THE MINISTRY OF HEALTH

Atlas of Common Clinical Presentations of Paediatric HIV Infections

TABLE OF CONTENTS

FOREWORD

Over 2 million children worldwide are living with HIV infection and 95% reside in sub-Saharan Africa with the majority infected through mother-to-child transmission. Infected children have a high mortality with 50% dying by 2 years of age. Their clinical presentation includes common childhood infections, opportunistic infections and conditions associated with HIV/AIDS immune suppression.

When paediatric HIV infection is diagnosed early and antiretroviral treatment initiated, there is a significant reduction in morbidity and mortality, with improvement in the quality of life. This leads to fewer acute illnesses and opportunistic infections, delaying onset of AIDS and improving the children's growth and development. Many infected children are only diagnosed when they present with an acute illness or AIDS defining illness. Therefore, it is important to recognize the common clinical conditions of HIV infected children so as to ensure referral for appropriate care and treatment.

Until recently, most clinicians from Africa have provided care for HIV infected children without access to antiretroviral therapy. Recognizing potentially HIV related conditions enabled the clinicians to provide the additional care and treatment required. This atlas covers decades of dedicated service by Dr. Israel Kalyesubula and colleagues, providing care and treatment for HIV infected children at Mulago Hospital, Uganda. The photographs provide an opportunity to see the wide clinical spectrum of paediatric HIV infection in Africa. I hope the atlas will assist health workers to identify the common clinical conditions and provide appropriate treatment for infected children.

The dream for the *Atlas of Common Clinical Presentations of Paediatric HIV Infections* started many years ago and it is exciting to finally see it in print. It provides an excellent resource for health workers in sub-Saharan Africa where the burden of paediatric HIV infection remains exceptionally high.

Dr. Nathan Kenya Mugisha
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MINISTRY OF HEALTH

ACKNOWLEDGEMENTS

We wish to acknowledge the following people and institutions for the invaluable contributions made towards development of the *Atlas of Common Clinical Presentations of Paediatric HIV Infections*.

Our gratitude goes to USAID for their financial support through the Health Communication Partnership (HCP) and the Regional Centre for Quality Health Care (RCQHC).

Our special thanks go to the following:
Dr. Israel Kalyesubula who took time during his practice to take these photographs without which the atlas could never have been developed.

Dr. Zainabu Akol, Program Manager STD/ACP MOH for the guidance and continuous encouragement throughout the process of developing this atlas.

Our gratitude goes to the team that dedicated time and effort to developing this atlas:

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Dr. Denis Nansera	Mbarara Regional Referral Hospital
Dr. Daniel Tumwine	Regional Centre for Quality Health Centre
Dr. Michael Mawanda	Regional Centre for Quality Health Centre
Dr. Victor Musiime	Joint Clinical Research Centre, Kampala
Karen Rowe	Consultant, Health Communication Partnership
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Dr. Eric Wobudeya	Mulago Hospital
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MINISTRY OF HEALTH

WHO Paediatrics HIV

	WHO Clinical Stage 1 *Asymptomatic*	WHO Clinical Stage 2 *Mild Disease*
Growth		
Symptoms Treat common and opportunistic infections according to IMCI guidelines	No symptoms or only: • Persistent generalized lymphadenopathy	• Unexplained persistent enlarged liver and/or spleen • Unexplained persistent parotid enlargement • **Skin conditions** (e.g. chronic dermatitis, fungal infections or extensive molluscum contagiosum, extensive wart, seborrhoeic dermatitis, prurigo, herpes zoster) • Fungal nail infection • **Recurrent or chronic** (sinusitis, ear infections, pharyngitis, tonsillitis bronchitis) • **Mouth conditions** (Recurrent oral ulceration, angular cheilitis, lineal gingival Erythema)
Prophylaxis	• Cotrimoxazole prophylaxis • INH prophylaxis, after excluding active TB	• Cotrimoxazole prophylaxis • INH prophylaxis, after excluding active TB
ARV therapy	Start ART if: • <2 Years treat all, irrespective of CD4 % or count • 2 to <5 Years CD4 < 25% (< 750 cells/mm3) • > 5years CD4 < 350 cells/mm3	Start ART if: • <2 Years treat all, irrespective of CD4 % or count • 2 to <5 Years CD4 < 25% (< 750 cells/mm3) • > 5years CD4 < 350 cells/mm3

Clinical Staging

World Health Organization

WHO Clinical Stage 3 *Advanced Disease*	WHO Clinical Stage 4 *Severe Disease (AIDS)*
Moderate unexplained malnutrition not adequately responding to standard therapy (very low weight for age, or low height for age, or low weight for height)	Severe refractory wasting or severe malnutrition unexplained and not adequately responding to standard therapy
• Oral thrush (after the first six to eight weeks of age) • Oral hairy leukoplakia • Unexplained and unresponsive to standard therapy: – Diarrhoea >14 days – Fever >1 month (intermittent or constant, > 37.5 0 C) – Thrombocytopenia* (<50,000/mm3 for > 1 mo) – Neutropenia* (< 5000/mm3 for 1 mo) – Anaemia for >1 month (Hb < 8 gm)* • Recurrent severe bacterial pneumonia • Pulmonary TB • TB Lymphadenopathy • Chronic HIV-associated lung disease, including bronchiectasis • Symptomatic LIP* • Acute necrotizing ulcerative gingivitis/periodontitis	• Oesophageal thrush • More than one month of herpes simplex infection • Severe recurrent bacterial infections > 2 episodes in a year (e.g. muscle, bone or joint infection, not including pneumonia) • Pneumocystis pneumonia (PCP)* • Kaposi's sarcoma • Extrapulmonary tuberculosis • Toxoplasma brain abscess* • Cryptococcal meningitis* • HIV encephalopathy*
• Cotrimoxazole prophylaxis • INH prophylaxis, after excluding active TB	• Cotrimoxazole prophylaxis • INH prophylaxis, after excluding active TB
• Start ART irrespective of the CD4 count • TB infected start ART within 2-8 weeks of initiating TB treatment	Start ART irrespective of the CD4 count and should be started as soon as possible. • If HIV infection is NOT confirmed in infants<18 months, presumptive diagnosisof severe HIV disease can be made on the basis of **: HIV antibody positive AND one of the following: – AIDS defining condition OR – Symptomatic with two or more of: · Oral thrush · Severe pneumonia · Severe sepsis

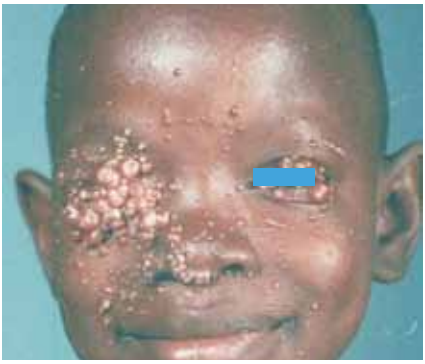
SKIN MANIFESTATIONS

EXTENSIVE MOLLUSCUM CONTANGIOSUM

WHO Clinical Stage 2

Signs and Symptoms:

- Small flesh-colored, pearly or pink, dome shaped or umblicated growths ranging from 2-5 mm often involve the face or trunk
- May be inflamed or red
- Involving more than 5% of body surface area or disfiguring
- Giant facial lesions may be disfiguring and often indicate advanced immunodeficiency



Well established molluscum contagiosum on face

Treatment:

- Start HAART if lesions are extensive and causing cosmetic problems

Alternatives:

- Curettage or surgical excision

Molluscum contangiosum: just starting

EXTENSIVE VIRAL WART INFECTION

WHO Clinical Stage 2

Signs and Symptoms:

- **Characteristic warty skin lesions:** small fleshy grainy bumps, often rough, flat on sole of feet (plantar warts), face, or genitals in more than 5% of body area or disfiguring

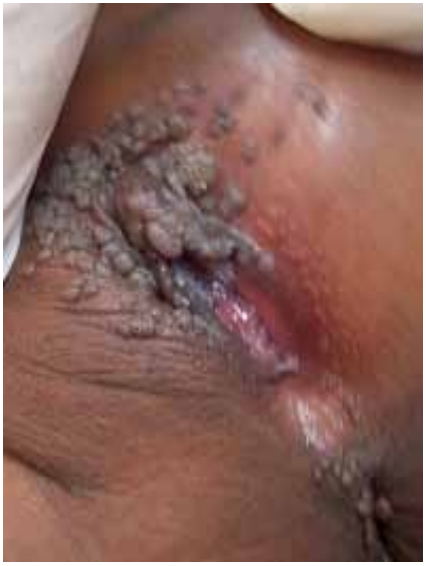
Treatment:

- **Topical:** Podophyllin resin 25% 6 hourly for many months

Alternatives:

- Surgical excision, cryotherapy or laser ablation

Skin lessions



Vulval lesions

VERRUCA PLANUS

WHO Clinical Stage 2

Signs and Symptoms:

- "Flat warts", common on hands and face: Slightly elevated, flat-topped, usually hypo-pigmented or skin-colored

Treatment:

- If extensive and causing cosmetic problems, start HAART
- Will spontaneously regress once the patient starts treatment, however may take some time to regress

Verruca planus on the face

FUNGAL NAIL INFECTIONS

WHO Clinical Stage 2

Signs and Symptoms:

Paronychia

- Inflammation and infection involving folds of tissues surrounding finger nail
- Painful, red and swollen nail bed

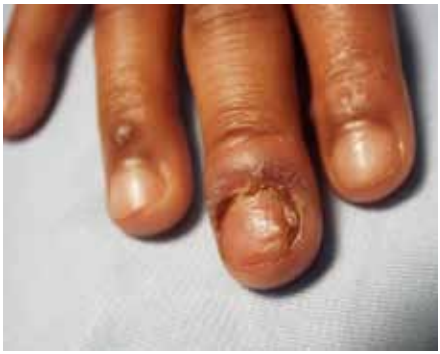
Paronychia

Onycholysis

- Painless separation of the nail from the nail bed
- Proximal white subungual onychomycosis is uncommon without immunodeficiency

Treatment:

- Fluconazole 3-6 mg/kg once a day for 4-6 weeks
  OR
- Ketoconazole 3-6 mg/kg once a day for 4-6 weeks
  OR
- Oral Griseofulvin 20 mg/kg once a day for 4-6 weeks
- Keep lesions clean with water and soap
- Good hand washing to prevent spread of infection



Paronychia with superinfection

If with super-imposed infection:

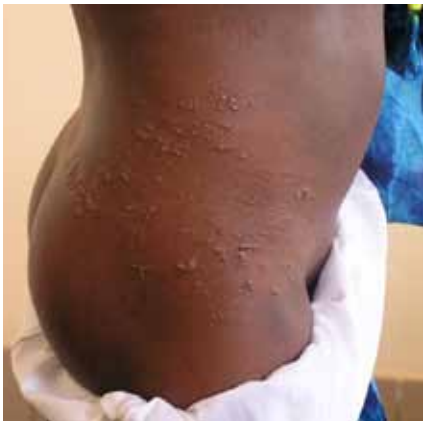
- Antibiotics (cream or Parenteral)
- Pus-I&D

HERPES ZOSTER

WHO Clinical Stage 2

Signs and Symptoms:

- Painful fluid-filled blisters—may become large and confluent
- Follow dermatome pattern
- Do not cross the midline
- If heals with scar can have burning pain in scar (post herpetic neuralgia)



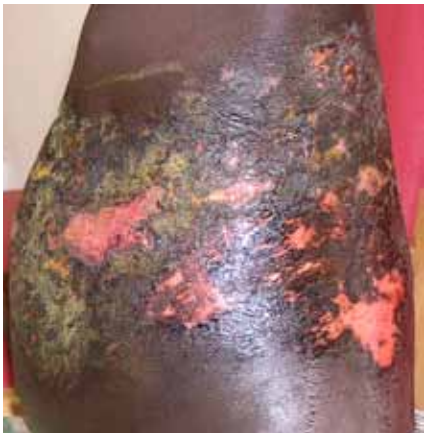
Herpes zoster lesion

Treatment:

- IV or Oral Acyclovir 10-20 mg/kg 6 hourly for 7 days

For post herpetic Neuralgia

- Carbamazepine 2 mg/kg 12 hourly
  OR
- Amitryptyline 0.5 mg/kg 12 hourly (until symptoms cease)



Herpes zoster complicated with secondary bacterial infection and healed with scars

PRURITIC PAPULAR ERUPTIONS

WHO Clinical Stage 2

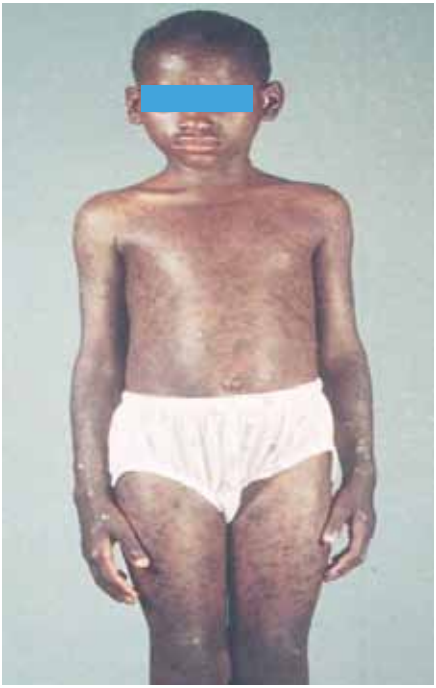
Signs and Symptoms:

- Symmetric and evenly distributed hyper-pigmented rash over the trunk and extremities with intense itching

Treatment:

- Antihistamine: Oral chloropheniramine 0.05–0.10 mg/kg/day od or bd until symptoms cease
- Topical steroid: Betamethasone cream apply twice daily

Pruritic papular eruptions with secondary bacterial infection



Pruritic papular eruptions – generalized to involve most of the body

CHRONIC HERPES SIMPLEX INFECTION

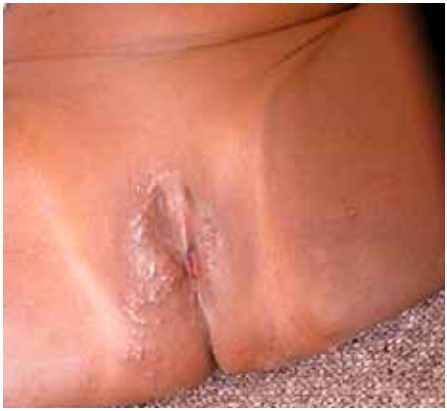
WHO Clinical Stage 2

Signs and Symptoms:

- Severe and progressive painful orolabial, genital or anorectic lesions (blisters) grouped together with reddening of the surrounding skin lasting for more than one month

Treatment:

- Oral or IV Acyclovir 10 - 20 mg/kg 6 hourly for 7 days
- Add an analgesic
- Give antibiotics if there is superinfection



Genital herpes simplex infection

Oral labial herpes simplex infection with secondary bacterial infection

ORAL MANIFESTATIONS

ANGULAR CHEILITIS

WHO Clinical Stage 2

Signs and Symptoms:

- Splits or cracks on the lips at the angle of the mouth with depigmentation
- Usually responding to antifungal treatment but may recur

Treatment:

- Apply Nystatin or Clotrimazole cream bd for 2 weeks
- May add: Vitamin C, Bonjella gel—a local anesthetic before meals or cleaning with antiseptic solutions

Angular cheilitis

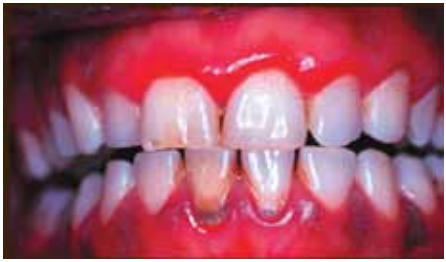
Severe angular cheilitis

LINEAL GINGIVAL ERYTHEMA

WHO Clinical Stage 2

Signs and Symptoms:

- It is a form of HIV associated periodontal (gum) disease characterized by presence of 2-3 mm linear band along the marginal gingival associated with diffuse erythema on the attached gingival and oral mucosa



Linear gingival erythema

Treatment:

- Good oral hygiene, flossing and use of mouthwash solutions such as 0.12% chlorhexidine gluconate twice daily (Rinse mouth with solution for about 30 seconds then spit)

RECURRENT ORAL ULCERATIONS

WHO Clinical Stage 2

Signs and Symptoms:

- Aphthous ulceration, typically with a halo of inflammation and yellow-grey pseudomembrane occurring twice or more times in a period of six months

Treatment:

- Clean lesions with saline, apply Oracure gel to control pain

Oral ulceration at the angle of the mouth

UNEXPLAINED PAROTID GLAND ENLARGEMENT

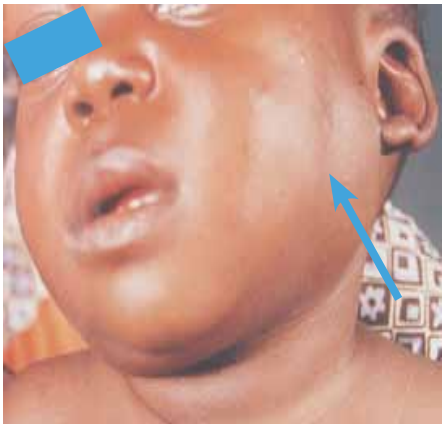
WHO Clinical Stage 2

Signs and Symptoms:

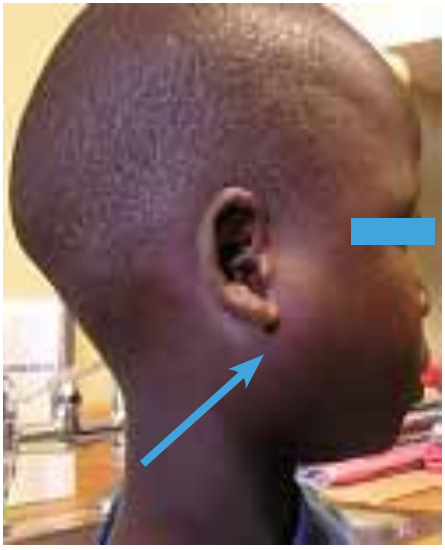
- Asymptomatic bilateral swelling that may spontaneously resolve and recur in the absence of any other known cause
- Usually painless

Treatment:

- Observe once other causes are excluded
- If there is pain, treat as Parotitis with analgesics and antibiotics



Parotid enlargement



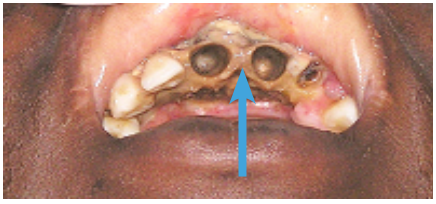
Parotid enlargement

ACUTE NECROTIZING ULCERATIVE GINGIVITIS/PERIODONTITIS

WHO Clinical Stage 3

Signs and Symptoms:

- Presence of ulceration, necrosis and sloughing of one or more interdental papillae accompanied by pain, bleeding and halitosis
- May progress to extensive rapid loss of soft tissue and teeth (Periodontitis)



A thirteen year old girl who presented with severe necrotizing gingivitis. Note the sockets of the teeth remained in the maxilla while the roots fell out with the enamel.

Treatment:

- Good oral hygiene, flossing and use of mouthwash solution eg 0.12% chlorhexidine gluconate twice daily– for older child; rinse mouth with solution for about 30 seconds then spit
- Add antibiotic
- Metronidazole 8-15 mg/kg 8 hourly and Amoxicillin-Clavulunate 15-25 mg/kg bd for 7 days
  OR
- Clindamycin 15-30 mg/kg 8 hourly for 7 days
- Refer child for proper dental examination

PERSISTENT ORAL CANDIDIASIS

WHO Clinical Stage 3

Signs and Symptoms:

- May manifest as erythematous (small or large patches over the tongue or palate)
  OR
- Pseudo-membranous candidiasis (multiple creamy white plaques over the buccal mucosa that can easily be wiped off revealing an erythematous base)

Oral candidiasis on tongue and under the tongue

Treatment:

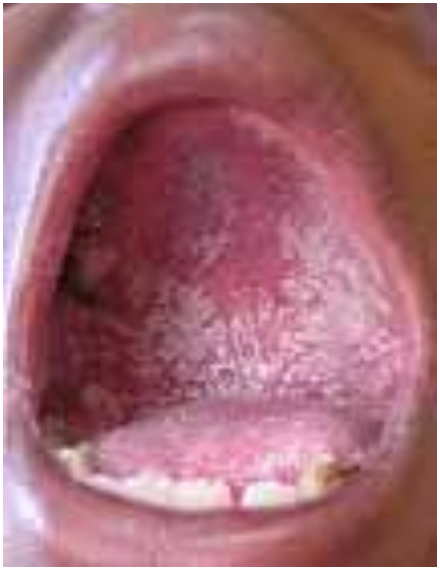
Topical antifungals:

- Oral Nystatin suspension 200,000 – 400,000IU/day 6 hourly for 2 weeks
  OR
- Gentian violet 1% solution apply 8 hourly for 2 weeks

Alternative:

Systemic antifungals:

- Oral Ketoconazole 4-6 mg/kg once a day for 3-5 days
  OR
- Fluconazole 6 mg/kg as a single dose



Oral candidiasis on the hard palate

ORAL HAIRY LEUCOPLAKIA

WHO Clinical Stage 3

Signs and Symptoms:

- Characterized by white thick patches and may exhibit vertical corrugations with a hair like appearance
- Lesions usually first appear on the lateral margins of the tongue, inside the cheeks and lower lip
- May be unilateral or bilateral and are painless
- Less common among children

Oral hairy leukoplakia

Treatment:

- Topical application of Podophyllin resin 25% once weekly 2-4 times—lesions respond to AZT based HAART regimens
- Conditions may be pre-cancerous and may require assessment by oral specialist
- Need for referral

Oral hairy leukoplakia

OESOPHAGEAL CANDIDIASIS

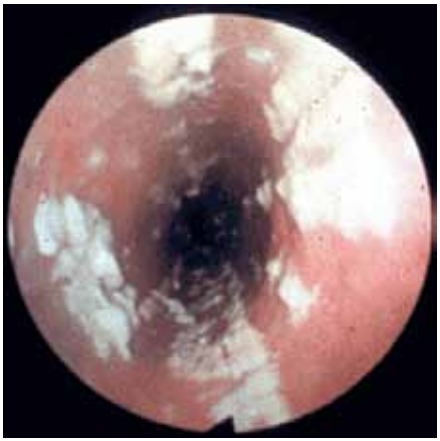
WHO Clinical Stage 4

Signs and Symptoms:

- Difficulty in swallowing or pain on swallowing feeds
- In a young child suspect if has oral thrush and refuses to feed and/or difficulty or cries when feeding

Treatment:

- Fluconazole 3-6 mg/kg/ once a day for 2-3 weeks
  OR
- Ketoconazole 5-10 mg/kg/ in 1or 2 divided doses for 2-3 weeks



Oesophageal candidiasis as seen during Oesophagoscopy

CENTRAL NERVOUS SYSTEM

HIV ENCEPHALOPATHY

WHO Clinical Stage 4

Signs and Symptoms:

Child presents with at least one or more of the following, progressing over at least 2 months in the absence of another causative illness:

- Failure to attain developmental milestones or loss of developmental milestones or intellectual ability
- Progressive impaired brain growth
- Acquired symmetric motor deficit accompanied by paresis, pathological reflexes, ataxia and/or gait disturbances

Treatment:

- Initiate ART—child often regains the milestones after some time

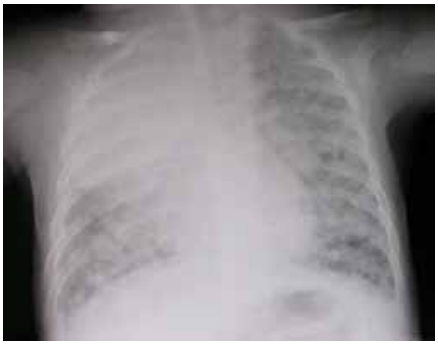
RESPIRATORY SYSTEM

PULMONARY TB

WHO Clinical Stage 3

Signs and Symptoms:

- Cough for 2 weeks or more
- Fever for 2 weeks or more
- Unexplained weight loss or failure to gain weight
- Reduced energy or activity
- Reduced appetite
- History of contact with an adult with TB or chronic cough
- Otherwise a well child but with a largely abnormal chest X ray



CXR with extensive or significant lung tissue destruction: has consolidation in the right mid zone and heterogeneous opacities on the left lung field

Treatment:

- Smear Negative PTB: 2 RHZ/ 4RH
- Smear Positive PTB: 2 RHZE/ 4RH
- Relapses, defaults and treatment failures: 2 SRHZE/ 1RHZE/5RHE

LYMPHOID INTERSTITIAL PNEUMONITIS (LIP)

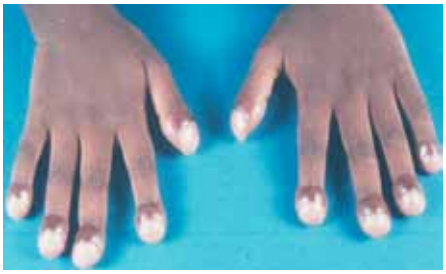
WHO Clinical Stage 3

Signs and Symptoms:

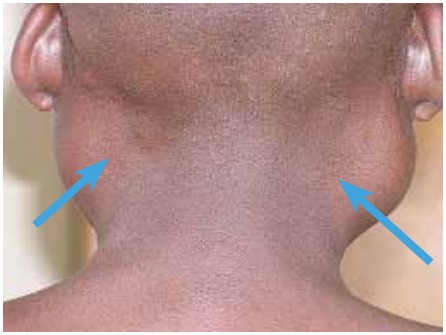
- Triad of finger clubbing, parotid enlargement and chronic cough, persistent hypoxaemia
- Child often has chronic cough, episodic respiratory distress, cyanosis and an abnormal chest x-ray

Treatment:

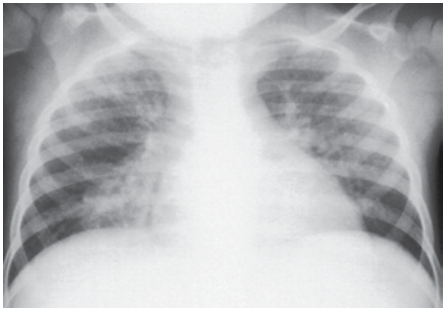
- Start HAART
- Steroids indicated in severe symptomatic patients: Predinisolone 1-2 mg/kg/day bd
- Exclude TB before giving steroids
- Treament for cor pulmonale may be required



Finger clubbing



Bilateral parotid enlargement



X-ray showing lung changes in LIP

RETICULO ENDOTHELIAL SYSTEM

LYMPHNODE TB

WHO Clinical Stage 3

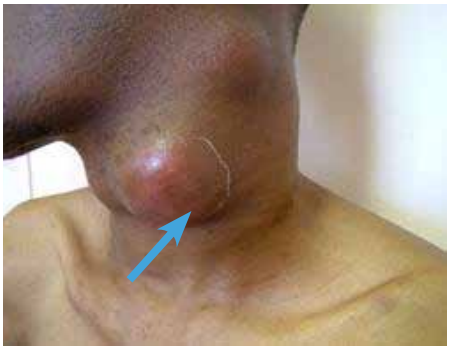
Signs and Symptoms:

- Non-acute, painless "cold" enlargement of lymph nodes
- Usually matted and unilateral
- Localized in one region commonly cervical
- May have draining sinuses

Treatment:

- Start anti-TB treatment: 2RHZ/4RH
- Rifampicin R 15 (10-20) mg/kg od
- Isoniazid H 10 (10-15) mg/kg od
- Pyrazinamide Z 35 (30-40) mg/kg od
- Consider starting ARVs two weeks later

Matted cervical lymph nodes



Cervical lymph nodes with a cold abscess

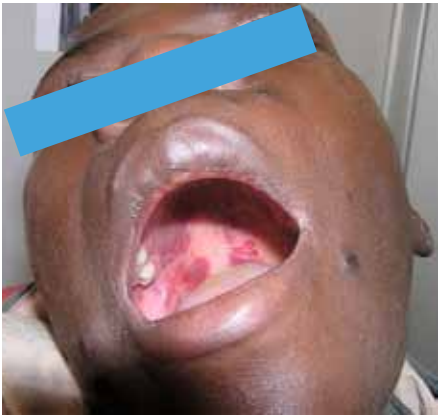
MALIGNANCIES

KAPOSI'S SARCOMA

WHO Clinical Stage 4

Signs and Symptoms:

- **Lymphadenopathic disease** is more common in children and presents as generalized lymphadenopathy
- **Cutaneous lesions** are purple or brown initially flat later developing into nodules appearing as dark plaques, may occur anywhere on the body
- May be disseminated to involve visceral organs like lungs, brain or gastrointestinal tract



Oral KS lession seen in the hard palate

Treatment:

The goal of treatment is palliation of symptoms:

- Localised disease: Often regresses with the initiation of HAART
- Diffuse disease: Systemic chemotherapy is often required—Doxorubicin, vincristine and bleomycin may be used
- Referral to specialized centers
  - Diagnosis
  - Treatment and follow up

Cutaneous KS lessions

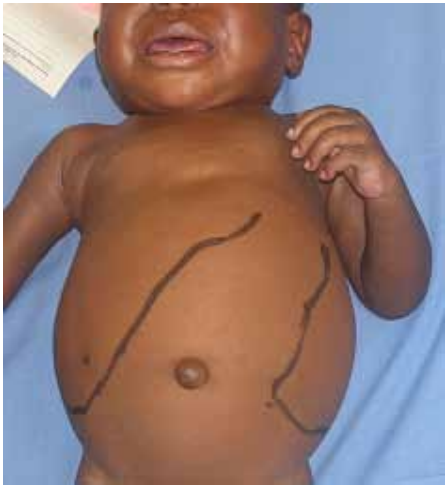
GASTROINTESTINAL MANIFESTATIONS

UNEXPLAINED PERSISTENT HEPATOSPLENOMEGALY

WHO Clinical Stage 2

Signs and Symptoms:

- Persistent enlargement of the liver and spleen with no known cause



Baby with an enlarged spleen and liver

UNEXPLAINED PERSISTENT DIARRHOEA (14 DAYS OR MORE)

WHO Clinical Stage 3

Signs and Symptoms:

- Unexplained persistent (14 days or more) diarrhoea (loose or watery stool, three or more times daily) not responding to standard treatment
- May have "no dehydration", "some dehydration" or "severe dehydration"

Diarrhoea with "severe dehydration"

Treatment:

- Need to assess and classify the dehydration
- Dehydration can be classified as: "no dehydration", some dehydration" and "severe dehydration"

ASSESSING OF LEVEL OF DEHYDRATION IN A CHILD WITH DIARRHOEA

ASSESS	NO DEHYDRATION	SOME DEHYDRATION	SEVERE DEHYDRATION
General condition	Alert	Restless, irritable	Lethargic, unconscious
Eyes	Normal	Sunken	Sunken
Ability to drink	Drinks normally, not thirsty	Thirsty, drinks eagerly	Drinks poorly or unable to drink
Skin pinch	Goes back quickly	Goes back slowly (<2s)	Goes back slowly (>2s)
Child should have at least 2 symptoms to be classified for a level dehydration			

Diarrhoea with "no dehydration" is managed using Plan A (see Appendix 1)
Diarrhoea with "some dehydration" is managed using Plan B (see Appendix 2)
Diarrhoea with "severe dehydration" is managed using Plan C (see Appendix 3)

APPENDIX 1:
DIARRHOEA TREATMENT PLAN A: TREAT DIARRHOEA AT HOME

COUNSEL THE CAREGIVER ON THE 4 RULES OF HOME TREATMENT OF DEHYDRATION

Rule 1: Give the child more fluids than usual to prevent dehydration

- Instruct the caregiver to do the following:
  - Breastfeed frequently and for longer at each feed
  - If the child is exclusively breastfed, give ORS or clean water in addition to breastfeeding
  - If the child is not exclusively breastfeeding, give ORS or clean water (if ORS is not available, soup, rice water or yogurt drinks may be used)
  - Avoid inappropriate fluids: commercial carbonated beverages, commercial fruit juices, sweetened tea, coffee, medicinal teas
- Teach the caregiver how to mix the ORS and make sure that he or she has at least 2 sachets.
- Tell the caregiver to give as much water as the child wants, but as a guide he or she should give the following in addition to the usual intake:
  - Younger than 2 years–give 50–100 ml with each watery stool
  - Older than 2 years–give 100–200 ml with each watery stool
- Teach the mother how to give the ORS:
  - Give frequent small sips from a cup or spoon
  - If the child vomits, wait 10 min. and then continue, but more slowly
- Continue giving the fluids as above until diarrhoea resolves

Rule 2: Give zinc supplements

- Tell the caregiver how much zinc to give:
  - Younger than 6 months—1/2 tab (10 mg) once daily for 10–14 days
  - 6 months and older—1 tab (20 mg) once daily for 10–14 days
- Instruct caregiver how to give the zinc—if child cannot chew tablet, crush or dissolve in small amount of clean water, ORS or expressed breast milk and give with a cup or spoon.
- Remind the caregiver to give the zinc for the full 10–14 days, regardless of whether the diarrhoea resolves.

APPENDIX 1:
DIARRHOEA TREATMENT PLAN A: TREAT DIARRHOEA AT HOME (CONTINUED)

Rule 3: Continue feeding

- Instruct the caregiver what food to give:
  - Infants who are breastfed should continue to breastfeed as often and as much as they want. During diarrhoeal illness infants may want to breastfeed more than usual; this should be encouraged.
  - Infants who are not breastfed should continue to be given their usual milk feeds at least every 3 hours. Special commercial formulas are unnecessary and should not be routinely given.
  - If the child is taking soft foods he or she should continue taking these in addition to milk.
- Instruct the caregiver how much food to give and how often:
  - Offer the child foods every 3–4 hours (at least 6 times per day).
  - Frequent, small feeds may be better tolerated than large feeds.
  - The child may need extra food for at least 2 weeks after an episode.

Rule 4: When to return

- Instruct the caregiver to return to a health worker if the child:
  - Begins passing frequent, watery stools
  - Has repeated vomiting
  - Becomes very thirsty
  - Is eating or drinking poorly
  - Develops a fever
  - Has blood in the stool
  - Does not get better in 3 days

APPENDIX 2:
DIARRHOEA TREATMENT PLAN B: TREAT SOME DEHYDRATION WITH ORS

GIVE RECOMMENDED AMOUNT OF ORS IN THE CLINIC OVER 4 HRS

Give ORS

- Determine the amount of ORS to give over 4 hours—see table below:
  - Use the age only when the weight cannot be determined. The approximate amount of ORS can be calculated by multiplying the weight by 75 (75 ml of ORS per kg).
  - If the child wants more ORS than shown, give it.

Age	<4 mo	4-11mo	12mo-12yrs	2-4 yrs	5-14yrs	>15yrs
Weight (kg)	<6	6-7.9	8-10.9	11-15.9	16-29.9	>30
ORS (mls)	200-400	400-600	600-800	800-1200	1200-2200	2200-4000

- Instruct caregiver on how to give ORS:
  - Give frequent, small sips with a cup, spoon, or syringe.
  - Vomiting is not unusual in the first 1–2 hours, especially if the child drinks too fast. This rarely prevents successful rehydration and usually stops. If the child vomits, wait 10 min and then continue, but more slowly.
  - Continue breastfeeding whenever the child wants.
  - Children can also be offered as much clean water they want in addition to the ORS as above.
- Monitor during the 4 hours to ensure that the child is taking the ORS appropriately.
- If the child develops signs of dehydration at any time switch to Treatment Plan C.

Reassess after 4 hours

- Assess and classify the level of dehydration after 4 hours of rehydration and select the appropriate treatment plan based on the new hydration assessment.
  - If now the child has "no dehydration", switch to Treatment Plan A for home treatment.
  - If the child still has "some dehydration", repeat Treatment Plan B.
  - If the child has "severe dehydration", start Treatment Plan C immediately.
- Begin feeding the child in clinic if able—see next page.

APPENDIX 2:
DIARRHOEA TREATMENT PLAN B: TREAT SOME DEHYDRATION WITH ORS (CONTINUED)

Give zinc

- After first 4 hours of rehydration, begin supplemental zinc:
  - Younger than 6 months—1/2 tab (10 mg) once daily for 10–14 days
  - 6 months and older—1 tab (20 mg) once daily for 10–14 days

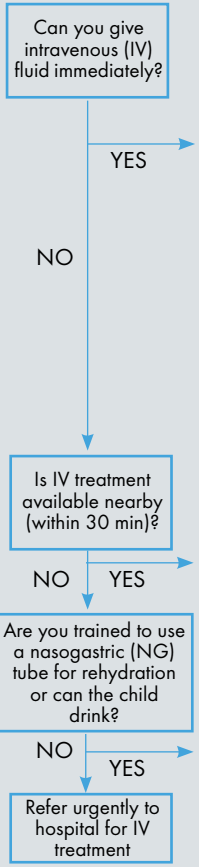
Begin giving food

- Except for breast milk, food should not be given during the first 3–4 hours of rehydration
- After the first 4 hours of rehydration, children should begin receiving food as described in Treatment Plan A and should be fed every 3–4 hours.

If caregiver must leave before completing treatment

- Show the caregiver how to mix ORS.
- Instruct him/her on how much ORS to give to complete the 4 hours of rehydration.
- Give him/her enough ORS to complete the rehydration and at least 2 packets for home treatment.
- Explain the 4 rules of home treatment—see Treatment Plan A.

APPENDIX 3:
DIARRHOEA TREATMENT PLAN C: FOR PATIENTS WITH SEVERE DEHYDRATION



Guidelines for IV treatment

- Rapid IV hydration is the preferred—start IV fluid immediately
  - If child can drink, give ORS by mouth while drip is set up
  - Give 100 ml/kg Ringer's lacate (RL) (or Normal Saline if RL not available) divided as below:

Age	First give 30 ml/kg in:	Then give 70 ml/kg in:
Infants (<1yr)	1 hour*	5 hours
Children (12 mo-5 yrs)	30 min*	2.5 hours

*Repeat once if radial pulse is still very weak or undetectable.

- Reassess every 15 – 30 min until strong radial pulse is present and then at least every hour.
  - If the hydration status is not improving, give the IV drip more quickly.
  - As soon as the child can drink, usually after 3-4 hours for infants or 1-2 hours for children, all children should be given ORS (5 ml/kg/h) (may provide base and potassium not in the IVF)
- Reassess an infant after 6 hours and a child after 3 hours
  - Classify dehydration
  - Choose the appropriate treatment plan – A,B or C

What to do if IV treatment not available

- Refer urgently to hospital for IV treatment
- If the child can drink, provide the caregiver with ORS solution and show him/her how to give frequent sips during the trip

- Start rehydration orally or by NGT with ORS
  - Give 20 ml/kg/h for 6 hours (total of 120 ml/kg)
- Reassess the child every 1-2 hours
  - If there is repeated vomiting or increasing abdominal distention, give the fluid more slowly.
  - If hydration status is not improving after 3 hours, send the child for IV therapy.
- Reassess the child after 6 hours
  - Classify dehydration
  - Choose the appropriate treatment plan – A, B or C

Adapted from World Health Organization. *Pocket Book of Hospital Care for Children: Guidelines for the Management of Common Illnesses with Limited Resources* (Geneva, Switzerland: World Health Organization. 2005), and *The Treatment of Diarrhoea: A Manual for Physicians and Other Senior Health Workers* – 4th rev. (Geneva, Switzerland: World Health Organization, 2005).

The enclosed photographs provide an opportunity to see the wide clinical spectrum of paediatric HIV infection in Africa. Thanks to the willingness of caregivers/patients to have their conditions photographed, and Dr. Israel Kalyesubula who took time during his practice to take these photographs, more health workers should be able to provide appropriate treatment and referrals for children living with HIV.