doctor.

PATA
Paediatric AIDS Treatment for Africa

DISCLOSURE

KEY MESSAGE

Disclosure is an ongoing process and should be individualised to include the child's cognitive ability, developmental stage, clinical status and social circumstances.

KEY MESSAGE

Parents and caregivers of HIV-exposed infants are understandably anxious about the health of their children. Most are worried that their child has or will have HIV infection. Given the complexity of the subject, it can be very difficult to explain the issues around infant diagnosis to parents and caretakers. However, a number of steps can be taken to help them understand the situation better.

- Begin talking about infant diagnosis as early as possible, preferably during the antenatal period or the first paediatric appointment.
- Inform parents that it can take many months, often as long as 18 months, to be sure that the child does not have HIV infection.
- Prepare them for early diagnostic testing by telling them that the child will have a blood test during the first months of life (6-12 weeks) that will aim to diagnose HIV infection in the baby (see section on HIV testing, page 31).
- Speaking openly with parents at each visit can be very helpful. Also, asking them for their questions, and addressing all of their questions and concerns can lessen their anxiety. Telling them about the baby's progress and highlighting positive findings (good growth, normal examination) can also be reassuring.

KEY MESSAGE

It is important to assess each caregiver's awareness of the child's right to understand what is happening to him/her or to someone in the family, and be involved in planning for the future.

- Protecting the child from painful topics leaves him/her to cope with fears alone: fantasies may be worse than reality.
- Children become frightened when they sense fear in adults: talk naturally to the child about the infection and illness, and let her/him understand that the caregiver feels comfortable with this. Be attentive to a child's ways of expressing anxiety (withdrawal, anger, acting out, regression, craving attention, difficulty sleeping) and encourage him/her to talk about it.

- Start disclosing HIV status as soon as possible in an age-appropriate way.
- Ideally the caregiver should be the one to disclose to the child, with a trusted relative/family friend if possible, and should provide consistent on-going support and loving empathy throughout the process.
- Disclosure to children should be done little by little, and includes encouraging questions, providing truthful answers and making the child understand that he/she can come back with more questions at any time, providing a loving context, and using child-friendly language.
- Listen to the child and encourage him/her to express fears and emotions.
- Always be truthful to gain the child's trust.
- Involve the child in decisions concerning his/her future.
- Reassure the child that it is not his/her fault if he/she or a family member is sick.
- Tell the child whom he/she can talk to about the illness, not that it is a secret.
- Link the caregiver with a peer support group for caregivers of a child infected by HIV.

STEP BY STEP GUIDE FOR CONVERSATIONS WITH CHILDREN

(TOWARDS DISCLOSURE)

- Can be a difficult process for all concerned.
- Effective conversations are dependent on the age and understanding (developmental level) of the child.
- Aim to build up a body of knowledge in the child that leads to the point of disclosure of HiV diagnosis.
- The **first step** is to find out what the child already knows (often more than adults think).
- Failure of full disclosure by early teenage years can lead to:
  - Poor adherence
  - Emotional difficulties
  - Poor school performance
  - HIV transmission if sexually active.

VERY YOUNG
0 - 4 Years

NO DISCLOSURE YET

DEVELOPMENTAL LEVEL
- Depends on adult for all needs and information
- Child needs comfort, support and most of all security

WHAT DO YOU EXPLAIN:
- Carry on consultation with child present
- Child too young for direct information about HIV but explanations to caregiver about how HIV can affect the child remain important
- Provide ideas to help caregiver support child taking medicine
- Congratulate child on taking medicines well
- Address caregiver anxieties
- Build relationship with the child through play/singing
- Provide a safe and welcoming clinic

AIM

BUILD UP CONFIDENCE of CHILD in HEALTH WORKERS and MEDICINE TAKING

Compiled by Kimesh Naidoo (Department of Paediatrics - University of KwaZulu Natal), Diane Melvin (Department of Psychology - Great Ormand Street Hospital for Sick Children) and Juliet Houghton (Programme Director CHIVA South Africa)
Contact Telephone: 031 260 4111/031 309 2217

YOUNG CHILD
(Pre-school) 5 – 7 Years

EARLY DISCLOSURE

DEVELOPMENTAL LEVEL
- Can understand concrete based ideas e.g. real events in the present and past
- Thinking is based in the present
- Take the lead from confidence of caregiver interactions with health workers
- Beginning to link medicines and health

WHAT DO YOU EXPLAIN:
Child needs to learn about illness but not HIV by name yet

- Introduce ideas of good and bad health by eating healthy food, keeping clean, exercising, looking after teeth etc.
- Medicines help to keep a body healthy and strong
- Introduce infections as 'germs' that can hurt or damage the body/make you sick or hurt
- Introduce (white) blood cells as the part of the body that look for and kill infections or germs
- Some germs hide and you need to take medicines to help fight the germs

AIM

UNDERSTANDING that MEDICINES SUPPORT the BODY to KEEP WELL

SCHOOL CHILD
8 – 11 Years

PARTIAL DISCLOSURE

DEVELOPMENTAL LEVEL
- Able to hold onto ideas and apply them to new situations
- Can understand past, present and future
- Has social and moral awareness about right & wrong behaviour
- Beginning to be more curious and take some control over their lives

WHAT DO YOU EXPLAIN:
- Explain that the germ concerned is a virus
- Viruses are 'clever germs' which can damage white blood cells
- If medicines are not taken correctly, the virus can get stronger and stop the medicines working (resistance)
- Naming of virus as HIV may occur but not essential
- Need to explain that information is private and should only be shared with those agreed with the caregiver(s)
- Help the child identify who they can to talk with about their health or HIV with
- Disclosure to symptomatic school age children is strongly encouraged

AIM

NAMING of INFECTION as HIV VIRUS

SCHOOL CHILD
11 – 14 Years

FULL DISCLOSURE

DEVELOPMENTAL LEVEL
- More abstract thinking (understands future consequences of actions)
- Increasingly making decisions on their own regarding identity, independence, school, career
- Puberty/sexual development
- Dependence on caregivers decreases
- Importance of relationships with friends increases

WHAT DO YOU EXPLAIN:
- Check understanding of health, medicines, sexual development and HIV infection
- Directly address young person during clinic consultations
- Need to understand responsibility for not transmitting HIV i.e. safer sex, and their rights i.e. family planning, confidentiality
- Preparation for future, encourage direct involvement in discussions and decisions
- Promote the benefits of attendance at adolescent support group

AIM

FULL UNDERSTANDING and RIGHTS and RESPONSIBILITIES
ABILITY to NEGOTIATE own HEALTH CARE

ASSESSING ADHERENCE

WHEN WORKING WITH CHILDREN AND INFANTS

When initiating and providing paediatric ART, the Health Care Worker (HCW) and the multidisciplinary team work closely with caregivers and, depending upon the developmental level of the child, the child themselves. As with adult ART, this begins with a dialogue in which the patient and caregivers are prepared for life-long treatment and adherence through:

- providing HIV knowledge on disease progression and treatment
- assessing the patient's circumstances
- assessing support systems and treatment readiness
- identification of factors that could possibly compromise adherence.
- assessing caregiver reliability to adhere to treatment needs
- assessing structural factors for medication storage
- demonstration of good insight

The following tool ***– Adherence Counselling Form for Infants/Children*** – has been designed for the HCW when working with the caregiver of the child or infant.

Points to remember when using this tool in adherence counselling:

- It is used over three sessions to gather information regarding the child's circumstances, to assess support available to the child, and assess adherence and treatment readiness. Though three sessions are not a strict requirement prior to ART initiation, the tool assumes limited patient/caregiver knowledge regarding ART, whereby a more thorough preparatory process is warranted.

- It is also used to equip the caregiver with specific information that would promote adherence – in every session there are opportunities to assess the level of knowledge that the caregiver has remembered from the previous session.

- Developing rapport with the caregiver will facilitate the assessment process and can serve as an opportunity to develop a relationship with the caregiver in the long-term treatment and care of the child.

- This tool is designed to be incorporated into the larger psychosocial support process and interventions with the family.

In addition to the HCW having sufficient knowledge and information on ART, this tool would work best if the HCW has sufficient knowledge and an understanding of the key psychosocial support issues in paediatric treatment and care.

KEY MESSAGE:

This tool requires the use of basic counselling skills in conversation with the family. Additional information required to better utilise this tool, would be a sound understanding in working with issues regarding child disclosure.

This tool has been developed by the Red Cross Children's Hospital in Cape Town and while it has been modified over a period of approximately 5 years, it is considered a work in progress.

ADHERENCE COUNSELLING

FORM FOR INFANTS / CHILDREN

SESSION 1

Have the following issues been discussed with the caregiver /patient?

1. General Information about how the infant/child was infected	YES	NO
2. What HIV does	YES	NO
3. The difference between HIV and AIDS	YES	NO
4. The function of the CD4 in the body	YES	NO
5. What the viral load is and what it means	YES	NO
6. The purpose of the visit at the ART clinic and the possibility to start ARVs	YES	NO
7. Has the primary caregiver been able to identify an alternative treatment supporter	YES	NO
8. Does the primary caregiver know the infant/child's CD4 count?	YES	NO
9. Has the primary caregiver disclosed to the child?	YES	NO
10. Does the caregiver have any other disclosure issues?	YES	NO

11. If there are difficulties with disclosure, what are the issues and how will they be addressed?

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Have you addressed the following issues with the caregiver /child?

12. Has the primary caregiver been able to identify an alternative treatment supporter? (Provide the name if possible)	YES	NO
13. Information regarding the clinic and procedures as well as clinic hours	YES	NO
14. If no alternative treatment supporter, treatment could be delayed	YES	NO

Are there factors that could influence the success of the treatment?

15. Socio-economic factors	YES	NO
16. Alcohol or drug abuse issues	YES	NO
17. Depression or other psychiatric conditions	YES	NO
18. Marriage or relationship issues	YES	NO
19. Issues related to religion or traditional healers	YES	NO

If the answer to any of the above is yes, please give details.

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20. Does the patient receive a grant?	YES	NO
21. Does the patient have other siblings?	YES	NO
22. If so, were they tested for HIV infection?	YES	NO

23. General Comments:

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24. Does the primary giver /child belong to a support group? If yes, please give details:	YES	NO

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Summarise session:.....

.....

Compiled by: ..... Date: .....

Date of next appointment: .....

SESSION 2

Recap on previous session.

To answer the questions below, please use the following scale:

1. No knowledge at all
2. Very limited knowledge
3. Some understanding
4. Good understanding
5. Understands as well as I do (better)

How well does the primary caregiver / patient understand each of the following:

RECAP INFORMATION	1	2	3	4	5
25. General Information about HIV transmission					
26. What HIV does to the body					
27. What is the difference between HIV and AIDS					
28. What the function of CD4 count is in the body					
29. What the viral load is					
30. What the viral load means					
31. The reason for the child to possibly start ARVs					
32. Has the primary caregiver been able to identify a treatment supporter?	YES			NO	
33. Has the primary caregiver brought a treatment supporter to this visit?	YES			NO	

Name of treatment Supporter: .....
Relationship: . .....
Tel number: .....

34. Have there been any new disclosures since last visit?	YES	NO

Have you tackled the following issues with the patient?

35. How ARVs work	YES	NO
36. When to take ARVs	YES	NO
37. The possible side effects of ARVs		
38. What to do if vomiting	YES	NO
39. What to do if doses are late or missed	YES	NO
40. What food restrictions if any are related to the treatment regimen	YES	NO
41. Stopping ARVs	YES	NO

42. The need to consult with a nurse or doctor before stopping medication	YES	NO
43. How to deal with medical problems between appointments (day hospitals , emergency room, clinic telephone)	YES	NO
44. Their fears around ARVs	YES	NO
45. The need to return medication at appointments	YES	NO
46. The need to take Bactrim/Cotrimoxazole if prescribed	YES	NO
47. The difference between Bactrim/Cotrimoxazole and ARVs	YES	NO
48. How to devise a treatment plan	YES	NO
49. The need to see the counsellor for the first six months	YES	NO
50. What to do in case of holidays or travel	YES	NO
51. Discuss safer sex/sexuality if appropriate	YES	NO
52. Will there be difficulties in the workplace with regard to bringing the child to clinic appointments?	YES	NO
53. The need to tell the HCW of any traditional or herbal medication usage	YES	NO

If so, what are the anticipated difficulties?

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54. General Comments: .....

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Summarise session:.....

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Compiled by: ..... Date: .....

Date of next appointment: .....

SESSION 3

Recap on previous session.

To answer the questions below, please use the following scale:

1. No knowledge at all
2. Very limited knowledge
3. Some understanding
4. Good understanding
5. Understands as well as I do (better)

How well does the patient understand the following?

	1	2	3	4	5
55. How ARVs work					
56. When to take ARVs					
57. The possible side effects of ARVs					
58. What to do if vomiting					
59. What to do if doses are late or missed					
60. What food restrictions if any are related to their treatment regimen					
61. How to deal with medical problems between appointments					
62. The fears surrounding ARVs					
63. The need to return medication at appointments					
64. The need to take Bactrim/Cotrimoxazole if prescribed					
65. The difference between Bactrim/Cotrimoxazole and ARVs					
66. The need to see the counsellor for the first six months					
67. How to devise a treatment plan					
68. What to do in case of holiday or travel					
69. The need to consult with a doctor before stopping medication					
70. Discuss safer sex/sexuality if appropriate					
71. Has the primary care giver been able to identify a treatment supporter?	YES		NO		
72. Has the patient brought a treatment supporter at this visit?	YES		NO		

Have you addressed the following issues with the patient?

73. The need to inform all medical personnel when taking the child to any health facility for treatment, that they are on ARVs.	YES	NO
74. The need to contact the clinic if there are difficulties with upcoming appointments.	YES	NO
75. Does the patient want to start ARVs	YES	NO

How well does the patient understand each of the following?

	1	2	3	4	5
76. How to give /take ARVs (timing)					
77. ARVs are a lifelong commitment					
78. Possible side effects of ARVs					
79. What to do in case of emergency					
80. In your opinion, is the patient ready to start ARVs?	YES		NO		

General Comments:.....

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Completed by: ..... Date: .....

CREATING AN ADOLESCENT–FRIENDLY ENVIRONMENT

KEY MESSAGE

Adolescents have different developmental needs than children do. Therefore, the manner in which health care workers relate to adolescents needs to acknowledge this, in order to encourage open communication

There is a growing need, worldwide, for adolescent-friendly healthcare services, particularly, in response to the increase in HIV infections, amongst this group. Some of the services that adolescents require are different from those of adults, and adolescent-friendly, healthcare services should place a greater emphasis on providing information, psychosocial support, and preventative healthcare.

Key features of adolescent-friendly healthcare services include:

- full participation of adolescents in healthcare decisions and interventions
- peer education, and life skills training
- integration with other services and organizations in the communities
- healthcare workers providing services to adolescents need to be trained in adolescent-friendly approaches, and communication
- an emphasis on privacy
- an emphasis on confidentiality

Adolescent-friendly healthcare services should, include information and interventions concerning, particularly:

- general health
  sexual and reproductive health (STI information & treatment; management and prevention of pregnancy; sexual identity issues; HIV information, testing, treatment, adherence & disclosure)
- mental health
- substance abuse
- information and counseling on a range of issues, for example, nutrition, hygiene, substance abuse, HIV etc.)

KEY MESSAGE

It is important for healthcare workers working with adolescents and their families, to regularly assess whether their needs are being addressed.

HOW TO TALK TO ADOLESCENTS

KEY MESSAGE

Excellent communication is integral to positive interactions with adolescent clients. This means effectively sharing information, as well as listening to the young people who come for counselling and testing.

TIP	WHAT TO DO AND SAY
Use simple language and short sentences. Avoid technical terms.	No medical terms or language
Use non-judgmental language.	Avoid saying, "You should . . . "; instead say, "You can . . . " or "You may want to think about . . . ".
Be aware of the language and slang adolescents use to discuss sexual issues.	
Be clear in your explanations and make sure your clients understand.	For instance, when talking about "sex," clarify that sex includes oral, vaginal, and anal sex. Some youth engage in oral or anal sex because they do not consider it "real" sex.
Be encouraging and affirming	"It is great that you are taking responsibility.....and it seems like you are really trying hard to manage this situation.."
Use "active listening" by paraphrasing your clients' statements and repeating them back. This confirms that you understand what your clients are saying.	If a young person says he is concerned about HIV, you can say, "It sounds like you want to learn how to prevent HIV, and you have some questions about protecting yourself and your partner." This technique also gives your clients the opportunity to correct any misunderstandings.
Ask open-ended questions that will lead to discussion rather than questions that require only a "yes" or "no" answer.	"What do you know about protecting yourself from HIV?" rather than, "Do you know how to protect yourself from HIV?"
Use appropriate eye contact, gestures, and verbal responses to show that you are listening.	Nod your head or say "go on" to help assure young people that they are being heard.
Learn to read body language. Be conscious of what your own body language is communicating by the way you stand, sit, or make eye contact.	If you are frowning and sitting with your arms crossed in front of you, this could convey that you are angry or upset by what your client is telling you.
Make sure young clients understand what you are saying to them.	Do not simply ask, "Do you understand what I have said?" Clients may be too embarrassed to admit they do not. Instead, consider asking questions that will help you determine if the young person understands.
Rather than giving orders, help youth develop steps they can take to protect themselves.	"How do you think you could take care of yourself?"
Be genuine. Admit when you do not know how to answer a client's question, and try to find the answer when you can.	" That is very important....I am not sure about that, could I check and come back to you with the answer to your question?"

Adapted from: American Psychological Association. (2002). Developing Adolescents. A Reference for Professionals. Washington, DC.

KEY MESSAGE

Adolescence requires a very specific approach due to the complex transition from childhood to adulthood and its associated physical, emotional, cognitive and psychological changes.

STAGES OF ADOLESCENCE:

Category of change	EARLY: 10 - 15 YEARS	MIDDLE: 14 - 17 YEARS	LATE: 16 - 19 YEARS
GROWTH OF BODY	• Secondary sexual characteristics appear • Rapid growth reaches a peak	• Secondary sexual characteristics advance • Growth slows down • Has reached approximately 95% of adult growth	• Physically mature
GROWTH OF BRAIN (Prefrontal cortex)		• Brain growth occurs • Influence on social and problem solving skills	
COGNITION (Ability to get knowledge through different ways of thinking)	• Uses concrete thinking ("here and now") • Does not understand how a present action has results in the future.	• Thinking can be more abstract (theoretical) but goes back to concrete thinking under stress. • Better understands results of own actions • Very self-absorbed	• Most thinking is now abstract • Plans for the future • Understands how choices and decisions now have an effect on the future
PSYCHOLOGICAL AND SOCIAL	• Spends time thinking about rapid physical growth and body image (how others see them) • Frequent changes in mood	• Creates their body image • Thinks a lot about impractical or impossible dreams • Feels very powerful • Experiments with sex, drugs, friends, risks	• Plans and follows long-term goals • Usually comfortable with own body image • Understands right from wrong (morally and ethically)
FAMILY	• Struggles with rules about independence/ dependence • Argues and is disobedient	• Argues with people in authority	• Moving from a child-parent/guardian relationship to a more equal adult-adult relationship
PEER GROUP	• Important for their development • Intense friendships with same sex • Contact with opposite sex in groups	• Strong peer friendships • Peer group most important and determines behaviour	• Decisions/values less influenced by peers in favour of individual friendships. • Selection of partner based on individual choice rather than what others think
SEXUALITY	• Self-exploration and evaluation • Preoccupation with romantic fantasy	• Forms stable relationships • Test how he/she can attract opposite sex • Sexual drives emerging	• Mutual and balanced sexual relations • Plans for the future • More able to manage close and long-term sexual relationships

Adapted from the Orientation Programme on Adolescent Health for Health-Care Providers, WHO, 2003 (Handout for Module B, the Meaning of Adolescence).

ADOLESCENCE CHECKLIST

The following list highlights key topics to consider in promoting mental health in adolescence. These topics may be discussed selectively during office visits, depending on the needs of the adolescent and family.

SELF

- [ ] **Self-esteem, including:**
  - [ ] Parental support
  - [ ] Peer influence
  - [ ] Resilience and handling failure
- [ ] **Mood, including**
  - [ ] Stability of moods
  - [ ] Depression
  - [ ] Suicidal ideation (suicidal thoughts) and behaviours
- [ ] **Body image, including:**
  - [ ] Physical appearance
  - [ ] Weight
- [ ] **Sexuality, including:**
  - [ ] Sexual development/puberty
  - [ ] Sexual behaviour
  - [ ] Sexual identity
  - [ ] Parental expectations and communication
  - [ ] Prevention of sexually transmitted diseases including HIV/AIDS
  - [ ] Pregnancy
  - [ ] Sexual abuse and rape

FAMILY

- [ ] **Independence and responsibility, including:**
  - [ ] Importance of family support in adolescence
  - [ ] Increased independence
  - [ ] Increased influence of peers
  - [ ] Parental expectations and limit setting
  - [ ] Family conflict

FRIENDS

- [ ] **Peer relationships, including**
  - [ ] Peer support
  - [ ] Peer influence

COMMUNITY

- [ ] **School, including:**
  - [ ] Transition from middleschool/ junior high to high school
  - [ ] Academic success
  - [ ] Homework
  - [ ] Extracurricular activities
  - [ ] Absenteeism, dropping out
  - [ ] Transition from high school to college or work
- [ ] **High-risk behaviours and risk factors, including**
  - [ ] Substance use
  - [ ] Violent behaviour
  - [ ] Firearm use
  - [ ] Exposure to violence

BRIDGES

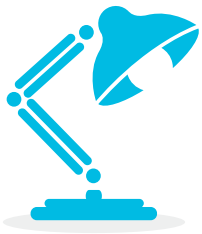
- [ ] **Opportunities for early identification and intervention, including:**
  - [ ] Anxiety problems and disorders
  - [ ] Attention deficit hyperactivity disorder
  - [ ] Child maltreatment
  - [ ] Eating disorders
  - [ ] Learning problems and disorders
  - [ ] Mental retardation
  - [ ] Mood disorders: depressive and bipolar disorders
  - [ ] Obesity
  - [ ] Oppositional and aggressive behaviour
  - [ ] Pervasive developmental disorders
  - [ ] Substance use

NOTES

National Centre for Education in Maternal and Child Health. 2002. Adolescence checklist. In Jellinek M, Patel BP, Froehle MC, eds., Bright Futures in Practice: Mental Health - Volume II. Tool Kit. Arlington, VA: National Centre for Education in Maternal and Child Health

HIV TESTING

THE "KIDZWHOTEST" MODEL

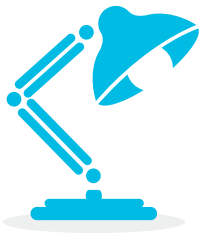


KEY MESSAGE

To date, HIV testing of children has been an adult-focused event between the caregiver and healthcare worker, with the child as an uninformed spectator who becomes afraid and confused. For children to experience this process calmly and without fear, they need to be included in the counselling and testing conversation.

Healthcare workers lack the confidence or tools to know how to engage with children. The KidzWhoTest Model/Talk Tool uses storytelling to address HIV Pre- and Post-Test Counselling. It was designed to provide healthcare workers with a structured strategy to include the child aged between 4 and 11 years, in the counselling session and to disclose sensitive information in an age-appropriate, non threatening, informative, and fun-filled manner.

A child's language is play
Storytelling is a form of play



KEY MESSAGE

Stories provide children with a non-threatening form of communication that can address their issues and concerns. It builds on a natural way in which children learn about themselves and their relationship with the world around them. Stories are an effective tool when used in more structured counselling sessions. They can enhance self-awareness, aid the process of self-discovery, develop empathic understanding and improve self-efficacy, communication skills, and emotional growth.

SIMPLE STORYTELLING SUGGESTIONS:

- Always introduce the child to the storytelling tool first (see Talk Tool page 1).
- Allow the child to create the storytelling if needed, by asking them "What do you see happening here?" You can then fill in any gaps.
- Show an interest in the storytelling process. Mirror back to the child what he/she is expressing through words and body language.
- Let the child teach you, as well. Always be willing to learn something new.

The **Talk Tool** story is about a frog called Sibusiso Selesele (meaning "Blessing"), who is cared for by his caregiver, Mkhulu Noah. We follow Sibusiso's step-by-step journey through the HIV testing health system. From a child's perspective we learn if he is HIV-infected or not, and what he needs to do to either remain HIV-uninfected or care for himself should he be HIV- infected.

The Talk Tool can be used in a variety of ways such as:

- Preparing the caregiver for the testing and disclosure process of their child.
- During the initial one-on-one counselling, testing, and disclosure process with the child.
- Group pre-test information or general group education sessions.
- To reinforce with the caregiver basic HIV information learned during patient litereacy and treatment readiness classes.
- To strengthen the key principles in HIV during routine follow-up care, Patient literacy/ Treatment Readiness and adherence counselling.

What content does the Talk Tool cover?

- Identifying and alleviating tension or anxiety from the child and their caregiver.
- Revising HIV basic information with the caregiver.
- Explaining age-appropriate disclosure.
- Establishing a disclosure plan with the caregiver.
- The role of the clinic or hospital in keeping children well & exploring their past experiences with these systems.
- What is a germ/virus?
- TB screening and infection prevention strategies.
- What do germs/viruses do in our bodies?
- The role of the CD4 cell.
- The role of medicines (incl. the difference between general medicines & ARVs).
- Sharing the positive or negative test result.
- Positive Living Strategies.
- HIV Prevention Strategies.
- The CD4 Count Test.
- Closing the session approproriately.

Using the Talk Tool may be difficult at first, but don't give up.
Learn something new.
At times, this may seem silly to you, but it means a lot to the child.

THE "KIDZWHOTEST" MODEL CONSISTS OF 7 STAGES:

1. **Establishing the Relationship (3 minutes)*** (TT page 1)
   - Meeting, greeting and welcoming the child and the caregiver whilst creating a relaxed environment.
   - To identify any underlying tension and anxiety in either the child or caregiver and bring comfort.
2. **Preparation (10 minutes)*** (TT page 3)
   - To provide the caregiver with a space to share their own HIV history and personal journey.
   - Create a safe environment for the confidential sharing of information.
   - Recap with or provide the caregiver with basic HIV information.
3. **Education (15 minutes)*** (TT page 8)
   - Providing age-appropriate pre-test education to the child.
4. **The Testing Process (3 minutes)*** (TT page 22)
   - Getting the child ready and conducting the HIV test by introducing the HIV blood test in a non-threatening and fear-inducing manner.
5. **Disclosure Safety (7 minutes)*** (TT page 23)
   - Engaging in an activity where the child creates their own Hand-of-Safety Tool, thus providing a safe platform for the protecting of confidential health information.
6. **Sharing the Result (Positive or Negative) (15 minutes)*** (TT page 25)
   - Providing age-appropriate post-test education around sharing either an HIV negative or positive result.
7. **The CD4 Count Test (7 minutes)*** (TT page 33)
   - Introducing and conducting the CD4 Count Test if the HIV test result was positive.

Talk Tool Addendums:

- Video Recording of a Counselling Session
- Sibusiso Selesele Colouring in and Hand-of-Safety templates

Footnote:

*1.Layout consists of a picture board followed by a key message, process, story and questions.

*2.TimeFrame is a guide and is flexible according to age, context and setting.

my hand of safety