Federal Democratic Republic of Ethiopia

Ministry of Health

Ethiopian primary health care clinical guidelines

Care of Children 5-14 years and Adults 15 years or older in Health Centers

PACK
Practical Approach to Care Kit

Addis Ababa
2010 (EC) | 2017 (GC)

Foreword

The Ethiopian health care system has three tiers: primary health care, general hospital and specialized care centers. The primary health care level includes health posts, health centers and district hospitals. These health facilities are the first patient contact levels. Early case detection and appropriate treatment at the primary care level has pivotal role in better treatment outcome, disease control, and provision of quality of care. This is in line with global initiatives of achieving universal health coverage (UHC). And most importantly it can be a crucial input for the realization of Woreda transformation agenda of the HTSP (Health Sector Transformation Plan) by strengthening high performing PHCUs (Primary Health Care Units). Standardization of patient care at all health tier levels is important. To achieve this important goal, in the past years several guidelines have been developed. Some of these address specific diseases while others are general.

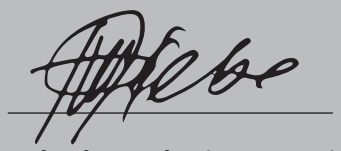
This First Edition of the **Ethiopian Primary Health Care Clinical Guidelines** is a guide for the primary care of older children and adults. The adult content is a comprehensive guide to the adult presenting to primary health care facilities. The paediatric content addresses priority conditions in children aged 5-14 years presenting to primary care and is intended to complement the Integrated Management of Childhood Illness which addresses the child younger than 5 years old.

The **Ethiopian Primary Health Care Clinical Guidelines** is an integrated symptom-based algorithmic approach to address the common presenting symptoms and priority chronic conditions in the country. The scope of what is covered in chronic conditions for adults, and long-term health conditions for older children includes: cardiovascular diseases; diabetes; chronic respiratory diseases; mental health, musculoskeletal disorders; and women's health. The Guidelines provides basic management principles to deal with these diseases at a health center level in an integrated user-friendly way to support health workers to provide care that is evidence-informed, compliant with local guidelines, comprehensive, compassionate and respectful.

The **Ethiopian Primary Health Care Clinical Guidelines** were developed by localizing the PACK Global Adult (2017) and PACK Western Cape Child (2017) guides developed by the Knowledge Translation Unit of the University of Cape Town Lung Institute, South Africa. Localising the **Ethiopian Primary Health Care Clinical Guidelines** to reflect Ethiopian policy and burden of disease required the establishment of a core technical team working full time and three intensive workshops with many clinicians. We thank the many clinicians who contributed to the development of the **Ethiopian Primary Health Care Clinical Guidelines** for their efforts (see Acknowledgements).

The localisation process aligned the **Ethiopian Primary Health Care Clinical Guidelines** to Federal Ministry of Health policies, guidelines and clinical protocols. These include: Standard Treatment Guidelines for Health Center (2014), List of Medicine for Health Centers (2012), Guidelines on Clinical and Programmatic Management of Major Non Communicable Diseases (2016) , National guidelines for comprehensive HIV prevention, care and treatment (2014), Guidelines for clinical and programmatic management of TB/HIV and leprosy in Ethiopia (2016), Guidelines for the management of acute malnutrition (2016), National guidelines for the management of sexually transmitted infections using syndromic approach (2015), National malaria guidelines, National guidelines for family planning, Ethiopian paediatric hospital care (2016) and others.

FMOH Ethiopia has a strong belief that the full implementation of this clinical guide in the health centers will standardize the care given at this level, will improve the quality of service and in effect will improve the health outcomes of the country. In this regards, I strongly encourage health workers in health centers to utilize this guide to the best of their capacity in the provision of health care, especially outpatient health service. And also in the same line, I encourage the health managers in the health system (especially in the Woreda Health Offices) to ensure the implementation and institutionalization of this guide and its practice in the health centers.



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How to use this Guide

Ethiopia's PHC clinical guide is an algorithmic guideline, prepared to be used as a quick and action oriented reference material for care givers in a health center; and primarily it targets health officers and nurses as care givers. It is divided into two main parts: first part for "adults" (15 years or older) and second part for children (5 to 14 years). Each part is divided into two sections: symptoms and chronic conditions (Routine Care). For management of the child aged younger than 5 years, please see the Integrated Management of New-borns and Childhood Illness (IMNCI) guidelines.

To use this guide,

- First consider the age of the patient and identify which part to use based on patient's age.
- In a patient presenting with one or more symptoms (Eg. Fever, cough, chest pain…),
  - Start by identifying the patient's main symptom.
  - Use the Symptoms contents page to find the relevant symptom page in the guide.
  - Decide if the patient needs urgent attention (in the red box) and if not, follow the algorithm to either a management plan or to consider a chronic condition in the chronic condition section of the guide.
- In the patient known with a chronic condition (Eg. known TB patient),
  - Use the chronic Conditions contents page to find that condition in the guide.
  - Go to the colour-coded Routine Care pages for that condition to manage the patient's chronic condition using the 'Assess, Advise and Treat' framework.
- Arrows refer you to another page in PHCG: The return arrow (↩) guides you to a new page but suggests that you return and continue on the original page. The direct arrow (→) guides you to continue on another page.
- The assessment tables on the Routine Care pages are arranged in 3 tones to reflect those aspects of the history, examination and investigations to consider.
- Refer to the glossary for abbreviations and units used in PHCG.

For further information about the PHCG, contact the Clinical Service Directorate of FMOH, via e-mail at phcgethiopia@gmail.com or via telephone +251 115 514901.

Glossary

A

ALP	alkaline phosphatase
ALT	alanine aminotransferase
ART	antiretroviral therapy
AST	aspartate aminotransferase

B

BID	twice a day
BMI	body mass index
BP	blood pressure measured in millimeters of mercury [mmHg]

C

CD4	count of the lymphocytes with a CD4 surface marker
COPD	chronic obstructive pulmonary disease
CPR	cardiopulmonary resuscitation
CRP	c-reactive protein
Cu-IUD	copper intrauterine device
CVD	cardiovascular disease

D

DBP	diastolic blood pressure
DKA	diabetic ketoacidosis
DMPA	depot medroxyprogesterone acetate
DNS	dextrose in normal saline
DR-TB	drug-resistant tuberculosis
DS-TB	drug-sensitive tuberculosis
DST	drug susceptibility testing
DVT	deep vein thrombosis
DW	dextrose water

E

ECG	electrocardiogram
EDD	estimated date of delivery
eGFR	estimated glomerular filtration rate
ELISA	enzyme-linked immunosorbent assay
eMTCT	elimination of mother-to-child-transmission
EPTB	extra pulmonary tuberculosis
ESR	erythrocyte sedimentation rate

G

GCS	glasgow coma scale
GGT	gamma-glutamyl transferase

H

H_20_2	hydrogen peroxide
Hb	haemoglobin
HbA_{1c}	glycated haemoglobin
HBsAg	hepatitis B surface antigen
HIV	human immunodeficiency virus
HPV	human papillomavirus

I

IM	intramuscular
IMCI	integrated management of childhood illness
INR	international normalized ratio
IPT	isoniazid preventive therapy
IU	international units
IUD	intrauterine device
IV	intravenous

M

MTB	*Mycobacterium tuberculosis*
MTB/RIF	*Mycobacterium tuberculosis* DNA and resistance to rifampicin
MU	million units
MUAC	mid-upper arm circumference

N

NS	normal saline
NSAIDs	non-steroidal anti-inflammatory drugs

P

PJP	*pneumocystis jiroveci* pneumonia
PCR	polymerase chain reaction
PEP	post-exposure prophylaxis
PO	orally
PPE	papular pruritic eruption
PR	per rectum
PTB	pulmonary tuberculosis
Pulse rate	measured in beats per minute
PVD	peripheral vascular disease

Q

QID	four times a day

R

RF	rheumatoid factor
RPR	rapid plasmin reagin
Respiratory rate	measured in breaths per minute

S

SC	subcutaneous
SBP	systolic blood pressure
STI	sexually transmitted infection

T

TAT	tetanus antitoxin
TB	tuberculosis
TBSA	total body surface area
TIA	transient ischaemic attack
TID	three times a day
TSH	thyroid stimulating hormone

V

VIA	visual inspection with acetic acid

Adult contents: Address the patient's general health 10

Adult contents: symptoms

Adult contents: chronic conditions

Other pages

Child contents

Symptoms

Long-term health conditions

Prescribe rationally

Assess the patient needing a prescription

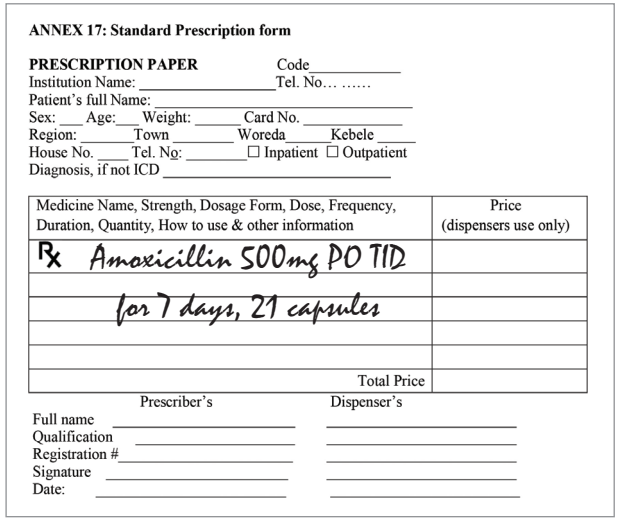
Assess	Note
Diagnosis	Confirm the patient's diagnosis, that the medication is necessary and that its benefits outweigh the risks: consider disease severity, safety and efficacy of medication and alternatives, severity and incidence of adverse drug reactions.
Other conditions	It may be necessary to adjust dose (e.g. lamivudine in kidney disease) or give alternative medication (e.g. avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
Other medications	Check if all medication (prescribed, over-the-counter, herbal) is necessary and for possible interactions, especially if on hormonal contraception, ART, TB or epilepsy treatment.
Allergies	If known allergy or previous bad reaction to medication, give alternative or refer.
Age	If > 65 years: consider using lower medication doses (give full doses of antibiotics and ART) and avoiding unnecessary medications. If patient on diazepam, amitriptyline, theophylline, codeine, ibuprofen, amlodipine or fluoxetine or using ≥ 5 medications, consider referral to hospital.
Pregnant/breastfeeding	If pregnant or breastfeeding check if the medication is safe.
Response to treatment	• If the patient's condition does not improve, assess adherence to treatment and consider changing the treatment or an alternative diagnosis. If on antibiotic, check for resistance. • Check for side effects and report possible adverse reaction/s to medication.

Advise the patient needing a prescription

- Explain why the medication is needed, what effect it will have and what will happen if it is taken incorrectly.
- Explain when and how to take the medication and for how long. Ask the patient to repeat your explanation to ensure s/he understands.
- Educate on the importance of adherence and that not adhering to medication may lead to relapse or worsening of the condition and possible resistance to the medication.
- Advise of possible side effects to the medication and what to do if they occur.
- Over-the-counter medications and herbal treatments may interfere with prescribed medication. Encourage patient to discuss with prescriber before using them.

Treat the patient needing a prescription

- If unsure about your medicine choice and dosing, side-effects or medication interactions, consult a medicines formulary, experienced colleagues or pharmacist.
- Ensure that the prescription contains all the detail it needs - see sample prescription. Write legibly.
- If the patient needs an antibiotic, try to avoid antibiotic resistance:
  - Confirm that patient needs the antibiotic.
  - If possible, take microbiological samples before starting antibiotic and adjust treatment with results.
  - Prescribe the shortest effective course at the appropriate dose and route.



ANNEX 17: Standard Prescription form

PRESCRIPTION PAPER Code_____
Institution Name: _____Tel. No… ……
Patient's full Name: _____
Sex: ___ Age:___ Weight: _____ Card No. _____
Region: _____Town _____ Woreda____Kebele ____
House No. ____ Tel. No: _____☐ Inpatient ☐ Outpatient
Diagnosis, if not ICD _____

Medicine Name, Strength, Dosage Form, Dose, Frequency, Duration, Quantity, How to use & other information	Price (dispensers use only)
℞ Amoxicillin 500mg PO TID	
for 7 days, 21 capsules	
Total Price	

Prescriber's Dispenser's

Full name _____ _____
Qualification _____ _____
Registration # _____ _____
Signature _____ _____
Date: _____ _____

Address the patient's general health

Assess the patient's general health at every visit		
Assess	**When to assess**	**Note**
Symptoms	Every visit	Manage symptoms as on symptom pages.
TB	Every visit	If cough ≥ 2 weeks, weight loss, night sweats, fever ≥ 2 weeks, chest pain on breathing or blood-stained sputum, exclude TB ⮌71.
Family planning	Every visit	• Discuss patient's contraception needs ⮌110 and pregnancy plans. If pregnant, give antenatal care ⮌114. • If HIV positive and planning pregnancy, advise patient to use contraception until viral load < 1000copies/mL.
Sexual health	Every visit	• Ask about genital symptoms ⮌36. • Ask about risky behaviour (patient or partner has new or > 1 partner, unreliable condom use or substance use ⮌103) and sexual problems ⮌43.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Substance use/ abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Smoking	Every visit	If patient smokes tobacco ⮌102. Support patient to change ⮌125.
Older person risk	Every visit if > 65 years	• If patient has a change in function, confusion or strange behavior ⮌64. • If for at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia ⮌106. • Consider using lower medication doses (give full doses of antibiotics and ART) and avoiding unnecessary medications. If patient on diazepam, amitriptyline, theophylline, codeine, ibuprofen, amlodipine or fluoxetine or is using ≥ 5 medications, consider referral to hospital.
Pain	Every visit	• If patient has pain, manage on symptom page. • If patient is terminally sick and survival is predicted to be short, also give palliative care ⮌120.
CVD risk	If ≥ 40 years or ≥ 2 risk factors	• Assess CVD risk ⮌84 at first visit, then depending on risk. • Risk factors: smoking, parent/sibling with premature CVD (man < 55 years or woman < 65 years), BMI > 25, waist circumference > 80cm (woman) or 94cm (man), hypertension, diabetes, cholesterol > 190g/dL.
BP	First visit, then depending on result	Check BP ⮌89.
BMI/MUAC	Yearly	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If BMI > 25 ⮌84. pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and BMI < 17.5 or MUAC < 21cm, **malnutrition** likely ⮌70.
Diabetes screen	• If ≥ 45 years • If BMI ≥ 25 *and* ≥ 1 other risk factor	• Check glucose ⮌86 at first visit, then depending on result. • Other risk factors: hypertension, cardiovascular disease, physical inactivity, family history of diabetes, high risk ancestry, previous gestational diabetes or big baby, previous impaired glucose tolerance or impaired fasting glucose.
HIV	• If status unknown • If sexually active: yearly • If pregnant: at first visit and 36 weeks	Test for HIV ⮌75.
Cervical screen	When needed	• If HIV negative, screen 5 yearly from age 30 to 49. • If HIV positive, screen at HIV diagnosis (regardless of age) then 5 yearly. • If abnormal ⮌40.
Breast check	First visit, then yearly	Check for lumps in breasts ⮌31 and axillae ⮌18.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Advise the patient about his/her general health

- Ask the patient about his/her concerns and expectations from this visit, and try to address these.
- Educate that not all tests, treatments and procedures help prevent or treat disease. Some provide little or no benefit and may even cause harm.
- Help patient to choose lifestyle changes to improve and maintain his/her general health. Support the patient to change ↩125.

Smoking
If patient smokes tobacco ↩102.

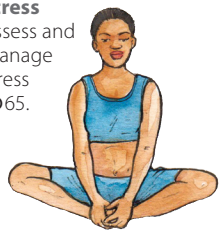
Be sun safe
- Avoid sun exposure, especially between 10h00 and 15h00.
- Use sunscreen and protective clothing (e.g. hat) when outdoors.

Avoid substance abuse
Limit alcohol intake < 2 drinks[1]/day and avoid alcohol on at least 2 days of the week.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.

Have safe sex
- Have only 1 partner at a time.
- If HIV negative, test for HIV between partners.
- Advise partner to test for HIV.
- Use condoms.

Diet
- Eat a variety of foods in moderation. Reduce portion sizes.
- Increase fruit and vegetables.
- Reduce fatty foods: eat low fat food, cut off animal fat.
- Reduce salty processed foods and avoid adding salt to food.
- Avoid/use less sugar.

Stress
Assess and manage stress ↩65.



Physical activity
- Aim for at least 30 minutes of moderate exercise (e.g. brisk walking) on most days of the week.
- Increase activities of daily living like gardening, housework, walking instead of taking transport, using stairs instead of lifts.
- Exercise with arms if unable to use legs.

Road safety
- Use pedestrian crossings to cross the road.
- Use a seat belt.
- Avoid using alcohol/drugs if driving.

Treat preventively to maintain the patient's general health

- If woman planning pregnancy, give folic acid 400mcg PO daily until 3 months after delivery.
- Review the patient's immunisation history and give if needed:

Vaccine	When	Note
Tetanus	If pregnant	• Give 1 dose of tetanus vaccine at first antenatal visit (any gestation). • Repeat at 4 weeks, then 6, 18 and 30 months after first dose.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

The emergency patient

Give urgent attention to the emergency patient:

Does patient respond to your voice?

Yes

No: call for help
Feel for carotid pulse for maximum of 10 seconds.

No pulse felt or unsure

Start CPR:
- Give cycles of 30 chest compressions and 2 breaths (at rate of at least 100 compressions/minute).
- Give adrenaline 1mL (1:1000 solution) IV, followed by 5mL sterile water. Repeat every 3-5 minutes.
- Check pulse:
  - If definite pulse returns, stop CPR and check breathing (as adjacent).
  - If no pulse, continue CPR for at least 30 minutes[1].

Pulse felt

Is patient breathing?

No
- Give 1 breath every 6 seconds.
- Recheck pulse every 2 minutes.
- If no pulse, start CPR (as adjacent).

Yes

Assess and manage airway, breathing, circulation and level of consciousness

Airway
- If airway obstructed (snoring, gurgling, noisy breathing), open with head-tilt and chin-lift. If injured, use jaw-thrust instead, keeping neck stable.
- Remove foreign bodies from mouth and suction fluids.
- If unconscious, insert oropharyngeal airway. If patient resists, gags or vomits, use lubricated nasopharyngeal airway instead.

Breathing
- If difficulty breathing or oxygen saturation < 90%, give face mask oxygen.
- If respiratory rate < 9 or blue lips/tongue,connect bag valve mask to oxygen and slowly deliver each breath with the patient.
- Refer if using bag valve mask and still difficulty breathing, oxygen saturation < 90% or blue lips/tongue.
- If sudden breathlessness, more resonant/decreased breath sounds/pain on 1 side, deviated trachea: tension **pneumothorax** likely: refer urgently for chest tube.

Circulation
- Establish IV access.
- If systolic BP < 90, pulse ≥ 100 or heavy bleeding, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Stop bleeding: apply pressure and elevate limb. If bleeding still severe, apply alternate tourniquet above injury until surgical intervention or referral.

Level of consciousness
- Assess Glasgow Coma Score (GCS):

Glasgow Coma Score (GCS)

Best motor response	Best verbal response	Eye opening
6 Obeys commands	5 Orientated	4 Spontaneous
5 Localises to pain	4 Confused	3 To voice
4 Withdraws from pain	3 Inappropriate words	2 To pain
3 Abnormal flexion to pain	2 Incomprehensible sounds	1 None
2 Extends to pain	1 None	
1 None		

- Add scores to give single score out of 15

Manage further according to disability and symptoms:
- If pupils unequal or respond poorly to light, raise head by 30 degrees. If injured, keep body straight and tilt to raise head (avoid bending spine).
- Apply rigid neck collar and sandbags/blocks on either side of head if injured with: head injury and GCS < 15, neck/spine tenderness, weak/numb limb or abnormal pupils. If needing to move patient, use spine board.
- If GCS ≤ 8 and none of above, place in left lateral position.
- Identify all injuries and look for cause: undress patient and assess front and back. If injured, use log-roll to turn. Then cover and keep warm.
- Assess patient further according to symptoms. Manage symptoms as on symptom pages. If unconscious →13. If injured →14.

[1]Continue CPR for longer if temperature < 35°C, patient drowned, poisoned or took medication.

The unconscious patient

Give urgent attention to the unconscious patient:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌12.
- Identify all injuries and look for cause: undress patient and assess front and back. If injured, use log-roll to turn. Then cover and keep warm.
- If convulsions, injuries or burns, also manage on symptom pages.
- If sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
  - Give normal saline 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Check blood glucose, temperature and pupils:

Blood glucose

< 70mg/dL or unable to measure

- Give glucose 40% 50mL IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with glucose 10% solution[1].
- If known alcohol user, give thiamine 100mg IV or vitamin B1+B6+B12 1 tablet PO before glucose.

> 200mg/dL

- Check urine for ketones: if >2+, **DKA** likely ⮌87.
- Otherwise, give normal saline 1L IV over 1 hour, then 500mL hourly for 4 hours, then 250mL hourly for 4 hours.

Temperature

≤ 35°C

- Remove cold/wet clothing and cover with warm blankets.
- Warm IV fluids to 40°C (avoid cold fluids).
- If no response or temperature ≤ 32°C, refer to hospital.

≥ 38°C

Severe pneumonia or **sepsis** or **meningitis** likely

- Give ceftriaxone[2] 2g IV/IM or crystalline penicillin[2] 3-4M IU IV with chloramphenicol 500mg IV.
- Check for malaria[3]: if positive, give artesunate 2.4mg/kg IM or artemether 3.2mg/kg IM.
- If temperature > 40°C:
  - Remove clothing.
  - Use fan and water spray to cool patient.
  - Apply ice-packs to axillae, groin and neck.
  - Stop once temperature < 39°C.

Pupils

Pinpoint

Illegal drug use and/or respiratory rate < 12

Opioid overdose likely
Give 100% face mask oxygen.

Excessive secretions or muscle twitching

Organophosphate poisoning likely

- Give atropine 2mg IV. Repeat every 5 minutes, doubling dose of atropine each time, until secretions controlled.
- Remove contaminated clothes and wash skin.

Both equally dilated

Stimulant or other drug overdose likely

Unequal or respond poorly to light

- **Intracranial bleeding/mass** or **stroke** likely
- Raise head by 30 degrees.
- If injured, keep body straight and tilt to raise head (avoid bending spine).

If no response or overdose/poisoning with other or unknown substance, refer to hospital.

- Refer urgently.
- While awaiting transport:
  - Check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes. Insert urinary catheter.
  - If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 90% or drop in GCS, reassess and manage airway, breathing, circulation and level of consciousness ⮌12.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give chloramphenicol only and refer. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

The injured patient

Give urgent attention to the injured patient:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌12.
- Identify all injuries and look for cause: undress patient and assess front and back. If head or spine injury, use log-roll to turn. Then cover and keep warm.

Bruising and blood in urine

- Give normal saline 1L IV hourly for 2 hours.
- Once urine output > 200mL/hour, give 500mL hourly.
- Stop if breathing worsens.

Wound and one or more of:

- Poor perfusion (cold, pale, numb, no pulse) below injury
- Excessive or pulsatile bleeding
- Penetrating wound to head/neck/chest[1]/abdomen

- Give normal saline 1L 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive/pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.

Fracture and one or more of:

- Poor perfusion (cold, pale, numb, no pulse) below fracture
- Increasing pain, muscle tightness, numbness in limb
- Suspected femur, pelvis or spine fracture
- Weakness/numbness below fracture
- Open fracture
- > 3 rib fractures
- Severe deformity

- Give diclofenac 75mg IM/IV and/or tramadol 100mg IV/IM.
- If poor perfusion or weakness/numbness below fracture, gently re-align into normal position.
- If open fracture: remove foreign material, irrigate with normal saline and hydrogen peroxide then cover with sterile saline-soaked gauze. Give ceftriaxone[2] 1g IV/IM and if dirty wound add metronidazole 500mg PO.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

Head injury and one or more of:

- Any loss of consciousness
- Convulsion
- Severe headache
- Amnesia
- Suspected skull fracture
- Bruising around eyes or behind ears
- Blood behind eardrum
- Blood or clear fluid leaking from nose or ear
- Pupils unequal or respond poorly to light
- Weak/numb limb/s
- Vomiting ≥ 2 times
- ≥ 1 other injury
- Drug or alcohol intoxication

- If GCS < 15, neck/spine tenderness, weak/numb limb or abnormal pupils, apply rigid neck collar and sandbags/blocks on either side of head.
- If pupils unequal or respond poorly to light, keep body straight and tilt to raise head (avoid bending spine).
- If convulsion, give phenytoin 20mg/kg PO (crushed and diluted in water through NG Tube). Avoid giving lorazepam/diazepam.

- Refer urgently. While awaiting transport, check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes.
- If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 90% or drop in GCS, reassess and manage airway, breathing, circulation and level of consciousness ⮌12.

Approach to the injured patient not needing urgent attention

- Refer same day if pregnant, known bleeding disorder, on anticoagulant, involved in high-speed collision, ejected from or hit by vehicle or fell > 3 metres. If assault or abuse ⮌66.
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[3]: if no reaction, give single dose TAT 3000U SC. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe. If unavailable, refer to hospital.

Wound

- Apply direct pressure to stop bleeding. Remove foreign material, loose/dead skin. Irrigate with normal saline or if wound dirty use instead povidone iodine solution or hydrogen peroxide solution.
- If sutures needed: suture, clean the overlying skin and apply non-adherent dressing for 24 hours.
- Avoid suturing if > 12 hours (body), > 24 hours (head/neck), remaining foreign material, infected, gunshot or deep puncture:
  - Pack wound with saline-soaked gauze and give amoxicillin/clavulanate 500/125mg PO TID for 7 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 7 days.
  - Review in 2 days. Suture if needed and no infection unless gunshot/deep puncture (irrigate and dress every 2 days instead).
- Give paracetamol 1g PO QID as needed for up to 5 days.
- Advise to return if infection (red, warm, painful, swollen, smelly, pus): start metronidazole[4] 500mg PO TID for 7 days and refer.
- Remove sutures after 5 days (face), 4 days (neck), 10 days (leg) or 7 days (rest of body).
- Refer if unable to close wound easily, weakness/numbness below injury or cosmetic concerns.

Fracture

- Splint limb to immobilise joint above and below fracture.
- Give paracetamol 1g PO QID and ibuprofen[5] 400mg PO QID.
- Refer to hospital.

Head injury

- Observe for 2 hours before discharging with carer.
- If mild headache, dizziness or mental fogginess, **concussion** likely:
  - Advise complete rest for 2 days. If no symptoms after 3 days, gradually increase exertion.
  - Advise that recovery can take > 1 month.
  - Give paracetamol 1g PO QID as needed for up to 5 days.
- Advise to return immediately if any of above symptoms of severity develop.

[1]Avoid suturing the wound, apply 3-side flap dressing. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give single dose erythromycin 500mg PO. [3]Inject 0.1mL TAT SC and 0.1mL normal saline at separate site as control: if wheal with redness develops around TAT site, skin test positive. Refer to hospital. [4]Advise no alcohol until 24 hours after last dose of metronidazole. [5]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Seizures/convulsions

Give urgent attention to the patient who is unconscious and convulsing:

- Assess and manage airway, breathing, circulation and level of consciousness ⮌12.
- If current head injury →14.
- Ensure the patient does not sustain additional trauma. Don't leave patient alone or put anything in mouth. Place patient on side and give 100% facemask oxygen.
- Secure IV access with normal saline or dextrose in normal saline.
- Check glucose. If < 70mg/dl or unable to measure, give glucose 40% 50ml IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with glucose 10% solution[1]. If glucose ≥ 200mg/dL, control convulsion and stabilize patient, then ⮌86
- If ≥ 20 weeks pregnant up to 1 week postpartum: consider eclampsia →112.
- Give diazepam 10mg IV slowly over 2 minutes. Repeat after 5 minutes if convulsion continues.
- If still convulsing 10 minutes after second dose of diazepam or patient does not recover consciousness between convulsions, **status epilepticus** likely:
  - Give phenytoin or phenobarbitone 20mg/kg PO (crushed and diluted in water through NG Tube). Give diazepam 10mg IV at the same time and repeat up to a total dose of 40-60mg if convulsion continues.
  - Add phenytoin or phenobarbitone 10mg/kg PO if convulsion persists after 60-90 minutes.
  - Refer urgently to hospital.

Approach to the patient who is not convulsing now

- Confirm with the patient and a witness that s/he indeed had a convulsion: abnormal, jerking movements of part of or the whole body, usually lasting < 3 minutes.
- May have had tongue biting, incontinence, post-convulsion drowsiness and confusion.

Yes

Refer patient same day if one or more of:

- Neck stiffness/meningism, temperature ≥ 38°C, **meningitis** likely: give ceftriaxone[2] 2g IM/IV or crystalline penicillin[2] 4M IU IV with chloramphenicol 500mg IV
- Malaria test[3] positive: give artesunate 2.4mg/kg IM or artemether 3.2mg/kg IM.
- HIV patient: consider CNS toxoplasmosis, CNS TB, cryptococcal meningitis or HIV associated dementia
- Reduced level of consciousness for more than 1 hour after convulsions stopped: suspect complications
- New sudden asymmetric weakness or numbness, difficulty speaking or visual disturbance: consider stroke
- New/different headache or headache getting worse/more frequent: consider sub-arachnoid hemorrhage
- BP ≥ 180/110 one hour after convulsion has stopped: consider hypertensive emergency
- Substance abuse: consider overdose or withdrawal
- Head injury within past 6 weeks: consider subdural hematoma
- Pregnant or up to 1 week postpartum: consider eclampsia →112.

Approach to the patient who had convulsion but does not need same day referral

Is the patient known with epilepsy?

Yes
Give routine **epilepsy** care →97.

No
Patient has previous history of head trauma, meningitis, family history, stroke or brain tumor?

Yes
Give routine **epilepsy** care →97.

No
Refer to hospital.

No

New sudden asymmetric weakness or numbness of face arm or leg; difficulty speaking or visual disturbance

Stroke or **TIA** likely →93.

Collapse with twitching lasting < 15 seconds following hot feeling, nausea, prolonged standing or intense pain with rapid recovery

Faint or **syncope** likely →20.

Episodes of acute anxiety, fully conscious, responds irregularly, with abnormal body movement and usually after stressful experience

Conversion Disorder (**Hysteria**) likely →99.

If diagnosis uncertain, refer.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give chloramphenicol only and refer. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

Weight loss

Check that the patient who says s/he has unintentionally lost weight has indeed done so. Compare current weight with previous records and ask if clothes still fit.

- Calculate the percentage of weight loss in the last 6 months: Investigate if ≥ 5%.
- Ensure you work through steps 1-5 in this first visit.

Step 1. First check for TB, HIV and diabetes

Exclude TB
- Start workup for TB ⮌71.
- At the same time test for HIV ⮌75 and diabetes ⮌86 and consider other causes below.

Test for HIV
Test for HIV ⮌75. If HIV positive, give routine care ⮌76.

Check for diabetes
Check glucose ⮌86.

Step 2. Ask about symptoms of common chronic infections

- If diarrhoea ⮌34
- If abdominal swelling in schistosomiasis endemic area, consider schistosomiasis and refer to hospital.
- If fever, night sweats resident in northwestern borders of Ethiopia, consider leishmaniasis and refer to hospital

Step 3. Ask about symptoms of common cancers

Abnormal vaginal discharge/bleeding	Breast lump/s or nipple discharge	Amenorrhea with lower abdominal swelling	Change in bowel habit	Cough ≥ 2 weeks, bloody sputum, long smoking history
Consider **cervical cancer**. Do a speculum examination and VIA →40.	Consider **breast cancer**. Examine breasts and axillae →31.	Consider **ovarian tumor.** Refer.	Consider **bowel cancer**. If mass on abdominal or rectal examination or stool occult blood positive, refer.	Consider **lung cancer**. Arrange chest x-ray and refer.

If above excluded, ask about food intake:

Step 4. Food intake inadequate: look for cause/s

Food intake is adequate

Nausea and/or vomiting	Loss of appetite	Assess and manage stress ⮌65.	Sore mouth or difficulty swallowing	Food insecure (drought, crop failure or unemployed)
→33.	• Eat small frequent meals. • Advise patient to eat nutrient dense foods (soya, meat, fish, nuts and seeds, beans, lentils, potatoes, rice, barley, wheat, maize).		**Oral/oesophageal candida** likely →27.	Refer to food safety net program.

- If any of: pulse ≥ 100, palpitations, tremor, dislike of hot weather or thyroid enlargement – **thyrotoxicosis** likely, refer to hospital.
- In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.

Step 5. Consider malnutrition

Check patient's BMI and mid-upper arm circumference (MUAC): if pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and BMI < 17.5 or MUAC < 21cm, **malnutrition** likely ⮌70.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Fever

Give urgent attention to the patient with fever (temperature ≥ 38°C now or in the past 3 days) and one or more of:

- Convulsion ⮌15
- Drowsiness, confusion or agitation
- Neck stiffness/meningism
- Respiratory rate > 30 or difficulty breathing
- BP < 90/60
- Severe abdominal or flank pain
- Jaundice
- Easy bleeding or bruising
- Unable to sit up or walk unaided
- Purple rash

Management and refer urgently:

- If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Give ceftriaxone[1] 2g IV/IM or crystalline penicillin[1] 4M IU IV with chloramphenicol 500mg IV. Give single dose paracetamol 1g.
- Check for malaria[2]: if positive, give artesunate 2.4mg/kg IM or artemether 3.2mg/kg IM; and if glucose < 70mg/dl give glucose 40% 50mL IV. Repeat if glucose still < 70mg/dl after 15 minutes.
- If patient started nevirapine or abacavir in last 4 weeks, check for urgent side effects ⮌80.

Approach to the patient with fever (temperature ≥ 38°C now or in the past 3 days) not needing urgent attention

- Check for associated symptoms: cough ⮌29; sore throat ⮌27; blocked/runny nose ⮌26; lower abdominal pain ⮌32; vaginal discharge ⮌38; urinary symptoms ⮌44; diarrhoea ⮌34; ear pain/discharge ⮌25; skin rash ⮌53; joint pain/swelling ⮌46.
- Give paracetamol 1g PO TID as needed for up to 5 days.

Do a peripheral blood film examination or a malaria rapid diagnostic test

Positive for malaria

Plasmodium falciparum or Plasmodium vivax seen

Plasmodium falciparum seen

- Give artemether/lumefantrine 20/120mg: 4 tabs PO BID for three days *and* single dose primaquine PO 0.25mg/kg.
- If pregnant in 1st trimester, give quinine sulphate 10mg/kg PO TID with food for 7 days.

Plasmodium vivax seen

- Give chloroquine: PO 4 tabs on days 1 and 2, 2 tabs on day 3 *and* primaquine 0.25mg/kg PO daily for 14 days.
- If pregnant in 1st trimester, omit primaquine.

Both Plasmodium falciparum and Plasmodium vivax seen

- Give artemether/lumefantrine 20/120mg: 4 tabs PO BID for three days and primaquine 0.25mg/kg PO daily for 14 days.
- If pregnant in 1st trimester, give quinine sulphate 10mg/kg PO TID with food for 7 days.

Advise patient to return if no better.

If fever persists beyond seven days

- Check adherence to treatment and repeat peripheral blood film examination. Check for associated symptoms as above and manage as on symptoms pages.
- Consider other causes of fever: If fever ≥ 2 weeks, exclude TB ⮌71; Test for HIV ⮌75.
- If cause uncertain, refer.

Positive for Borrelia (relapsing fever)

- Delouse the patient, shave hair and change clothing.
- Give procaine penicillin 400,000IU IM. Ensure patient does not become shocked:
  - Establish IV access with normal saline.
  - Check BP every 15 minutes for first 2 hours, every 30 minutes for next 4 hours, then 6 hourly. If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. If breathing worsens, stop and refer.
- If penicillin allergic, give instead tetracycline[3] 250mg PO TID for 3 days.
- Repeat peripheral blood film after 12 hours:
  - If negative: give tetracycline 250mg PO TID for 3 days.
  - If positive: repeat procaine penicillin 400,000IU IM and check BP as above.
- Discharge after 12 hours and give tetracycline[3] 250mg PO TID for 3 days. If signs of severity as above, refer.
- Educate patient and family on personal hygiene.

Negative for malaria and Borrelia

- Avoid Widal and Weil-Felix tests as they are not specific and do not show new infection.
- Ask about pattern of fever, personal hygiene, headache, diarrhoea/constipation and look for lice on body:

If intermittent fever with any of: headache, lives in overcrowded setting, poor personal hygiene or body lice, **typhus fever** likely:

- Give doxycycline[3] 100mg PO BID for 7-10 days or tetracycline[3] 250mg PO QID for 7 days or chloramphenicol 500mg PO QID for 7 days.

If persistent fever with any of: diarrhoea followed by constipation or poor food hygiene, **typhoid fever** likely:

- Give ciprofloxacin[3] 500mg PO BID for 10-14 days or amoxicillin 1g PO TID for 14 days.

If fever ≥ 2 weeks, exclude TB ⮌71 and test for HIV ⮌75.

- If none of the above, advise cold compresses and review after 2 days.
- If cause uncertain, or no better after treatment, refer.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give chloramphenicol only and refer. [2]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [3]Avoid if pregnant.

Lump/s in neck, axilla or groin

Approach to the patient with lump/s in neck, axilla or groin

- If lump is in the skin →53.
- If lump is beneath the skin, first exclude thyroid mass, hernia and aneurysm:
  - Lump in neck that moves up when patient swallows, **thyroid mass** likely: refer for further investigation.
  - Lump in groin that gets bigger when patient stands up or coughs, **inguinal hernia** likely: refer. If severe pain or cannot be reduced, refer urgently.
  - Pulsating lump, **aneurysm** likely: refer.
- If none of the above, a lump in neck, axilla or groin is likely an enlarged lymph node (lymphadenopathy). If unsure, refer.

Is lymphadenopathy localised (neck or axilla or groin) or generalised (≥ 2 areas)?

Generalised lymphadenopathy

- Test for HIV ⮌75. If HIV positive, give routine care ⮌76.
- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, check for TB ⮌71.
- If no TB found and symptoms persist, refer same week.
- Check complete blood count and ESR. If abnormal, refer to hospital.
- Review medication: atenolol, allopurinol, co-trimoxazole, antibiotics and phenytoin can cause lymphadenopathy. Consider changing medication.
- If no cause found, refer.

Localised lymphadenopathy
Ask about other symptoms and look for cause (infection, skin lesion, rash, bite):

Neck
Check scalp, face, eyes, ears, nose, mouth and throat.

Axilla

- Check arms, breasts, chest, upper abdomen and back.
- If lump in breast →31.

Groin
Is there risk of STI (Age < 25 years, > 1 partner, new partner or unprotected sex in last 3 months, or partner/s with STI)?

No
Is the groin lump hot and tender?

- **Yes** → Look for cause: Check lower abdomen, legs, buttocks, genitals, anal region.
- **No** → Refer to hospital.

Yes
Is an ulcer present?

- **Yes** → Ulcer →39
- **No**

Treat patient and partner for **lymphogranuloma venereum** (**Bubo**)

- First assess and advise the patient and partner ⮌36.
- Give ciprofloxacin 500mg PO BID for 3 days *and* doxycycline 100mg PO BID for 14 days.
- If pregnant/breastfeeding, give instead erythromycin 500mg PO QID for 14 days.
- If fluctuant lymph node, aspirate pus through healthy skin in sterile manner every 3 days as needed.
- Review after 14 days. If no better, refer.

Has a cause been found?

- **No**
- **Yes**
  - Manage as on symptom page.
  - If lymph node persists > 4 weeks, refer.

How to aspirate lymph node for TB microscopy and cytology

- Clean skin over largest node with ethanol or povidone iodine. Hold node in fixed position with one hand so that it will not move.
- Insert 22 gauge needle into node, draw back plunger 2-3mL to create vacuum.
- Partially withdraw and reinsert needle at different angles several times through node (avoid withdrawing needle completely, maintain continuous vacuum).
- Release vacuum pressure before withdrawing needle completely.
- Remove syringe from needle, pull 2-3mL air into syringe, re-attach needle and gently spray contents of needle on to a glass slide.
- Lay another slide on top and pull the slides apart to spread the material.
- Allow one slide to air dry and fix other slide with cytology spray.
- If enough aspirate, also send for TB and bacterial culture and sensitivity.
- If aspirate unsuccessful or does not confirm a diagnosis, refer.

Weakness or tiredness

Give urgent attention to the patient with weakness or tiredness and one or more of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- Chest pain →28
- Respiratory rate > 30 or difficulty breathing →29.
- Glucose < 70mg/dL: if known diabetes →87. If not, manage as below.
- Glucose > 200mg/dL if known diabetes →87. If not →86.
- Severe dehydration: decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100.
- Dehydration: thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100.
- Worsening weakness of leg/s
- If on ART, check for urgent side effects ⮌80.

Management:

- If dehydrated, give oral rehydration solution. If unable to drink or BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. If IV rehydration needed or no better with oral rehydration after 2 hours, refer.
- If glucose < 70mg/dL or unable to measure, give oral glucose 20g. If unable to take orally, give instead glucose 40% 50mL IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with glucose 10% solution[1]. If glucose better and patient able to take orally, encourage patient to eat and drink. If weakness/tiredness persists, refer same day.
- If worsening weakness of leg/s, refer urgently.

Approach to the patient with weakness or tiredness not needing urgent attention

Tiredness is a problem when it persists so that the patient is unable to complete routine tasks and it disrupts work, social and family life. Look for a cause of the patient's weakness/tiredness:

- If temperature ≥ 38˚C ⮌17. If < 38˚C but had a fever in past 3 days, exclude malaria ⮌17.
- If cough, weight loss, night sweats or fever, exclude TB ⮌71.
- Test for HIV ⮌75. If HIV positive, give routine care ⮌76.
- Exclude pregnancy. If pregnant →112.
- Assess and manage stress ⮌65 and if patient has difficulty sleeping ⮌67.
- If patient is terminally sick and survival is predicted to be short, give palliative care ⮌120.

If none of the above:

- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →91.
- Exclude anaemia: Check Hb:
  - If Hb 11-12g/dL (woman) or 11-13g/dL (man): If no infection, cancer or bleeding, give ferrous sulphate 200mg PO BID for 1 month. Give also single dose albendazole 400mg PO. Repeat Hb after 1 month: If repeat Hb not increased by at least 1g/dL , refer to hospital.
  - If Hb <11g/dL, refer for further investigation.
- Exclude diabetes: check glucose ⮌86.
- Look for kidney disease: do urine dipstick. If patient has proteinuria on dipstick, diabetes, hypertension or is > 50 years, refer for further investigation.
- If weight gain, low mood, dry skin, constipation or cold intolerance, **hypothyroidism** likely. Refer to hospital
- Review medication and refer if patient taking any of: loratidine, enalapril, amlodipine, propranolol, atenolol, fluoxetine, amitriptyline, metoclopramide, valproic acid, phenytoin and spironolactone.
- In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
- Screen for substance use/abuse: In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.

If persistent weakness or tiredness and no obvious cause, refer.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute. [2]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Collapse/faint

Give urgent attention to the patient who has collapsed/fainted and one or more of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- Unconscious →13
- Convulsion →15
- Chest pain →28
- Difficulty breathing →29
- Recent injury
- Systolic BP < 90
- Pulse < 50 or irregular
- Palpitations
- Family history of collapse or sudden death
- Known heart problem
- Collapse with exercise
- Vomited blood or blood in stool
- Pregnant or missed/overdue period with abdominal pain and vaginal bleeding
- Severe back or abdominal pain
- Sudden diffuse rash or face/tongue swelling: **anaphylaxis** likely

Management:

- If glucose < 70mg/dL or unable to measure, give oral glucose 20g. If unable to take orally, give instead glucose 40% 50mL IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with glucose 10% solution[1].
- If glucose > 200mg/dL ⮌86.
- If **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
  - Give normal saline 1-2L IV rapidly regardless of BP.
- If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient who has collapsed/fainted not needing urgent attention

- Refer patient for further investigation, including ECG.
- Screen for substance use/abuse:
  - If current drug or alcohol intoxication ⮌103.
  - In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
- Check for orthostatic hypotension: measure BP lying and repeat after standing for 3 minutes:

Systolic BP drops by ≥ 20 (or ≥ 30 if known hypertension) *or* diastolic BP drops by ≥ 10

- This is common in the elderly.
- If thirsty and pulse on standing ≥ 100, dehydration likely. Give oral rehydration solution and look for and manage cause.
- Check Hb: if < 11g/dL, refer to hospital.
- Review medication: amitriptyline, amlodipine, enalapril, furosemide, glyceryl trinitrate, hydrochlorothiazide and metoprolol. Consider changing medication.
- Advise patient to sit first before standing up from lying down.

Systolic BP does not drop by ≥ 20 (or ≥ 30 if known hypertension) *and* diastolic does not drop by ≥ 10
Before the collapse did patient experience flushing, dizziness, nausea, sweating?

Yes

Common faint (**Syncope**) likely

- May have had twitching of limbs that last < 15 seconds (not a convulsion).
- Advise to avoid overheating, prolonged standing, crowded environment and situations where fainting has occurred previously.
- Assess and manage stress ⮌65.

No

Was collapse associated with a specific action (e.g. coughing, swallowing, head turning or passing urine)?

Yes
Refer to hospital.

No
Is there known diabetes?

Yes

Give routine diabetes care ⮌87.

No

If cause for collapse is uncertain, refer.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute. [2]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Dizziness/vertigo

Give urgent attention to the patient with dizziness (spinning/feeling of rotation of self or surroundings) and one or more of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- BP < 90/60
- Pulse < 50 or irregular
- Chest pain →28
- Difficulty breathing, especially on lying flat with leg swelling →91
- Recent head injury
- Unable to stand without support
- New sudden severe dizziness/ vertigo with nausea/vomiting, abnormal eye movements or walk

Management:

- If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient with dizziness not needing urgent attention

- Ask about ear symptoms. If present ⮌25. If hearing loss, refer same week.
- Ask about fainting/collapse attacks. If present, do ECG. If ECG abnormal, refer same day.
- Screen for substance use/abuse:
  - If current drug or alcohol intoxication ⮌103.
  - In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
- Review medication: antidepressants, hypertension and epilepsy treatment, furosemide and efavirenz can cause dizziness. Refer.
- If diabetic, check glucose ⮌87.
- Check Hb: if < 11g/dL, refer to hospital same week.
- Check BP: if > 140/90 ⮌89. Assess for orthostatic hypotension: measure BP lying and repeat after standing for 3 minutes:

Systolic BP drops by ≥ 20 (or ≥ 30 if known hypertension) *or* diastolic BP drops by ≥ 10

Orthostatic hypotension likely

- This is common in the elderly.
- If thirsty and pulse on standing ≥ 100, dehydration likely. Give oral rehydration solution and look for and manage cause.
- Advise patient to sit first before standing up from lying down.

Systolic BP does not drop by ≥ 20 (or ≥ 30 if known hypertension) *and* diastolic BP does not drop by ≥ 10

Ask patient to breathe rapidly for 2 minutes. Are symptoms reproduced?

Yes

Hyperventilation likely

- Reassure and encourage patient to breathe at a normal rate.
- Assess and manage stress ⮌65.

No

Ask about associated symptoms and length of dizziness/vertigo. Is there hearing loss, headaches, visual symptoms or tinnitus (ringing/buzzing in ear/s)?

No

Sudden dizziness/vertigo lasts seconds, precipitated by head movements

Positional vertigo likely
Reassure patient that dizziness is self-limiting and usually resolves within 6 months.

Sudden dizziness/vertigo lasts hours/days with nausea/vomiting. May have preceding flu-like illness.

Vestibular neuritis likely

- If nausea/vomiting, give metoclopramide 10mg PO TID as needed for up to 5 days.
- Encourage to be mobile as soon as possible
- If no better after 2 weeks, or if hearing loss or tinnitus occurs, refer.

Yes

Refer to hospital.

- If none of the above, refer to hospital.
- Refer if no cause is found, dizziness/vertigo persists despite above treatment or uncertain of diagnosis.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Headache

Give urgent attention to the patient with headache and one or more of:

- Sudden severe headache
- New/different headache, or headache that is getting worse and more frequent
- Headache that wakes patient or is worse in the morning
- Temperature ≥ 38°C, neck stiffness/meningism or vomiting
- Worsening/persistent headache in HIV patient recently started on ART
- BP ≥ 180/110 and not pregnant →89
- Pregnant or 1 week post-partum, and BP ≥ 140/90 →112
- Decreased level of consciousness
- Confusion
- Sudden dizziness
- Vision problems (e.g. double vision) or eye pain →23
- Following a first convulsion
- Recent head trauma
- Sudden weakness or numbness of face, arm or leg →93
- Speech disturbance
- Pupils different in size

Management:

- If temperature ≥ 38°C or neck stiffness/meningism, give ceftriaxone[1] 2g IV/IM or crystalline penicillin[1] 4M IU IV with chloramphenicol 500mg IV. If malaria test[2] positive, also give artesunate 2.4mg/kg IM or artemether 3.2mg/kg IM.
- Refer urgently.

Approach to the patient with headache not needing urgent attention

Is headache disabling and recurrent with nausea or light/noise sensitivity, that resolves completely?

Yes

Migraine likely

- Give immediately, and then as needed: ibuprofen[3] 400mg PO QID with food *or* paracetamol 1g PO QID for up to 5 days.
- If nausea, also give metoclopramide 10mg PO TID as needed up to 5 days.
- Give oral hydration.
- Advise patient to recognise and treat migraine early, rest in dark, quiet room.
- Advise regular meals, keep hydrated, regular exercise, good sleep hygiene.
- Keep a headache diary to identify and avoid migraine triggers like lack of sleep, hunger, stress, some food or drink.
- Avoid oestrogen-containing contraceptives ⮌110.
- If ≥ 2 attacks/month, refer for medication to prevent migraines.

No

Pain when pushing on forehead or cheek/s, recent common cold, runny/blocked nose?

Yes

Sinusitis likely

- Give paracetamol 1g PO QID as needed for up to 5 days.
- If tooth infection, swelling over sinus or around eye, refer.
- If patient has recurrent sinusitis, test for HIV ⮌75.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[4])?

Yes

- Give amoxicillin/clavulanate 500/125mg PO TID for 7-10 days.
- If penicillin allergic, give instead azithromycin 500mg PO daily for 3 days, if available or refer.

No

- Give amoxicillin 500mg PO TID for 7 days.
- If penicillin allergic, give instead doxycycline[5] 100mg PO BID for 7 days.

No

- If using analgesia > 2 days/week for ≥ 3 months it can cause headaches:
  - Advise against regular use and to cut down on amount used.
  - Headache should improve within 2 months of decreased use.
- Consider muscular neck pain or giant cell arteritis:

Constant aching pain, tender neck muscles

Muscular neck pain likely →48.

> 50 years, pain over temples

Giant cell arteritis likely

Check ESR. If > 30mm/h, give single dose prednisolone 60mg PO and refer same day.

- In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
- If excessive worry causes impaired function/distress for at least 6 months with ≥ 3 of: muscle tension, restlessness, irritability, difficulty sleeping, poor concentration, tiredness: **generalised anxiety disorder** likely ⮌100..

- Warn patient to avoid overusing analgesics.
- If uncertain of diagnosis or poor response to treatment, refer.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give chloramphenicol only and refer. [2]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [3]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [4]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [5]Avoid if pregnant.

Eye/vision symptoms

Give urgent attention to the patient with eye/vision symptoms and one or more of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- BP ≥ 180/110 and not pregnant ⮌89
- Pregnant or up to 1 week post-partum, and BP ≥ 140/90: treat as **severe pre-eclampsia** →112.
- Yellow eyes: **jaundice** likely →60.
- Single painful red eye
- Sudden loss or change in vision (including blurred or reduced vision)
- New onset hazy cornea
- Painful red skin with blisters involving eye, eyelid or nose: **herpes zoster** (**shingles**) likely
- Whole eyelid swollen, red and painful: **orbital cellulitis** likely
- Penetrating eye trauma
- Foreign body that is metal, or from hammering, mechanical saw, welding, grinding or explosion
- Chemical burn to eye/s: immediately wash eye/s for at least 15 minutes continuously with normal saline or clean water.
- If painful eye with redness, blurred vision, haloes around light, dilated unreactive pupil, headache or nausea/ vomiting, **acute glaucoma** likely

Manage and refer urgently to ophthalmology centre:

- If orbital cellulitis likely, give ceftriaxone[1] 2g IV/IM.

Approach to the patient with eye/vision symptoms not needing urgent attention

Eye/s discharging or watery

Is there prominent itch?

Yes: Is there eczema, allergic rhinitis or asthma and both eyes involved?

No

Localised cause likely

- Wash eye with clean water.
- Identify and remove the cause.
- If no better after 24 hours, refer.

Yes

Allergic conjunctivitis likely

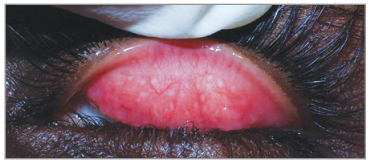
- Advise cool compresses and normal saline eye drops as needed.
- Help to identify and advise to avoid allergens that worsen/ trigger symptoms.
- Avoid steroid eye drops
- Give oxymetazoline eye drops 1 drop 3-4 times a day for 5 days.
- Give loratadine 10mg PO daily or chlorpheniramine 4mg PO at night as needed.
- If no better after 4 weeks, refer.

No: Is the discharge pus or clear?

Pus

Bacterial conjunctivitis likely

Check under upper eyelid for yellows bumps: if present, **trachoma** likely. Refer same day.



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If no yellow bumps:

- Give chloramphenicol 1% ointment QID or gentamycin 0.3% eye drops 1 drop 4-6 hourly for 10-15 days.
- Advise patient to wash hands regularly, not share towels/bedding.
- Patient can return to work after 2 days.

If no better after 2 days, refer.

Clear

Viral conjunctivitis likely

- Advise cool compresses.
- Advise patient to wash hands regularly and not share towels or bedding. Patient can return to work after 1 week.
- Give normal saline or clean water eye washes up to 4 times per day

Gradual change in vision

- Exclude diabetes ⮌86 and hypertension ⮌89.
- Test for HIV ⮌75.
- Refer for visual assessment.

Red or swollen eyelid margins with crusting

Blepharitis likely

- Apply warm/ cool compress for 5-10 minutes BID.
- Advise to gently wash eyes with baby shampoo. to remove crusts. If no better, give erythromycin eye drops 1 drop daily for 2 weeks.
- If no better after 2 weeks, refer.

Superficial foreign body

- Wash eye with clean water or normal saline and clean corners of eye with damp cotton- tipped bud. Advise regular hydration
- Attempt removal of foreign body
- Refer to hospital if:
  - Unable to remove foreign body as above
  - Damage to eye
  - Abnormal vision or eye movement
  - No better 2 days after removal of foreign body

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid ceftriaxone and refer.

Face symptoms

Give urgent attention to the patient with face symptoms and one or more of:

- If new sudden asymmetric weakness or numbness of face (with no/minimal forehead involvement), arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- New facial swelling with abnormal urine dipstick: **kidney disease** likely
- Sudden face/tongue swelling with difficulty breathing, BP < 90/60 or collapse, **anaphylaxis** likely
- Painful red facial swelling and temperature ≥ 38°C: **facial cellulitis** likely

Management:

- If **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
  - Give normal saline 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

Approach to the patient with face symptoms not needing urgent attention

Face pain

If rash on face →53.

Pain of cheek or jaw and on tapping or biting on involved tooth. May be swollen.

Gum/tooth infection likely

- Give paracetamol 1g PO QID as needed for up to 5 days.
- If temperature ≥ 38°C or difficulty opening mouth, give amoxicillin 500mg PO TID for 5 days and metronidazole[1] 500mg PO TID for 5 days. If penicillin allergic, replace amoxicillin with doxycycline[2] 100mg PO BID for 5 days.
- Advise good oral hygiene and a soft diet for a few days.
- Refer to dentist same week.

Pain when pushing on forehead or cheek/s, headache, recent common cold, runny/blocked nose

Sinusitis likely

- Give paracetamol 1g PO QID as needed for up to 5 days.
- If neck stiffness/meningism, tooth infection or swelling over sinus/around eye, refer.
- If patient has recurrent sinusitis, test for HIV ↩75.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[3])?

Yes

- Give amoxicillin/clavulanate 500/125mg PO TID for 7-10 days.
- If penicillin allergic, give instead azithromycin 500mg PO daily for 3 days, if available or refer.

No

- Give amoxicillin 500mg PO TID for 7 days.
- If penicillin allergic, give instead doxycycline[2] 100mg BID for 7 days.

Sudden progressive weakness of 1 side of face and unable to wrinkle forehead or close eye. May have impaired taste or dry eye.

Bell's palsy likely

- Give prednisolone as soon as possible: give 60mg PO daily for 5 days. Then reduce dose by 10mg daily. If no better after 3 weeks, refer.
- If severe/complete weakness, also give aciclovir 400mg PO 5 times a day for 10 days.
- Protect eye:
  - Advise patient not to rub eye.
  - Keep eye moist with drops.
  - Cover eye with transparent eye shield during the day.
  - Tape eyelid closed at night.
- Refer same day if:
  - Otitis media
  - Any change in hearing
  - Recent head trauma
  - Damage to cornea
  - Unsure of diagnosis

Swelling of face

Painless swelling in patient on enalapril

Angioedema likely

- Stop enalapril *and never start it again.*
- Give loratadine 10mg PO daily until swelling resolved.
- Referto hospital for review of medication.
- Advise patient to return urgently should difficulty breathing occur or symptoms worsen and that s/he should never take enalapril again.

Painful swelling of one/both sides of face with low-grade fever, headache, body pain.

Parotitis (**mumps**) likely

- Give paracetamol 1g PO QID as needed for up to 5 days.
- Advise patient s/he can return to work after 5 days and that symptoms usually resolve within 1 to 2 weeks.
- Refer if:
  - Neck stiffness/ meningism
  - Painful scrotal swelling
  - Loss of hearing

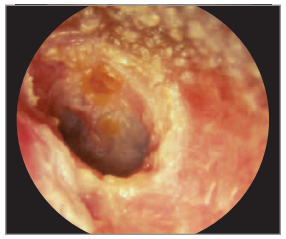
[1]Advise no alcohol until 24 hours after last dose of metronidazole. [2]Avoid if pregnant. [3]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids.

Ear/hearing symptoms

Is ear itchy, painful, discharge from ear, difficulty hearing or tinnitus (ringing/buzzing in ear/s)? Then look in ear.

Itchy ear

Redness and/or pus in ear canal



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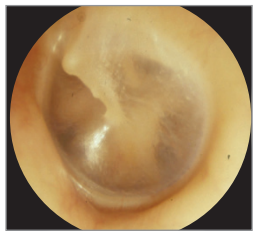
Otitis externa likely

- Clean ear[1].
- Give paracetamol 500mg PO QID as needed for up to 5 days.
- If severe pain, temperature ≥ 38°C, impaired immunity[2] give cloxacillin 500mg PO QID for 5 days. If penicillin allergy, give instead erythromycin 500mg PO QID for 5 days.
- If no response after 2 days, refer.

Painful ear

Normal drum and canal



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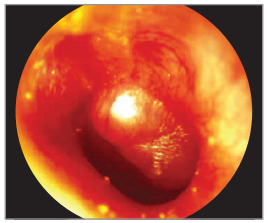
Referred pain likely

- Look for cause:
  - If dental problem, refer to dentist.
  - If throat problem →27.
  - If pain in temporo-mandibular joint, check for joint problem →46.
  - If painful swelling of one/ both sides of face, consider **mumps** likely →24.

Symptoms < 2 weeks; red or bulging eardrum. May have fever and/or difficulty hearing.



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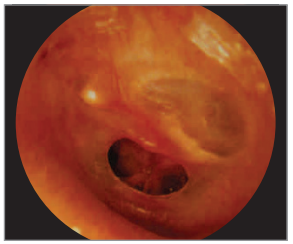
Acute otitis media likely

- Give paracetamol 500mg PO QID as needed for up to 5 days.
- Clean ear[1] if discharge.
- Give amoxicillin 500mg PO TID for 5 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 5 days.
- Refer if:
  - No response to antibiotics after 5 days
  - Recurrent otitis media
- Refer urgently if:
  - Painful swelling behind ear
  - Neck stiffness/ meningism

Discharge from ear

Symptoms ≥ 2 weeks; perforated eardrum. Painless, may have difficulty hearing



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Chronic suppurative otitis media likely

- Clean ear[1] 3 times a day. The ear can heal only if dry.
- Give hydrogen peroxide solution 3% 5-10 drops into affected ear BID.
- Refer if:
  - No better after 2 weeks
  - Foul-smelling discharge or yellow/white deposit on eardrum, **cholesteotoma** likely.
  - Large perforation
  - Hearing loss
  - Pain in ear
- Refer urgently if:
  - Painful swelling behind ear
  - Neck stiffness/meningism
- If poor response to treatment, check for TB ⮌71 and HIV ⮌75.

Difficulty hearing or tinnitus

- If tinnitus, refer to hospital.
- If itchy/painful ear or discharge from ear, see adjacent column/s.
- Check for wax and foreign body:

Wax

- Syringe ear with warm water and/ or dilute hydrogen peroxide. If unsuccessful after 3 attempts or causes pain, stop and refer.
- If hearing does not improve after wax removal, refer.

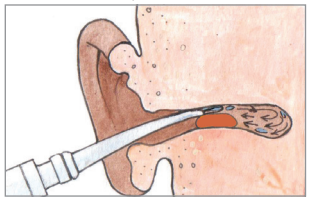
Foreign body

- If insect, instil oil and if possible remove using forceps.
- Otherwise, syringe ear with warm water.
- If unsuccessful after 3 attempts or causes pain, stop and refer.

Normal looking ear

- Look for and if possible remove cause:
  - Ask about prolonged exposure to loud noise.
  - Review medication: aspirin, NSAIDs and furosemide.
- Refer if:
  - Sudden onset
  - One-sided
  - Dizziness/vertigo
  - Patient taking kanamycin
  - No cause found or no better 2 weeks after removing cause.

How to syringe an ear



Fill a large syringe (50-200mL) with warm water. Ask patient to hold container under ear against neck to catch water. Gently pull ear upwards and backwards to straighten ear canal. Place tip of syringe at ear canal opening (no further than 8mm into canal) and direct water spray upwards in ear canal.

[1]Cleaning the ear (dry mopping): roll a piece of clean paper towel or absorbent cloth into a wick. Carefully insert wick into ear with twisting action. Remove wick and replace with clean dry wick. Repeat until wick is dry when removed. Never leave wick or other object inside the ear. [2]Known with HIV, diabetes or cancer or receiving chemotherapy or corticosteroids.

Nose symptoms

Runny or blocked nose
Ask about duration and associated symptoms.

Sore throat or fever

Body aches/muscle pains or chills

No

Common cold likely

- Advise patient to avoid contact with others to prevent spread, use tissues when sneezing/coughing and dispose of these carefully, and to wash hands regularly.
- Give paracetamol 500mg PO QID or ibuprofen[1] 400mg PO TID needed for up to 5 days.
- Explain that antibiotics are not necessary.
- Advise patient to return if symptoms persist > 4 days.

Yes

Influenza (flu) likely

- Advise patient to avoid contact with others to prevent spread, use tissues when sneezing/coughing and dispose of these carefully, and to wash hands regularly.
- Give paracetamol 500mg PO QID or ibuprofen[1] 400mg PO TID needed for up to 5 days.
- Explain that antibiotics are not necessary.
- Advise patient to return if symptoms persist > 4 days.

Pain when pushing on forehead or cheek/s, headache, recent common cold

Sinusitis likely

- Give paracetamol 1g PO QID as needed for up to 5 days.
- If neck stiffness/meningism, tooth infection, swelling over sinus or around eye, refer.
- If patient has recurrent sinusitis, test for HIV ⮌75.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[2])?

Yes

- Give amoxicillin/clavulanate 500/125mg PO TID for 7-10 days.
- If penicillin allergic, give instead azithromycin 500mg PO daily for 3 days if available or refer.

No

- Give amoxicillin 500mg PO TID for 7 days.
- If penicillin allergic, give instead doxycycline[3] 100mg PO BID for 7 days.

Recurrent episodes of sneezing and itchy nose on most days for > 2 weeks. May have itchy eyes, ears or throat.

Allergic rhinitis likely

- Advise patient to identify and avoid allergens that worsen/trigger symptoms.
- Give loratadine 10mg daily for up to 5 days or cetirizine 10mg daily only when symptoms worsen.
- If symptoms occur on ≥ 4 days per week for > 1 month, give beclometasone nasal spray long term 100mcg (2 sprays) in each nostril daily. Once symptoms controlled, use lowest effective dose to maintain control.
- If no better with above treatment and symptoms debilitating, refer.

Bleeding nose

- Firmly pinch nostrils together for 10 minutes.
- Check BP:
  - If < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
  - If ≥ 140/90 ⮌89.
- If still bleeding:
  - Insert cotton strips or swabs saturated with mixture of lidocaine 4% and xylometazoline 0.05% into bleeding nostril/s for 15 minutes.
  - If bleeding persists, refer.
- If patient has recurrent episodes:
  - Advise patient to apply petroleum jelly or saline spray inside nostrils and avoid nose-picking or rubbing, contact sports and trauma to nose.
  - Advise patient to avoid aspirin and NSAIDs (e.g. ibuprofen) as they may prolong bleeding.
  - Educate patient to firmly pinch nostrils together if bleeding occurs.

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [2]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [3]Avoid if pregnant.

Mouth and throat symptoms

Give urgent attention to the patient with mouth/throat symptoms and one or more of:
- Unable to open mouth – consider Ludwig's angina, dental infections/abscess, jaw dislocation or tetanus
- Unable to swallow at all – consider severe tonsillitis with abscess, severe oesophageal thrush

Management:
- Refer same day.

Approach to the patient with mouth/throat symptoms not needing urgent attention
- Ask about dry mouth and swallowing problems (difficulty or painful swallowing). If food/liquid gets stuck with swallowing, consider oesophageal cancer or stricture, refer.
- Examine the mouth and throat for redness, white patches, blisters, ulcers or cracks.

Red throat

Are there 2 or more of:
- Fever
- No cough
- Pus/patches on tonsils
- Tender neck lymph nodes

No

Viral pharyngitis likely
- Give paracetamol 1g PO QID as needed for up to 5 days.
- Rinse with salt water or H_2O_2 3% mouthwash after meals
- Reassure that antibiotics are not necessary.

Yes

Bacterial pharyngitis/tonsillitis likely
- Give paracetamol 1g PO QID as needed for up to 5 days.
- Rinse with salt water or H_2O_2 3% mouthwash after meals
- Give single dose benzathine penicillin 1.2MU IM or amoxicillin 500mg PO QID for 10 days; If penicillin allergic give instead erythromycin 500mg PO QID for 10 days.

If > 4 episodes in 1 year, refer for ENT assessment.

White patches on cheeks, gums, tongue, palate; may have cracks in corners of mouth

Oral thrush/candida likely
- Test for HIV ⮌75 and diabetes ⮌86.
- Give miconazole oral gel 60mg or nystatin 500 000IU tablet PO QID for 7 days. Keep in mouth as long as possible.
- If patient uses inhaled corticosteroids, ensure s/he uses spacer and rinses mouth with water after use ⮌81.
- If patient is terminally sick and survival is predicted to be short, give palliative care ⮌120.

If difficulty or pain on swallowing, **oesophageal candida** likely
- Give fluconazole 200mg PO daily for 14 days.
- If no response, refer.

Painful blisters on lips/mouth

Herpes simplex likely
- Apply tetracaine 0.5% on blisters or gentian violet 0.5% solution painted in mouth TID and paracetamol 1g PO QID up to 5 days.
- Give aciclovir 400mg PO TID for 7 days if:
  - HIV patient
  - Blisters for ≤ 12 hours or new blisters forming
  - Ulcers are extensive, recurrent or present for > 1 month
  - Severe pain
- Avoid touching the lesions and kissing.
- Advise frequent hand washing.

Painful ulcer/s in mouth/throat

Aphthous ulcer/s likely
- Apply triamcinolone acetonide 0.1% (Oropaste®) TID on the lesions for 7 days or crushed prednisolone 5mg tablet BID until healed
- Apply tetracaine 0.5% on ulcers
- Give paracetamol 1g PO QID as needed.
- Rinse with chlorhexidine 0.12% solution 10ml BID
- Test for HIV ⮌75
- Refer if:
  - Not healed within 2 weeks
  - Ulcer diameter > 1cm

Dry mouth

- If thirst, urinary frequency or weight loss, check for diabetes ⮌86.
- If runny or blocked nose ⮌26.
- Look for and treat oral candida as in adjacent column.
- Review medication: furosemide, amitriptyline, chlorpheniramine antipsychotics and morphine can cause dry mouth. Consider changing medication.
- Advise patient to sip fluids frequently. Sucking on oranges, pineapple, lemon or passion fruit may help.
- If patient is terminally sick and survival is predicted to be short, give palliative care ⮌120.

Red, cracked corners of mouth

Angular cheilitis likely
- Apply petroleum jelly (Vaseline®) TID.
- If crusts and blisters around mouth, **impetigo** likely ⮌59.
- If very itchy, contact dermatitis likely. Identify and remove irritant.
- If using inhaled corticosteroids, advise to rinse mouth after use.

If no better or uncertain of cause:
- Check hemoglobin.
- Test for HIV ⮌75 and diabetes ⮌86.
- If still uncertain, refer.

- Advise the patient with a sore mouth/throat to avoid spicy, hot, sticky, dry or acidic food and to eat soft, moist food.
- Advise to keep mouth and teeth clean by brushing and rinsing regularly.

Chest pain

Give urgent attention to the patient with chest pain and one or more of:

- Respiratory rate > 30 or difficulty breathing
- BP ≥ 180/110 or < 90/60
- Pulse irregular, ≥ 100 or < 50
- Severe pain
- New pain or discomfort in centre or left side of chest
- Pain radiates to neck, jaw, shoulder/s or arm/s
- Nausea or vomiting
- Pallor or sweating
- Known with ischaemic heart disease
- At risk of heart attack (diabetes, smoker, hypertension, high cholesterol, known CVD risk > 20%, family history)

Is chest pain worse on palpating the chest or when patient lies down or breathes deeply?

No

Assess for ischaemic heart disease →94

Yes

Manage and refer urgently:

- If oxygen saturation < 90%, oxygen saturation machine not available, respiratory rate > 30 or difficulty breathing, give face mask oxygen.
- If sudden breathlessness, more resonant/decreased breath sounds/pain on one side, deviated trachea, **tension pneumothorax** likely: refer for urgent chest tube.
- If BP < 90/60, give normal saline 250mL IV rapidly. Repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If BP ≥ 180/110, repeated after 5 minutes to confirm, give single dose metoprolol 25mg PO and refer.
- If temperature ≥ 38°C, give ceftriaxone[1] 1g IV/IM.

Approach to the patient with chest pain not needing urgent attention

- If recurrent episodes of central chest pain, brought on by exertion and relieved by rest, **ischaemic heart disease** likely →94.
- If cough, fever or pain on breathing deeply ↩29.
- Ask about site of pain and associated symptoms:

Retrosternal or epigastric pain with eating, hunger or lying down/bending forward

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night. Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ↩102. Support patient to change ↩125.
- If drinks alcohol ≥ 4 drinks[2]/session ↩103.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ↩84.
- Give omeprazole 20mg PO daily for 4 weeks.
- Refer same week if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive or abdominal mass.

Tender at costochondral junction, no fever or cough

Musculoskeletal problem likely

- Give ibuprofen 400mg PO TID with food up to 10 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If pain persists > 4 weeks, refer.

Burning pain on one side of body with or without rash

Herpes zoster (**shingles**) likely →54.

If uncertain of diagnosis, refer same week.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid ceftriaxone and refer. [2]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Cough or difficulty breathing

If wheeze/tight chest and no rash or face/tongue swelling →30.

Give urgent attention to the patient with cough and/or difficulty breathing and one or more of:

- Breathless at rest or while talking
- Difficulty breathing worse on lying flat and leg swelling: **heart failure** likely →91.
- Rapid deep breathing with glucose > 200mg/dl: consider DKA →86.
- Sudden diffuse rash or face/tongue swelling: **anaphylaxis** likely
- Temperature ≥ 39°C
- Respiratory rate > 30
- Coughs ≥ 1 tablespoon fresh blood
- Confused or agitated
- BP < 90/60, shock
- Swelling and pain in one calf

Manage and refer urgently:

- Give face mask oxygen (if known COPD give 24-28% face mask oxygen).

Temperature ≥ 38°C, **pneumonia** likely
Give ceftriaxone[1] 1g IV/IM or amoxicillin[1] 1g PO.

Sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely
- Raise legs and give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
- Give normal saline 1-2L IV rapidly, regardless of BP.

Sudden breathlessness, more resonant/ decreased breath sounds/pain on one side, deviated trachea, **tension pneumothorax** likely
Arrange urgent chest tube.

If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

Approach to the patient with cough or difficulty breathing not needing urgent attention

- Test for HIV ⮌75. If on ART, check for urgent side effects ⮌80.
- Ask about duration of cough or difficulty breathing:

Cough or difficulty breathing < 2 weeks

Sputum, chest pain, pulse ≥ 100 or temperature ≥ 38°C?

No

Acute bronchitis or **common cold** likely

- Reassure patient antibiotics are not necessary.
- Advise to return if symptoms worsen or fever develops.

Yes

Pneumonia likely

Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[2])?

No
Give doxycycline[3] 100mg PO BID for 7 days.

Yes
Give amoxicillin[1] 1g PO TID and doxycycline[3] 100mg PO BID for 5-7 days.

- If symptoms worsen after 2 days of antibiotics, refer.
- If not better after 7 days of antibiotics, consider TB ⮌71
- If no cause found, refer to hospital.

Cough or difficulty breathing ≥ 2 weeks

- Exclude TB ⮌71.
- Consider asthma and COPD ⮌81 and other cause for cough or difficulty breathing:

HIV with CD4 < 200cells/mm³ with dry cough, worsening breathlessness on exertion

Pneumocystis pneumonia likely

Refer to hospital for x ray and inpatient treatment.

Smoker
- If patient smokes tobacco ⮌102.
- Has patient lost weight?

Yes

Consider **lung cancer**.
Refer to hospital.

No

Coughing sputum most days of 3 months for ≥ 2 years, **chronic bronchitis** likely.
Refer to hospital for COPD workup

Recent common cold, no difficulty breathing

Post-infectious cough likely
Advise that cough should resolve within 8 weeks.

Relieve cough or difficulty breathing in the patient needing palliative care ⮌120:

- If thick sputum, give steam inhalations. If more than 30mL/day, try deep fast breathing with postural drainage.
- If excess thin sputum, give hyoscine 10mg TID. If annoying dry cough, give dextromethorphan syrup 10mg/5ml or diphenhydramine syrup 10mg/5mL three times a day.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid and refer. [2]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [3]If pregnant, give instead erythromycin 500mg PO QID for 5 days.

Wheeze/tight chest

- If sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely →29.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →91.

Give urgent attention to the patient with wheeze/tight chest:

Assess severity of episode:
Any of: respiratory rate > 30, pulse > 120, unable to talk in full sentences, using accessory muscles, silent chest (tight chest but no wheeze), agitated, drowsy or confused?

No → **Mild** or **moderate**

- Give inhaled salbutamol via spacer[1] 400-800mcg (4- 8 puffs). If no better, repeat salbutamol every 20 minutes during first hour.
- If known asthma or COPD, give prednisolone 40mg PO. If unable to take oral medication, give instead hydrocortisone 100mg IV.
- Give face mask oxygen between each dose of salbutamol (if known COPD, give 24-28% face mask oxygen).
- Monitor response regularly:

Improving or no change at 1 hour

Check respiratory rate. Can patient talk normally?

Able to talk normally *and* respiratory rate < 20

Wheeze/tight chest resolved

- If first episode of wheeze/tight chest, assess for asthma and COPD →81.
- If known asthma/COPD, give routine care: if asthma →82, if COPD →83.

Wheeze/tight chest still present

- Repeat salbutamol hourly or as needed.
- Is wheeze/tight chest still present at 3 hours?

No → Yes

Continue salbutamol and refer.

Unable to talk normally *or* respiratory rate > 20

Worsening despite treatment

Yes → **Severe**

- Refer urgently.
- While awaiting transport:
  - Give inhaled salbutamol 400-800mcg (4-8 puffs) every 20 minutes via spacer[1].
  - Give face mask oxygen between doses (if known COPD, give 24-28% face mask oxygen).
  - Give hydrocortisone 100mg IV if not already given.

[1]If conventional spacer unavailable, make a hole in the bottom of a 500mL plastic bottle to fit the size and shape of inhaler spray opening.

Breast symptoms

Approach to the patient with a breast symptom who is not breastfeeding

Breast lump/s

Both breasts, with/without pain

This is likely to be cyclical.
- Reassure.
- If on hormonal contraceptive, consider non-hormonal method ⮌110.
- If symptoms change/worsen, refer.

One breast

Any one of: man, patient > 30 years, family history of breast cancer, irregular fixed lump, skin/nipple changes, nipple discharge or axillary lymph node?

- No → Re-examine breast on day 7 of menstrual cycle. If lump persists, refer same week.
- Yes → Refer same week.

Breast pain

- Reassure patient that breast cancer rarely causes pain.
- Advise a well-fitting bra.
- If pregnant, reassure and give antenatal care ⮌114.
- Give paracetamol 1g PO QID as needed for up to 5 days.
- May be a side effect of hormonal contraceptive. If no better after 3 months, change method →110.

Nipple discharge

Any one of: blood-stained or one-sided discharge, patient ≥ 50 or a man, skin/nipple changes, breast/axillary lump?

- Yes → Refer same week.
- No
  - If pregnant, reassure and give antenatal care ⮌114.
  - Review medication: haloperidol, antidepressants, oral contraceptive and metoclopramide can cause nipple discharge. Consider changing medication.
  - If discharge persists, refer.

Breast enlargement/feels different

One breast

Refer same week.

Both breasts

- Confirm that this is not obesity. If BMI > 25 assess CVD risk ⮌84.
- Review medication: efavirenz and amlodipine can cause breast enlargement. Consider changing medication.

Rash on breast

- Check for breast lump.
- Check axilla for lymph node ⮌18.
- Check for nipple discharge
- If none of the above →53

Approach to the patient with a breast symptom who is breastfeeding

Painful/cracked nipple/s
Usually in first few days of breastfeeding due to poor latching

- Avoid soap on nipples.
- Advise patient to continue breastfeeding and help patient to latch properly.
- Advise patient to apply breastmilk to nipples after feeding and expose to the air.
- Advise HIV patient to stop feeding from the breast, express and heat-treat[1] the milk, and cup-feed baby until cracks have healed.

Painful breast/s
Is there a breast lump?

No
Temperature ≥ 38°C or body pain?

- Yes → **Mastitis** likely
  - Give cloxacillin 500mg PO QID for 10 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 14 days.
  - Give paracetamol 1g PO QID as needed for up to 5 days.
  - Advise warm compresses and, if HIV negative, frequent breastfeeds.
  - Advise HIV patient to stop feeding from the breast, express and heat-treat[1] the milk, and cup-feed baby until mastitis resolves.
  - If no better after 2 days, refer.
- No → **Engorgement** likely
  - Advise frequent breastfeeding, warm compresses and to gently massage breast.
  - Advise to return to clinic if worse/no better.

Yes
Temperature ≥ 38°C or body pain?

- No → **Blocked duct** likely
  - Advise frequent breastfeeding, warm compresses and to gently massage breast.
  - Advise to return to clinic if worse/no better.
- Yes → **Breast abscess** likely
  - Give single dose ceftriaxone[2] 1g IM and refer same day.
  - Advise HIV patient to stop feeding from the breast, express and heat-treat[1] the milk, and cup-feed baby until abscess resolves.

Ensure the breastfeeding HIV patient and her baby receive routine HIV care ⮌76 and ⮌116.

[1]Heat-treat milk to rid it of HIV and bacteria: place breastmilk in sterilized glass jar. Close lid and place in pot. Fill pot with water 2cm above milk and heat water. Remove jar when water is rapidly boiling. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid ceftriaxone and refer.

Abdominal pain (no diarrhoea)

Give urgent attention to the patient with abdominal pain and one or more of:

- Unable to pass urine and distended abdomen: consider acute urinary obstruction →44
- Chest pain: consider heart attack →28
- Pregnant or up to 1 week post-partum and BP ≥ 140/90: consider pre-eclampsia →112
- Recent abortion/delivery: consider puerperal sepsis →116
- Pregnant and vaginal bleeding, consider ectopic pregnancy or abortion →112
- If drowsiness, confusion, nausea/vomiting, rapid deep breathing: consider DKA, check glucose ⮌86.
- If on ART, check for urgent side effects such as lactic acidosis ⮌80.
- Peritonitis (guarding, rigidity or rebound tenderness): consider acute abdomen
- Jaundice (yellow eyes): consider bile duct infection, hepatitis
- Temperature ≥ 38°C: consider severe infection of any abdominal organ/structure
- No stool or flatus for last 24 hours with/without vomiting: consider intestinal obstruction
- Sudden severe upper abdominal pain spreading to back with nausea/vomiting: consider perforated duodenal ulcer or pancreatitis
- Pulsatile abdominal mass: consider abdominal aortic aneurysm
- Severe pain just before or during menses, **severe dysmenorrhea** likely

Manage and refer urgently:

- If temperature ≥ 38°C, jaundice or peritonitis, give single dose ceftriaxone[1] 1g IV or IM.
- If **severe dysmenorrhea**, give single dose tramadol 50mg IM. If pain subsides, manage below, otherwise refer.

Approach to the patient with abdominal pain not needing urgent attention

- If sexually active woman with lower abdominal pain and abnormal vaginal discharge →38.
- If pain just before or during menses, **dysmenorrhea** likely: if abdominal mass refer. Otherwise reassure patient and give ibuprofen 400mg PO TID, starting at onset of pain for few days of menses every month for 4 to 6 months. If no better, refer.
- If the patient has urinary symptoms →44. If the patient is constipated →35.
- Do stool microscopy:
  - If positive give the following treatment:
    - If **giardiasis**, give single dose tinidazole 2g PO.
    - If **amoebiasis**, give metronidazole 500mg PO TID for 5-7 days.
    - If **strongyloidiasis**, give albendazole 400mg PO BID for 3 days.
    - If **other parasites**, give albendazole 400mg PO once daily for 3 days.
  - If stool microscopy negative, manage below:

Does patient have epigastric pain which is worse with eating, hunger or lying down/bending forward?

Yes

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night.
- Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ⮌102. Support patient to change ⮌125.
- If drinks alcohol ≥ 4 drinks[2]/session ⮌103.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ⮌84.
- Avoid serologic H pylori tests as they are not specific and not useful for management decisions.
- Give omeprazole 20mg BID for 4 weeks.

Refer if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive, abdominal mass or uncertain of diagnosis.

No

Has patient lost weight?

Yes

Does patient have any of: cough, night sweats, fever or HIV?

Yes

Exclude TB ⮌71.

No

Consider **cancer**. Refer same week.

No

Does the patient report worms?

Yes

- Tapeworm or worm segments: give single dose praziquantel 600mg PO or albendazole 400mg PO once daily for 3 days.
- Other worm or unsure: give single dose albendazole 400mg.
- Educate on personal hygiene.

No

If pain is recurrent and relieved when passing stool, with constipation and/or diarrhoea and bloating, **irritable bowel syndrome** likely. Refer to hospital.

- Give paracetamol 1g PO QID as needed for up to 5 days.
- Review regularly until pain resolves or a cause is found.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid ceftriaxone and refer. [2]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Nausea or vomiting

Give urgent attention to the patient with nausea or vomiting and one or more of:

- Headache: consider brain bleeding, meningitis, abscess or tumor→22
- Chest pain: consider heart attack →28
- Sudden severe upper abdominal pain spreading to back: consider perforated duodenal ulcer or pancreatitis
- Signs of severe dehydration: decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100
- Peritonitis (guarding, rigidity or rebound tenderness): consider acute abdomen
- Vomiting blood: consider gastric/duodenal ulcer or oesophageal bleeding
- Jaundice (yellowish eyes): consider hepatitis, bile duct obstruction or gall bladder infection
- Abdominal pain/distention and no stools or flatus: consider intestinal obstruction.
- If drowsiness, confusion, abdominal pain, rapid deep breathing: consider DKA, check glucose ↩86.
- If pregnant, signs of severe dehydration and ketone in urine, **hyperemesis gravidarum** likely.
- If on ART, check for urgent side effects such as lactic acidosis ↩80.

Management:

- Secure IV line with normal saline and advise patient not to take anything by mouth
- If severe dehydration, give normal saline 1L IV rapidly, repeat until systolic BP > 90. Stop if breathing worsens.
- If **hyperemesis gravidarum**, give normal saline as above: add 2 vials of glucose 40% and 2 ampoules of vitamin B complex in each 1L bag. Also give chlorpromazine 25mg IM or promethazine 25mg IM.
- Refer urgently.

Approach to the patient with nausea or vomiting not needing urgent attention

- Exclude pregnancy.
- If associated dizziness ↩21.
- Review medication: NSAIDs (e.g. ibuprofen), metformin, contraceptives, hormone therapy, theophylline, chemotherapy and morphine can cause nausea/vomiting. If on TB medication ↩73 or ART ↩80.
- Screen for substance use/abuse: in the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.
- If patient is terminally sick and survival is predicted to be short, also give palliative care ↩120.

Does patient have epigastric pain which is worse with eating, hunger or lying down/bending forward?

Yes

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night.
- Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ↩102. Support patient to change ↩125.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ↩84.
- Give omeprazole 20mg BID for 4 weeks.

Refer if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive, abdominal mass or uncertain of diagnosis.

No

Viral infection or food poisoning likely

- If new onset vomiting, usually with diarrhoea, cramping abdominal pain, loss of appetite, body pains and weakness, reassure patient that vomiting/diarrhoea should resolve within 1-3 days.
- Give metoclopramide 10mg TID as needed for up to 5 days.
- If vomiting/diarrhoea, give oral rehydration solution.
- Advise patient to drink lots of fluids, eat small frequent meals as able and avoid fatty food.

- Refer if any of:
  - Vomiting persists > 3 days
  - Not tolerating oral fluids or needing urgent attention as above
  - Nausea persists > 2 weeks
  - Uncertain of cause

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Diarrhoea

Give urgent attention to the patient with diarrhoea and one or more of:

- Dehydration: thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine output, drowsiness/confusion, BP < 90/60 or postural drop of systolic BP > 20mmHg, pulse ≥ 100
- Large volumes of watery stools: **cholera** likely

Management:

- Give oral rehydration solution (ORS). If unable to drink or BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. If no improvement after IV rehydration, refer to hospital.
- If **cholera** likely: Isolate patient and follow standard infection prevention precautions ⮌122; manage according to degree of dehydration:
  - If no/some dehydration, give oral rehydration solution.
  - If unable to drink or severe dehydration, give Ringer's lactate IV: 30mL/kg over 30 minutes followed by 70ml/kg over 2 and ½ hours and single dose doxycycline[1] 300mg.
  - Discuss with the head of the facility and/or Woreda Health Office and review after 6 hours:
    - If no dehydration and < 3 liquid stools in past 6 hours, consider discharge. Give enough ORS for home treatment for 2 days. Advise patient to return if vomiting, diarrhea worsens or drinking/eating poorly.
    - If still dehydrated or > 3 liquid stools in past 6 hours, continue rehydration. If patient is known with diabetes, heart disease or has no urine output, refer to hospital.

Approach to the patient with diarrhoea not needing urgent attention

- Confirm patient has diarrhoea: ≥ 3 watery or loose stools/day. Ask about duration of diarrhoea.
- Do stool microscopy for ova or parasite and inflammatory cells.
- Advise patient to take more fluids, eat small frequent meals when able and avoid sweet/caffeinated drinks.
- Give oral rehydration solution to prevent dehydration.

Review stool microscopy result.

Positive

RBC/WBC only seen

- Give ciprofloxacin 500mg PO BID for 5 days.
- If pregnant, give instead azithromycin 1g PO daily for 5 days.

Amoebic trophozoite and RBC/WBC seen

- Give metronidazole[2] 500mg PO TID for 5-7 days.
- If no response within 2 days, add ciprofloxacin[1] 500mg BID for 5 days

Ova or parasite only seen

- If amoebiasis, give metronidazole[2] 500mg PO TID for 5-7 days.
- If giardiasis, give single dose tinidazole[2] 2g PO.
- If strongyloidiasis, give albendazole 400mg PO BID for 3 days.
- If other parasites, albendazole 400mg PO daily for 3 days.

If diarrhoea for > 2 weeks, test for HIV ⮌75.

Review in 2 weeks if diarrhoea still present.

Negative

Diarrhoea for ≤ 2 weeks

Avoid antibiotics.

Diarrhoea for > 2 weeks

Knowing the patient's HIV status helps in the management. Test for HIV ⮌75.

HIV positive

- Give routine HIV care ⮌76.
- Lopinavir/ritonavir can cause ongoing diarrhoea.
- ART not started or ART failed, treat for *possible Isospora belli* and microsporidiosis with co-trimoxazole 2 tablets of 960mg PO BID for 21 days and albendazole 400mg PO BID for 14 days.
- Give loperamide 4mg PO initially, then 2mg after each loose stool, maximum 16mg/day.

HIV negative/unknown

- Avoid antibiotics.
- Review medication: omeprazole, NSAIDs (e.g. ibuprofen) and metformin can cause diarrhoea. Consider change of medication if diarrhoea persists.
- Give loperamide 4mg PO initially, then 2mg after each loose stool, maximum 16mg/day.

If diarrhoea persists despite treatment or cause is not clear, refer to hospital.

If patient is terminally sick and survival is predicted to be short, give palliative care →120.

[1]Avoid if pregnant. [2]Advise no alcohol until 24 hours after last dose of metronidazole/tinidazole.

Constipation

Give urgent attention to the patient with constipation and:
- No stools or flatus/wind in the last 24 hours with abdominal pain/distention and vomiting

Management:
- Refer same day.

Approach to the patient with constipation not needing urgent attention
- Review diet, fluid intake and medication (amitriptyline, schizophrenia treatment, codeine and morphine can cause constipation).
- Ask about regular use of enemas or laxatives.
- Exclude pregnancy. If pregnant ⮌112.
- If weakness/tiredness, weight gain, low mood, dry skin or cold intolerance, **hypothyroidism** likely. Refer to hospital
- If patient is terminally sick and survival is predicted to be short, give palliative care ⮌120.
- If > 65 years, bed-bound or receiving palliative care, check for impaction (solid immobile bulk of stool in rectum). If impacted, gently remove stool from rectum using lubrication. Follow with liquid paraffin 10ml TID per-rectum as needed. If bleeding or severe pain, stop and refer.
- Advise a high fibre diet (vegetables, fruit, wholemeal cereals, bran and cooked dried prunes), adequate fluid intake and at least 30 minutes moderate exercise (e.g. brisk walking) most days of the week.
- If no better with diet and exercise, give bisacodyl 5mg daily at night, increasing to maximum of 15mg as needed for 3-5 days. If on codeine/morphine, continue bisacodyl 5-10mg daily at night.
- If no response after 1 week of laxative use, recent change in bowel habits, weight loss, blood in stool or occult blood positive, or uncertain cause for constipation, refer.

Anal symptoms

Give urgent attention to the patient with anal symptoms and one or more of:
- Extremely painful lump on anus
- Unable to pass stool because of anal symptoms

Management:
- Refer same day.

Assess patient with anal pain, bleeding, discharge or itch/irritation.
If patient has anal sex, also ask about genital symptoms ⮌36.

Crack/s	Lump/pile	Ulcer/s	Perianal warts	Red/raw skin	Suspected worms
• Advise as for constipation above and to take sits baths. • If constipated, give bisacodyl as above. • Give bismuth compound one suppository BID for 5 days.	• Advise as for constipation above and to avoid straining. • Apply hydrocortisone 1% cream BID for 5 days.	Treat as for genital ulcer →39.	Treat as for genital warts →40.	• Advise good hygiene. • Look for contact cause. If diarrhoea ⮌34. • Apply petroleum jelly to raw areas. If severe itching, also apply hydrocortisone 1% cream BID for 5 days.	• Give single dose mebendazole 100mg and repeat dose 14 days later. If pregnant, give instead pyrantel pamoate 11mg/kg and repeat dose 14 days later. • Treat family members at the same time.

If no better with treatment, refer.

Genital symptoms

Assess the patient with genital symptoms and his/her partner/s

Assess	Note
Symptoms	Ask about genital discharge, rash, itch, lumps, ulcers and manage as below. Manage other symptoms as on symptom pages.
STI risk	Ask if patient or his/her regular partner has new or multiple partner/s, unreliable condom use or substance abuse ⮌103.
Abuse	Ask about sexual assault. If yes ⮌66. Ask if patient is unhappy in relationship. If yes ⮌65.
Family planning	Assess patient's contraception needs ⮌110 and discuss infertility. Exclude pregnancy. If pregnant ⮌112.
Examination	• Woman: examine abdomen for masses, look for genital discharge, ulcers, rash, lumps. Do bimanual palpation for cervical tenderness or pelvic masses and speculum examination for cervical abnormalities. • Man: look for discharge, inguinal lymph nodes, ulcers, scrotal swelling or masses.
HIV	If status unknown, test for HIV ⮌75.
Syphilis	Test for syphilis if patient has an STI, is pregnant, was raped or whose partner has an STI. If positive ⮌41.
Cervical screen	• If HIV negative, screen 5 yearly from age 30 to 49. If HIV positive, screen at HIV diagnosis (regardless of age) then 5 yearly. If abnormal ⮌40. • Do cervical screen once an abnormal discharge has been treated ⮌38. If cervix looks suspicious of cancer, refer same week.

Advise the patient with genital symptoms and his/her partner/s

- Discuss safe sex: provide male and female condoms, advise patient to stick to one partner at a time.
- If patient has a sexually transmitted infection (STI) :
  - Educate patient about cause and that an STI increases risk of HIV transmission. Urge patient to adhere to treatment and abstain from sex for duration of treatment and until at least 1 week after treatment.
  - Stress importance of partner treatment and issue partner notification slip with the patient's diagnosis for each partner.

Treat the patient with genital symptoms and his/her partner/s

Patient's diagnosis	Treat the patient's partner/s according to the patient's diagnosis as well as the partners' symptoms (if any)
Cervicitis (Vaginal discharge)	Give partner ciprofloxacin 500mg PO stat or ceftriaxone[1] 250mg IM and azithromycin 1g PO stat or doxycycline 100mg PO BID for 7 days.
Pelvic inflammatory disease (Lower abdominal pain)	Give partner ciprofloxacin 500mg PO stat or ceftriaxone[1] 250mg IM and azithromycin 1g PO stat or doxycycline 100mg PO BID for 7 days.
Male urethritis (Urethral discharge)	Give partner ciprofloxacin[2] 500mg PO stat or ceftriaxone[1] 250mg IM and azithromycin 1g PO stat or doxycycline[2] 100mg PO BID for 7 days.
Epididymitis/epididymo-orchitis (Scrotal swelling)	Give partner ciprofloxacin[2] 500mg PO stat or ceftriaxone[1] 250mg IM and azithromycin 1g PO stat or doxycycline[2] 100mg PO BID for 7 days.
Genital ulcer disease	Give partner single dose benzathine benzylpenicillin 2.4MU IM and either ciprofloxacin[2] 500mg PO BID for 3 days or single dose azithromycin 1g PO or erythromycin 500mg PO QID for 7 days. If penicillin allergic, replace benzylpenicillin with doxycycline[2] 100mg PO BID for 14 days.
RPR positive	Give partner single dose benzathine benzylpenicillin 2.4MU IM. If penicillin allergic, give instead doxycycline 100mg PO BID for 14 days. If pregnant, avoid doxycycline ⮌41.
Balanitis/balanoposthitis	Give female partner clotrimazole vaginal tablet 200mg inserted at night for 3 days or clotrimazole 1% vaginal cream applied once at night for 7 days.
Pubic lice	Give partner permethrin 1% or 5% thin film to be applied for 10 minutes then washed off ⮌40.
Inguinal bubo (swelling) without ulcer	Give partner doxycycline 100mg PO BID for 14 days. If pregnant, give instead erythromycin 500mg PO QID for 14 days.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and increase azithromycin dose to 2g orally. [2]Avoid if pregnant.

Genital symptoms in a man

Give urgent attention to the man with genital symptoms and one or more of:

- Scrotal swelling/pain with any of: sudden severe pain, affected testicle higher/rotated, preceding trauma/strenous activity: **torsion of testicle** likely
- Foreskin retracted over glans and unable to be reduced with swollen and very painful glans: **paraphimosis** likely
- Prolonged erection > 4 hours: **priapism** likely

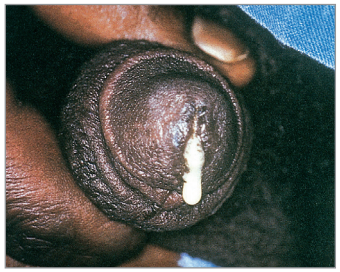
Management:

- If **torsion of testicle** or **priapism** likely: refer urgently.
- If **paraphimosis** likely:
  - If glans blue/black: refer urgently.
  - If not, attempt manual reduction: apply lidocaine 2% gel to glans, then wrap glans in gauze. Apply increasing pressure for 10-15 minutes until foreskin can be replaced over glans. If unsuccessful, refer urgently.

Approach to the man with genital symptoms not needing urgent attention

First assess and advise the patient and his partner/s ↩36.

Urethral discharge



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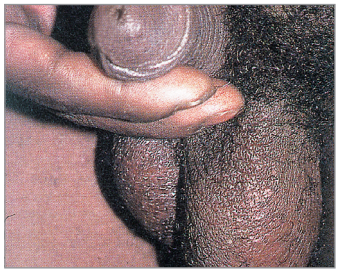
Male urethritis likely

- Give single dose: ceftriaxone 250mg IM or spectinomycin 2g IM or ciprofloxacin 500mg PO *and*
- Give single dose azithromycin 1g PO or doxycycline 100mg PO BID for 7 days.
- If partner has cervicitis/vaginitis, also give single dose metronidazole[1] 2g PO.
- Treat patient's partner/s ↩36.

Advise patient to return in 7 days if symptoms persist:

- If not adherent or was re-exposed, repeat treatment.
- If fully adherent and no re-exposure:
  - Give single dose ceftriaxone 250mg IM *and*
  - Single dose azithromycin 2g PO *and*
  - Single dose metronidazole[1] 2g PO (if not already given) or tinidazole[1] 1g PO once daily for 3 days.
  - If severe penicillin allergy[2], omit ceftriaxone and refer.

Scrotal symptoms



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Pain with/without swelling

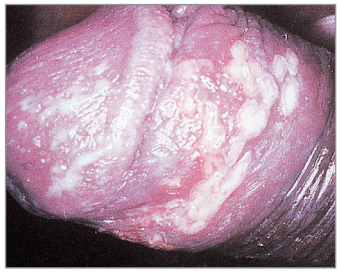
Epididymitis/epididymo-orchitis likely

- Give single dose ceftriaxone 250mg IM or spectinomycin 2g IM or ciprofloxacin 500mg PO *and*
- Give doxycycline 100mg PO BID for 14 days.
- Treat patient's partner/s ↩36.
- For pain, give paracetamol 1g PO QID as needed for up to 5 days. If no response, also give ibuprofen 400mg PO TID with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If no better after 7 days, refer.

Painless swelling

- If firm lump, **testicular cancer** likely: refer to hospital.
- If soft lump, **hydrocele** likely: if large or uncomfortable, refer to hospital; otherwise advise patient to return if it becomes larger, painful or uncomfortable.

Painful, itchy or smelly glans



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Balanitis/balanoposthitis likely

- Advise patient to wash daily with water, avoid soap. Retract foreskin while washing then dry fully.
- Give clotrimazole cream BID for 7 days.
- Offer referral for medical male circumcision, especially if persistent/recurrent or difficulty retracting foreskin.
- Treat patient's partner/s ↩36.
- Advise patient to return in 7 days if symptoms persist:
  - If adherence poor, repeat treatment.
  - Test for diabetes ↩86 and HIV ↩75.
- If still no better, refer.

[1]Advise no alcohol until 24 hours after metronidazole or last dose of tinidazole. [2]Penicillin allergy with angioedema, anaphylaxis or urticaria.

Vaginal symptoms

If abnormal vaginal bleeding ⮌42. If vaginal discharge or mass, manage below.

Vaginal discharge

- It is normal for a woman to have a vaginal discharge. Abnormal discharges are itchy or different in colour or smell. Not all women with a discharge have an STI.
- First assess and advise the patient and her partner/s ⮌36.

If the vulva is red, scratched and inflamed or cheese/curd-like discharge, **vaginal candida** likely:
- Give clotrimazole vaginal tablet 200mg inserted at night for 3 days or single dose fluconazole 150mg PO.
- If severe, give instead single dose fluconazole 150mg PO and repeat after 3 days.

If patient known with cervical cancer, and survival is predicted to be short, give palliative care →120.

Vaginal mass

Vaginal/uterine prolapse likely
- If cough ⮌29; constipation ⮌35; menopause ⮌119.
- Examine to confirm prolapse. If unsure, refer.
- If no ulcer on prolapse, refer for surgery.
- If ulcer present on prolapse:
  - Apply oestrogen cream or crushed oral contraceptives in petroleum jelly daily for 1 month.
  - Advise patient to reinsert prolapse regularly and avoid strenuous activity.
  - Review after 1 month: If healed, refer for surgery. If not healed, refer for further evaluation.

Is there lower abdominal pain or cervical motion tenderness?

No

Treat for **vaginitis** (trichomoniasis/bacterial vaginosis):
- Give metronidazole[1] 500mg PO BID for 7 days.
- If recurrent vaginitis, also give partner single dose metronidazole[1] 2g PO.

Does patient have any of:
< 25 years, > 1 partner, new partner and unprotected sex in last 3 months, ever traded for sex or partner/s with STI?

No

Yes

Also treat for **cervicitis** (gonorrhoea & chlamydia):
- Give single dose ceftriaxone 250mg IM *and*
- Give doxycycline[2] 100mg PO BID for 7 days or single dose azithromycin 1g PO, if available.
- If severe penicillin allergy[3], omit ceftriaxone and increase azithromycin to 2g.
- Treat the patient's partner/s ⮌36.

Review in 7 days:
- If ongoing discharge: examine cervix for cancer and do cervical screen ⮌40.
- If ongoing vaginal candida also test for diabetes ⮌86 and HIV ⮌75.
- Refer same week.

Yes

Give urgent attention to the patient with vaginal discharge and lower abdominal pain/cervical motion tenderness and any of:
- Recent miscarriage/delivery/abortion
- Pregnant or missed/overdue period
- Peritonitis (guarding, rigidity or rebound tenderness)
- Abnormal vaginal bleeding
- Temperature ≥ 38°C
- Abdominal mass

Management:
- If BP < 90/60, give normal saline 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Give ceftriaxone 1g IV and metronidazole[1] 500mg IV infusion/orally. If severe penicillin allergy[3], omit ceftriaxone and refer.
- Refer same day for surgical/gynaecological assessment.

Approach to the patient with lower abdominal pain or cervical motion tenderness not needing urgent attention:

Cervical motion tenderness with or without lower abdominal pain

Lower abdominal pain only, no cervical motion tenderness

Check urine dipstick. If WBC/nitrites positive, **urinary tract infection** likely →44. If WBC/nitrites negative, treat below.

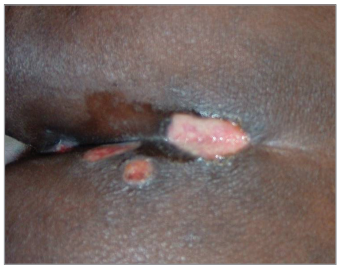
Pelvic inflammatory disease likely
- Give single dose ceftriaxone 250mg IM or if severe penicillin allergy[3], give instead single dose ciprofloxacin 500mg PO *and*
- Give doxycycline 100mg PO BID for 14 days *and* metronidazole[1] 500mg PO BID for 14 days.
- For pain, give paracetamol 1g PO QID as needed for up to 5 days. If no response, also give ibuprofen 400mg PO TID with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Treat the patient's partner/s ⮌36.
- Review within 3 days. If no better, refer same day.

[1]Advise no alcohol until 24 hours after last dose of metronidazole. [2]Avoid if pregnant and give single dose azithromycin 1g PO instead. [3]Penicillin allergy with angioedema, anaphylaxis or urticaria.

Genital ulcer

- First assess and advise the patient and his/her partner/s ⮌36.
- The patient may have blister/s, sore or ulcer.

Treat for **herpes**:
- Start as soon as possible after onset of symptoms:
  - If first episode, give aciclovir 400mg PO TID for 10 days.
  - If recurrent episode, give aciclovir 400mg PO TID for 5 days. If impaired immunity[1], give aciclovir 400mg PO TID for 10 days.
- For pain:
  - Advise sitz baths as needed (sit for 10 minutes in lukewarm water with no salts).
  - Give lidocaine 2% gel applied topically to lesions TID as needed.
  - Give paracetamol 1g PO QID as needed for up to 5 days. If no response, also give ibuprofen 400mg PO TID with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Keep lesions clean and dry.
- Explain that herpes infection is lifelong and that herpes transmission can occur even when asymptomatic. Advise patient to use condoms and to abstain from sex when symptomatic. The likelihood of HIV transmission is increased when there are ulcers.
- If recurrent episodes are severe or > 6 in 1 year or cause distress, refer



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First episode, solitary or non-vesicular ulcer?

Yes

Also treat for **early syphilis** and **chancroid**:
- Give single dose benzathine benzylpenicillin 2.4MU IM or if penicillin allergic and not pregnant/breastfeeding, doxycycline 100mg PO BID for 14 days and
- Give single dose azithromycin 1g PO or ciprofloxacin 500mg PO BID for 3 days or erythromycin 500mg PO QID for 7 days.
  - If penicillin allergic and pregnant/breastfeeding, give ceftriaxone 1g IM daily for 8-10 days.
  - If penicillin allergic, do baseline RPR. Advise patient to return for repeat RPR in 6 and 12 months. If RPR positive after 12 months, refer.
- If vaginal/urethral discharge, also treat patient and partner/s for **gonorrhoea** (chlamydia already covered for above): give single dose ceftriaxone[2] 250mg IM.

No

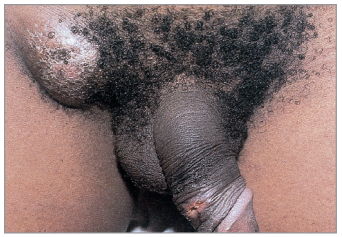
Check if patient also has hot tender swollen inguinal nodes (discrete, movable and rubbery).

No

If no better after 7 days, refer.

Yes

Also treat patient and partner/s for **lymphogranuloma venereum**:
- Give ciprofloxacin 500mg PO BID for 3 days *and* doxycycline 100mg PO BID for 14 days. If pregnant/breastfeeding, give instead erythromycin 500mg PO QID for 14 days.
- If fluctuant lymph node (hernia and aneurysm excluded), aspirate pus through healthy skin in sterile manner every 3 days as needed. Avoid making incisions.
- Review after 14 days. If no better, refer.



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[1]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and refer.

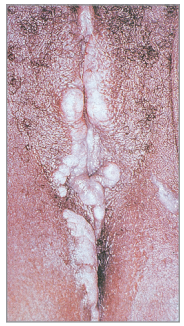
Other genital symptoms

First assess and advise patient and partner/s ⮌36.

Lumps

Genital warts

- Test for syphilis. If positive ⮌41.
- Choose treatment based on availability and/or patient choice.
- Patient administered:
  - Apply **imiquimod 5%** cream directly to warts. Wash off after 6-10 hours. Apply 3 times weekly for 16 weeks.
  - Alternatively, apply **podophyllotoxin 0.5%** cream BID for 3 days followed by 4 days of no treatment. Repeat cycle up to 4 times.
- Provider administered:
  - Apply Vaseline® to surrounding normal skin and then apply **trichloroacetic acid 30-90%** solution directly to warts weekly until wart resolves.
  - Alternatively, apply **podophyllin resin 10-25%** directly to warts. Wash after 1-4 hours. Repeat weekly until wart resolves.
- Do cervical screen.
- If warts > 1cm, multiple, in vagina or on cervix, pregnant or medications not available, refer.
- Reassure patient that most warts resolve spontaneously within 2 years.



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Molluscum contagiosum

- Papules with central dent
- Usually self-limiting and no treatment required.
- If HIV positive, should resolve with ART.
- If no response to treatment, refer.

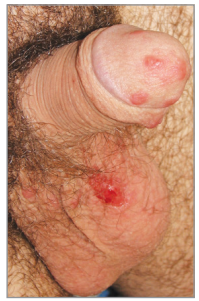
Itchy rash in pubic area

Pubic lice

- Treat patient and partner/s
- Apply thin film of **permethrin 1%** or **5%** cream to affected areas and adjacent hairy areas. Wash off after 10 minutes. Avoid mucous membranes, urethral opening and raw areas. Repeat after 7 days if needed.
- Wash all clothes, sheets and blankets in very hot water.
- Iron all clothing
- Shave pubic area

Scabies

- Treat patient, partner/s and household contacts
- Apply **permethrin 5%** from the neck down. Wash off after 8-14 hours. Avoid mucous membranes, urethral opening and raw areas.
- Repeat after 1 week if needed.
- Wash clothes in hot water or iron clothes after normal wash.



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Cervical screening

- A cervical screen detects cervical abnormalities which occur before cancer develops. Cervical cancer is caused by certain types of human papilloma virus (HPV) which is usually transmitted sexually.
- Visual inspection with acetic acid (VIA) is the cervical screening method that is recommended at health centers and should be performed by trained personnel.
- Women who smoke are more likely to have cervical abnormalities. If patient smokes tobacco ⮌102. Support patient to change ⮌125.
- If HIV-negative and asymptomatic, do a cervical screen from age 30, then 5 yearly if the result is normal till age 49.
- If HIV-positive and asymptomatic, do a cervical screen at HIV diagnosis (regardless of age), then 5 yearly if the result is normal.
- No screening needed if age ≥ 50, > 30 weeks pregnant or previous total hysterectomy for benign case.

Manage according to VIA:

- If normal: arrange repeat VIA after 5 years.
- If VIA abnormal, treat with cryotherapy using double freeze (3 minutes freeze, 5 minutes defrost, 3 minutes freeze) technique.
- After treatment, continue screening every year.
- If suspicious of cancer, refer same week.

Inform patient of symptoms of cervical cancer (abnormal vaginal bleeding, vaginal discharge, postcoital/contact bleeding) and advise her to return should they occur.

Positive syphilis result

Approach to the patient with a positive RPR result
First assess and advise the patient and his/her partner/s ⮌36.

Is previous RPR result available?

No

Does patient have a genital ulcer or signs of secondary syphilis[1]?

No

- Treat for **late syphilis**:
  - Give benzathine benzylpenicillin 2.4MU IM weekly for 3 weeks.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg PO BID for 28 days.
  - If penicillin allergic and pregnant/breastfeeding, give instead erythromycin 500mg PO QID for 30 days.
- Repeat RPR in 6, 12 and 24 months. If positive RPR at 24 months, refer.
- Treat partner/s ⮌36.

Yes

- Treat for **early syphilis**:
  - Give single dose benzathine benzylpenicillin 2.4MU IM.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg PO BID for 14 days.
  - If penicillin allergic and pregnant/breastfeeding, give instead ceftriaxone 1g IM daily for 8-10 days.
- Repeat RPR in 6 and 12 months. If RPR positive at 12 months, refer.
- Treat partner/s ⮌36.

Yes

Is there a negative RPR from the last 2 years?

Yes

- Treat for **early syphilis**:
  - Give single dose benzathine benzylpenicillin 2.4MU IM.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg PO BID for 14 days.
  - If penicillin allergic and pregnant/breastfeeding, give instead ceftriaxone 1g IM daily for 8-10 days.
- Repeat RPR in 6 and 12 months. If RPR positive at 12 months, refer.
- Treat partner/s ⮌36.

No

- Treat for **late syphilis**:
  - Give benzathine benzylpenicillin 2.4MU IM weekly for 3 weeks.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg PO BID for 28 days.
  - If penicillin allergic and pregnant/breastfeeding, give instead erythromycin 500mg PO QID for 30 days.
- Repeat RPR in 6, 12 and 24 months. If RPR positive at 24 months, refer.
- Treat partner/s ⮌36.

Manage the newborn of the RPR positive mother:

- If baby well and mother fully treated > 1 month before delivery: give single dose benzathine benzylpenicillin 50 000 units/kg IM.
- If signs of congenital syphilis[2], or mother not fully treated or treated < 1 month before delivery, refer to hospital.

[1]The signs of secondary syphilis occur 4-8 weeks after the primary ulcer and include a generalized rash (including palms and soles), flu-like symptoms, flat wart-like genital lesions, mouth ulcers and patchy hair loss. [2]Signs of congenital syphilis are rash (red/blue spots or bruising especially on soles and palms), jaundice, pallor, distended abdomen, swelling, low birth weight, runny nose/respiratory distress, hypoglycaemia.

Abnormal vaginal bleeding (AVB)

Give urgent attention to the patient with vaginal bleeding and one or more of:

- Pregnant →112
- BP < 90/60
- Postpartum →116.
- Following miscarriage/abortion →112
- Pallor with pulse ≥ 100, respiratory rate > 30, dizziness/faintness or chest pain

Management:

- If BP < 90/60, give normal saline 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

Approach to the patient with abnormal vaginal bleeding not needing urgent attention

- Do a bimanual palpation for pelvic masses, a speculum examination to visualise cervix and a cervical screen ↩40. If abnormal, refer.
- If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ↩119. If new bleeding occurs > 1 year after final period, refer same week.
- If patient is not menopausal determine the type of bleeding problem:

Heavy regular bleeding (interferes with quality of life) or clots or bleeding > 7 days each period

Has the patient been bleeding elsewhere (gums, easy bruising, purple rash)?

Yes

- Check complete blood count.
- Refer to hospital same week.

No

- If Hb ≤ 12g/dL, give ferrous sulphate 200mg (65mg elemental iron) 1 tablet PO TID until 3 months after Hb reaches 12g/dL.
- Give combined oral contraceptive: ethinylestradiol/levonorgestrel 30/150mcg for 3 cycles ↩110.
- If combined oral contraceptive contraindicated (heart disease, thrombo-embolic conditions, liver disease, migraine headache, genital tract cancer), or pregnancy desired, give instead ibuprofen 400mg PO TID with food for 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If on injectable contraceptive or subdermal implant: reassure (common in first 3 months). If bleeding persists, give combined oral contraceptive or ibuprofen as above.
- Refer the patient:
  - Same week if mass in abdomen
  - If no better after 3 months on treatment
  - If excessive bleeding after IUD insertion

Periods have irregular pattern (< 21 days or > 35 days between periods)

- If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, refer to hospital.
- Give combined oral contraceptive: ethinylestradiol/levonorgestrel 30/150mcg for 6 months.
- If pregnancy desired, refer instead.

Bleeding after sex

- Assess for STI ↩36.
- If assault or abuse ↩66.

Spotting between periods

- Assess for STI ↩36.
- If on hormonal contraceptive, manage according to method:

Oral contraceptive:

- Ensure correct use.
- If ≥ 2 days diarrhoea/vomiting, advise condom use (continue for 7 days once diarrhoea/vomiting has resolved).
- If on ART, rifampicin or phenytoin, change to injection/IUD.
- If on ethinylestradiol/levonorgestrel 30/150mcg, change to ethinylestradiol/norethisterone 35mcg/1mg for 3 cycles.

Injectable contraceptive or subdermal implant:

- Reassure (common in first 3 months).
- If bleeding persists, give combined oral contraceptive: ethinylestradiol/levonorgestrel 30/150mcg for 3 cycles.
- If combined oral contraceptive contraindicated (heart disease, thrombo-embolic conditions, liver disease, migraine headache, genital tract cancer), give instead ibuprofen 400mg PO TID with food for 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).

Refer the patient within 2 weeks if:

- Unsure of diagnosis
- Bleeding > 1 week after STI treatment, or after diarrhoea/vomiting stop
- Bleeding persists after 3 months on treatment.
- Abnormal cervix on speculum examination (suspicious of cancer)

Sexual problems

Ask about problems getting or maintaining an erection, pain with sex, painful ejaculation or loss of libido:

Problems getting or maintaining an erection

Does patient often wake with an erection in the morning?

Yes

- Assess and manage stress ↩65.
- Ask about relationship problems, anxiety/ fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If sexual assault or abuse ↩66.
- In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ↩99.
- Discuss condom use. Ensure patient knows how to use condoms correctly.

No

- Assess and manage CVD risk ↩84.
- Review medication: propranolol, atenolol, hydrochlorothiazide, spironolactone, fluphenazine decanoate, fluoxetine and amitriptyline can cause sexual problems. Consider changing medication.
- Screen for substance use/ abuse: In the past year, has patient: 1) drunk ≥ 4 drinks[1]/ session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.
- If patient smokes tobacco ↩102. Support patient to change ↩125.
- Assess and manage stress ↩65.
- If no better once chronic condition/s stable and treatment optimised, refer.

Painful erection orejaculation

- If genital symptoms ↩36.
- If urinary symptoms ↩44.
- Review medication: herbal medication, antidepressants and schizophrenia treatment can cause painful ejaculation. Consider changing medication.
- If no cause found or painful ejaculation or erection continues, refer.

Pain with sex (vaginal)

Is the pain superficial or deep?

Superficial pain

- If genital symptoms ↩36.
- If urinary symptoms ↩44.
- Ask about vaginal dryness:
  - If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping ↩119.
  - Review medication: oral or injectable contraceptive, antidepressants and hypertension treatment can cause vaginal dryness. Consider changing medication.
- Advise patient to use lubricant during sex. Ensure it is condom- compatible, avoid using petroleum jelly with condoms.

Deep pain

- If genital symptoms ↩36.
- Refer if:
  - Heavy, painful or prolonged periods
  - Infertility
  - Abdominal/pelvic mass

- Assess and manage stress ↩65.
- If sexual assault or abuse ↩66.

Loss of libido

Ask if pain with sex or if problem with erections. Assess and manage in adjacent columns.

- Assess and manage stress ↩65.
- Review medication: phenytoin, metoprolol, hydrochlorothiazide, spironolactone, chlorpromazine, fluphenazine decanoate, risperidone, fluoxetine, amitriptyline and lopinavir/ ritonavir can cause loss of libido. Consider changing medication.
- In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ↩99.
- Screen for substance use/abuse: In the past year, has patient: 1) drunk ≥ 4 drinks[1]/ session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.
- Ask about relationship problems, anxiety/ fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If woman > 40 years, screen for menopause ↩119.
- If sexual assault or abuse ↩66.
- Assess the patient's contraception needs ↩110.

If sexual problems do not improve, refer to hospital.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Urinary symptoms

Give urgent attention to the patient with urinary symptoms and one or more of:

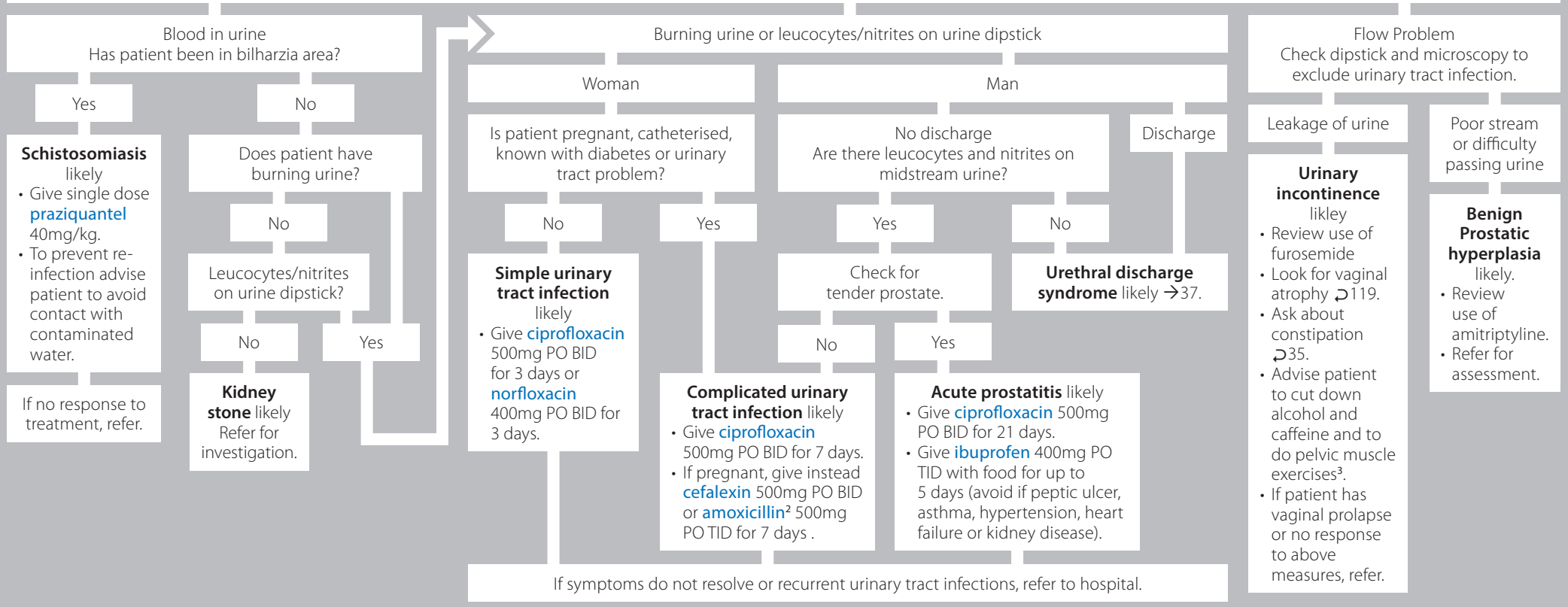
- Unable to pass urine with lower abdominal discomfort/distention
- Flank pain with leucocytes/nitrites on urine dipstick and any of: vomiting, BP < 90/60, pulse ≥ 100, temperature > 39°C, pregnant, ≥ 60 years or chronic illness: **complicated pyelonephritis** likely.

Manage and refer urgently:

- If unable to pass urine, insert urinary catheter.
- If **complicated pyelonephritis** likely, give ceftriaxone[1] 1g IV/IM. If **pyelonephritis not complicated**, treat below. If unsure about diagnosis or severe pain, refer. If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

Approach to the patient with urinary symptoms not needing urgent attention

- If **pyelonephritis not complicated**: send urine for microscopy. Give ciprofloxacin 500mg PO BID for 10 days and paracetamol 1g PO QID. If no better after 2 days, refer.
- Ask about blood in urine, burning urine and flow problem. Check urine dipstick.



[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria) and able to take orally, give instead ciprofloxacin 500mg PO (avoid if pregnant). [2]If penicillin allergic give instead co-trimoxazole 960mg PO BID for 7 days. [3]Repeated contraction and relaxation of pelvic floor muscles.

Body/general pain

Approach to the patient who aches all over

- Check temperature and weight.
- Ask about a sore throat, runny/blocked nose or fever in the past 3 days.
- If on ART, check for urgent side effects ⮌80.

Normal

Screen for a joint problem: ask patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.

- If temperature ≥ 38°C or fever in the past 3 days →17.
- If weight loss ≥ 5% of body weight in past 3 months →16.
- If sore throat →27.
- If runny/blocked nose →26.

Unable to do all actions comfortably

Able to do all actions comfortably

Examine the joints.

Joints are warm, tender, swollen, have limited movement.

Arthritis likely →107

Joints are normal.

- Test for HIV ⮌75.
- Assess and manage stress ⮌65.
- Review patient's medication. If on simvastatin or lovastatin and muscle pain/cramps and weakness, refer to hospital.
- If patient is terminally sick and survival is predicted to be short, give palliative care →120.
- Ask about duration of pain:

< 3 months

- Give paracetamol 1g PO QID as needed for up to 5 days.
- Advise patient to return if no better after 2 weeks.

≥ 3 months

- Give paracetamol 1g PO QID as needed for up to 5 days. Advise to avoid long term regular use.
- Check ESR ,urine protein, blood glucose and Hb.
- If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance: **hypothyroidism** likely. Refer to hospital.

Results all normal

- Assess and manage stress →65.
- Consider **fibromyalgia** →109.

Any result abnormal

Refer for further assessment.

Joint symptoms

Give urgent attention to the patient with a joint symptom and:
- Short history of single warm, swollen, extremely painful joint with limited range of movement

Management:
- If recent trauma, immobilise and if available arrange x-ray.
- If known with gout, manage as **acute gout** →108.
- Refer urgently.

Approach to the patient with a joint symptom not needing urgent attention

Check if problem is in the joint: patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.

Able to do all actions comfortably

Joint problem unlikely

- If generalised body pain →45.
- If back pain →47.
- If neck pain →48.
- If arm symptoms →48.
- If leg symptoms →49.
- If foot symptoms →50.

Unable to do all actions comfortably

Has there been recent trauma?

No

Ask about duration of joint pain

< 6 weeks
Recent genital discharge or painless non-itchy skin rash?

Yes

Gonococcal arthritis likely
- Usually involves wrists, ankles, hand and feet.
- Refer patient same day.
- Treat patient's partner/s as for cervicitis/male urethritis ↩36.

No

Sudden onset of 1-3 warm, extremely painful, red, swollen joints (often big toe or knee)?

No

- Give paracetamol 1g PO QID as needed for up to 5 days. If no response, give ibuprofen 400mg PO TID with food as needed (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Test for HIV ↩75.
- Review after 1 month or sooner if joint pain worsens. If worsens, refer.

Yes

Acute gout likely →108

≥ 6 weeks

Chronic arthritis likely →107

Yes

Musculoskeletal sprain/strain likely
- Rest and elevate joint.
- Apply ice.
- Apply pressure bandage.
- Give paracetamol 1g PO QID as needed for up to 5 days. If no response, give ibuprofen 400mg PO TID with food as needed for up to 7 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Advise patient to mobilise joint after 2-3 days, if not too painful.
- Advise to avoid traditional practices like massage.
- Review after 1 week: if no better, refer and if available arrange x-ray.

Back pain

Give urgent attention to the patient with back pain and one or more of:

- Bladder or bowel disturbance - retention or incontinence
- Numbness of buttocks, perineum or legs
- Leg weakness or difficulty walking
- Recent trauma and x-ray unavailable or abnormal
- Sudden severe upper abdominal pain with nausea/vomiting: **pancreatitis** likely
- Any palpable abdominal mass
- If flank pain or fever, check urine dipstick:
  - If leucocytes/nitrites, **pyelonephritis** likely. If also vomiting, BP < 90/60, pulse ≥ 100, temperature > 39°C, pregnant, ≥ 60 years or chronic illness: **complicated pyelonephritis** likely
  - If blood with sudden, severe, one-sided pain radiating to groin: **kidney stone** likely

Management:

- If **pancreatitis** likely: give Ringer's lactate 1L IV rapidly regardless of BP, then give 1L 4 hourly. Stop if breathing worsens.
- If abdominal mass: if ruptured abdominal aortic aneurysm suspected avoid giving IV fluids as raising blood pressure may worsen rupture even if BP < 90/60
- If **complicated pyelonephritis** likely: give ceftriaxone[1] 1g IV/IM. If **pyelonephritis not complicated**: →44. If unsure about diagnosis or severe pain, refer. If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **kidney stone** likely: give normal saline 1L IV 6 hourly and ibuprofen[2] 800mg PO.
- Refer urgently.

Approach to the patient with back pain not needing urgent attention

- If **pyelonephritis not complicated**: send urine for microscopy, culture, sensitivity. Give ciprofloxacin 500mg PO BID for 10 days and paracetamol 1g PO QID as needed. If no better after 2 days, refer same day.
- Does patient have any of: cough, weight loss, night sweats or fever?

Yes

Exclude TB
⮌71 *and*

- If available, do back x-ray.
- Check ESR.
- Refer to hospital.

No

Any of: > 50 years, pain progressive or for > 6 weeks, previous cancer, back surgery or trauma, osteoporosis, oral steroid use, HIV, IV drug use or deformity?

Yes

No

Any of: < 40 years, sleep disturbed by pain, pain better with exercise, does not get better with rest?

No

Mechanical back pain likely

- Measure waist circumference: if > 80cm (woman) or > 94cm (man) assess CVD risk ⮌84.
- Assess and manage stress ⮌65.
- Reassure patient that back pain is very common, normally not serious and will get better on its own.
- Advise patient to be as active as possible, continue normal activity and avoid resting in bed.
- Advise patient that regular exercise may prevent recurrence of back pain.
- Give diclofenac[2]/misoprostol 50mg/200mg PO BID or ibuprofen[2] 400mg PO TID with food for up to 5 days *or* paracetamol 1g PO QID as needed for up to 5 days .
- If degenerative disc disease, consider indomethacin[1] 25mg PO or 100mg PR BID.
- If pain persists > 4 weeks or unable to cope with daily activities, refer for physiotherapy.
- If pain persists > 6 weeks, do back x-ray if available and refer to hospital.
- If bladder/bowel disturbance, numbness or weakness develops, refer urgently.

Yes

Inflammatory back pain likely

- If available, do back x-ray
- Check ESR.
- Refer to hospital.

Unsure

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid ceftriaxone and refer. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Neck pain

Give urgent attention to the patient with neck pain and one or more of:

- Neck stiffness/meningism and temperature ≥ 38°C: give ceftriaxone[1] 2g IV/IM or crystalline penicillin[1] 4M IU IV with chloramphenicol 500mg IV.
- Neurological symptoms in arms/legs: weakness, numbness, clumsiness, stiffness, change in gait or difficulty with co-ordination
- Recent trauma and x-ray unavailable/abnormal x-ray, or neurological symptoms: immobilise neck with rigid collar and sandbags/blocks on either side of head.

Management

- Refer urgently.

Approach to the patient with neck pain not needing urgent attention

Any of: < 20 years, > 55 years, pain progressive or for > 6 weeks, previous cancer/TB/neck surgery, osteoporosis, oral steroid use, HIV, diabetes, IV drug use or unexplained weight loss/fever?

Yes

- Arrange cervical spine x-rays if available.
- Check ESR and refer to hospital.

No

- Give paracetamol 1g QID PO as needed for up to 5 days.
- If no arm pain, refer to hospital for physiotherapy.
- If no response after 6 weeks, weakness/numbness in arm or hand develops or pain worsens, do cervical spine x-rays if available and refer.

Arm symptoms

Check if problem is in the joint: patient to place hands behind head; then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. If unable to do all actions comfortably →46.

Give urgent attention to the patient with arm symptoms and one or more of:

- Arm pain with chest pain →28.
- Recent trauma with pain and limited movement: immobilise, arrange x-ray if available and refer.
- If arm/hand cold, pale, decreased pulses or numb or open fracture, refer urgently.
- If new sudden weakness of arm, may have difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.

Approach to the patient with arm symptoms not needing urgent attention

Painful shoulder

Referred pain likely
Ask about neck pain (see above), cough/difficulty breathing →29, abdominal pain →32, pregnancy →112.

Wrist/hand pain: intermittent, worse at night, relieved by shaking. May be numbness/tingling in 1st, 2nd and 3rd fingers or weakness of hand.

Carpal tunnel syndrome likely
Refer.

Elbow pain with or after elbow flexion/extension. May have decreased grip strength.

Tennis or Golfer's elbow (**medial/lateral epicondylitis**) likely
- Advise patient to apply ice to elbow and rest arm.
- Give ibuprofen[2] 400mg PO TID with food for 10 days.
- If no better after 6 weeks or worsens, refer.

Pain at base of thumb worsened by thumb or wrist movement or catching/locking of finger

Tenosynovitis of hand/wrist likely
- Rest and splint joint.
- Give ibuprofen[2] 400mg PO TID with food for up to 14 days.
- If no better after 6 weeks or worsens, refer.

[1]If severe penicillin allergy with previous angioedema, anaphylaxis or urticaria, give chloramphenicol only and refer. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Leg symptoms

- Check if problem is in the joint: ask patient to walk. Sit and stand up with arms folded. If unable to do all actions comfortably →46.
- If the problem is also in the foot →50.

Give urgent attention to the patient with leg symptoms and one or more of:

- Unable to bear weight following injury ⮌14.
- Swelling and pain in one calf: **deep venous thrombosis** likely, especially if BMI > 30, smoker, immobile, pregnant, on oestrogen, leg trauma, recent hospitalisation, TB or cancer
- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Muscle pain in legs or buttocks on exercise associated with pain at rest, gangrene or ulceration: **critical limb ischaemia** likely

Management:

- Refer same day.

Approach to the patient with leg symptoms not needing urgent attention

- If constant burning pain, pins/needles or numbness of legs and feet that is worse at night, **peripheral neuropathy** likely →50
- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, refer to hospital.
- Is there leg swelling?

No

Pain in buttock radiating down back of lower leg

Irritation of sciatic nerve likely

- Give paracetamol 1g PO BID and ibuprofen[1] 400mg PO TID with food only as needed for up to 1 month (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Advise patient to be as active as possible, continue normal activity and avoid resting in bed.
- Advise patient to return and refer same day if:
  - Retention or incontinence of urine or stool
  - Numbness of buttocks, perineum or legs
  - Leg weakness
  - Difficulty walking
- If no better after 1 month, refer.

Muscle pain in legs or buttocks on exercise that is relieved by rest

Peripheral vascular disease likely →96.

Yes

Both legs swollen
Is there difficulty breathing worse on lying flat?

Yes

Heart failure likely →91.

No

- If pregnant →112.
- Check for kidney disease on urine dipstick: if blood or protein, refer to hospital.
- If weight loss and MUAC < 21cm, **malnutrition** likely ⮌70.
- If none of the above or unsure, refer to hospital.

One leg swollen

Has there been a recent injury?

Yes

Musculoskeletal sprain/strain likely

- Ensure patient can bear weight on leg, otherwise refer same day.
- Rest and elevate leg.
- Apply ice.
- Apply pressure bandage.
- Advise patient to mobilise leg after 2-3 days, if not too painful.
- Give paracetamol 1g PO QID for up to 5 days or give ibuprofen[1] 400mg PO TID with food up to 7 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Review after 1 week: if no better, refer to hospital.

No

Examine skin: are there any painful areas, ulcers, lumps or changes in skin colour?

Yes

→53

No

Check for groin lump/s.

Yes

→18

No

Refer same week.

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Foot symptoms

Check if problem is in the joint: ask patient to walk. Sit and stand up with arms folded. If unable to do all actions comfortably →46.

Give urgent attention to the patient with foot symptoms and one or more of:

- Unable to bear weight following injury ⮌14.
- Sudden severe foot pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Muscle pain in legs or buttocks on exercise associated with foot pain at rest, gangrene or ulceration: **critical limb ischaemia** likely
- On ART and symptoms rapidly worsening over a few weeks, sensation decreased, and/or arms involved: stop ART

Management:

- Refer same day.

Approach to the patient with foot symptoms not needing urgent attention

Generalised foot pain

Constant burning pain, pins/needles or numbness of feet worse at night

Peripheral neuropathy likely

- Test for HIV ⮌75. If HIV positive, give routine care ⮌76.
- Exclude diabetes ⮌86.
- Give amitriptyline 10-75mg at night and paracetamol 1g PO QID. If no response, add ibuprofen 400mg PO TID with food up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer same week if one-sided, other neurological signs or loss of function.
- Check if patient is on IPT, TB treatment or ART:
  - If on IPT or TB treatment: give pyridoxine 75mg daily.

Foot pain with muscle pain in legs or buttocks

Peripheral vascular disease likely →96.

Localised pain

Ensure that shoes fit properly.

Heel pain, worse on starting walking

Plantar fasciitis likely

- Advise patient to avoid bare feet and to apply ice.
- If BMI > 25, assess CVD risk ⮌84.
- Give as needed: paracetamol 1g PO QID or ibuprofen 400mg PO TID with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer to hospital for physiotherapy.

Foot deformity

Bony lump at base of big toe; may have callus, redness or ulcer

Bunion likely

- Advise pain relief as needed: apply ice, give paracetamol 1g PO QID or ibuprofen 400mg PO TID with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Advise to wear comfortableshoes when possible.
- If severe pain, ulcer or other foot deformity refer.

In the patient with diabetes or PVD, identify the foot at risk. Review more frequently the patient with diabetes or PVD and one or more of:

- Skin: callus, corns, cracks, wet soft skin between toes ⮌55, ulcers ⮌59.
- Foot deformity: check for bunions (see above). If foot deformity, refer to hospital.
- Sensation: light prick sensation abnormal after 2 attempts
- Circulation: absent or reduced foot pulses

Advise the patient with diabetes or PVD to care for feet daily to prevent ulcers and amputation

- Inspect and wash feet daily and carefully dry between the toes. Avoid soaking your feet.
- Moisten dry cracked feet daily with Vaseline®. Avoid moisturising between toes.
- Tell your health worker at once if you have any cuts, blisters or sores on the feet.
- Avoid walking barefoot or wearing shoes without socks. Change socks/stockings daily. Inspect inside shoes daily.
- Clip nails straight, file sharp edges. Avoid cutting corns/calluses yourself or chemicals/plasters to remove them.
- Avoid testing water temperature with feet or using hot water bottles or heaters near feet.

Burn/s

Give urgent attention to the patient with burn/s:

Give facemask oxygen if:
- Burns to face, neck or upper chest
- Cough, difficulty/noisy breathing or hoarse voice: **inhalation burn** likely
- Patient drowsy or confused
- Oxygen saturation < 90%
- Percentage total body surface area (%TBSA burnt) > 15%

Remove any sources of heat:
- Remove burnt or hot clothing. Immerse burnt skin in cool water or apply cool, wet towels for 30 minutes.
- Cover patient with clean, dry sheet to prevent hypothermia.

Calculate size and depth of burn:
- Calculate percentage total body surface area (%TBSA) burnt using adjacent guide.
- If red, blistered, painful, wet: **partial thickness burn** likely
- If white/black leathery, painless, dry: **full thickness burn** likely

Assess and manage fluid needs if %TBSA burnt >10%:
- Insert a large-bore IV line in area away from burned skin. If > 15 %TBSA or deep/electrical , insert a second IV line.
- Give Ringer's lactate IV:
  - Calculate total volume needed over next 24 hours (mL) = %TBSA burnt x weight(kg) x 4
  - Give half this volume in the first 8 hours after burn. Calculate the hourly volume (mL) = total volume ÷ 2 ÷ 8
- Insert a urine catheter and document urine output every hour.

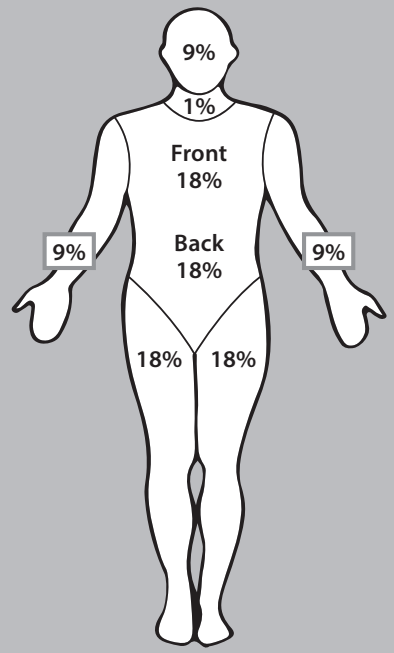
Give medication:
- If pain severe, give tramadol 100mg IV/IM. If pain not severe, give paracetamol 1g PO QID.
- Give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[1]: if no reaction, give single dose TAT 3000U SC. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe. If unavailable, refer to hospital.

Give wound care:
- Do not rupture blisters.
- Cover burn with a non-adherent dressing or wrap in clean, dry sheet and blanket. Keep as sterile as possible.

Refer same day the patient with any of:
- Burn covering > 10% TBSA
- Burn involves face/neck/hands/feet/genitals/joint
- Inhalation/electric/chemical burn
- Full-thickness burn of any size
- Circumferential burn of limbs/chest
- Other injuries

- While awaiting transport, monitor vital signs: BP, pulse, respiratory rate, oxygen saturation, level of consciousness and urine output.
- Write a referral letter and include details of how burn occurred, vital signs, fluid calculation, details of fluid and other medications given.
- Review daily below if not needing same day referral.

Calculate % total body surface area (TBSA):
- Head 9%
- Neck 1%
- Front 18%
- Back 18%
- Each arm 9%
- Each leg 18%



Review daily the patient with a burn not needing same day referral:
- Clean with water and mild soap. Dress wound daily: apply silver sulfadiazine 1% cream and cover with non-adherent dressing. Check for infection (red, warm, painful, swollen, smelly or pus).
- Give paracetamol 1g PO QID as needed for up to 5 days. If increased pain/anxiety with dressing changes, give tramadol 100mg IM while changing dressing.
- Refer if signs of infection, pain despite medication or burn not healed within 2 weeks.

[1]Inject 0.1mL TAT SC and 0.1mL normal saline at separate site as control: if wheal with redness develops around TAT site, skin test positive. Refer to hospital.

Bites and stings

Give urgent attention to the patient with a bite/sting and one or more of:

- **Snake bite** (even if bite marks not seen)
- Sudden diffuse rash or face/tongue swelling with difficulty breathing, BP < 90/60 or collapse: **anaphylaxis** likely
- Weakness, drooping eyelids, difficulty swallowing and speaking, double vision
- Animal/human bite with any of: multiple bites, deep/large wound, loss of tissue, involving joint/bone, temperature ≥ 38°C or pus
- BP < 90/60
- Excessive or pulsatile bleeding

Management:

- **If snake bite:**
  - Reassure patient.
  - Remove jewellery and immobilise bitten limb. Avoid applying tourniquet or trying to suck out venom.
  - Discuss anti venom with doctor if available.
- **If anaphylaxis likely:**
  - Raise legs and give face mask oxygen.
  - Give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
  - Give normal saline 1-2L IV rapidly, regardless of BP. Then if BP < 90/60, also give fluids as below.
  - Remove stinger.
- If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- Remove loose/dead skin and clean wound with soap and water. Irrigate under pressure with normal saline for 15 minutes. Avoid suturing the wound.
- Give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[1]: if no reaction, give single dose TAT 3000U SC. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe. If unavailable, refer to hospital.
- Refer urgently.

Approach to the patient with a bite/sting not needing urgent attention

Human or animal bite/s

- Remove loose/dead skin and clean wound with soap and water. Irrigate under pressure with normal saline for 15 minutes. Avoid suturing the wound.
- Consider rabies risk if bite/scratch or licking of eyes/mouth/broken skin by a dog, feral cat, hyena, rat or other animal or any contact with bat:
  - Clean wound thoroughly with povidone iodine or hydrogen peroxide or chlorhexidine solution.
  - Give rabies vaccine 1 ampoule IM into shoulder/upper arm muscle immediately and repeat on day 3. If patient unimmunised or unsure, repeat vaccine on day 7 and 14 and if impaired immunity[1], also give a 5th dose on day 28. If unavailable, refer to hospital.
  - If patient unimmunised, also give rabies immunoglobulin 20 units/kg immediately. Inject most into wound, and the rest IM at a distant site.
- If impaired immunity[2] or bite is deep, infected, involves hand/head/neck/genitals or bite from cat or human: give amoxicillin/clavulanate[3] 500/125mg PO TID and metronidazole[4] 500mg PO TID for 7 days.
- If human bite has broken the skin, also assess need for HIV and hepatitis B post-exposure prophylaxis ↩68.
- Give paracetamol 1g PO QID as needed for up to 5 days.
- If bite infected and no response to antibiotics, refer.

Insect/spider/scorpion bite or sting

- Remove stinger. Clean wound with soap and water. Apply ice pack for pain/swelling.
- If itch and rash, give loratadine 10mg PO daily and ranitidine 150mg PO daily for 3 days. If no response, give prednisolone 60mg PO daily for 5 days.
- If pain, give ibuprofen[5] 400mg PO TID with food for up to 5 days.
- If very painful scorpion sting, inject lidocaine 2% 2mL around site.

Give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[1]: if no reaction, give single dose TAT 3000U SC.
If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe. If unavailable, refer to hospital.

[1]Inject 0.1mL TAT SC and 0.1mL normal saline at separate site as control: if wheal with redness develops around TAT site, skin test positive. Refer to hospital. [2]Known with HIV, diabetes, cancer,pregnancy or receiving chemotheraphy or corticosterroid. [3]If penicillin allergy give instead clindamycin 300mg QID and cotrimoxazole 160/800mg BID for 7 days. [4]Advise no alcohol until 24 hours after last dose of metronidazole. [5]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Skin symptoms

Give urgent attention to the patient with skin symptoms and one or more of:

- Sudden diffuse rash or face/tongue swelling with difficulty breathing, BP < 90/60 or collapse: **anaphylaxis** likely
- Purple rash with fever, headache, neck stiffness/meningism, nausea/vomiting or confusion: **meningococcal disease** likely
- Extensive blisters
- If on abacavir, check for abacavir hypersensitivity reaction ⮌80.
- **Serious drug reaction** likely if on any medication and one or more of:
  - Temperature ≥ 38°C
  - BP < 90/60
  - Jaundice
  - Vomiting/abdominal pain/diarrhoea
  - Involves mouth, eyes or genitals
  - Blisters, peeling or raw areas

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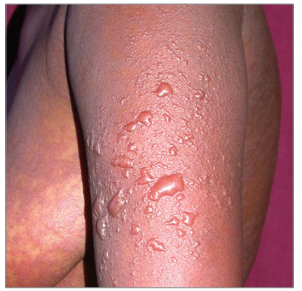

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Management:

- **Anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately adrenaline 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed. If no response, give hydrocortisone 100mg IV and promethazine 50mg IM.
  - Give normal saline 1-2L IV rapidly, regardless of BP.
- **Meningococcal disease** likely: give ceftriaxone[1] 2g IV or crystalline penicillin[1] 4M IU IV with chloramphenicol 500mg IV.
- **Serious drug reaction** likely: stop all medication and refer urgently. If peeling or raw skin, also manage as for burns before referral ⮌51.
- If BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

Approach to the patient with skin symptom/s not needing urgent attention

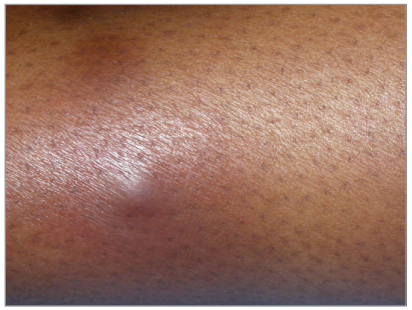
- Pain → 54
- Itch
  - No rash → 55
  - Rash
    - Localised → 55
    - Generalised → 56
- Generalised, non-itchy rash → 57
- Lump/s → 58
- Ulcers → 59
- Crusts → 59
- Changes in skin colour → 60

If rash is extensive, recurrent or difficult to treat, test for HIV ⮌75.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), give chloramphenicol only and refer.

Painful skin

Firm, red, warm lump which softens in the centre to discharge pus



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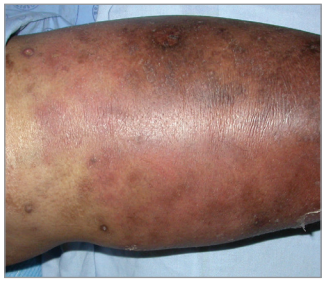
Furuncle/carbuncle/boil/abscess likely

- Advise patient to wash with soap and water, keep nails short, and avoid sharing clothing or towels.
- If fluctuant, incise and drain.
- If multiple lesions, extensive surrounding infection or impaired immunity[1], give **cloxacillin** 500mg PO QID for 7 days. If penicillin allergic, give instead **erythromycin** 500mg PO QID for 7 days.
- Give **paracetamol** 1g PO QID as needed for up to 5 days.
- If recurrent boils or abscesses:
  - Test for HIV ⮌75 and diabetes ⮌86.
  - Wash once with **chlorhexidine 5%** solution from neck down.
- Refer if:
  - Difficult area to drain (face, genitals, hands)
  - No response to treatment within 2 days

Sudden swelling of skin with redness, pain and warmth
Are borders poorly or clearly defined?

Poorly-defined borders



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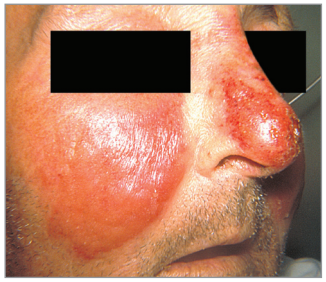
Cellulitis likely

- Give **cloxacillin** 500mg PO QID for 7 days. If penicillin allergic, give instead **erythromycin** 500mg PO QID for 7 days.
- Give **paracetamol** 1g PO QID as needed for up to 5 days.

Clearly-defined borders



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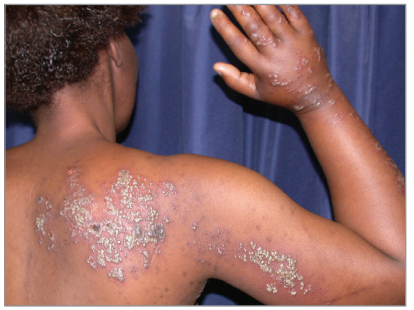
Erysipelas likely

- Give **cloxacillin** 500mg PO QID for 5 days. If penicillin allergic, give instead **erythromycin** 500mg PO QID for 5 days.
- Give **paracetamol** 1g PO QID as needed for up to 5 days.

- Refer if:
  - Temperature ≥ 38°C
  - BP < 90/60 or pulse > 100
  - Confused
  - Face or eye involvement
  - Blisters or grey/black skin
  - Poorly controlled diabetes or stage 4 HIV
  - No response to treatment within 2 days

Painful blisters in a band along one side



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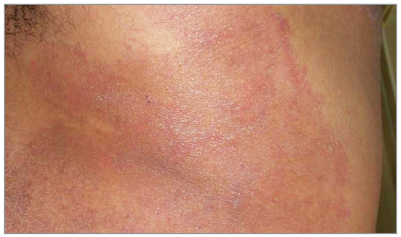
Herpes zoster (**shingles**) likely

- Test for HIV ⮌75.
- Advise to keep lesions clean and dry, and avoid skin contact with others until crusts have formed.
- Apply **calamine** lotion to rash 4 times a day as needed.
- Give **aciclovir** 800mg 5 times a day for 7 days if ≤ 3 days since onset of rash (or if ≤ 1 week since onset of rash if impaired immunity[1]).
- For pain:
  - Give **paracetamol** 1g PO QID for up to 5 days.
  - If needed add **tramadol** 50mg PO BID for 5 days.
  - If poor response or pain persists after rash has healed, give **amitriptyline** 25mg at night. Increase by 25mg every week to 75mg if needed.
- If infected, give **cloxacillin** 500mg PO QID for 7 days. If penicillin allergic, give instead **erythromycin** 500mg PO QID for 7 days.
- Refer same day if:
  - Eye, ear or nose involvement
  - Signs of meningitis (headache, temperature ≥ 38°C, neck stiffness/meningism)
  - Rash involves more than one region

[1]Known with HIV, diabetes or cancer or receiving chemotherapy or corticosteroids.

Itch with localised rash

Slow-growing ring-like patch/es with raised edge



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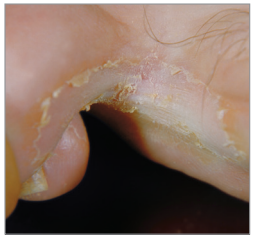
Tinea (**ringworm**) likely

- If extensive or involves nails, test for HIV ⮌75. If HIV positive, give routine care ⮌76.
- Advise to keep skin clean and dry and avoid sharing towels/clothes.
- Apply clotrimazole or ketoconazole cream twice a day. Use for 1 week after rash has cleared.
- If rash on scalp or no response to terbinafine, give griseofulvin 500mg daily until cured (up to 8 weeks) or fluconazole 200mg PO daily for 2-4 weeks.

Scaling moist lesions between toes or on soles of feet



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Tinea pedis (**Athlete's foot**) likely

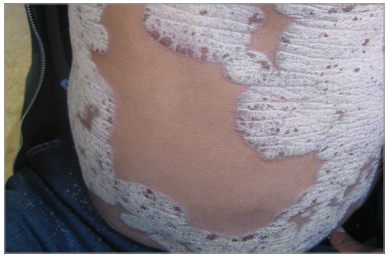
- Apply clotrimazole or ketoconazole cream twice a day. Continue for 1 week after rash has cleared.
- Advise to wash and dry feet well.
- Encourage open shoes/sandals.

Intense itch on scalp or in pubic area

Lice likely
Look for lice or eggs in hair and small red dots from bites.

- Apply malathion 1% lotion to scalp. Rinse after 2 hours. Repeat after 1 week.
- Soak all combs and brushes in permethrin for at least 2 hours.
- Wash clothes and linen in very hot water.
- Treat household contacts if infected or share a bed. If pubic lice, also treat sexual partners.

Well demarcated, pink, raised plaques covered with silvery scales, usually on elbows, knees, trunk and scalp



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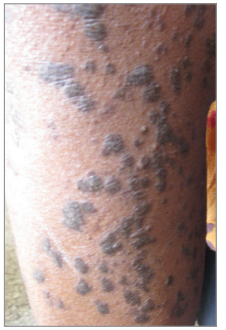
Psoriasis likely

- Apply betamethasone 0.1% ointment twice a day. For face, use hydrocortisone 1% cream only. Reduce to once a day when improvement seen. Stop as soon as better.
- Advise to avoid using soap and to moisturise skin 3 times a day.
- If extensive or no better after 1 month, refer.

Itchy flat purple papules/plaques



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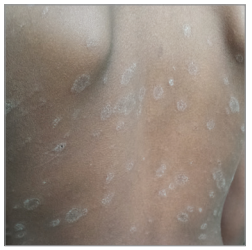
Lichen Planus likely

- Apply liquid paraffin once daily.
- Apply betamethasone ointment over the lesion once daily for 1-2 weeks.

Oval shaped plaques with scales at the edges over trunk, arms and thighs



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Pityriasis rosae likely

- Apply liquid paraffin once daily.
- Reassure patient that it should resolve within 3 weeks.
- If persists after 3 weeks, apply momethason ointment once daily for 1 to 2 weeks.

Itch with no rash

Confirm there is no rash, especially scabies, lice or other insect bites.
Is the skin very dry?

No
Did the patient start any new medications in the weeks before the itch started?

Yes
Medication side-effect likely

- Continue the medication only if no rash and treatment still necessary.
- For itch, give loratadine 10mg or cetirizine 10mg PO daily for 5 days.
- Advise patient to return immediately if rash develops.

No

- Advise to avoid hot baths and soap (wash with aqueous cream instead).
- Moisturise skin twice a day.
- Give loratadine 10mg or cetirizine 10mg PO daily for 5 days.
- If itch persists, refer

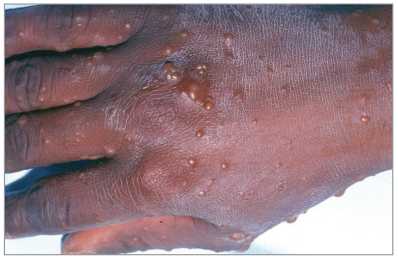
Yes

Dry skin (xeroderma) likely

- Advise to avoid soap (wash with aqueous cream instead).
- Moisturise skin twice a day.
- For itch, give loratadine 10mg or cetirizine 10mg PO daily.

Generalised itchy rash

Widespread, very itchy rash with burrows, in web-spaces of hands/feet, axillae and genitals. Especially itchy at night.



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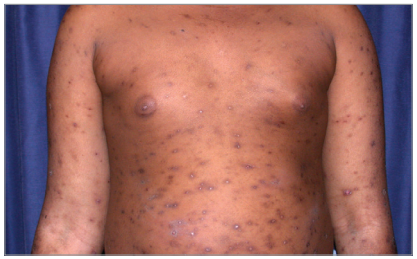
Scabies likely

- Apply permethrin 5% cream or benzyl benzoate 25% lotion or sulphur 5-10% ointment. Avoid eyes and mouth. Wash off after 12 hours. Repeat for 3 consecutive nights.
- Treat all household contacts and sexual partners at the same time, even if asymptomatic.
- Wash linen and clothing in very hot water and dry well.
- For itch, give loratadine 10mg or diphenhydramine 25-50mg PO daily until itch subsides.

Itchy bumps on extremities or lower trunk. Skin often remains hyperpigmented.



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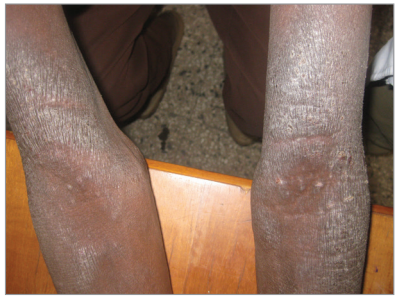
Papular pruritic eruption (PPE) likely

- Test for HIV ⮌75. If HIV positive, give routine care ⮌76.
- May temporarily worsen when starting ART.
- First treat for scabies in adjacent column.
- Moisturise skin twice a day.
- Apply betamethasone 0.1% cream twice a day. For face, use instead hydrocortisone 1% cream.
- For itch, give loratadine 10mg or cetirizine 10mg or diphenhydramine 25-50mg PO daily until itch subsides.

Itchy, thickened, hyperpigmented rash with associated allergic rhinitis, allergic conjunctivitis and other allergies.



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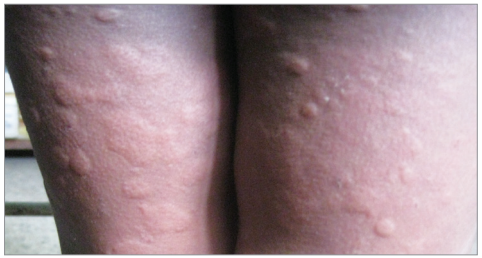
Eczema likely

- Moisturise skin twice a day and immediately after bathing.
- Avoid frequent bath with soap.
- Apply hydrocortisone 1% cream twice a day until improved (up to 4 weeks). If poor response, apply betamethasone 0.1% cream twice a day (avoid face).
- For itch, give loratadine 10mg or cetirizine 10mg or diphenhydramine 25-50mg PO daily until itch subsides.
- If infected, treat with cloxacillin 500mg PO QID for 7 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 7 days.
- If patient also has asthma, give routine asthma care ⮌82.

Very itchy, red, raised wheals that appear suddenly and usually disappear within 24 hours



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Urticaria likely
Commonly due to allergy to food/medication/insect sting

If sudden rash with difficulty breathing, BP < 90/60 or collapse, anaphylaxis likely →53.

Approach to the patient not needing urgent attention:

- Identify and remove cause.
- Give loratadine 10mg or cetirizine 10mg PO daily until rash resolved.
- If no response after 24 hours, give prednisolone 40mg PO daily for 5 days.
- Advise patient to return immediately if any symptoms of anaphylaxis occur.

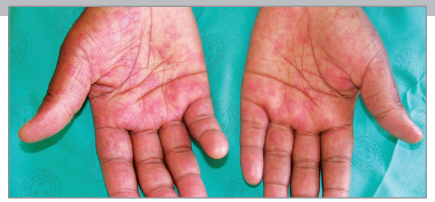
- If recently started new medication, check for drug reaction ⮌57.
- If no response to treatment, refer.

Generalised non-itchy red rash

Is patient taking any medication?

Yes

Drug reaction likely
- Rash may be mild, patchy spots or widespread (like burns).
- Can be caused by any medication. Common causes are antibiotics, anticonvulsants, antiretrovirals (especially nevirapine), TB medication, co-trimoxazole and NSAIDs (e.g. ibuprofen).



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Are there any markers of severity?
- Temperature ≥ 38°C
- BP < 90/60
- Difficulty breathing
- Face or tongue swelling
- Abdominal pain
- Vomiting or diarrhoea
- Involves mouth, eyes or genitals
- Blisters, peeling or raw areas
- Severe rash
- Jaundice

Yes

Manage as **serious drug reaction**
Stop all drugs and refer same day →53.

No

Is patient taking ART, TB treatment, co-trimoxazole or IPT?

Yes

- If on abacavir, check for hypersensitivity reaction ⮌80. If likely, stop ART and refer same day.
- If itchy, give loratadine 10mg PO daily and apply hydrocortisone 1% cream to rash twice a day.
- Check ALT and review result within 24 hours:

ALT ≥ 100U/L or patient unwell

→ Manage as **serious drug reaction**
Stop all drugs and refer same day →53.

ALT < 100U/L and patient well
- Continue medication.
- If on nevirapine:
  - If on once daily dose, avoid increasing until rash resolved.
  - Repeat ALT after 1 week. If ≥ 100U/L, refer same day.
  - If rash persists > 4 weeks after starting nevirapine, switch medication ⮌79.
- If on co-trimoxazole prophylaxis[1]: stop it until rash resolved. Consider re-starting co-trimoxazole or changing instead to dapsone 100mg daily.
- Review patient within 2 days.
- Advise patient to return urgently if markers of severity develop.
- If rash no better after 2 weeks, refer to hospital.

No

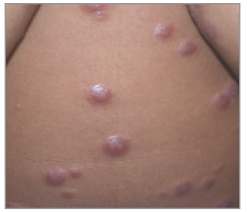
- If itchy, give loratadine 10mg or cetirizine 10mg PO daily and and apply hydrocortisone 1% cream to rash twice a day.
- Refer if:
  - Any markers of severity develop.
  - Rash does not improve within 2 weeks of stopping/ changing medication.

No

- Check patient does not need urgent attention ⮌53.
- If bleeding from gums or purple rash, do complete blood count and refer immediately.
- Patient may have fever, headache, lymphadenopathy, muscle pain.
- If pain or fever, give paracetamol 1g PO QID as needed for up to 5 days.
- Test for syphilis and HIV ⮌75.

Syphilis test positive

Secondary syphilis likely
Rash often on palms and soles.
May have wart-like lesions on genitals and patchy hair loss.



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Treat patient for **early syphilis** →41.

HIV negative

Rash may be part of HIV seroconversion illness.

- If risk of HIV infection in past 4 weeks, repeat HIV test after 4 weeks.
- Encourage patient to follow safe sex practices.

HIV positive

Give routine HIV care →76.

If no better after 1 week, refer.

If generalised non-itchy rash and no obvious cause, refer.

[1]If on co-trimoxazole treatment for pneumocystis pneumonia (PJP), toxoplasmosis or *Isospora belli* diarrhoea, refer to hospital.

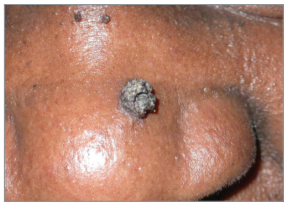
Skin lump/s

Refer same week the patient with a mole that:

- Is irregular in shape or colour
- Changed in size, shape or colour
- Differs from surrounding moles
- Is > 6mm wide
- Bleeds easily
- Itches

If painful, firm, red, warm lump which softens in the centre to discharge pus, **boil**/**abscess** likely →54.

Round, raised papules with rough surfaces



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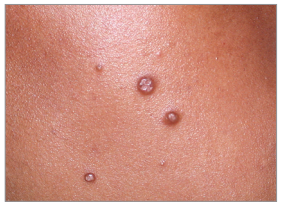
Warts likely

- Usually on hands, knees or elbows but can occur anywhere.
- Plantar warts on the soles of the feet are thick and hard with black dot/s.

- Reassure patient that warts often disappear spontaneously.
- If treatment desired, apply salicylic acid 5% 1-2 drops to wart every night and cover with a plaster.
- Advise patient to soak in warm water for 5 minutes then scrape wart with nail file between treatments.
- Continue to apply salicylic acid for a week after wart has come off.
- If warts are extensive, refer.

Small, skin-coloured bumps with pearly central dimples



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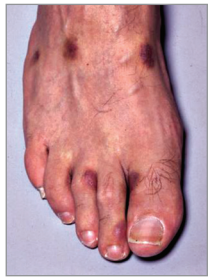
Molluscum contagiosum likely
May be extensive in HIV.

- Test for HIV ⮌75.
- Reassure patient that lesions may resolve spontaneously after several years or with ART.
- If intolerable, remove with curettage or apply podophyllum 15% for 4 hours, then wash off. Repeat podophyllum weekly for up to 6 weeks.
- If podophyllum not available, protect surrounding skin with petroleum jelly and apply KOH 5-10% solution with cotton tip applicator daily for 2-3 weeks.
- If extensive or no resolution after 4 years and intolerable for patient, refer.

Painless, purple/brown lumps on skin



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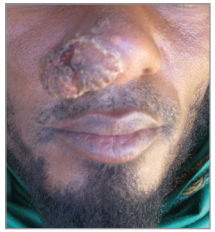
Kaposi's sarcoma likely
Lesions vary from isolated lumps to large ulcerating tumours and may also appear in mouth and on genitals.

- Test for HIV ⮌75. If HIV positive, give routine care and ART ⮌76.
- Refer for biopsy to confirm diagnosis and for further management.

Painless lumps on face and extremities with overlying scales or central ulcer



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Cutaneous leishmaniasis likely
Do slit skin smear microscopy and refer to leishmaniasis treatment center.

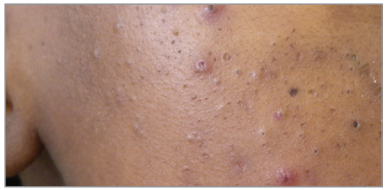
Red lumps on face

Dry skin with redness and visible vessels on face

Rosacea likely

- Advise to avoid aggravating factors.
- Apply zinc oxide ointment every morning.
- Give doxycycline[1] 100mg PO daily for 1 month or azithromycin 250mg PO 3 times a week for 6 weeks.
- Refer if no improvement or diagnosis uncertain.

Oily skin with white/blackheads



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Acne likely
May involve chest, back and upper arms

- Advise patient to wash skin with mild soap twice a day and to avoid picking, squeezing and scratching.
- Apply benzoyl peroxide 5% cream twice a day after washing. Continue for 2 weeks after lesions have gone. Avoid in pregnancy.
- If benzoyl peroxide not available, apply clindamycin 1% gel and tretinoin 0.025- 0.05% cream once daily.
- If red, swollen and extensive lesions over chest and back, also give doxycycline 100mg PO daily for at least 3 months. Doxycycline may interfere with oral contraceptive. Advise patient to use condoms as well. Avoid in pregnancy.
- In woman needing contraception, advise combined oral contraceptive ⮌110.
- Advise patient that response may take several weeks to months.
- If severe or no response after 6 months of treatment, refer.

[1]Avoid if pregnant.

Ulcers and crusts

Ulcer/s
Is patient usually in bed and is ulcer in common bedsore site (see below)?

No

Is ulcer on the leg or foot?

No

- If genital ulcer →39.
- If elsewhere on body and no obvious cause like trauma, refer to exclude skin cancer.

Yes

Check leg and foot pulses and if patient has muscle pain in legs or buttocks on exercise.

Pulses normal and no muscle pain in legs or buttocks on exercise

Is there red/brown darkening of skin around ulcer, spidery veins?

No

Does patient have diabetes ⮌86?

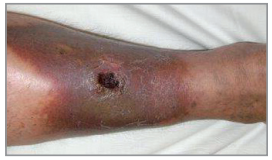
No

- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, exclude TB ⮌71.
- Refer for further assessment.

Yes

Diabetic ulcer likely
- Avoid pressure/weight-bearing on ulcer.
- Give foot care advice ⮌50.
- Clean ulcer daily and cover with non-adherent dressing.
- If infected (skin red, warm, painful), give erythromycin 500mg PO QID and ciprofloxacin[1] 500mg PO BID for 10 days.
- Give diabetes routine care ⮌86.
- Refer if
  - Fever, pus or extensive infection
  - Ulcer > 2cm, or tendon or bone visible
  - Ulcer no better after 2 weeks of treatment

Yes



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Venous stasis ulcer likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess and manage CVD risk ⮌84.
- Clean ulcer daily and cover with non-adherent dressing.
- Refer if:
  - Recurrent ulcers
  - No better after 3 months

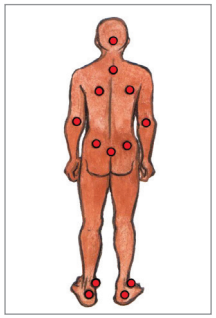
Pulses reduced or muscle pain in legs/buttocks on exercise that is relieved by rest

Peripheral vascular disease (**PVD**) likely

If sudden severe leg pain at rest with numbness, weakness, pallor or no pulse, refer urgently.

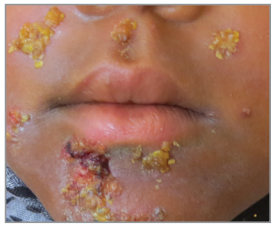
- Clean ulcer daily and cover with non-adherent dressing.
- Avoid compression bandage.
- Give PVD routine care →96, and refer to hospital.

Yes



Bedsore likely
- Relieve pressure on ulcer and reposition patient every 2 hours.
- Clean ulcer daily and cover with non- adherent dressing.
- If infected (skin red, warm or tender), apply silver sulfadiazine 1% cream to ulcer until infection better.
- Give paracetamol 1g PO QID as needed for up to 5 days. If needed, add tramadol 50mg PO BID for 5 days.
- Refer to dietician to ensure adequate calorie and protein intake.
- Refer if:
  - Fat, bone, muscle or tendon visible
  - Yellow/grey/black tissue
  - Extensive or worsening infection
  - Ulcer not healing with treatment
- If patient is terminally sick and survival is predicted to be short, also give palliative care →120.

Blisters which dry to form honey coloured crusts



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Impetigo likely
Often around mouth or nose. May complicate insect bites, scabies or skin trauma.

- Test for HIV ⮌75.
- Impetigo is contagious:
  - Advise patient to avoid close contact with others and to wash with soap and water twice a day.
  - Advise contacts to avoid sharing towels and to add a spoon of potassium permanganate solution (1:10 000) to bathwater 2-3 times a week.
- Apply fusidic acid cream to lesions and nostrils 3 times a day for 7 days.
- If extensive or no response to above treatment, add cloxacillin 500mg PO QID for 7 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 7 days.
- Refer if:
  - Cellulitis or abscess
  - Temperature ≥ 38°C
  - No response to antibiotic

[1]Avoid if pregnant.

Changes in skin colour

Yellow skin

Jaundice likely

Refer urgently the patient with jaundice and one or more of:
- Temperature ≥ 38°C
- Hb < 11g/dL
- BP < 90/60
- Severe abdominal pain
- Drowsy or confused
- Easy bruising or bleeding
- Pregnant
- Alcohol dependent ⮌103 or recent alcohol binge (≥ 5 drinks[1]/ session)
- Using any medication or illegal drugs

Approach to the patient with jaundice not needing urgent referral:
- Send blood for ALT, AST, GGT, ALP, complete blood count.
- Advise patient to return immediately if any above markers of severity develop.
- Review patient with results within 2 days.

Is ALP/GGT predominantly raised?

No

If ALT/AST raised, send blood for hepatitis serology and refer.

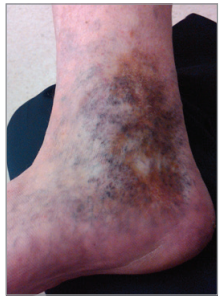
Yes

Refer.

Darkening of skin
Is darkened area only on lower leg/s?

Yes

Red-brown discolouration. May have breaks in skin/ ulcers, spidery veins.



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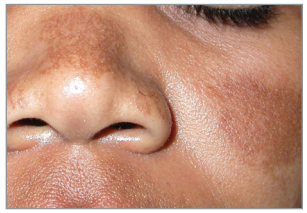
Venous stasis likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess and manage CVD risk ⮌84.
- If ulcer:
  - Clean daily and cover with non-adherent dressing.
  - If no better after 3 months or recurrent ulcers, refer.

No

Is skin smooth or scaly?

Smooth

Flat, brown patches on cheeks, forehead and upper lip



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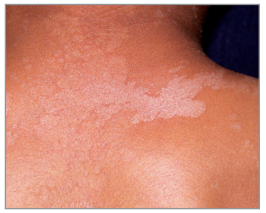
Melasma likely
- Hormones and sunlight will worsen melasma:
  - Advise patient to apply sunscreen daily and avoid sun exposure.
  - Avoid oral contraceptive, rather use alternative contraception ⮌110.
  - If pregnant, advise patient lesions may resolve up to 1 year after pregnancy.
- Avoid facial products other than bland emollients.
- Often difficult to treat. If not responding to above and intolerable for patient, refer.

Scaly

Light or dark patches with fine scale. Usually on trunk.



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Tinea versicolor likely
- Apply selenium sulfide 2% or ketoconazole 2% shampoo to neck, trunk, arms and legs. Leave for 10 minutes, then wash off. Repeat daily for 1 week.
- Advise that colour may take months to return to normal.
- If scale persists or frequent relapses, give single dose fluconazole 400mg PO.
- Recurrence is common and the patient may need frequent treatment.

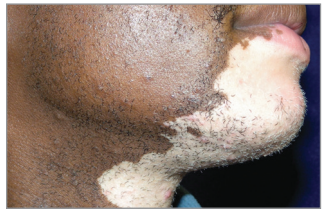
Lightening of skin

Is skin smooth or scaly?

Smooth

Is there decreased sensation on the skin lesion?

No



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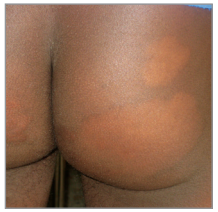
Vitiligo likely
- Advise patient to use camouflage cosmetics.
- If patient requests treatment and lesions are limited, apply betamethasone 0.1% cream twice a day for at least 3 months (avoid face). Stop if skin thinning, stretch marks or bruising occur.
- If extensive or no response to treatment, refer to hospital.
- If distressing to patient, refer for psychological support.

Yes



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Leprosy likely
Do baciliary index, morphology index and manage accordingly.

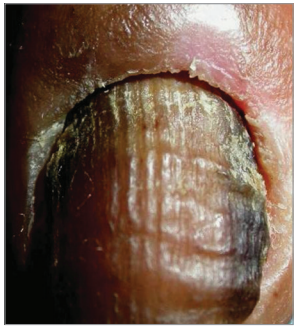
If diagnosis is uncertain, refer.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Nail symptoms

If nails long and dirty and patient unkempt, screen for mental health problem and abuse/neglect ↩66.

Disfigured nail with swollen nail bed and loss of cuticle



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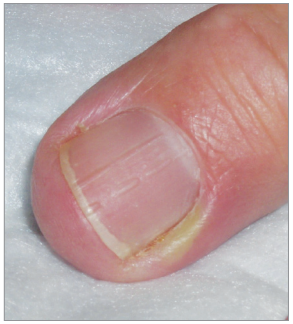
Chronic paronychia likely
Usually associated with excessive exposure to water and irritants like nail cosmetics, soaps and chemicals.

- Advise patient to avoid water and irritants and to wear gloves if unavoidable.
- Apply betamethasone 0.1% cream to swollen nail beds twice a day for 3 weeks.
- If no response, apply miconazole 2% cream twice a day for 4 weeks.
- If no response, refer.

Pain, redness and swelling of nail folds, there may be pus.



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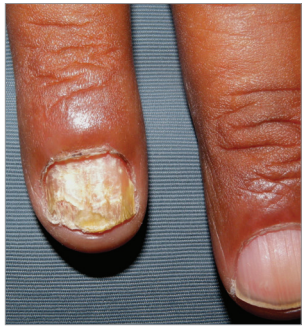
Acute paronychia likely
Often with history of trauma, such as nail biting or pushing the cuticle.

- Advise patient to stop trauma to nail.
- If any pus, incise and drain.
- Advise warm saline soaks for 20 minutes twice a day.
- Apply fusidic acid 1% cream after soaking.
- If severe pain, pus, infection beyond nail fold or temperature ≥ 38°C, give cloxacillin 500mg PO QID for 7 days. If penicillin allergic, give instead erythromycin 500mg PO QID for 7 days.
- If no response, refer.

White/yellow disfigured nails



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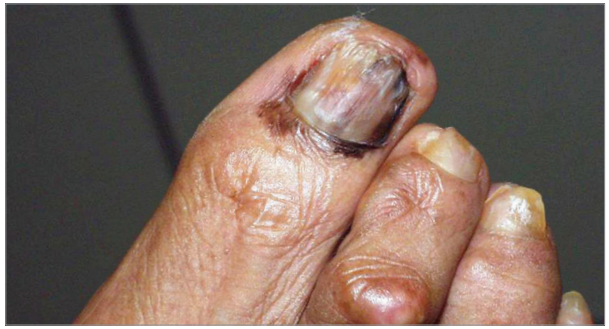
Fungal infection likely

- Test for HIV ↩75.
- Fungal nail infection is difficult to treat.
- Treat if:
  - Previous cellulitis on affected limb
  - Diabetes
  - Painful nail
  - Cosmetic concerns
- Send nail clippings for microscopy to confirm diagnosis before starting treatment.
- If fungal infection confirmed, give fluconazole 400mg PO once weekly for 6-9 months for finger nails and 12-18 months for toe nails.

Blue/brown/black discolouration of nail



CDC Public Health Image Library

Has there been recent trauma to nail?

Yes

Haematoma likely

- Treat if injury < 2 days old and painful:
  - Clean nail with povidone iodine solution.
  - Hold finger secure and gently twist a large bore needle into nail over centre of haematoma. Stop when blood drains through hole.
  - Cover with sterile gauze dressing.

No

- Review medication: chloroquine, fluconazole, ibuprofen, lamivudine, phenytoin and zidovudine can cause discolouration of nails. Consider changing medication.
- Refer same week to exclude melanoma (picture above) if:
  - New dark spot on 1 nail which is getting bigger quickly and no recent trauma
  - Discolouration extends into nail folds
  - Band on nail that is:
    - > 4mm wide
    - Getting darker or bigger
    - Has blurred edges
    - Nail is damaged.

Self-harm or suicide

Give urgent attention to the patient who has attempted or considered self-harm or suicide:

Has patient attempted self-harm or suicide?

Yes

- First assess and manage airway, breathing, circulation and level of consciousness ⮌12.
- If oral overdose or harmful substance in past 1 hour and patient fully conscious, give activated charcoal 100g in 500mL water via nasogastric tube. Avoid if paraffin, petrol, corrosive poisons, iron, lithium or alcohol.
- If opioid (morphine/codeine) overdose and respiratory rate < 12: give 100% face mask oxygen and naloxone 0.4mg IV immediately. Repeat every 2-3 minutes, increasing dose by 0.4mg each time until respiratory rate > 12, maximum 10mg.
- If exposed to carbon monoxide (exhaust fumes): give 100% face mask oxygen.
- If no response, or overdose/poisoning with other or unknown substance, refer to hospital.

No: does patient have current thoughts or plans to commit suicide?

Yes

No: has patient had thoughts or plans of self-harm or suicide in past month or performed act of self-harm or suicide in past year?

Yes: is patient agitated, violent, distressed or uncommunicative?

Yes

No

No

High risk of self-harm or suicide

Low risk of self-harm or suicide
Manage patient as below.

- Remove any possible means of self-harm (firearms, knives, pills).
- If aggressive or violent, ensure safety: assess patient with other staff, use security personnel or police if needed. Sedate only if necessary ⮌63.
- Refer urgently.
  - While awaiting transport, monitor closely. Avoid leaving patient alone. If patient refuses admission, consider involuntary admission ⮌98.

Assess the patient whose risk of self-harm or suicide is low

Assess	When to assess	Note
Depression	Every visit	• If known depression ⮌100. • In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Substance use/abuse	Every visit	In the past year has the patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Other mental illness	Every visit	If hallucinations, delusions, disorganised speech, disorganised or catatonic behaviour, refer to mental health professional same day.
Stressors	Every visit	• Assess and manage stress ⮌65. • Help identify psychosocial stressors. Ask about trauma, sexual abuse/violence ⮌66, family or relationship problems, financial difficulty, bereavement, chronic ill-health.
Chronic condition	Every visit	• If chronic pain, assess and manage pain ⮌45 and underlying condition. • If patient is terminally sick and survival is predicted to be short, also give palliative care ⮌120.

Advise the patient whose risk of self-harm or suicide is low

- Discuss with patient reasons to stay alive. Encourage carers to closely monitor patient as long as risk persists and to bring patient back if any concerns.
- Advise patient and carers to restrict access to means of self-harm (remove firearms from house, keep medications and toxic substances locked away) as long as risk persists.
- Suggest patient seeks support from close relatives/friends and offer referral to counsellor or local mental health centre.

- Discharge into care of family, if possible. Review patient at least weekly for 2 months. If self-harm or suicide risk is still low follow up monthly.
- If thoughts or attempts of self-harm or suicide recur, reassess suicide risk above.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Aggressive/disruptive patient

Give urgent attention to the aggressive/disruptive patient with one or more of:

- Angry behaviour
- Loud, aggressive speech
- Challenging, insulting or provocative behaviour
- Frequently changing body position, pacing
- Tense posturing like gripping arm rails tightly, clenching fists
- Aggressive acts like pounding walls, throwing objects, hitting

Management:

- Ensure the safety of yourself, the patient and those around you: ensure security personnel present, call police if needed. They should disarm patient if s/he has a weapon or a potentially harmful object (e.g.: stick, stone etc). Assess with other staff in a safe spacious room with at least two doors for entry and exit. Ensure exit is not blocked.
- Try to verbally calm the patient:
  - Avoid direct eye contact, sudden movements and approaching patient from behind. Stand at least two arm's lengths away.
  - Use an honest, non-threatening manner. Avoid talking down to the patient, arguing or commanding him/her to calm down. Use a friendly gesture like offering a drink or food.
  - Listen to patient, identify his/her feelings and desires and offer choices. Take all threats seriously.
  - Restrain and/or sedate only if absolutely needed: imminent harm to self/others, disruption of important treatment, damage to environment, verbal attempts to calm patient failed.
  - If possible, before sedation: assess and manage possible causes of abnormal thoughts or behaviour ⮌64, especially if patient disorientated/confused as sedatives may worsen the condition.
- Consider involuntary admission if signs of mental illness and refuses treatment or admission and a danger to self, others, own reputation or financial interest/property ⮌98.

If needed, sedate the aggressive/disruptive patient:
Try to avoid IM or IV medication, especially if > 65 years. Will patient accept oral medication?

Yes

- Give diazepam 5mg PO *or* haloperidol 2-5mg (2mg if > 65 years) PO.
- Assess response after 30 minutes:

Patient calm

Patient still aggressive/disruptive after 30 minutes

No

Patient refuses oral medication

Decide which medication to sedate patient according to likely cause:

Exact cause unknown	Alcohol/drug withdrawal	Stimulant drug intoxication	Alcohol intoxication	Psychosis
Give haloperidol 2-5mg (2mg if elderly) IM *or* diazepam 10mg IV slowly (avoid IM). If confused (without alcohol withdrawal), avoid diazepam if possible.			Give haloperidol 2-5mg (2mg if elderly) IM.	

Assess after 30 minutes:

Patient calm	Partial response Repeat same dose of IM medication used above.	No response • If diazepam used above, give haloperidol 2-5mg (2mg if > 65 years) IM. • If haloperidol used above, give diazepam 10mg IV slowly (avoid IM).

- Monitor and record temperature, BP, respiratory rate and pulse rate and level of consciousness every 15 minutes for the first hour and every 30 minutes until patient alert and walking.
- If haloperidol used and painful muscle spasms, acute dystonic reaction likely, give benzhexol 2-5mg, if needed can be given PO TID.
- Once patient is calmer, reassess for underlying cause and manage further ⮌64.

Refer the mentally ill aggressive patient same day to hospital: document history, details of involuntary admission, and time and dose of medication given.

Abnormal thoughts or behaviour

Give urgent attention to the patient with abnormal thoughts or behaviour and one or more of:
- *Sudden* onset of abnormal thoughts or behaviour
- *Recent* onset of abnormal thoughts or behaviour

Management:
- If aggressive/disruptive, assess and manage ⮌63. Sedate only if absolutely needed: if patient confused sedatives may worsen the condition.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →93.
- Just had a convulsion →15.
- If difficulty breathing, respiratory rate > 30, oxygen saturation < 90% or oxygen saturation machine not available, give face mask oxygen.
- If glucose < 70mg/dL or unable to measure, give oral glucose 20g. If unable to take orally, give instead glucose 40% 50mL IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with 10% glucose solution[1].
- If known alcohol user, give thiamine 100mg IV before glucose. If glucose ≥ 200mg/dL →86.
- If thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine: give oral rehydration solution. If unable to drink or BP < 90/60, give normal saline 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If suicidal thoughts or behaviour ⮌62.
- Consider involuntary admission if signs of mental illness and refuses treatment or admission and a danger to self, others, own reputation or financial interest/property ⮌98.
- Look for delirium, mania, psychosis, intoxication, withdrawal or poisoning and manage before referral:

Varying levels of consciousness over hours/days and/or temperature ≥ 38°C

Delirium likely
- Give single dose ceftriaxone[2] 2g IV/IM or crystalline penicillin[2] 4M IU IV with chloramphenicol 500mg IV.
- If malaria test[3] positive, also give artesunate 2.4mg/kg IM or artemether 3.2mg/kg IM.

Abnormally happy, energetic, talkative, irritable or reckless

Mania likely

Lack of insight with ≥ 1 of:
- Hallucinations (seeing/ hearing things which are not there for others around the patient)
- Delusions (unusual/ bizarre beliefs)
- Disorganised speech or behaviour

Psychosis likely

Dilated pupils, restlessness, paranoia, nausea, sweating or pulse ≥ 100, BP ≥ 140/90

Stimulant drug intoxication likely
If pulse irregular, chest pain or BP ≥ 140/90, refer urgently to hospital.
If aggressive ⮌63.

Smells of alcohol, slurred speech, incoordination, unsteady gait

Alcohol intoxication likely
- Give thiamine 100mg IV/IM.
- Give normal saline 1L 6 hourly.
- Check for head injury.

Known alcohol/drug user who has stopped/reduced intake with tremor, sweating, nausea, severe restlessness/ agitation or hallucinations

Alcohol/drug withdrawal likely
- If no other sedation given, give diazepam 10mg PO or IV.
- If alcohol withdrawal, also give thiamine 100mg PO or IV/IM and oral rehydration solution.
- If ≥ 8 hours since last alcohol, refer to hospital for detoxification.

Exposure via ingestion/ inhalation/ absorption of medication/ unknown substance

Poisoning
Refer to hospital.

Refer urgently *unless*:
- Patient with known chronic psychosis who is otherwise well: give routine psychosis care ⮌104.
- Patient with known diabetes and low glucose, not on glicazide or insulin: if abnormal thoughts/behaviour resolve following oral or IV glucose, no need to refer, give routine diabetes care ⮌87.
- Patient with known alcohol use who is otherwise well: if abnormal thoughts/behaviour resolve once sober, no need to refer ⮌103.

Approach to the patient with abnormal thoughts or behaviour not needing urgent attention
- If for at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider **dementia** →106.
- If unsure of diagnosis, refer for further assessment.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute. [2]If severe penicillin allergy with previous angioedema, anaphylaxis or urticaria, give chloramphenicol only and refer. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

Stressed or distressed patient

Give urgent attention to the stressed or distressed patient with:
- Suicidal thoughts or behaviour ⮌62.

Assess the stressed or distressed patient: if known with depression, give routine care ⮌100.

Assess	Note
Symptoms	Manage symptoms on symptom pages. If patient has multiple physical complaints consider depression ⮌99.
Stressors	• Help identify psychosocial stressors. Ask about family or relationship problems, financial difficulty, bereavement, chronic ill-health. Ask about loneliness in older person. • If patient is terminally sick and survival is predicted to be short, also give palliative care ⮌120.
Trauma/abuse	Has the patient ever had a bad experience that is causing nightmares, flashbacks, avoidance of people/situations, jumpiness or a feeling of detachment? If yes ⮌66. If patient being abused ⮌66.
Anxiety	• If excessive worry causes impaired function/distress for at least 6 months with ≥ 3 of: muscle tension, restless, irritable, difficulty sleeping, poor concentration, tired: **generalised anxiety** likely ⮌100. • If anxiety impairs function and is induced by a particular situation/object (phobia) or has no obvious cause with repeated sudden fear with physical symptoms (panic) ⮌100.
Depression	In the past month, has patient felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Substance abuse	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Women's health	• If recent delivery, give postnatal care ⮌116. • If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ⮌119.
Medication	Review medication: prednisolone, efavirenz, metoprolol, metoclopramide, theophylline and estrogen containing oral contraceptives can cause mood changes. Consider changing medication or alternative contraceptive and antihypertensive. If persistent symptoms on efavirenz for > 6 weeks, change ART ⮌79.

Advise the stressed or distressed patient

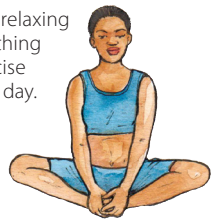
- Encourage patient to question negative thinking and be realistic if s/he often predicts the worst, generalises, exaggerates problem, inappropriately takes the blame, takes things personally.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If patient has difficulty sleeping ⮌67.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Do a relaxing breathing exercise each day.



Encourage patient to do activities s/he enjoyed previously.

Get active
Advise regular exercise.

Access support
Encourage patient to connect with friends, family, spiritual leaders and community groups like Edir, Mahber, Senbete.

- Do relaxing breathing in a quiet place for 10 minutes everyday: sit comfortably, breathing slow, steady breaths through nose. Time breathing with counting: 1, 2, 3 in; 1, 2, 3 pause; 1, 2, 3 out.
- Support problem solving: List main problems and identify an important but solvable problem. Support the patient to identify steps to solving the problem. Agree on specific steps that the patient will try in the next week. At follow-up, review, trouble-shoot and set new goals.
- Refer to available counsellor, psychiatric nurse/psychologist or social worker.
- Deal with bereavement issues if patient or family member has a life-limiting illness or if patient is recently bereaved:
  - Acknowledge grief reactions: denial, disbelief, confusion, shock, sadness, bargaining, yearning, anger, humiliation, despair, guilt and acceptance.
  - Allow patient/family to share sorrow and talk of memories, the meaning of the patient's life or religious beliefs. Suggest connecting with a spiritual counsellor as appropriate.
- For tips on how to communicate effectively ⮌124.

Offer to review the patient in 1 month. If no better, refer to available counsellor, psychiatric nurse/psychologist or social worker.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Traumatised/abused patient

Give urgent attention to the traumatised/abused patient with one or more of:

- Injuries needing attention ⮌14
- Immediate risk of being harmed and in need of shelter
- Suicidal thoughts or behaviour ⮌62
- Recent sexual assault:
  - If severe vaginal or anal bleeding, refer urgently.
  - Aim to prevent HIV, hepatitis B, STIs and pregnancy urgently:

Prevent HIV and hepatitis B ⮌68.

Prevent STIs

- Give single doses of ceftriaxone 250mg IM, metronidazole[1] 2g PO and doxycycline 100mg PO BID for 7 days.
- If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and give instead single dose spectinomycin 2g IM.

Prevent pregnancy

- Do pregnancy test. If pregnant ⮌112.
- If not pregnant, not on reliable contraception and ≤ 5 days since rape, give emergency contraception:
  - Give single dose levonorgestrel 1.5mg[2] PO. If patient vomits < 2 hours after taking, repeat dose *or*
  - Insert copper intrauterine device instead ⮌110.
- If > 5 days since rape and emergency contraception not given, repeat pregnancy test 6 – 8 weeks after last menses. If pregnant ⮌112.

Also assess and support the patient needing urgent attention as below.

Assess the traumatised/abused patient

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Ask about genital symptoms even if no recent sexual assault ⮌36.
Family planning	Every visit	Assess patient's contraception needs ⮌110. If pregnant ⮌112.
Mental health	Every visit	• Assess and manage stress ⮌65. • In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99. • In the past year, has patient: 1) drunk ≥ 4 drinks[3]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103. • If patient has ever had an experience so horrible that s/he has had ≥ 3 of the following for > 1 month: 1) Nightmares or involuntary thoughts/flashbacks 2) Avoided certain situations/people 3) Been constantly on guard, watchful or easily startled 4) Felt numb or detached from other people, activities or surroundings: **post-traumatic stress disorder** likely, refer.
HIV	First visit	Test for HIV ⮌75.
Syphilis (if sexual assault)	If negative: repeat after1 month	If positive ⮌41.

Advise the traumatised/abused patient

- Find a quiet place to talk. Comfort patient, remind him/her that you are there to help. Reassure that s/he is safe and all information is confidential. Allow a trusted friend/relative to stay close.
- Be patient, listen attentively and avoid pressurising the patient. Clearly record patient's story in his/her own words. Include nature of assault and, if possible, identity of the perpetrator.
- Ask if patient has specific needs/concerns and link with support structures. Refer to available trauma counsellor/psychiatric nurse/psychologist/social worker.
- Encourage patient to report case to the police and to apply for protection order. Respect patient's wishes if s/he declines to do so.

Review the traumatised/abused patient

- If sexually assaulted, review within 3 days →69. Also check syphilis after 1 month.
- Offer to review the traumatised/abused patient who has not been sexually assaulted in 3 months.

[1]Advise no alcohol until 24 hours after metronidazole. [2]If patient taking ART, rifampicin or phenytoin, offer copper intrauterine device instead or increase single dose levonorgestrel to 3mg. [3]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Difficulty sleeping

Assess the patient with difficulty sleeping

- Confirm that the patient really is getting insufficient sleep. Adults need on average 6-8 hours sleep per night. This decreases with age.
- Determine the type of sleep difficulty: waking too early or frequently, difficulty falling asleep, insufficient sleep.

Exclude medical problems:

- Ask about pain, difficulty breathing, urinary problems. See relevant symptom pages. If patient has a chronic condition, give routine care.
- Ask about snoring or restless legs. If present, refer for assessment.
- If pulse ≥ 100, weight loss, palpitations, tremor, dislike of hot weather or thyroid enlargement, **thyrotoxicosis** likely, refer to hospital.
- If patient is terminally sick and survival is predicted to be short, also give palliative care ⮌120.

Review medication:

- Over-the-counter decongestants, salbutamol, theophylline, fluoxetine and efavirenz can cause difficulty sleeping. Consider changing medication.
- Reassure patient that difficulty sleeping from efavirenz is usually self-limiting and resolves within 4 weeks on ART. If > 4 weeks, refer to hospital.

Assess substance use/abuse:

- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.

Screen for possible stressors and mental health problem:

- Screen for mental health problem (depression, anxiety, post-traumatic stress disorder and phobias) and manage stress ⮌65.
- If abnormal thoughts or behaviour ⮌64.
- If for at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia ⮌106.

Ask about menopausal symptoms:

- If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes and sexual problems ⮌119.

Advise the patient with difficulty sleeping

- Encourage patient to adopt sensible sleep habits. These often help to resolve a sleep problem without the use of sedatives.
  - Get regular exercise.
  - Avoid caffeine (coffee, tea, sweetened fizzy drinks), alcohol and smoking for several hours before bedtime.
  - Avoid day-time napping. If very tired, nap for no longer than 30 minutes.
  - Encourage routine: get up at the same time every day (even if tired) and go to bed at the same time every evening.
  - Allow time to unwind/relax before bed.
  - Use bed only for sleeping and sex. Spend only 6-8 hours a night in bed.
  - Once in bed, avoid clock-watching. If not asleep after 20 minutes, get out of bed and do a low energy activity (read a book, walk around house). Once tired, return to bed.
  - Keep a sleep diary. Review this at each visit.
- Review the patient regularly. A good relationship between clinician and patient can help.

Treat the patient with difficulty sleeping:

If problems with daytime functioning, daytime sleepiness, irritability, anxiety or headaches that do not improve with 1 month of sensible sleep habits:
reassess for mental health and substance use problems and consider promethazine 25mg or amitriptyline 12.5-25mg PO at night for short-term symptom-relief.

If still no better after 1 month on medication, refer patient for further assessment.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Exposed to infectious fluid: post-exposure prophylaxis

Fluids transmit infection through sexual contact (assault or consensual, burst condom), occupational exposure (sharps injury, splash to eye, mouth, nose or broken skin), human bite, sharing needles, contact with used condom and exposure to blood in sport or at accident scene.

Give urgent attention to the patient exposed to infectious fluid:

Does patient have one or more of the following?
- Exposure to blood, blood-stained fluid/tissue, pleural/pericardial/peritoneal/amniotic/synovial/cerebrospinal fluid, vaginal secretions, semen or breast milk
- Human bite that broke the skin

Yes

Was there sexual contact, sharps injury, splash to eye, mouth, nose or broken skin?

Yes

- Give immediate attention:
  - If broken skin, clean area immediately with soap and water.
  - If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water or normal saline.
  - If sexual assault ⮌66.
- Assess need for HIV post-exposure prophylaxis:

Patient known HIV positive

- Send blood for HBsAg, hepatitis C antibody. If sexual exposure, also check syphilis.
- Avoid giving HIV post-exposure prophylaxis, give routine HIV care ⮌76.

Patient HIV negative or unknown: do HIV test ⮌75.

Positive

- Send blood for HBsAg, hepatitis C antibody. If sexual exposure, also check syphilis.
- Avoid giving HIV post-exposure prophylaxis, give routine HIV care ⮌76.

Negative, one positive and one negative or patient refuses HIV test

- Give HIV post-exposure prophylaxis (PEP) only if ≤ 72 hours since exposure (ideally within 1 hour):
- Give tenofovir/lamivudine 300/300mg and efavirenz 600mg PO daily for 28 days.
- If known kidney disease, give zidovudine/lamivudine 300/150mg PO BID instead of tenofovir/lamivudine .
- If source on ART, start PEP as above and refer to hospital to adjust PEP if needed.
- Send blood for HBsAg, hepatitis C antibody and creatinine[1]. If sexual exposure, also check syphilis.

Assess need for hepatitis B post-exposure prophylaxis: has patient received 3 doses of hepatitis B vaccine?

Yes

Reassure that hepatitis B transmission is unlikely.

No or not sure

Give 1st dose of hepatitis B vaccine 1mL IM.

Assess source: if s/he agrees, test for HIV ⮌75, HBsAg and hepatitis C antibody. If sexual exposure, check syphilis.

Review patient and blood results within 3 days →69.

No

- Reassure that HIV and hepatitis B transmission is unlikely.
- Avoid giving HIV or hepatitis B post-exposure prophylaxis.
- If unsure, refer to hospital.

[1]If giving zidovudine, check complete blood count instead of creatinine.

Review the patient on post-exposure prophylaxis

Review patient within 3 days, at 2 weeks, 6 weeks, 3 months and 6 months.

- Check adherence and ask about side effects from HIV post-exposure prophylaxis ⮌80. Advise patient to report side effects promptly if they occur.
- Advise patient to use condoms for 3 months until results confirmed.
- If assault or abuse ⮌66.
- Check bloods according to table and review results as below:

Assess	When to assess	Note
HIV	If negative: at 6 weeks, 3 months	Test for HIV ⮌75. If positive, stop HIV post-exposure prophylaxis and give routine HIV care ⮌76.
HBsAg	If negative: at 6 months	If positive, refer.
Hepatitis C antibody	If negative: at 6 weeks, 3 months	If positive, refer.
Syphilis (if sexual exposure)	If negative: repeat after 1 month	If positive ⮌41.
eGFR[1] (by referral to hospital)	If on tenofovir: at 2 weeks, 6 weeks	• If initial eGFR < 50mL/min/1.73m^3: stop tenofovir/lamivudine, give instead zidovudine/lamivudine 300/150mg PO BID and check complete blood count. • If repeat eGFR < 50mL/min/1.73m^3: refer.
Complete blood count	If on zidovudine: at 2 weeks, 6 weeks	If Hb < 7g/dL or neutrophils < 0.75 x 10^9/L, refer.
Source blood results (if done)	-	• If HIV negative, discontinue HIV post-exposure prophylaxis. • If HIV positive, give source routine HIV care ⮌76. Continue HIV post-exposure prophylaxis. • If HBsAg or hepatitis C antibody positive, refer source and patient to hospital. • If syphilis positive ⮌41.

Approach to the patient who is HBsAg negative

Has patient received 3 doses of hepatitis B vaccine?

- Yes
  - Reassure that hepatitis B transmission is unlikely.
- No or not sure
  - Check source HBsAg result.
    - Source HBsAg positive or not known
      - Refer to hospital.
    - Source HBsAg negative
      - If not already given, give 1st dose of hepatitis B vaccine 1mL IM.
        - At 4 weeks: Give patient 2nd dose of hepatitis B vaccine 1mL IM.
        - At 8 weeks: Give patient 3rd dose of hepatitis B vaccine 1mL IM.

[1]Calculate eGFR = [(140 - age) x weight (kg)]/[72x creatinine (mg/dL)]. If patient is a woman, multiply by 0.85.

Malnutrition: routine care

Diagnose malnutrition

The patient has malnutrition if not pregnant and BMI < 17.5 or MUAC < 21 or if pregnant/breastfeeding and MUAC < 23 or if oedema of both feet with no other cause.

Give urgent attention to the patient with malnutrition and one or more of:

- Hb < 7g/dL
- Respiratory rate ≥ 30 ⮌29
- BP < 90/60
- Jaundice
- Extensive skin lesions
- Very weak, lethargic or unconscious

Management

- If BP < 90/60, give normal saline 250mL IV. Avoid or stop if breathless.
- Refer urgently.

Assess the patient with malnutrition

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom page. Ask about diarrhoea ⮌34 and vomiting ⮌33 and manage on symptom pages.
Diet	At diagnosis	Check variety and quantity of food. If patient not getting at least 2 meals a day or eating a balanced diet, refer to nutrition support programme.
TB screening	Every visit	Exclude TB ⮌71.
Family	At diagnosis	Ensure that patient's family and children are screened for malnutrition.
Oedema	Every visit	If swelling of feet, hands or face develops or does not resolve with feeding, refer.
Weight/BMI	Every visit	If not gaining weight or losing weight, refer. Discharge the non-pregnant patient when BMI > 17.5.
MUAC	Monthly	Discharge the pregnant/breastfeeding patient when MUAC is > 23.
Substance use	At diagnosis	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Pallor	At diagnosis	Look for pallor and if possible check Hb. If < 7gdL, refer.
HIV	At diagnosis	Test for HIV ⮌75. If HIV positive, give routine HIV care ⮌76.
Family planning	Every visit	Assess patient's contraception needs ⮌110. If pregnant ⮌112.

Advise the patient with malnutrition

- Provide nutrition counselling: advise the patient to eat a healthy balanced diet and about preparing food and water in a hygienic way.
- Advise the patient not to share Plumpy nut® with others, how to open packets, to store it in a cool place and avoid keeping it once opened.
- How to link to other services, programs or initiatives as appropriate.

Treat the patient with malnutrition

- Give single dose mebendazole 500mg PO or single dose albendazole 400mg PO.
- Give Ready to Use Therapeutic Food (RUTF) (Plumpy nut®) two 100g sachets three times a day.

Review the patient with malnutrition monthly until BMI and MUAC are normal stop RUTF.
Ensure ongoing follow-up from available nutrition support programme.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela

Tuberculosis (TB): diagnosis

Check for TB in the patient with any of the following: cough ≥ 2 weeks, weight loss, drenching night sweats, fever ≥ 2 weeks, chest pain on breathing, blood-stained sputum.

Give urgent attention to the presumed TB patient with one or more of:

- Respiratory rate > 30
- Breathless at rest or while talking
- Confusion or agitation
- Coughs ≥ 1 tablespoon fresh blood

Management:

- Give ceftriaxone[1] 1g IV/IM. If unavailable, give amoxicillin[1] 1g PO.
- Give face mask oxygen.
- Refer same day.

Approach to presumed TB patient not requiring urgent attention:

- Test for HIV ⮌75.
- Assess risk factors for drug resistant (DR) TB: previously treated for TB, close contact with another DR-TB patient or known high risk MDR settings (correctional facilities, military barracks, homeless shelters, refugee camps, dormitories or nursing homes).
- Decide which test the patient needs:

Does patient have abdominal pain, swelling, diarrhoea, headache or lymph node ≥ 2cm?

- Yes → **Presumed Extra-pulmonary TB (EPTB)** → Refer to hospital.
- No → **Presumed Pulmonary TB (PTB)**
  Any of: risk factors for DR TB, HIV positive or recent 2 sputum samples negative[2]?
  - Yes → Send single sputum sample for Xpert MTB/RIF assay → Review Xpert MTB/RIF assay results[3]
    - MTB detected
      - Rifampicin sensitive → **Diagnose drug-sensitive TB** → Give routine DS-TB care and start DS-TB treatment same day →72:
      - Rifampicin resistant → **Diagnose rifampicin-resistant TB** → Refer to hospital.
    - MTB not detected → Refer to hospital.
  - No → Send 2 spot sputum samples for AFB
    - Both sputum AFB negative
      - Give doxycycline[4] 100mg PO BID for 7 to 10 days or clarithromycin 500mg PO BID for 5 to 7 days.
      - If antibiotic use in last 3 months, add amoxicillin 1g PO TID for 5 to 7 days.
      - Advise patient to return if no better or symptoms worsen.
    - At least one sputum positive for AFB → Give routine DS-TB care and start DS-TB treatment same day →72:

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid and refer. [2]If patient previously tested negative for AFB and no better after antibiotic therapy. [3]If unsuccessful or error result seen, repeat with new sample. [4]Avoid if pregnant.

Drug-sensitive (DS) TB: routine care

Assess the patient with DS-TB at diagnosis, at 2 weeks and then once a month throughout DS-TB treatment.

Assess	When to assess	Note
Symptoms	Every visit	• If respiratory rate > 30, breathless at rest or while talking, or confused/agitated, give urgent attention →71. • Expect gradual improvement on TB treatment. **If symptoms worsen or do not improve after 1 month of treatment, refer to hospital.**
Contacts	At diagnosis and if contact symptomatic	• Trace and screen symptomatic contacts, HIV positive contacts and contacts < 5 years of age for TB. • Exclude TB and administer 6 months IPT to asymptomatic contacts < 5 years of age and to HIV positive contacts.
Family planning	Every visit	Assess contraception needs to avoid pregnancy during TB treatment ⮌110. If oral contraceptive, give higher estrogen dose (50 mcg). If on subdermal implant, advise consistent condom use. Alternatively, offer switch to intrauterine contraceptive device (IUCD).
Adherence	Every visit	Review adherence on the TB treatment card. Manage the patient who interrupts TB treatment ⮌74.
Side effects	Every visit	Ask about side effects on treatment ⮌73.
Substance use/abuse	At diagnosis; if adherence poor	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Weight	Every visit	Expect weight gain on treatment and adjust TB treatment dose accordingly ⮌73. **If losing weight, refer same week to hospital.**
BMI/MUAC	At diagnosis and week 8	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and BMI < 17.5 or MUAC < 21cm, **malnutrition** likely ⮌70.
Glucose	At diagnosis	Check glucose ⮌86.
HIV	At diagnosis or if status unknown	Test for HIV ⮌75. If HIV positive and not already on ART, start ART once tolerating TB treatment ⮌76: • If CD4 ≤ 50 cells/mm³ or stage 4, start ART within 2 weeks. If TB meningitis, start ART after 4-6 weeks of TB treatment. • If CD4 > 50 cells/mm³ and not stage 4, start ART between 2-8 weeks of TB treatment.
Sputum specimen for microscopy, if smear positive at diagnosis	End of month 2, month 5 and month 6	• IIf smear negative at end of month 2, change to continuation phase. • If smear positive at end of month 2, manage as on month 2 smear positive algorithm ⮌74.
Sputum specimen for Xpert MTB/RIF, if HIV positive, smear negative or EPTB	End of month 2, month 5 and month 6	• If drug sensitive, continue treatment. • If drug resistant, diagnose DR-TB, stop DS-TB treatment and refer to hospital for DR-TB treatment.
Treatment outcome	End of treatment	Manage according to smear status at diagnosis: • Smear positive at diagnosis: - If AFB negative at month 5 and month 6, assign "**Cure**" outcome. - If AFB positive at either month 5 or month 6, assign "**Treatment failure**" outcome and refer to hospital. - If smear result does not fit any of the criteria above, assign "**Treatment completed**" outcome. • Smear negative at diagnosis or patient with extrapulmonary TB: If patient completed full course of TB treatment, assign "**Treatment completed**" outcome.

Advise and treat the patient with TB →73.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Advise the patient with TB

- Arrange TB/HIV education and refer for community or workplace adherence support.
- Support the patient with poor adherence. Educate on adherence and the dangers of resistance and arrange adherence support. If treatment interrupted ⮌74.
- Educate patient about TB treatment side effects below and to report these promptly if they occur.
- Advise patient s/he will no more be infectious after 2 weeks of effective treatment.
- Advise the patient misusing alcohol, khat and/or using illegal or misusing prescription or over-the-counter medication to stop.
- Alcohol, khat and drug misuse interferes with recovery and adherence ⮌103. If patient smokes tobacco ⮌102. Support patient to change ⮌125.

Treat the patient with TB

- Treat the patient with TB 7 days a week for 6 months:
  - Give intensive phase RHZE for 8 weeks.
  - Change to continuation phase RH at 8 weeks to complete 6 months of TB treatment. If sputum smear positive at end of 2 months, manage further ⮌74.
- If TB meningitis, TB spine or TB of hip or knee, extend continuation phase to 10 months.
- If TB meningitis or TB pericarditis, also give prednisolone 60mg PO daily for first 4 weeks, then gradually taper off over the next 4 weeks.
- Give pyridoxine 25mg PO daily until treatment completed.

	Intensive phase: 8 weeks	Continuation phase: 4 months
Weight	RHZE (150/75/400/275)	RH
30-37kg	2 tablets	2 tablets (150/75)
38-54kg	3 tablets	3 tablets (150/75)
55-70kg	4 tablets	2 tablets (300/150)
≥ 71kg	5 tablets	2 tablets (300/150)

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

Manage the TB/HIV co-infected patient:

- If TB diagnosed while patient on IPT, stop IPT and start TB treatment.
- Avoid starting nevirapine with DS-TB treatment. If already on nevirapine, consider switching medication ⮌79.

Look for and manage TB treatment side effects

Jaundice and vomiting	Most TB medications	Stop all medications and refer same day.
Skin rash/itch	Most TB medications	Assess and manage ⮌53.
Loss of colour vision	Ethambutol	Refer same day.

Nausea/poor appetite	Rifampicin	Take treatment at night. Give metoclopramide 10mg PO TID up to 5 days.
Joint pain	Pyrazinamide	Give ibuprofen 400mg PO TID up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
Orange urine	Rifampicin	Reassure.
Burning feet	Isoniazid	Increase pyridoxine to 75mg PO daily.

Review the patient with DS-TB at diagnosis, at 2 weeks and then once a month throughout DS-TB treatment.

Manage the patient with a positive sputum smear at the end of month 2

- Look for explanation for result: ask about alcohol, khat or drug use ⮌103, stress ⮌65 and side effects. Give increased adherence support and educate the patient about the risks of poor adherence ⮌73.
- Send 1 sputum specimen for Xpert MTB/RIF. Indicate on the request form that the patient's sputum at end of month 2 is smear positive. Review results:

Rifampicin sensitive or Xpert MTB/RIF not available

Change to continuation phase.

At the end of month 5 and month 6, send sputum specimen for smear.

Smear positive

Assign **treatment failure**.
- Stop treatment
- Refer to hospital

Smear negative

Assign **cured**/**completed**
Stop treatment at 6 months.

Rifampicin resistant

Diagnose rifampicin-resistant TB
Refer to hospital for treatment.

Manage the patient who interrupts TB treatment

- Trace the patient and look for explanation for treatment interruption. Ask about alcohol, khat or drug use ⮌103, stress ⮌65 and side effects.
- Give increased adherence support and educate the patient about the risks of poor adherence ⮌73.
- Manage treatment interruption according to duration of interruption:

Interrupted for < 1 month

- Continue TB treatment.
- Ensure patient makes up missed doses by adding the missed days at the end of treatment.

Interrupted for 1-2 months

- Send sputum for Xpert MTB/RIF.
- Continue treatment while awaiting results.

Sensitive

- Continue TB treatment.
- Ensure patient makes up missed doses by adding the missed days at the end of treatment.

Resistant

Refer to hospital for DR TB treatment.

Interrupted for ≥ 2 months

- Register patient as **lost to follow up**.
- Send sputum for Xpert MTB/RIF and manage patient according to result:

MTB detected

Sensitive

Restart full course of DS-TB treatment.

Resistant

Rifampicin resistant TB
Refer to hospital for treatment

MTB not detected

Refer to hospital

HIV: diagnosis

Decide who to test for HIV

- Pregnant woman and her partner/s if HIV status unknown
- Patient in labour and her partner/s if HIV status unknown
- Postpartum woman and her partner/s if HIV status unknown
- Patient seeking contraception and her partner/s if HIV status unknown
- Patient whose partner is HIV positive
- Patient whose family member is HIV positive
- Patient with symptoms of HIV/AIDs
- Patient with TB if HIV status unknown
- Patient with STI and partner/s if HIV status unknown
- MARP[1] patient or between patient 15-24 years of age.

Obtain informed consent

- Educate patient about HIV, modes of HIV transmission, risk factors, benefits of knowing one's HIV status and treatment.
- Offer HIV testing like any other investigation. Unless the patient says no, s/he is tested.
- If consent is granted, explain the test procedure and proceed to testing immediately.

Test

Do rapid HIV test on finger-prick blood using Colloidal Gold®.

Positive

Do a second rapid HIV test on finger-prick blood using Uni Gold®.

Positive

Patient has HIV.

- Give routine HIV care at this visit →76.
- Offer to help disclose status to sexual partner/s.
- Encourage HIV testing for sexual partners and children.

Negative

Do a third rapid HIV test on finger-prick blood using Vikia®

Positive

Patient has HIV.

- Give routine HIV care at this visit →76.
- Offer to help disclose status to sexual partner/s.
- Encourage HIV testing for sexual partners and children.

Negative

HIV test result negative

Was patient at risk of HIV infection in the past 4 weeks (new or multiple sexual partners, or unprotected sex)?

Yes

- Repeat HIV test after 4 weeks.
- Encourage patient to follow safe sex practices.

No

- Patient does not have HIV.
- Encourage patient to remain negative and advise when to re-test:
  - If sexually active, yearly
  - If pregnant: between 28 and 36 weeks
- Offer referral for male circumcision to decrease risk of HIV infection.

Negative

HIV test result negative

Was patient at risk of HIV infection in the past 4 weeks (new or multiple sexual partners, or unprotected sex)?

No

- Patient does not have HIV.
- Encourage patient to remain negative and advise when to re-test:
  - If sexually active, yearly
  - If pregnant: between 28 and 36 weeks
- Offer referral for male circumcision to decrease risk of HIV infection.

Indeterminate/Invalid

- Advise patient to practice safe sex and return after 2 weeks for repeat test.
- If results are still indeterminate, send blood specimen to laboratory for ELISA test.

Support

Ensure patient understands test result and knows where and when to access further care.

[1]MARP include commercial sex workers, long distance drivers, university students and community around and workers of Mega projects.

HIV: routine care

Assess the patient with HIV

Assess	When to assess	Note
Symptoms	Every visit	Manage patient's symptoms as on symptom pages. If TB symptoms ⮌71.
TB	Every visit	If any one of: cough, weight loss, night sweats or fever, exclude TB ⮌71. If none of the symptoms are present, start IPT. Start ART after TB has been excluded.
STI	Every visit	If genital symptoms ⮌36.
Adherence	Every visit	Ask patient if s/he is taking medicines regularly. Check adherence with pill count (at pharmacy) and record of attendance. If adherence to IPT or CPT is poor, give adherence counseling before considering starting ART.
Side effects	Every visit	Ask about side effects from ART ⮌80, isoniazid preventive therapy (IPT) ⮌78, co-trimoxazole ⮌78 and fluconazole ⮌78.
Mental health	Every visit	• In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99. • In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103. • If ≥ 1 of: memory/co-ordination problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia ⮌106.
CVD risk	At diagnosis	Assess the patient's CVD risk ⮌84.
Sexual health	Every visit	Ask about risky behaviour (patient or partner has new or > 1 partner, unreliable condom use or risky alcohol/drug use ⮌103) and sexual problems ⮌43.
Family planning	Every visit	• Advise reliable[2] contraception (IUD, injectable or sterilisation *plus* condoms) ⮌110. • If planning pregnancy, advise patient to use contraception until viral load < 1000copies/mL.
eMTCT	If pregnant or breastfeeding	If not on ART, start ART same day or as soon as possible. If pregnant, give antenatal care ⮌114.
Palliative care	If deteriorating	If patient deteriorating on ART and survival is predicted to be short, also give palliative care ⮌120.
Weight (BMI)	Every visit	• If weight loss ≥ 5% of body weight in 4 weeks ⮌16. • If BMI < 17.5, **malnutrition** likely ⮌70. BMI = weight (kg) ÷ height (m) ÷ height (m).
MUAC	Every visit, if pregnant/lactating or unable to stand	If pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and MUAC < 21cm, **malnutrition** likely ⮌70.
Stage	Every visit	• Check weight, mouth, skin, previous and current problems. • If stage 3 or 4 give co-trimoxazole and prioritise patient for ART. If clinical stage worsens while patient on ART, refer to hospital.

Stage 1	Stage 2	Stage 3	Stage 4	
• No symptoms • Persistent painless swollen glands	• Recurrent sinusitis, tonsillitis, otitis media, pharyngitis • Papular pruritic eruption (PPE) • Fungal nail infections • Herpes zoster (shingles) • Recurrent mouth ulcers • Angular cheilitis • Unexplained weight loss < 10% body weight	• Pulmonary TB • Oral candida • Oral hairy leukoplakia • Unexplained weight loss ≥ 10% body weight • Unexplained diarrhoea > 1 month • Unexplained fever > 1 month • Severe bacterial infections (pneumonia, meningitis) • Unexplained anaemia < 8g/dL, neutropaenia < 0.5x10/L, or chronic thrombocytopaenia < 50x10/L	• Extrapulmonary TB • Weight loss ≥ 10% and diarrhoea or fever > 1 month • Pneumocystis pneumonia (PJP) • Recurrent severe bacterial pneumonia • Herpes simplex of mouth or genital area > 1 month • Oesophageal candida	• Kaposi's sarcoma, lymphoma, invasive cervical cancer • Cytomegalovirus infection • Toxoplasmosis • HIV-associated dementia, encephalopathy • Cryptococcal disease (including meningitis) • *Cryptosporidium* or *Isospora belli* diarrhoea

Cervical screen (VIA)	At diagnosis, then 5 yearly if normal	If VIA abnormal ⮌40.

Continue to assess the patient with HIV →77.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela. [2]The oral contraceptive and implant may be less effective on ART. Advise the patient on ART choosing to continue with oral contraceptive or implant to use condoms as well.

Continue to assess the patient with HIV

Do blood tests at diagnosis, before starting ART and regularly on ART: sending blood samples to respectively assigned referral hospital

At diagnosis	Starting/changing ART regimen	4 weekss	8 weeks	12 weeks	6 months	1 Year	Yearly	6 monthly
• CD4 • If available: - Cryptococcal antigen - HBsAg and Hepatitis C antibody tests	• **Starting AZT:** CBC • **Starting NVP:** ALT • **Starting TDF:** eGFR or creatinine[1] • **Changing from TDF:** HBsAg	**AZT:** CBC	**AZT:** CBC	**AZT:** CBC	• Viral load • CD4	• Viral load • CD4	Viral load	• **CD4:** If viral load test available, stop after 1 year on ART and 2 consecutive CD4 counts of >350cells/mm³ or viral load < 1000 copies/mL • **NVP:** ALT

AZT – zidovudine **CBC** – complete blood count **Hb** – haemoglobin

Review results of routine blood tests

Assess	When to assess	Note
Hepatitis	At diagnosis and if changing from TDF	• If HBsAg or hepatitis C antibody positive, refer to hospital. • If changing regimen: if HBsAg positive, continue tenofovir as a 4th medication (avoid stopping tenofovir) and refer to hospital.
CD4	At diagnosis and 6 monthly	• Start ART regardless of CD4 count. • If CD4 ≤ 350cells/mm3, also give co-trimoxazole. • If viral load test available, stop CD4 testing after 1 year on ART and 2 consecutive CD4 counts of >350cells/mm3 or viral load < 1000 copies/mL. • If viral load test not available, continue CD4 6 monthly testing.
Cryptococcal antigen	At diagnosis if CD4 ≤ 100cells/mm³	• If cryptococcal antigen positive and symptomatic, (headache, confusion), refer same day. • If cryptococcal antigen positive and asymptomatic or test unavailable, give fluconazole ⮌78 for cryptococcal infection and start ART 4 weeks later.
eGFR[2] (if not pregnant)	On TDF: before starting (if available)	If eGFR < 50mL/min/1.73m³: • Avoid tenofovir and start instead zidovudine[3]. Adjust doses of other medications. • Check BP, glucose, urine dipstick and arrange kidney ultrasound. Refer to hospital.
Creatinine (if pregnant)		If creatinine ≥ 85µmol/L, avoid tenofovir and refer.
CBC	On AZT: before starting, at 4, 8 and 12 weeks	• If Hb 7-7.9g/dL or neutrophil ≥ 0.75 x 10⁹/L or platelet > 50,000/mcL: start/continue ART. • If Hb < 7g/dL or neutrophils < 0.75 x 10⁹/L or platelet ≤ 50,000/mcL: if starting, avoid zidovudine, refer. If on AZT, switch medication ⮌79.
ALT	On NVP: before starting, then 6 monthly	• At diagnosis: - If ALT > 200, refer same day. If ALT 100-200, review hepatitis results, medications, alcohol use. Avoid nevirapine. • On ART: - If ALT > 200, refer same day. If ALT 100-200, continue medication and repeat ALT within 1 week.
Viral load	At 6 months, 12 months, then 12 monthly	• If viral load > 1000 copies/mL for 1st time, give intensified adherence support and repeat viral load after 3 months. • If viral load > 1000 copies/mL for 2nd time, patient has virological failure: refer to hospital.

Advise and treat the patient with HIV →78.

[1]If not pregnant, check eGFR. If pregnant, check creatinine instead. [2]Calculate eGFR = [(140 - age) x weight (kg)]/[72x creatinine (mg/dL)]. If patient is a woman, multiply by 0.85. [3]If previously on zidovudine, refer to hospital.

Advise the patient with HIV

- Offer to help disclose status to supportive partner, family member or friend and refer to counsellor/support group. Advise patient's partner/s and children be tested for HIV.
- Encourage abstinence, being faithful to one partner and safe sex even if partner has HIV or patient on ART. Advise correct and consistent use of condoms with all partners. Demonstrate and give male/female condoms.
- Explain that HIV is treatable but not curable and needs lifelong adherence to treatment to prevent resistance.
- Explain the benefits of starting ART early, regardless of CD4 or stage but especially if CD4 ≤ 350, stage 3 or 4, pregnant or breastfeeding. If patient chooses not to start ART, advise to attend regularly for routine HIV care and to return immediately if s/he becomes unwell.
- Give **increased adherence support** to the patient with poor adherence/attendance or viral load > 1000copies/mL:
  - Educate patient and family on the importance of adherence and dangers of resistance.
  - Plan with patient how to take treatment. Consider adherence aids (pillboxes, diaries).
  - Refer for support: adherence counsellor, support group, treatment buddy, health extension worker.

Treat the patient with HIV

- Give prophylaxis: isoniazid preventive therapy (IPT), co-trimoxazole and fluconazole as needed (see below).
- Give ART regardless of CD4 or stage ↩79.
- If already on ART and no problems, continue treatment.
- If already on ART and contraindication to current ART or intolerable side effect, change ART ↩79.

	When to give	What to give	Side effects	When to stop
Isoniazid preventive therapy (IPT)	• No TB symptoms • If also starting ART, start IPT once tolerating ART. • Avoid if TB symptoms, on TB treatment, peripheral neuropathy, liver disease, alcohol abuse.	• Isoniazid 300mg daily • Pyridoxine 25mg daily	• Peripheral neuropathy ↩50 • Rash ↩53 • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ↩80.	Stop IPT after 6 months.
Co-trimoxazole	• CD4 ≤ 350cells/mm³ • Stage 3 or 4	Co-trimoxazole 960mg PO daily	• Nausea/vomiting ↩33 • Rash ↩53 • Fatigue, dizziness (if Hb ≤ 7g/dL, refer to hospital) • Easy bruising, bleeding from gums: stop medication and refer same day. • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ↩80.	Stop co-trimoxazole after 1 year on ART and 2 consecutive CD4 counts of >350cells/mm³ or viral load < 1000 copies/mL
Fluconazole	• Cryptococcal antigen positive or • Cryptococcal antigen unavailable with CD4 ≤ 100cells/mm³	• If pregnant, breastfeeding or known liver disease, avoid fluconazole and refer same day. • If symptomatic (headache, confusion), refer same day. • If asymptomatic, give fluconazole 800mg PO daily for 2 weeks, then 400mg daily for 2 months, then 200mg daily to complete at least 1 year.	• Nausea/vomiting ↩33 • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ↩80.	Stop after at least 1 year on ART and fluconazole if 2 consecutive CD4s ≥ 100cells/mm³ or viral load < 1000copies/mL.

Review the patient with HIV

- If starting ART: review 2 weeks after starting ART, then monthly.
- Once on ART for ≥ 1 year, 2 consecutive viral loads < 1000 copies/mL, not pregnant or breastfeeding, is adherent and well, review 6 monthly. If unwell or problems with adherence, see more often.
- If declines ART: see patient 2 weekly and give repeated counseling; Otherwise advise patient to return if unwell or s/he decides to start ART.

Start or change ART in the patient with HIV

1. Decide which ART regimen the patient needs

Currently not on ART

Never had ART

Choose 1st line ART

Known with kidney disease or uncontrolled hypertension?

Yes

Known with active psychiatric illness?

No

Choose zidovudine, lamivudine and efavirenz.

Yes

Choose zidovudine, lamivudine and nevirapine.

No

Known with active psychiatric illness?

Yes

Choose tenofovir, lamivudine and nevirapine.

No

Choose tenofovir, lamivudine and efavirenz.

Previously had ART and interrupted

- Do viral load test.
- Is viral load > 1000copies/mL?

No

Choose same regimen as before.

Yes

Refer to hospital for 2nd line ART

Currently on ART and contraindication or intolerable side effect.

Switch to a medication from the same section ↩80.

2. Check other medications and change if needed

- If epilepsy and patient is on phenytoin, monitor closely. If available or affordable, use instead valproic acid ↩97.
- If on oral contraceptive or implant, advise the patient to use condoms as well.
- If on TB treatment and starting nevirapine, replace with efavirenz ↩80.

3. Order blood tests as directed ↩77

If blood results done accordingly are abnormal, alter regimen choice ↩80. Discuss if needed.

4. Decide when to start/change ART

If starting ART:

- If pregnant or breastfeeding: start ART after 2 weeks unless newly diagnosed TB or suspected TB (refer instead to hospital).
- If TB, start ART once tolerating TB treatment:
  - If CD4 ≤ 50cells/mm³ or stage 4, start ART within 2 weeks. If TB meningitis, start ART after 2-8 weeks of TB treatment.
  - If CD4 > 50cells/mm³ and not stage 4, start ART between 2-8 weeks of TB treatment.
- If cryptococcal antigen positive: start ART after 4 weeks of fluconazole. If cryptococcal meningitis, start ART after 4-6 weeks of fluconazole.
- If none of above: start ART within 2 weeks.

If changing ART:

- Change as soon as blood results are available.
- If contraindication or intolerable side effect: change same day and review blood results as soon as possible.

5. Start/change ART

- Give a combination of 3 medications (1 from each of the 3 sections in the table below) according to chosen ART regimen and blood results.
- Give fixed dose combination tablet if available.

	Medication	Dose	Urgent side effects (stop medication and refer same day)	Self-limiting side effects (refer to hospital if persist after 6 weeks)	Long-term side effects
1	Tenofovir (TDF)	• 300mg PO daily • Avoid if eGFR < 50mL/min/1.73m³	Kidney failure	Nausea, diarrhoea	-
	Zidovudine (AZT)	300mg PO BID	• Lactic acidosis[1] • Symptomatic anaemia (pallor with respiratory rate > 30, dizziness/faintness or chest pain)	• Headache • Nausea • Muscle pain • Fatigue (if Hb ≤ 7g/dL switch medication ⮌79)	Fat loss in face, limbs and buttocks; fat accumulation (central obesity, breast enlargement); switch to tenofovir or abacavir ⮌79.
	Abacavir (ABC) Avoid if previous Abacavir Hypersensitivity Reaction (AHR)	300mg PO BID or 600mg PO daily	Abacavir Hypersensitivity Reaction likely if ≥ 2 of: • Fever • Rash • Fatigue/body pain • Nausea/vomiting/diarrhoea/abdominal pain • Sore throat/cough/difficulty breathing	• Nausea • Vomiting • Diarrhoea	-
2	Lamivudine (3TC)	150mg PO BID or 300mg PO daily	Uncommon	Uncommon. Occasional nausea and diarrhoea	Uncommon
3	Efavirenz (EFV) Avoid if active psychiatric illness	• 400mg PO daily • If pregnant or TB, give 600mg PO daily • Avoid taking drug with fatty meal	• Rash ⮌53 • Jaundice/hepatitis[2] • Psychosis	• Rash ⮌53 • Headache, dizziness, sleep problems, low mood - take dose at night. If on 600mg daily, consider giving 400mg PO daily.	• Central obesity, breast enlargement, switch to nevirapine ⮌79. • Dyslipidemia
	Nevirapine (NVP) Avoid if CD4 > 250cells/mm³ (woman) or > 400cells/mm³ (man) or ALT ≥ 100	200mg PO daily for 2 weeks, then 200mg PO BID	• Rash ⮌53 • Jaundice/hepatitis[2]	• Rash ⮌53 • Nausea	-

[1]Lactic acidosis likely if 2 or more of: fatigue/weakness, body pain, nausea/vomiting, diarrhoea, weight loss, loss of appetite, abdominal pain, difficulty breathing (more likely if rapid lactate ≥ 2.5mmol/L). [2]If jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌77.

Asthma and COPD: diagnosis

- The patient with chronic cough may have more than one disease. Also consider TB, pneumocystis pneumonia (PJP), lung cancer, bronchitis, heart failure and post-infectious cough ⮌29.
- Asthma and chronic obstructive pulmonary disease (COPD) both present with cough, wheeze, tight chest or difficulty breathing. Distinguish asthma from COPD:

Asthma likely if several of:
- Onset before 20 years of age
- Associated allergic rhinitis, eczema, allergic conjunctivitis, other allergies
- Symptom severity changes over time with symptom-free periods in between.
- Symptoms worse at night, early morning, with cold, stress or common cold
- Patient or family have a history of asthma

Give routine asthma care →82.

COPD likely if several of:
- Onset after 40 years of age
- Symptoms are persistent and worsen slowly over time
- Cough with sputum starts long before difficulty breathing
- History of heavy tobacco smoking or indoor smoke exposure
- Previous diagnosis of TB
- Poor response to inhaled salbutamol

Give routine COPD care →83.

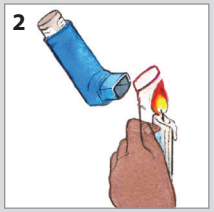
If unsure of diagnosis, treat as asthma ⮌82 and refer to hospital within 1 month.

Using inhalers and spacers

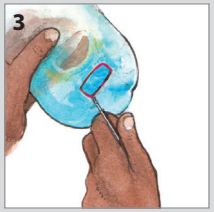
- If patient unable to use an inhaler correctly, add a spacer to increase drug delivery to the lungs, especially if using inhaled corticosteroids. This may also reduce the risk of oral candida.
- Clean the spacer before first use and every second week: remove the canister and wash spacer with soapy water. Allow it to drip dry. Avoid rinsing with water after each use.

How to make a spacer from a plastic bottle[1]

- Wash a 500mL plastic cold-drink bottle with soapy water.
- Leave to air-dry.
- Discard the lid.



- Wind a steel wire around the open mouth of inhaler to form a mould.
- Keep some wire for a handle.
- Heat the mould with a flame until it is red hot.

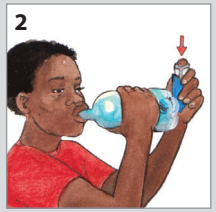


Apply the hot mould to the bottom end of the bottle for 10 seconds then rotate 180° and reapply until the plastic melts.

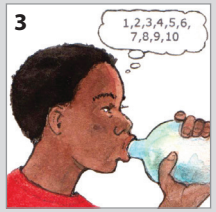
- Insert mouth of inhaler immediately to create a tight fit.
- Apply quick-setting glue to seal the inhaler permanently to the spacer.

How to use an inhaler with a spacer[2]

Shake inhaler and insert into spacer.



- Stand up and breathe out.
- Then form a seal with lips around mouthpiece.



Press pump once to release one puff into spacer.

- Then take 4 breaths keeping spacer in mouth.
- Repeat steps 3 and 4 for each puff.
- Rinse mouth after using inhaled corticosteroids.

[1]Adapted from: Zar HJ, Green C, Mann MD, Weinberg EG. A novel method for constructing an alternative spacer for patients with asthma. SAMJ. 1999 January; 89(1): 40-42. [2]If no spacer available, explain how to use inhaler without spacer: take off cap and shake inhaler. Stand up and breathe out. Then form seal with lips around inhaler mouthpiece. Breathe in slowly. While breathing in, press pump once and keep breathing in slowly. Close mouth and hold breath for 10 seconds. Breathe out.

Asthma: routine care

Assess the patient with asthma

Assess	When to assess	Note
Symptom control	Every visit	• If patient has wheeze/tight chest and is breathless at rest or while talking or respiratory rate > 30, manage acute exacerbation ⮌30. • Any of the following indicate that the patient's asthma is **not controlled**: - Daytime cough, difficulty breathing, tight chest or wheeze > 2 times a week - Night-time or early morning waking due to asthma symptoms - Limitation of daily activities due to asthma symptoms - Need to use salbutamol inhaler > 2 times a week - frequent exacerbations > 2 in past 12 months • If none of the above then asthma is **controlled**.
Other symptoms	Every visit	• Manage symptoms as on symptom pages. Ask about and manage allergic rhinitis ⮌26 and dyspepsia ⮌32. • Ask the patient using inhaled corticosteroids about a sore mouth. Check for oral candida ⮌27.
Medication use	Every visit	Check adherence and that patient can use inhaler and spacer correctly ⮌81. If not adherent, refer for health extension worker support.

Advise the patient with asthma

- Ask about smoking. If patient smokes tobacco ⮌102. Support patient to change ⮌125.
- Ensure patient understands medication: beta-agonist (salbutamol) relieves symptoms but does not control asthma. Inhaled corticosteroid (beclomethasone) prevents but does not relieve symptoms and it is the mainstay of asthma control.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of beclomethasone.
- Advise patient to avoid allergens that worsen/trigger asthma or allergic rhinitis (e.g. animals, dust, chemicals, pollen, grass). Also advise to avoid aspirin, NSAIDs (e.g. ibuprofen) and beta-blockers (e.g. metoprolol).

Treat the patient with asthma

- Give inhaled salbutamol 200mcg (2 puffs) as needed, up to 4 times a day. If exercise-induced asthma, give patient salbutamol 200mcg (2 puffs) to use before exercise.
- If patient received prednisolone or hydrocortisone for an acute exacerbation, give prednisolone 40mg PO daily for 5 days.
- If acute exacerbation or asthma is **not controlled**, step up treatment:
  - Before adjusting treatment ensure patient is adherent and can use inhaler and spacer correctly ⮌81. Also check patient is avoiding smoking, allergens and medications (aspirin, NSAIDs, beta-blockers).
  - Give inhaled beclomethasone 200mcg BID if not already on it. If already on it, increase beclomethsone to 400mcg BID. If not available start predisolone 2.5 to 5mg daily and refer.
- If still not controlled, add theophedrine 120/10mg BID. Increase theophedrine to 240/20mg BID if needed . If not controlled after 1 month, refer to hospital.
- If asthma is **controlled**: continue medication at same dose. If controlled and no acute exacerbations for ≥ 6 months, step down treatment:
  - If on theophylline, decrease dose or stop.
  - If on beclomethasone, decrease total daily dose by 200mcg. If on 200mcg daily, stop beclomethasone.
  - If symptoms worsen while stepping down treatment, step up again to same medication and dose as when the patient was controlled.
- If acute exacerbation, only give antibiotic if fever or thick yellow/green sputum: give doxycycline 100mg PO BID for 5 days. Avoid doxycycline if pregnant.
- If > 2 courses of prednisolone given in past 6 months or acute exacerbation occurs on maximum treatment, refer to hospital.

- Review the patient with controlled asthma 3 monthly, the patient with asthma that is not controlled monthly, and the patient with an acute exacerbation after 1 week.
- **Advise patient to return before next appointment if no better or symptoms worsen.**

Chronic obstructive pulmonary disease (COPD): routine care

Assess the patient with COPD

Assess	When to assess	Note
COPD symptoms: cough and difficulty breathing	Every visit	• If patient has wheeze/tight chest and breathless at rest or while talking or respiratory rate > 30, manage acute exacerbation ⮌30. • Assess disease severity: If difficulty breathing with activities of daily living (like dressing) and at rest, COPD is **severe**. If unable to walk at same pace as others of same age, COPD is **moderate**. If difficulty breathing only when walking fast/up a hill, COPD is **mild**. • Investigate for TB only if patient has other TB symptoms like weight loss, night sweats, blood-stained sputum ⮌71.
Other symptoms	Every visit	• Manage symptoms as on symptom pages. • Ask the patient using inhaled corticosteroids about a sore mouth. Check for oral candida ⮌27. • If swelling in both legs, and unable to lie flat, consider heart failure. Refer to hospital.
BMI/MUAC	Every visit	If pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and BMI < 17.5 or MUAC < 21cm, **malnutrition** likely ⮌70
Medication use	Every visit	Check adherence and that patient can use inhaler and spacer correctly ⮌81. If not adherent, refer for health extension worker support.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Palliative care	Every visit	If severe COPD, > 3 hospital admissions for COPD in 1 year or heart failure and survival is predicted to be short, also give palliative care ⮌120.
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌84. • If <10%, reassess after 1 year. If 10% to < 20%, reassess after 6 months.

Advise the patient with COPD

- Ask about smoking. If patient smokes tobacco ⮌102. Support patient to change ⮌125. Stopping smoking is the mainstay of COPD care.
- Encourage the patient to take a walk daily and to increase activities of daily living like gardening, housework and using stairs instead of lifts.
- Help the patient to manage his/her CVD risk ⮌85.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of beclomethasone.

Treat the patient with COPD

- Give inhaled salbutamol 200mcg (2 puffs) when needed, up to 4 times a day.
- If patient received prednisolone or hydrocortisone for acute exacerbation at this visit, give prednisolone 40mg PO daily for 5 days.
- If sputum increases in amount or changes in color to yellow/green and worsening of cough or dyspnea, treat for chest infection:
  - Give doxycycline 100mg PO BID for 7 days. Avoid if pregnant.
  - If increased breathlessness, also give prednisolone 40mg PO daily for 5 days if not already on it.
- Before referring for treatment adjustment, ensure patient is adherent and can use inhaler and spacer correctly ⮌81
- If **moderate** or **severe** COPD and ≥ 2 exacerbations in 1 year, add inhaled beclomethasone 200mcg BID, if available.
- If severe COPD, add theophedrine 120/10mg BID. Increase theophedrine to 240/20mg BID if needed. If no better after 1 month, refer to hospital.
- If ≥ 2 courses of prednisolone given in 6 months, refer to hospital for review and spirometry.

If stable and mild COPD review 6 monthly. If moderate/severe COPD or frequent/recent exacerbation review monthly.

Cardiovascular disease (CVD) risk: diagnosis

CVD risk is the chance of having a heart attack or stroke over the next 10 years

CVD risk[1]:

- **> 30%**
- **20-30%**
- **10-20%**
- **< 10%**

Identify if the patient has established CVD:

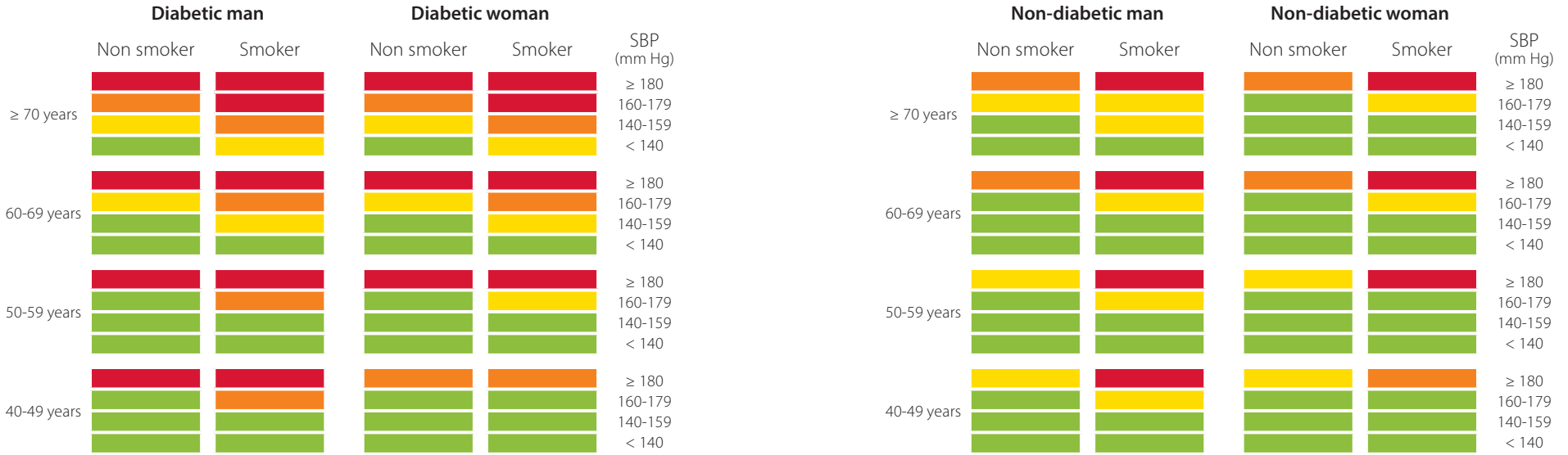
- Patient known with any of: previous heart attack, angina pectoris or heart failure, previous stroke or TIA or peripheral vascular disease.
- If patient has current/recent chest pain, especially on exertion and relieved by rest, screen for ischaemic heart disease ⮌94.
- If patient has current/recent leg pain, especially on walking and relieved by rest, screen for peripheral vascular disease ⮌49.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA ⮌93.

Look for CVD risk factors:

- Ask about **smoking**: consider the patient who quit smoking in the past year a smoker for CVD risk assessment.
- Ask about **family history**: a parent or sibling with premature CVD (man < 55 years or woman < 65 years) is a risk factor.
- Calculate **Body Mass Index** (BMI): weight (kg) ÷ height (m) ÷ height (m). A BMI > 25 is a risk factor.
- Measure **waist circumference** over no/light clothing, at the end of a normal breath out, midway between lowest rib and top of iliac crest. More than 80cm (woman) or 94cm (man) is a risk factor.
- Look for **hypertension**: check BP ⮌89.
- Look for **diabetes**: check glucose ⮌86.

Calculate the patient's CVD risk:

- Plot patient's risk on charts[1] below using diabetes status, age, sex, systolic BP (SBP) and smoking status. Show the patient what his/her risk of heart attack or stroke might be over next 10 years.
- Avoid using these charts to decide treatment if patient has established CVD or kidney disease. Treat as if the patient has a CVD risk > 30%.



- **If CVD risk factors or CVD risk ≥ 10% or established CVD, manage the CVD risk →85.**
- If CVD risk < 10% and no CVD risk factors, reassess CVD risk after 5 years.

[1]Adapted from WHO/ISH Cardiovascular Risk Prediction Chart for WHO epidemiological sub-regions AFR E. From: Prevention of Cardiovascular Disease. Pocket Guidelines for Assessment and Management of Cardiovascular Risk. World Health Organization. Geneva, 2007.

Cardiovascular disease (CVD) risk: routine care

Assess the patient with CVD risk factors or CVD risk ≥ 10% or established CVD

Assess	When to assess	Note
Symptoms	Every visit	Ask about chest pain ⮌28, difficulty breathing ⮌29, leg pain ⮌49, or new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance ⮌93.
Modifiable risk factors	Every visit	Ask about smoking, diet, substance use and exercise or activities of daily living. Manage as below.
BMI	Every visit	BMI = weight (kg) ÷ height (m) ÷ height (m). Aim for < 25.
Waist circumference	Every visit	Measure while standing, on breathing out, midway between lowest rib and top of iliac crest. Aim for < 80cm (woman) and < 94cm (man).
BP	Every visit	Check BP ⮌89. If known hypertension ⮌90.
CVD risk	At diagnosis, then depending on risk	If < 10% with CVD risk factors or 10-20% reassess after 1 year. If > 20%, refer to hospital for investigation if not already done.
Blood glucose	At diagnosis, then depending on result	Check glucose ⮌86. If known diabetes ⮌87.
Random total cholesterol (by referral to hospital)	At baseline if no CVD or diabetes within 3 months of diagnosis.	• If no CVD or diabetes no need to repeat cholesterol or adjust simvastatin. • If CVD or diabetes, increase simvastatin based on repeat cholesterol on relevant page.

Advise the patient with CVD risk

- Discuss CVD risk: explore the patient's understanding of CVD risk and the need for a change in lifestyle.
- Invite patient to address 1 lifestyle CVD risk factor at a time: help plan how to fit the lifestyle change into his/her day. Explore what might hinder or support this. Together set reasonable target/s for next visit.

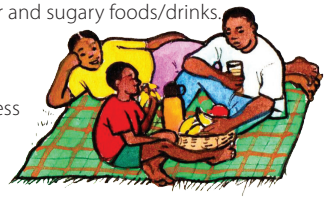
Physical activity
- Aim for at least 30 minutes of moderate exercise (e.g. brisk walking) on most days of the week.
- Increase activities of daily living like gardening, housework, walking instead of taking transport, using stairs instead of lifts.
- Exercise with arms if unable to use legs.

Smoking
- Encourage patient not to start
- If patient smokes tobacco ⮌102.

Weight
- Aim for BMI < 25, and waist circumference < 80cm (woman) and < 94cm (man).
- Any weight reduction is beneficial, even if targets are not met.

Diet
- Eat a variety of foods in moderation. Reduce portion sizes.
- Increase fruit and vegetables.
- Reduce fatty foods: eat low fat food, cut off animal fat. Use liquid oils instead of solid or semisolid oils
- Avoid adding salt to food.
- Avoid/use less sugar and sugary foods/drinks.

Stress
Assess and manage stress ⮌65.



Screen for substance abuse
- Limit alcohol intake ≤ 2 drinks[1]/day and avoid alcohol on most days of the week.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.

- Identify support to maintain lifestyle change: health care worker, friend, partner or relative to attend clinic visits, a healthy lifestyle group.
- Be encouraging and congratulate any achievement. Avoid judging, criticising or blaming. It is the patient's right to make decisions about his/her own health. For tips on communicating effectively ⮌124.

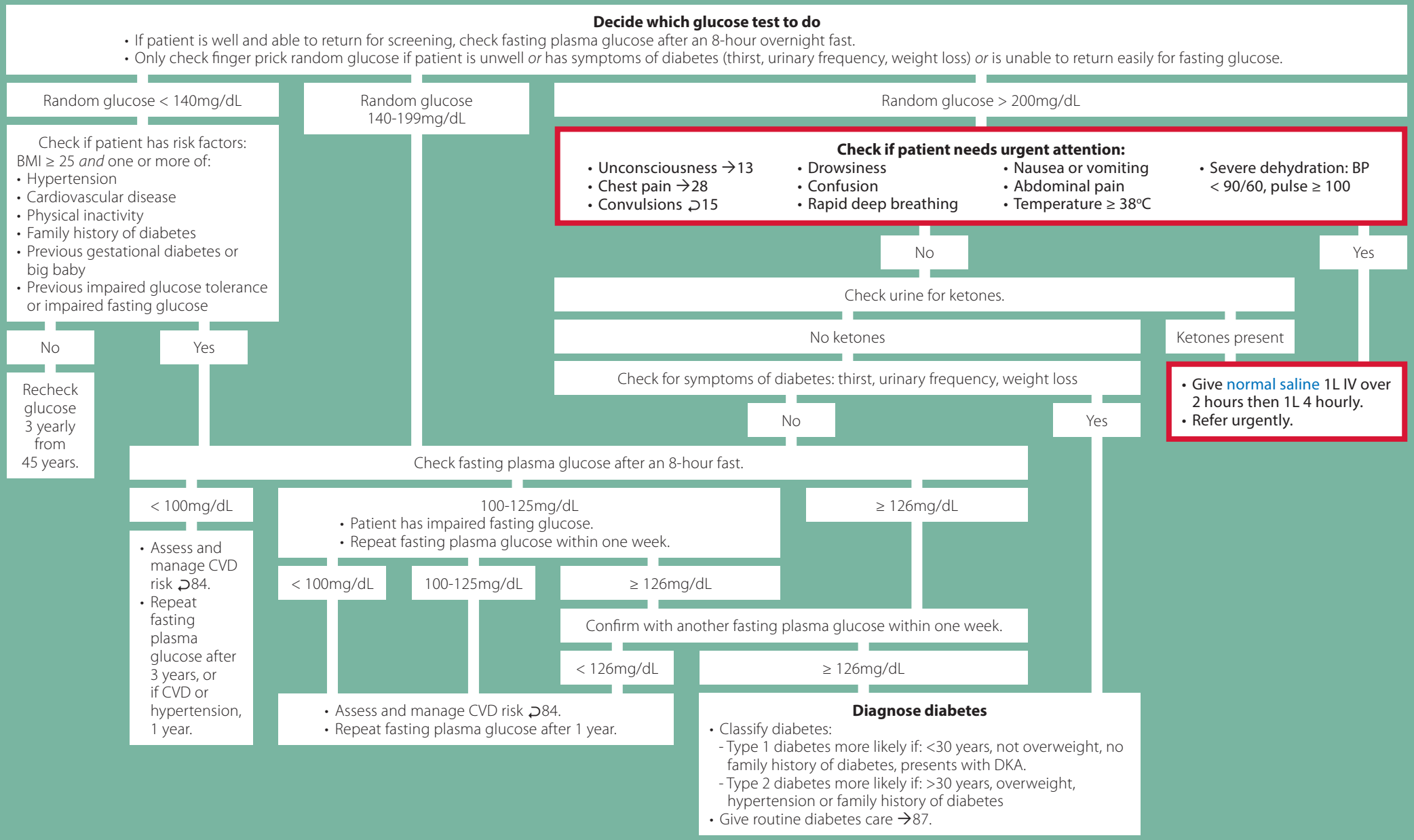
Treat the patient with CVD risk

- If no diabetes, give simvastatin 20mg PO daily if patient has established CVD, cholesterol > 300mg/dL or CVD risk ≥ 30%.
- If diabetes, decide if patient needs simvastatin ⮌87.

If CVD risk remains > 30% after 6 months, refer.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Diabetes: diagnosis



Diabetes: routine care

Give urgent attention to the patient with diabetes and one or more of:

- Chest pain →28
- Convulsing ⮌15
- Decreased consciousness, drowsiness
- Confusion or unusual behaviour
- Weakness or dizziness
- Shaking
- Sweating
- Palpitations
- Rapid deep breathing
- Nausea or vomiting
- Abdominal pain
- Thirst or hunger
- Temperature ≥ 38°C
- Severe d ehydration: decrease urine output, BP < 90/60, pulse ≥ 100

Check random fingerprick glucose:

Glucose < 70mg/dL with/without symptoms

- Give oral glucose 20g. If unable to take orally, give instead glucose 40% 50mL IV over 2-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes. Maintain with glucose 10% solution[1].
- Give the patient food as soon as s/he can eat safely.
- Identify cause and educate about meals and doses ⮌88.
- If incomplete recovery, refer same day.
- Discuss referral if on gliclazide or insulin.

Glucose > 200mg/dL with symptoms

- Give normal saline 1L IV over 2 hours then 1L 4 hourly.
- Give regular insulin 10IU IM single dose.
- Refer urgently.

Glucose > 200mg/dL without symptoms

Check urine for ketones.

- Ketones in urine → Give normal saline 1L IV over 2 hours then 1L 4 hourly. Give regular insulin 10IU IM single dose. Refer urgently.
- No ketones in urine → Give routine diabetes care below.

Assess the patient with diabetes

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. • If frequent urination, thirst or hunger, check random glucose. • Ask about chest pain ⮌28 and leg pain ⮌49.
Family planning	Every visit	Assess patient's contraception needs ⮌110. If pregnant or planning pregnancy, refer to hospital.
CVD risk	At diagnosis, then yearly	Assess CVD risk ⮌84. Start simvastatin if CVD risk > 20% or patient is > 40 years old ⮌88.
BP	Every visit	Check BP ⮌89. If known hypertension ⮌90.
BMI	At diagnosis and yearly	BMI = weight (kg) ÷ height (m) ÷ height (m). Aim for BMI < 25kg/m².
Waist circumference	Every visit	Aim for < 80cm in woman and < 94cm in man.
Eyes for retinopathy	At diagnosis, yearly and if visual problems	If visual problems, cataracts or new retinopathy, refer to hospital.
Feet ⮌50	• Visual: every visit • Comprehensive: at diagnosis then yearly, more often if problems	• Visual assessment: look for ulcers, calluses, redness, warmth, deformity. • Comprehensive assessment: visual assessment as above, foot pulses, reflexes, sensation in toes and feet • If ulcers ⮌59. If severe infection or other abnormalities, refer to hospital.
Random glucose	Only if symptoms or adjusting glucose-lowering medication	If random glucose < 70mg/dl or > 200mg/dl give urgent attention above.
Urine protein	At diagnosis, then yearly if not on enalapril	If urine protein > 1+, start enalapril 5mg PO daily and increase to a maximum of 10mg PO BID. Refer to hospital for annual check up.
eGFR (by referral to hospital)	At diagnosis, then yearly	If eGFR < 60mL/min/1.73m³, refer to hospital.
Random total cholesterol (by referral to hospital)	• Baseline if < 40 years or if CVD risk < 20% • 3 months after starting simvastatin and then after 3 months if ≥ 190mg/dL	• If baseline cholesterol > 300mg/dL, start simvastatin. • If cholesterol ≥ 190mg/dL: increase simvastatin to 40mg. If already on 40mg daily, refer to hospital. • If cholesterol < 190mg/dL, no need to repeat.

[1]Add 10 vials of glucose 40% in 1L dextrose in normal saline solution at 30 drops per minute.

Advise the patient with diabetes

- Help the patient to manage his/her CVD risk ⮌85.
- Explain importance of adherence and to eat regular meals. If newly diagnosed, poor adherence or attendance, refer local diabetes association branches.
- Ensure patient can recognise and manage hypoglycaemia (shaking, sweating, palpitations, weakness, hunger):
  - Drink sugar water, sugary soft drink or eat a candy or biscuit. Always carry something sweet. If convulsions, confusion/coma, rub sugar inside mouth.
  - Identify and manage the cause: increased exercise, missed meals, inappropriate dosing of glucose-lowering medications, alcohol use, illnesses like infections.
- Encourage the patient to eat a healthy, balanced, low-fat diet including lots of vegetables. Eat fewer sweet foods.
- Educate the patient to care for his/her feet to prevent ulcers and amputation: avoid walking barefoot or without socks, wash feet in lukewarm water and dry well especially between the toes, avoid cutting calluses or corns, use care when cutting nails. Look at feet every day and see health care worker if any problem or injury.
- Educate the patient using insulin:
  - Explain injection technique and recommended sites: abdomen, thighs, upper arms.
  - Advise patient to store insulin in fridge or a cool dark place.
  - Ensure patient can recognise hypoglycaemia and hyperglycaemia.
  - Arrange for on sharps disposal at home or clinic.

Treat the patient with diabetes

- Give simvastatin if ≥ 40 years, CVD risk > 20%, established CVD or cholesterol > 300mg/dL. Start simvastatin[1] 20mg PO daily. If repeat cholesterol > 190mg/dL increase to 40mg PO daily. If already on 40mg daily, refer to hospital.
- Start aspirin 75-150mg PO daily if patient has established CVD or CVD risk >30%. Avoid if known peptic ulcer, dyspepsia, kidney or liver disease.
- Give enalapril 5mg PO daily if diabetic kidney disease confirmed with urine albumin even if no hypertension. Increase gradually to 20mg PO daily if systolic BP remains > 100. Avoid in angioedema, stop if severe cough with use.
- If **type 1 diabetes**, start or continue insulin:
  - Start with NPH insulin at 0.2-0.4U/kg in two divided doses (2/3 morning, 1/3 evening).
  - Increase by 2 units every 3 days until morning fasting blood glucose is 90-130mg/dL.
  - If > 30IU needed, episodes of hypoglycemia at night or random glucose >180mg/dL repeatedly after 3 months, refer.
- If **type 2 diabetes**, give glucose-lowering medication in a stepwise fashion below. Ensure patient is adherent before increasing treatment.
- If patient using insulin:
  - Advise home blood glucose monitoring if available and patient is able to operate glucometer.
  - Once stable, patient to check fasting blood glucose on waking once a week.
  - If unavailable, monitor fasting blood glucose at health centre (or if not possible random).

Step	Medication	Start dose	Maximum dose	Note
1	Metformin (take with or after meals)	500mg PO daily	1g BID	• Increase by 500mg/day every week if random glucose ≥ 180mg/dL or fasting glucose ≥ 130mg/dL and patient adherent. • Avoid in kidney or liver disease, or heart failure. • If on maximum dose, move to step 2.
2	Add glibenclamide (take with food)	2.5mg PO daily	20mg daily	• Continue metformin. • If random glucose ≥ 180mg/dL and patient is adherent, increase every week by 2.5mg/day. • If total daily dose > 5mg then give in 2 divided doses. • Avoid in severe kidney or liver disease. • If on maximum dose, move to step 3.
3	Add basal insulin (NPH insulin)	0.1 units/kg/dose subcutaneously		• Take at bedtime. • Continue metformin. Decrease glibenclamide gradually until stopped. • Increase by 2 units every 3 days until morning fasting glucose is between 90 and 130mg/dL. • If > 30IU needed, episodes of hypoglycaemia at night or fasting glucose ≥ 130mg/dL repeatedly after 3 months, refer.

Review the patient with diabetes 6 monthly once stable.

Hypertension: diagnosis

Check blood pressure (BP)

- Seat patient with back against chair and arm supported at heart level for 5 minutes.
- Use a larger cuff if mid-upper arm circumference is > 34cm.
- Record systolic BP (SBP) and diastolic BP (DBP): SBP is the first appearance of sound, DBP is the disappearance of sound.
- Check two readings 5 minutes apart. Use the lowest reading to determine the patient's BP.
- If patient is pregnant, interpret reading →112.

Give urgent attention to the patient with BP ≥ 180/110 and one or more of:

- Visual disturbances
- Dizziness
- Weakness or numbness
- Confusion
- Headache
- Chest pain →28
- Difficulty breathing worse on lying flat or with leg swelling →91
- BP > 200/120

Management:

- Give nifedipine 20mg PO.
- Refer urgently.

Approach to the patient not needing urgent attention

BP < 140/90

BP ≥ 140/90

Repeat BP check on 2 more occasions.
Avoid diagnosing hypertension based on one reading alone.

BP < 140/90 on repeat checks

BP confirmed on 3 occasions ≥ 140/90

Assess CVD risk ⮌84.

Diagnose hypertension

- Give routine hypertension care →90.
- If < 40 years, refer to exclude secondary hypertension.

BP < 120/80

BP 120/80-139/89

Recheck BP after 5 years.

Patient's BP is a CVD risk factor.

- Manage CVD risk ⮌85.
- Recheck BP after 1 year.

Hypertension: routine care

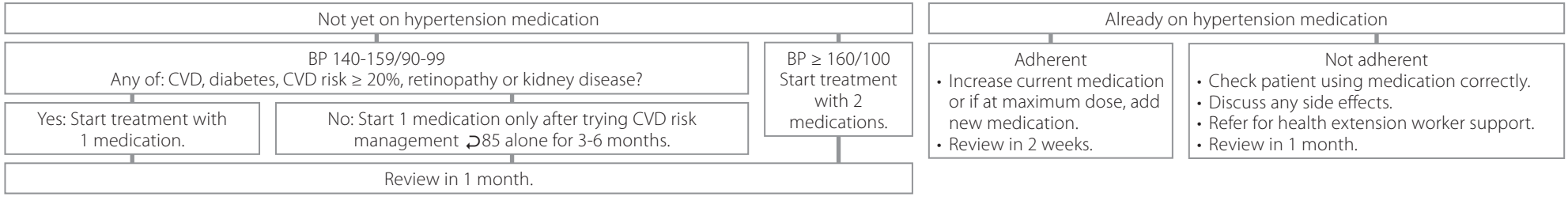
Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms on symptom pages. Ask about symptoms of heart failure ⮌91, ischaemic heart disease ⮌94 or stroke/TIA ⮌93.
BP	• Check 2 readings at every visit. • For correct method ⮌89.	• If BP < 140/90 (< 150/90 if ≥ 60 years), BP is **controlled**: continue current treatment and review 6 monthly. • If BP ≥ 140/90 (≥ 150/90 if ≥ 60 years), BP is **not controlled**: decide treatment below. If ≥ 180/110: also check if needs urgent attention ⮌89.
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌84. • If < 10% with CVD risk factors reassess after 1 year. If 10-20% reassess after 6 months. If > 20% refer to hospital.
Eyes for retinopathy	At diagnosis, then yearly and if visual problems	If new retinopathy, visual problems or cataracts, refer.
Glucose	At diagnosis, then yearly	Check glucose ⮌86. If known diabetes ⮌87.
eGFR[1] (by referral to hospital)	At diagnosis, then yearly	If eGFR < 60mL/min/1.73m³, refer to hospital.
Urine dipstick	At diagnosis, then yearly	If blood or protein on dipstick, refer to hospital and repeat dipstick at next visit. If glucose on dipstick, screen for diabetes ⮌86.
Random total cholesterol (by referral to hospital)	At baseline if no CVD or diabetes within 3 months of diagnosis.	• If no CVD or diabetes no need to repeat cholesterol or adjust simvastatin. • If CVD or diabetes, increase simvastatin based on repeat cholesterol on relevant page.

Advise the patient with hypertension

- Help patient to manage his/her CVD risk ⮌85. Emphasise salt restriction ≤ 1 teaspoon/day, weight reduction and smoking cessation. If patient smokes tobacco ⮌102.
- Advise patient to avoid NSAIDs (e.g. ibuprofen) and combined oral contraceptive ⮌110. If pregnant or planning pregnancy, refer to hospital.
- Explain importance of adherence and that patient will need lifelong hypertension care to prevent stroke, heart disease and kidney disease. If newly diagnosed, refer for health extension worker support.

Treat the patient with hypertension

- If no diabetes, give simvastatin 20mg PO daily if patient has established CVD, cholesterol > 300mg/dL or CVD risk ≥ 30%. If diabetes, decide if patient needs simvastatin ⮌87.
- Give aspirin 75-150mg PO daily if patient has CVD. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- If BP is not controlled, decide treatment for hypertension using algorithm and table below:



Medication	Decide which medication to use	Start dose	Maximum dose	Side effects
Hydrochlorothiazide	First-line therapy. Avoid in gout, severe liver/kidney disease. Refer if impaired glucose tolerance, diabetes or raised cholesterol.	12.5mg PO daily in morning	50mg daily or in 2 divided doses	Impaired glucose tolerance, gout attack, gastrointestinal disturbances
Enalapril	Use first if diabetes with proteinuria or kidney disease. Avoid if previous angioedema. Add to hydrochlorothiazide if patient needs > 1 medication.	5mg PO daily or in 2 divided doses	40mg daily in 2 divided doses	Cough (common), dizziness, angioedema (swelling tongue, lips, face, difficulty breathing: stop enalapril immediately ⮌24).
Amlodipine	Use if peripheral vascular disease. Refer if patient has heart failure.	2.5mg PO daily	10mg daily	Dizziness, flushing, headache, fatigue
Atenolol	Use if ischaemic heart disease. Avoid in uncontrolled heart failure, asthma, COPD.	50mg PO daily	100mg daily	Tight chest, fatigue, slow pulse, headache, cold hands/feet, impotence

[1]Calculate eGFR = [(140 - age) x weight (kg)]/[72x creatinine (mg/dL)]. If patient is a woman, multiply by 0.85.

Heart failure: routine care

The patient with heart failure has leg swelling and difficulty breathing which worsens on lying down/with effort. **A doctor must confirm the diagnosis and refer for specialist assessment.**

Give urgent attention to the patient with heart failure and one or more of:

• Chest pain →28 • Rapid worsening of symptoms • Respiratory rate > 30 at rest • BP < 90/60 • New wheeze • Frothy sputum

Management:

- Sit patient up and if oxygen saturation < 90% or oxygen saturation machine not available, give face mask oxygen.
- If systolic BP > 90: give furosemide 40mg slowly IV. If no response after 30 minutes, give 80mg IV; if still no better after 20 minutes, give a further 40mg IV. If IV furosemide unavailable, give PO.
- If systolic BP > 90: give sublingual isosorbide dinitrate 5mg even if there is no chest pain. Repeat 4 hourly.
- Refer urgently.

Assess the patient with heart failure

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. If cough or difficulty breathing ⮌29. Refer same day if temperature ≥ 38°C, fever/chills or fainting/blackouts.
Family planning	Every visit	Discuss contraception needs ⮌110. If pregnant or planning pregnancy, refer for specialist care.
Substance use/abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Weight	Every visit	Assess changes in fluid balance by comparing with weight when patient least symptomatic.
BP and pulse	Every visit	Check BP ⮌89. If known hypertension ⮌90. If new irregular pulse, refer same day.
eGFR[2] and potassium	At diagnosis, 6 monthly	Also check 1-2 weeks after starting/increasing dose of spironolactone/enalapril. If abnormal, refer. If potassium > 5mmol/L, stop spironolactone.
Other blood tests	At diagnosis	Check Hb, glucose (also yearly ⮌86 to interpret results). If abnormal, refer. Test for HIV ⮌75.

Advise the patient with heart failure

- Advise patient to adhere to treatment even if asymptomatic.
- Help the patient to manage his/her CVD risk ⮌85. Emphasize salt restriction to < 1 teaspoon/day and advise regular exercise within limits of symptoms.
- Advise patient to restrict fluid intake to 1.5L/day (6 cups) and if possible to monitor weight daily. If s/he gains ≥ 2kg in 2 days, advise to return to clinic.

Treat the patient with heart failure

Aim to have patient on steps 1, 2 and 3. Add step 4 if patient has ongoing symptoms on steps 1-3. If uncontrolled on steps 1-4, refer to hospital.

Step	Medication	Dose	Note
1	Give furosemide	Start: 20-40mg PO daily. Use lowest dose to prevent leg swelling.	Use if moderate-severe heart failure or eGFR < 60mL/min/1.73m². Expect response within 2-3 days.
	or hydrochlorothiazide	25-50mg PO daily	Use if mild heart failure and eGFR ≥ 60mL/min/1.73m². Avoid in gout, liver disease.
2	Add enalapril	Start 2.5mg PO BID. Maximum: 20mg BID.	• Increase gradually. Continue maximum tolerated dose. • Side effects: cough (common, if troublesome refer), dizziness, angioedema (stop enalapril immediately).
3	Add carvedilol	Start 3.125mg PO BID. Maximum: 25mg BID.	• Start once on enalapril and no oedema. Double dose 2 weekly. Continue maximum tolerated dose. • Avoid in asthma/COPD, peripheral vascular disease or if pulse < 60.
4	Add spironolactone	Start 25mg PO daily. Maximum: 50mg daily	Avoid if eGFR < 60mL/min/1.73m² or potassium > 5mmol/L. Stop potassium supplements.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela. [2]Calculate eGFR = [(140 - age) x weight (kg)]/[72x creatinine (mg/dL)]. If patient is a woman, multiply by 0.85.

Rheumatic heart disease/previous rheumatic fever: routine care

- The patient with previous rheumatic fever has had one or more episodes of fever, joint swelling/pain, rash, strange movements and carditis following a sore throat.
- Sometimes the carditis can lead to rheumatic heart disease which is damage to the heart valves. Ensure that diagnosis of rheumatic fever and rheumatic heart disease is confirmed at hospital.

Assess the patient with rheumatic heart disease/previous

Assess	When to assess	Note
Symptoms	Every visit	• If cough/difficulty breathing or leg swelling, **heart failure** likely ⮌91. • If fever with new joint pain or swelling, **rheumatic fever recurrence** likely, refer. If fever in patient with known rheumatic heart disease, refer to exclude infective endocarditis. • If weakness or numbness of face, arm or leg, especially on one side, visual disturbance, difficulty speaking or walking, refer. • If patient on warfarin has easy bleeding: gum/nose bleeds, easy bruising, heavy menstruation refer same day for INR.
Adherence	Every visit	Check that patient is receiving monthly prophylaxis and if on warfarin, is taking it reliably.
Weight	At diagnosis, every visit	Assess changes in fluid balance by comparing with weight when patient least symptomatic.
BP and pulse	At diagnosis, every visit	Check BP ⮌89. If known hypertension ⮌90. If new irregular pulse, refer hospital same day.
Pallor	At diagnosis, every visit	If pale, check Hb. If < 11g/dL, refer hospital.
Family planning	Every visit	Discuss contraception needs ⮌110. If pregnant or planning pregnancy, refer hospital.
Heart failure	Every visit	• If cough/difficulty breathing or leg swelling, **heart failure** likely ⮌91. • If known heart failure also give routine heart failure care ⮌91.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
INR	If on warfarin	Ensure patient on warfarin checks INR on regular basis.

Advise the patient with rheumatic heart disease/previous rheumatic fever

- Explain the cause of rheumatic heart disease: a sore throat infection caused rheumatic fever which damaged the heart valves.
- This may cause heart failure. Advise patient to return if symptoms of heart failure develop: difficulty breathing (especially on lying down), fatigue, cough, leg swelling).
- Having benzathine penicillin every month will prevent recurrences of rheumatic fever and protect the heart valves. Advise the patient that this must be continued lifelong if heart valve damage, or if no heart valve damage for at least 10 years or up to the age of 25 years.
- Educate patient on warfarin that it thins the blood to prevent clots on damaged or mechanical heart valves and protects against stroke. Advise to return urgently if abnormal bleeding occurs: gum/nose bleeds, easy bruising, heavy menstruation.
- Advise patient the patient with rheumatic heart disease to brush teeth regularly and to get antibiotic prophylaxis before dental procedures.

Treat the patient with rheumatic heart disease/previous rheumatic fever

- Give prophylaxis to protect heart valves and prevent recurrence of rheumatic fever:
  - Give benzathine penicillin 1.2MU deep IM every 4 weeks. Observe for 15 minutes after injection for anaphylaxis: If sudden face/tongue swelling with difficulty breathing, collapse, **anaphylaxis** likely ⮌29.
  - If penicillin allergic give instead erythromycin 500mg PO BID continuously.
  - Continue for life if rheumatic heart disease. If patient had rheumatic fever, the decision to stop will be made at hospital.
- Give warfarin if patient has atrial fibrillation or mechanical heart valve. Start at 2.5mg PO daily and increase to maximum 10mg PO daily based on INR. Target INR is 2.0-3.0.
- Give antibiotic prophylaxis 1 hour before dental procedure if rheumatic heart disease and one or more of mechanical valve or previous infective endocarditis: single dose amoxicillin 1g PO. If penicillin allergy, give single dose clarithromycin 500mg PO instead, if unavailable, refer.

Advise patient to attend monthly for benzathine penicillin and routine care and refer for hospital review annually if stable.

Stroke: diagnosis and routine care

Sudden onset of one or more of the following suggests a stroke or a transient ischaemic attack (TIA):

- Weakness or numbness of the face, arm or leg, especially on one side of the body
- Blurred or decreased vision in one/both eyes or double vision
- Difficulty speaking or understanding
- Difficulty walking, dizziness, loss of balance or co-ordination

If patient has one or more of: hypertension , diabetes, heart disease, on warfarin, > 60 years and has no history of head trauma, **stroke** likely. If not, refer to hospital to confirm the diagnosis of stroke.

Give urgent attention to the patient with a stroke/TIA:

- If oxygen saturation < 95% or oxygen saturation machine not available, give face mask oxygen.
- If glucose < 70mg/dL or unable to measure, give 25mL glucose 40% IV over 1-3 minutes. Repeat if glucose still < 70mg/dL after 15 minutes.
- Keep patient nil by mouth until swallowing is formally assessed.
- Give normal saline 1L IV 4-6 hourly. If glucose ≥ 70mg/dL, avoid fluids containing glucose/dextrose as raised blood glucose may worsen a stroke.
- If BP ≥ 220/120, give single dose of nifedipine 20mg PO.
- Refer urgently.

Assess the patient with stroke/TIA

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. • Ask about symptoms of another stroke/TIA. Also ask about chest pain ⮌94 or leg pain ⮌96.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Rehabilitation needs	Every visit	Refer to physiotherapy for mobility.
BP	Every visit	• Check BP ⮌89. If new hypertension, avoid starting treatment until > 48 hours after a stroke. • If known hypertension ⮌90.
Glucose	At diagnosis, then yearly	Check glucose ⮌86. If known diabetes ⮌87.
Random total cholesterol (by referral to hospital)	3 months after starting simvastatin and then after 3 months if ≥ 190mg/dL	• If cholesterol ≥ 190mg/dL: increase simvastatin to 40mg. If already on 40mg daily, refer to hospital. • If cholesterol < 190mg/dL, no need to repeat.
HIV	At diagnosis or if status unknown	Test for HIV ⮌75.

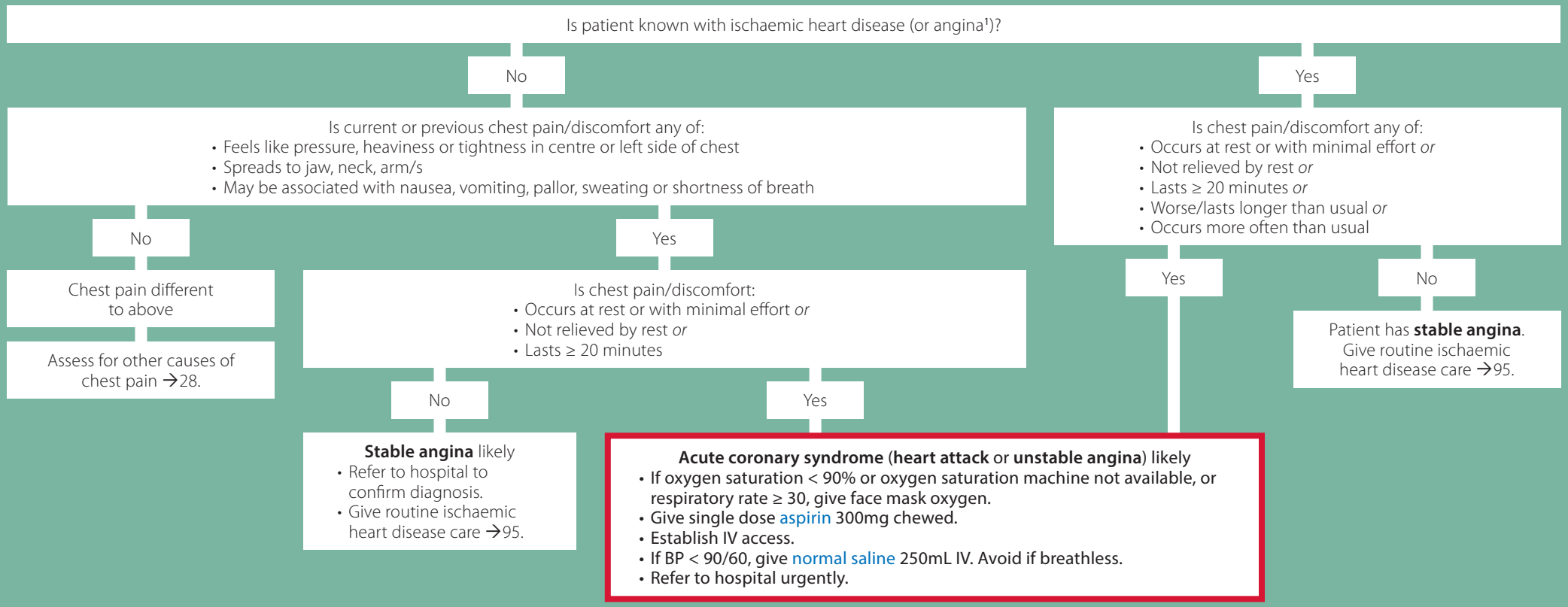
Advise the patient with stroke/TIA

- Advise the patient to seek medical attention immediately should symptoms recur. Quick treatment of a minor stroke/TIA can reduce the risk of major stroke.
- Help patient to manage his/her CVD risk ⮌85.
- If patient is < 55 years (man) or < 65 years (woman), advise the first degree relatives to have CVD risk assessment ⮌84.
- Avoid combined oral contraceptive. Advise other method such as IUD, injectable, progestogen-only pill or subdermal implant ⮌110.

Treat the patient with an ischaemic stroke/TIA

- Give aspirin 75-150mg PO daily for life. Avoid if haemorrhagic stroke, peptic ulcer, dyspepsia, kidney or liver disease. If heart valve disease or atrial fibrillation, refer for warfarin instead.
- Start simvastatin 20mg PO daily. If repeat cholesterol > 190mg/dL increase to 40mg daily. If already on 40mg, refer to hospital.

Ischaemic heart disease (IHD): initial assessment



[1]Chest pain caused by ischaemic heart disease.

Ischaemic heart disease (IHD): routine care

Assess the patient with ischaemic heart disease

Assess	When to assess	Note
Symptoms	Every visit	• Do initial assessment if not already done ⮌94. • Ask about leg pain ⮌49 and symptoms of stroke/TIA ⮌93.
Modifiable risk factors	Every visit	• Ask about smoking, diet, khat and alcohol use and exercise or activities of daily living ⮌85.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
BP	Every visit	Check BP ⮌89. If known hypertension ⮌90.
Blood glucose	At diagnosis, then yearly	Check glucose ⮌86. If known diabetes ⮌87.
Random total cholesterol (by referral to hospital)	3 months after starting simvastatin and then after 3 months if ≥ 190mg/dL	• If cholesterol ≥ 190mg/dL: increase simvastatin to 40mg. If already on 40mg daily, refer to hospital. • If cholesterol < 190mg/dL, no need to repeat.

Advise the patient with ischaemic heart disease

- Help the patient to manage his/her CVD risk ⮌85.
- Patient can resume normal daily and sexual activity 6 weeks after heart attack if symptom free.
- Emphasize the importance of lifelong adherence to medication.
- Advise patient to avoid NSAIDs (e.g. ibuprofen, diclofenac, indomethacin), as they may precipitate chest pain or a heart attack or heart failure.
- If patient is < 55 years (man) or < 65 years (woman), advise first degree relatives to have CVD risk assessment ⮌84.

Treat the patient with ischaemic heart disease

- Give aspirin 75-150mg PO daily for life. Avoid if peptic ulcer, dyspepsia, severe kidney or liver desease.
- Start simvastatin 20mg PO daily. If repeat cholesterol > 190mg/dL increase to 40mg daily. If already on 40mg, refer to hospital.
- Give atenolol (immediate release) 50mg PO daily even if no chest pain/discomfort. Avoid in asthma/COPD uncontrolled heart failure, pulse < 50, systolic BP < 100.
- If patient also has hypertension, diabetes or chronic kidney disease, give enalapril 5mg PO daily and increase slowly to 20mg daily. Avoid in angioedema.
- If patient has new onset or worsening angina, refer to hospital. If patient known with stable angina continue with treatment as prescribed at hospital:

Medication	Dose	Maximum dose	Note
Atenolol (immediate release)	50mg PO daily	100mg PO daily	Avoid atenolol in asthma/COPD, uncontrolled heart failure, pulse < 50, systolic BP < 100 or side effects (headache, cold hands/feet, impotence, tight chest, fatigue) are intolerable. Use amlodipine instead.
Amlodipine	5mg PO in the morning	10mg daily	Avoid in heart failure, refer to hospital if unsure.

If atenolol and amlodipine contra-indicated/not tolerated or chest pain/discomfort persists on full treatment, refer to hospital.

Peripheral vascular disease (PVD): diagnosis and routine care

- Peripheral vascular disease is characterised by claudication: muscle pain in legs or buttocks on exercise that is relieved by rest. Leg pulses are reduced and skin may be cool, shiny and hairless.
- Refer the patient newly diagnosed with peripheral vascular disease to hospital for assessment.

Give urgent attention to the patient with peripheral vascular disease and one or more of:

- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Leg pain occurring at rest, ulcer or gangrene on leg: **critical limb ischaemia** likely
- Pulsatile mass in abdomen with abdominal/back pain or BP < 90/60: **ruptured abdominal aortic aneurysm** likely
- Chest pain ⮌28

Management:

- **Ruptured abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen the rupture).
- Refer urgently.

Assess the patient with peripheral vascular disease

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. Ask about chest pain ⮌94 and symptoms of stroke/TIA ⮌93. • Document the walking distance before onset of claudication.
BP	Every visit	• Check BP. If ≥140/90 ⮌89. • If known hypertension ⮌90.
Legs and feet	Every visit	Check for pain, pulses, sensation, deformity and skin problems on both legs & feet. For foot screen and foot care education and care ⮌47.
Abdomen	Every visit	If a pulsatile mass felt, refer for assessment for possible abdominal aortic aneurysm.
Glucose	At diagnosis, then yearly	Check glucose ⮌86. If known diabetes ⮌87.
Random total cholesterol (by referral to hospital)	3 months after starting simvastatin and then after 3 months if ≥ 190mg/dL	• If cholesterol ≥ 190mg/dL: increase simvastatin to 40mg. If already on 40mg daily, refer to hospital. • If cholesterol < 190mg/dL, no need to repeat.

Advise the patient with peripheral vascular disease

- Help the patient to manage his/her CVD risk ⮌85.
- Advise the patient to keep legs warm and position legs below heart level (especially at night), and to avoid decongestant medications that may constrict blood vessels.
- If patient smokes tobacco ⮌102. Support patient to change ⮌125.
- Advise patient that physical activity is an important part of treatment. It increases the blood supply to the legs and may significantly improve symptoms.
- If patient is < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment ⮌84.

Treat the patient with peripheral vascular disease

- Advise active brisk exercise for 30 minutes at least 3 times a week (preferably daily). Advise patient to pause and rest whenever claudication develops.
- Start simvastatin 20mg PO daily. If repeat cholesterol > 190mg/dL increase to 40mg daily. If already on 40mg, refer to hospital.
- Give aspirin 150mg PO daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.

- Refer to hospital at diagnosis (start medications if available and exercise while waiting for appointment) and if pain interferes with activities of daily living after 3 months of medication and exercise.
- Review 3 monthly until stable (coping with activities of daily living and able to work), then 6 monthly.

Epilepsy: routine care

- If the patient is convulsing →15 to control the convulsion. If the patient is not known with epilepsy and has had a convulsion →15 to assess and manage further.
- **Epilepsy** is a chronic seizure disorder diagnosed in a patient who has had at least 2 definite convulsions with no identifiable cause or with one convulsion following meningitis, stroke or head trauma.

Assess the patient with epilepsy

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
Frequency of convulsions	Every visit	Ask patient about frequency of convulsions since last visit. Assess if convulsions prevent patient from leading a normal lifestyle.
Adherence	Every visit	Assess past clinic attendance and pill counts.
Side effects	Every visit	Side effects (see below) may explain poor adherence. Weigh up side effects with control of convulsions or consider changing medication.
Other medication	At diagnosis, if convulsion occur	Check if patient is on other medication like TB treatment, ART or contraceptive. See below for interactions and consider referring the patient.
Substance use or abuse	At diagnosis, every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.
Family planning	Every visit (for reproductive age women)	• Refer same week if patient is pregnant or planning to be, for epilepsy and antenatal care. • Assess family planning needs: avoid oral contraceptives and implants on carbamazepine or phenytoin ↩110.

Advise the patient with epilepsy

- Educate patient about epilepsy (cause and prognosis), the medications (including about side effects) ,need for adherence to treatment and to record occurrence and frequency of convulsions.
- Advise patient to avoid lack of sleep, asubstance use/abuse, dehydration and flashing lights.
- Advise patient on avoiding dangers like heights, fires, swimming alone, cycling on busy roads, operating machinery. Avoid driving until free of convulsions for 1 year.
- Advise patient there are many medications that interfere with anti-convulsant treatment (see below) and to discuss with health worker when starting any new medication.
- Advise patient to use reliable contraception (like IUD , Injectables and condom) and to seek advice if planning a pregnancy.

Treat the patient with epilepsy

- Initiate with single medication and review every 2 weeks until no convulsions.
- If still convulsing on treatment, increase dose as below if patient is adherent, there is no substance use/abuse and no interactions with other medications.
- If still convulsing after 1 month on maximum dose or side effects intolerable, start new medication and increase dose without discontinuation of the first medication to avoid recurrence of convulsions.
- After the second medication is increased to optimal dose, the first is gradually tapered and discontinued.

Medication	Dose	Note
Phenytoin	Start 150mg PO daily. If needed, increase by 50mg weekly to 300mg daily. Maximum dose: 600mg daily.	Avoid in pregnancy. Side effects: facial hair , drowsiness, large gums. Toxicity: balance problem, double vision, slurred speech. Drug interactions: anti-TB, ART, furosemide, fluoxetine, fluconazole, theophylline, oral contraceptives and implants.
Phenobarbitone	Start 30mg PO BID; maximum dose of 180mg per day	Side Effects: Sedation, ataxia, sexual dysfunction, depression. Liver failure. Drug interactions: similar to phenytoin, see above.
Carbamazepine	Start dose 100mg PO BID; and a maximum dose of 1200mg daily in 2 or 3 divided doses	Side effects: skin rash, blurred or double vision, ataxia, nausea. Drug interactions: isoniazid, warfarin, fluoxetine, cimetidine, theophylline, amitriptyline, oral contraceptives, Implants and antiretrovirals.
Valproic acid	Start 600mg PO daily in 2 divided doses. Increase daily dose by 200mg every 3 days to maintenance dose of 1-2 g daily in divided doses. Maximum dose: 2.5g daily.	Avoid if liver problem, pregnant or a woman of childbearing age unless on reliable contraception. Use as first choice in patient on ART. Side effects: drowsiness, dizziness, weight gain, temporary hair loss. Drug interactions: zidovudine, aspirin.

- If convulsion free, follow up 3 monthly. If convulsions uncontrolled with two medications, refer.
- Consider stopping treatment if no convulsion for 2 years. Refer patient to a hospital, for gradual tapering and discontinuation of antiepileptic medications.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Admit the mentally ill patient

Assess the mentally ill patient first on appropriate symptom or chronic condition pages.

Approach to the mentally ill patient in need of hospital admission:

- Before sedating the patient (if needed) fully inform patient in his/her own language about reasons for treatment and consider his/her choice if he/she opts for PO medication.
- Assess if the patient can give informed consent: the patient understands that s/he is ill, is needing treatment and can communicate his/her choice to receive treatment:

Yes

Does patient agree to admission?

Yes

- Refer to hospital.
- Record everything clearly in patient notes and referral letter.
- A close relative or a carer must accompany the patient to hospital.
- Request police assistance if the patient is too dangerous to be transferred in a staffed vehicle or is likely to abscond.

No

Does patient ≥ 1 of the following?

- Severe mental illness or suicidal or
- Needs treatment in a hospital or
- Danger of harm to self, others, own reputation, financial interest or property *or*
- Severe self neglect and poor social support

Yes

- Refer to hospital.
- Record everything clearly in patient notes and referral letter.
- A close relative or a carer must accompany the patient to hospital.
- Request police assistance if the patient is too dangerous to be transferred in a staffed vehicle or is likely to abscond.

No

Manage as an outpatient.

No

- Refer to hospital.
- Record everything clearly in patient notes and referral letter.
- A close relative or a carer must accompany the patient to hospital.
- Request police assistance if the patient is too dangerous to be transferred in a staffed vehicle or is likely to abscond.

Depression: diagnosis

Has patient had 1 or more of the following core features of depression for at least 2 weeks?
- Depressed mood most of the day, nearly every day *or*
- Loss of interest or pleasure in activities that are usually pleasurable

Yes

Has patient had 5 or more of the following features of depression for at least 2 weeks?
- Depressed mood most of the day, nearly every day
- Loss of interest or pleasure in activities that are usually enjoyable
- Fatigue or loss of energy
- Disturbed sleep, sleeping too much/too little
- Change in appetite or weight
- Feeling guilty or worthless
- Reduced concentration, indecisiveness ,forgetfulness
- Agitated/restless or talking/moving more slowly than usual
- Ideas, plans or acts of self-harm or suicide

No → Continue to assess and manage the stressed or distressed patient →65.

Yes: does the patient have difficulty carrying out ordinary work, domestic or social activities?

No → Continue to assess and manage the stressed or distressed patient →65.

Yes

Check for anaemia
If pallor, check Hb. If < 11g/dL, refer to hospital.

Check for thyroid disease
Check TSH. If abnormal, refer to hospital.

Screen for substance abuse
In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.

Check for medication side effects
Review medication: prednisolone, efavirenz, metoprolol, metoclopramide, theophylline and contraceptives can cause depression. If on any of these, refer to hospital.

One or more of above → Refer to hospital.

None of above: does the patient have any psychotic symptoms[2]?

Yes → Refer to hospital.

No: has patient previously had a diagnosis of bipolar disorder or symptoms of mania: 3 or more of the following, that have lasted at least 1 week and interfered with ordinary work, domestic or social activities?
- Elevated mood and/or irritability
- Decreased desire to sleep
- Inappropriate social behaviour
- Easily distracted
- Increased activity, feeling of increased energy, talkative, rapid speech
- Impulsive/reckless behaviour like excess spending, thoughtless decisions, sexual indiscretion
- Inflated self esteem

Yes → **Bipolar disorder** likely
- Refer to a mental health professional.
- If aggressive/ disruptive ⮌63.

No: has there been a major loss or bereavement within last 6 months?

Yes: does patient have ideas of suicide or self-harm, feelings of worthlessness or is s/he talking or moving unusually slowly?

No → **Depression** likely, treat →100.

No: has patient had depression in the past?

Yes → **Depression** likely, treat →100.

No → Provide support →65.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela. [2]Psychotic symptoms include any of: hallucinations (hearing voices/seeing things that are not there); delusions: (unusual/bizarre beliefs not shared by society; beliefs that thoughts are being inserted or broadcast); disorganised speech (incoherent or irrelevant speech); behaviour that is disorganised or catatonic (inability to talk, move or respond).

Depression and/or anxiety: routine care

Assess the patient with depression and/or anxiety

Assess	When to assess	Note
Symptoms	Every visit	• Assess symptoms of depression and anxiety. If no better after 8 weeks of treatment or worse on treatment, refer. • Manage other symptoms as on symptom pages.
Self-harm	Every visit	Asking a patient about thoughts of self-harm/suicide does not increase the chance of suicide. If patient has suicidal thoughts or plans ⮌62.
Mania	Every visit	If abnormally happy, energetic, talkative, irritable or reckless: manage the aggression and disruption ⮌63 and refer.
Anxiety	At diagnosis	• If excessive worry causes impaired function/distress for at least 6 months with ≥ 3 of: muscle tension, restlessness, irritability, difficulty sleeping, poor concentration, tiredness: **generalised anxiety** likely. • If anxiety is induced by a particular situation/object, phobia likely. If patient avoids social situations because of phobia, **social phobia** likely. • If repeated sudden fear with physical symptoms and no obvious cause, **panic** likely. • If patient had a bad experience causing nightmares, flashbacks, avoidance of people/situations, jumpiness or feeling detached, **post-traumatic stress** likely.
Dementia	At diagnosis	If for at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider **dementia** ⮌106.
Substance use/abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Side effects	Every visit	Ask about side effects of antidepressant medication ⮌101.
Stressors	Every visit	Help identify the domestic, social and work factors contributing to depression or anxiety. If patient is being abused ⮌66. If recently bereaved ⮌65.
Family planning	Every visit	• Discuss patient's contraception needs ⮌110. • If pregnant or breastfeeding, refer to hospital to evaluate risks: the risk to baby from untreated depression may outweigh any risk from antidepressants.

Advise the patient with depression and/or anxiety

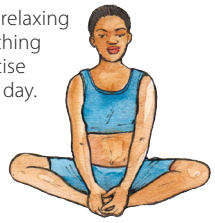
- Explain that depression is a very common illness and can happen to anybody. It does not mean that a person is lazy or weak. A person with depression cannot control his/her symptoms.
- Explain that thoughts of self-harm and suicide are common. Advise patient that if s/he has these thoughts, s/he should not act, but tell a trusted person and return for help immediately.
- Educate the patient that anti-depressants can take 4-6 weeks to start working. Explain that there may be some side effects, but these usually resolve in the first few days.
- Emphasise the importance of adherence even if feeling well. Advise patient that s/he will likely be on treatment for at least 9 months and it is not addictive. Advise not to stop treatment abruptly.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If patient has difficulty sleeping ⮌67.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Do a relaxing breathing exercise each day.



Find a creative or fun activity to do.

Get active
Regular exercise may help.

Access support
Encourage patient to connect with friends, family, spiritual leaders and community groups like Edir, Mahber, Senbete.

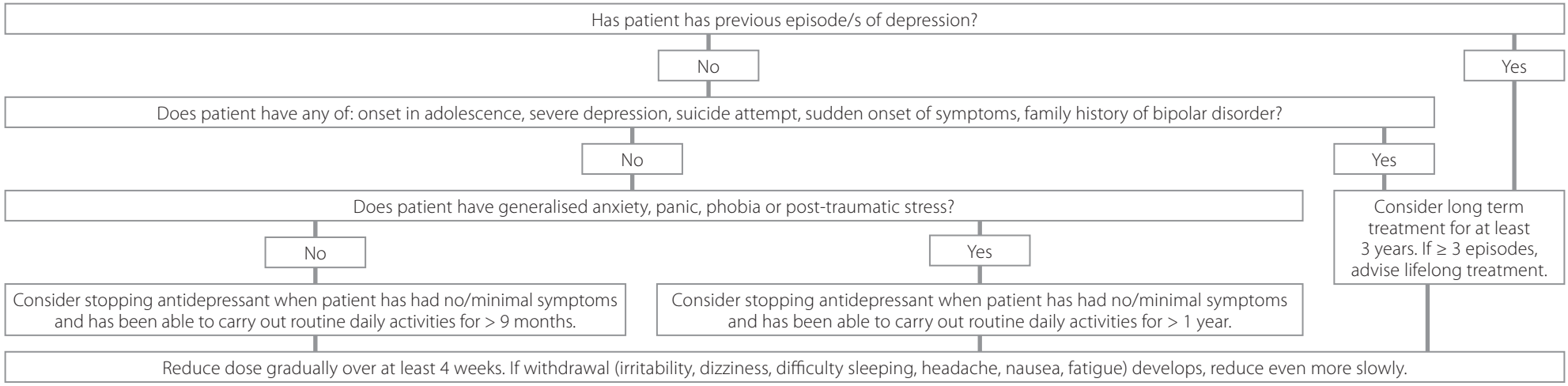
[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Treat the patient with depression and/or anxiety

- Give anti-depressants to the patient with any of: depression, generalised anxiety, social phobia, post traumatic stress and panic. Respect the patient's decision if s/he declines antidepressants.
- If patient has phobia, also advise gradual desensitization:
  - Start with relaxing breathing exercise.
  - When calm, imagine the feared thing at some distance away. Continue breathing exercise. When ready, imagine the thing coming slightly closer. Continue breathing exercise.
  - Repeat the above and stop if severe anxiety. When calm, repeat, with the thing at a distance that did not cause anxiety. Advise patient to repeat gradual desensitisation daily.
- If generalised anxiety disorder or features of anxiety[1] when starting antidepressant, consider diazepam 2-5mg PO daily as needed, for up to 10 days. Avoid if patient is known to use substances.
- Start antidepressant and increase dose as needed according to response. Plan to continue antidepressant for at least 9 months:

Medication	Dose	Note	Side effects
Fluoxetine	• Start 20mg PO alternate days for 1 week then increase to 20mg daily in the morning. • If partial or no response after 4 weeks, increase by 20mg every 2 weeks, up to 60mg/day.	• Refer to specialist if patient has epilepsy, liver or kidney disease. • Monitor blood glucose more often in diabetes.	Changes in appetite and weight, headache, restlessness, difficulty sleeping, nausea, diarrhoea, sexual problems
Amitriptyline	Start 25mg PO at night. Increase by 25mg every 5 days, up to 150mg/day (or 100mg/day if > 65 years).	• Use if fluoxetine contraindicated. • If suicidal thoughts, avoid, or if fluoxetine not an option, supply only a few doses at a time and ensure close supervision by carer (can be fatal in overdose). • Avoid if heart disease, urinary retention, glaucoma, epilepsy.	Dry mouth, constipation, difficulty urinating, blurred vision, sedation

Plan when to stop antidepressant



Review 2 weekly, even if not on antidepressants, until symptoms improve, then monthly. If no better after 8 weeks, refer.

[1]Patient has felt nervous, anxious or panicky or been unable to stop worrying or thinking too much over the past month.

Tobacco smoking

Assess the patient who smokes tobacco

Assess	When to assess	Note
Symptoms	Every visit	• Ask about symptoms that might suggest cancer: cough/difficulty breathing ⮌29, urinary symptoms ⮌44 or weight loss ⮌16. • Ask about chest pain ⮌28, leg pain ⮌49, new sudden onset of any of: asymmetric weakness of face, arm or leg; numbness, difficulty speaking or visual disturbance ⮌23. • Manage other symptoms as on symptom pages.
Use	Every visit	• Ask about number of cigarettes/day, activities associated with smoking and previous attempts at stopping. • If recently stopped, ask about challenges and give advice below.
Stressors	Every visit	Help identify the domestic, social and work factors contributing to smoking tobacco. Assess and manage stress ⮌65.
COPD	At diagnosis	If difficulty breathing when walking fast/up a hill, consider COPD ⮌81. If known COPD ⮌83
CVD risk	At diagnosis	Assess and manage CVD risk ⮌84

Advise the patient who smokes tobacco

- Ask if patient is willing to discuss tobacco smoking. For tips on how to communicate effectively ⮌124.
- Advise patient that stopping tobacco smoking is the most important action s/he can take to improve health, quality of life and increase life expectancy.
- Educate patient that nicotine is a very addictive substance and stopping can be difficult, resulting in withdrawal symptoms (see below). Nicotine replacement may help reduce these symptoms.
- Advise that most smokers make several attempts to stop before they are successful.

If patient is not ready to stop in the next month:

- Discuss risks to patient (worsening asthma, infertility, heart attack, stroke, COPD, cancer) to spouse (lung cancer, heart disease) and to children (low birth weight, asthma, respiratory infections).
- Help the patient identify benefits of stopping tobacco smoking like saving money, improved health, taste, sense of smell and appearance and being a positive role model for children.
- Help the patient identify barriers to stopping tobacco smoking and possible solutions.
- Ask if patient is ready to stop smoking tobacco in the next month. If not ready to stop, encourage patient to return.

If patient is ready to stop in the next month or recently stopped:

- Help the patient plan: set date to stop within 2 weeks, seek support from family and friends, avoid/manage situations associated with smoking and remove cigarettes, matches, and ashtrays.
- Help manage cravings: set a time limit before giving in, advise to delay as long as possible, take a deep breath and blow out slowly (repeat 10 times).
- Educate about nicotine withdrawal symptoms: increased appetite, mood changes, difficulty sleeping/concentrating, irritability, anxiety, restlessness. These should improve after 2 weeks.

Alcohol/drug use

Assess the patient who uses any drugs or drinks alcohol in way that that puts him/her at risk of harm/dependence. This may be binge drinking or daily drinking. If patient smokes tobacco ⮌102.

Assess the patient with unhealthy alcohol use or *any* drug use

Assess	Note
Symptoms	• If recently reduced/stopped use and is restless, agitated, difficulty sleeping, confused, anxious, hallucinating, sweating, tremors, headache or nausea/vomiting, treat for likely **withdrawal** ⮌64. • If aggressive/violent or disruptive behaviour ⮌63. • If patient has suicidal thoughts or plans ⮌62.
Hazardous/ harmful use	• Use is harmful if it has caused physical (like injuries, liver disease, stomach ulcer), mental (like depression self harm or harm to others), social (relationship, legal or financial) harm or risky sexual behaviour. • The following is considered hazardous/harmful alcohol/drug use and increases the risk of dependence: - If drinks ≥ 4 drinks[1]/day (if man) or ≥ 2 drinks[1]/day (if woman), **hazardous drinking** likely. - If drinks ≥ 6 drinks[1]/day (if man) or ≥ 4 drinks[1]/day (if woman), **harmful drinking** likely. - Any use of khat or illicit drugs (e.g. cannabis), misuse of prescription drugs, **harmful/hazardous drug use** likely.
Dependence	Patient is **dependent** if ≥ 3 of: strong need to use substance; difficulty controlling use; withdrawal on stopping/reducing; tolerance (needing more); neglecting other interests; continued use despite harm.
Stressors	Help identify the domestic, social and work factors contributing to alcohol/drug use. Ask about reasons for his/her substance use. If patient is being abused ⮌66.
Depression	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Dementia	If chronic alcohol/drug use and at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia ⮌106.

Advise the patient with unhealthy alcohol use or any drug use

- Assess and manage stress ⮌65.
- If pregnant/planning pregnancy or breastfeeding, advise to avoid alcohol/drugs completely. Alcohol/drugs can harm the developing baby.
- Suggest patient seeks support from close relatives/friends who do not use alcohol/drugs. Refer patient to social worker, psychologist or counsellor.
- Discuss risks/harms that using alcohol/drugs may cause. Support and encourage patient to decide for him/herself to stop or cut down. Support the patient to make a change ⮌125.

Harmful/hazardous alcohol use without dependence

- If pregnant, harmful drinking, previous dependence or contraindication (like liver damage, mental illness), advise to stop alcohol completely. Avoid drinking places and keeping alcohol at home.
- If none of above and patient chooses to continue alcohol, advise low-risk use: ≤ 2 drinks[1]/day and avoid alcohol at least 2 days/week.

Harmful/hazardous drug use without dependence

- Advise to stop using illegal or misusing prescription drugs completely.
- The patient with harmful/hazardous drug use without dependence can safely cut down on his/her own: encourage the patient to set goals for reducing use and a 'quit date'.
- If patient chooses to continue, advise to reduce harm: avoid injections or use sterile injection technique, test regularly for HIV and hepatitis.

Alcohol/drug dependence

- Advise that alcohol/drugs need to be stopped slowly. If stopped suddenly, withdrawal effects can be harmful.
- If patient wishes to stop, refer to a hospital for detoxification. Ensure patient is motivated to adhere.

If harmful/hazardous use, review in 1 month then as needed.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela

Psychosis: diagnosis and routine care

Consider psychosis in the patient who has difficulty carrying out ordinary work, domestic or social activities *and* any of the following:

- Delusions: unusual/bizarre beliefs not shared by society.
- Hallucinations: usually hearing voices or seeing things that are not there.
- Disorganised speech: incoherent or irrelevant speech
- Behaviour that is disorganised or catatonic (inability to talk, move or respond) *or* negative symptoms: lack of emotion or facial expression, no motivation, not moving or talking much, social withdrawal.

Assess the patient with psychosis

Assess	When to assess	Note
Symptoms	Every visit	• Assess symptoms of psychosis above. If symptoms of psychosis and: - Aggressive/violent ⮌63. - Varying levels of consciousness over hours/days or temperature ≥ 38°C, **delirium** likely ⮌64. - Patient has interrupted treatment: address reasons like side effects, substance abuse and consider intramuscular treatment if patient still struggles with adherence ⮌104. - Good adherence to optimal doses of treatment, refer. • Manage other symptoms as on symptom pages.
Self-harm	Every visit	If patient has suicidal thoughts or plans ⮌62. If intent to harm others, alert intended victim/s if possible.
Stressors	Every visit	Help identify stressors that may worsen or cause symptoms to recur. If patient is being abused ⮌66.
Substance use/abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Family planning	Every visit	Discuss patient's contraception needs ⮌110. If patient is pregnant, planning pregnancy or breastfeeding, refer to specialist.
Medication	Every visit	• Ask about treatment side effects ⮌105. • Ask about adherence. If non-adherent, restart medication at same dose, explore reasons for stopping treatment and refer for health extension worker support. • Refer to hospital if patient is on medication that might cause acute psychosis, like prednisolone, efavirenz, moxifloxacin and terizidone.
Weight (BMI)	Every visit	BMI = weight (kg) ÷ height (m) ÷ height (m). • If gaining weight or BMI > 25, assess and manage CVD risk ⮌84 and discuss with specialist about possible alternative psychosis treatment. • If unintentionally losing weight or BMI <17.5 ⮌16. Discuss with patient and carer about the importance of eating regular healthy meals.
Glucose	• At diagnosis, then yearly • Also 4 monthly if gaining weight	Check glucose ⮌86.
HIV	At diagnosis or if status unknown	Test for HIV ⮌75. If HIV positive, avoid efavirenz, refer to hospital.
Syphilis	At diagnosis	If positive, refer.

Advise the patient with psychosis and the patient's carer

- Educate carer and patient: the patient with chronic psychosis often lacks insight into illness and may be hostile towards carers. S/he may have difficulty functioning, especially in high stress settings.
- Encourage carer to be supportive and avoid trying to convince patient that beliefs or experiences are false or not real. Avoid hostility and criticism towards the patient.
- Advise patient to avoid substance use/abuse and encourage regular sleep routine.
- Advise the patient to continue social/educational/occupational activities if possible. Refer to local NGOs or community organisations to help find educational or employment opportunities.
- Emphasize importance of treatment adherence and to return immediately if symptoms of psychosis return/worsen.
- Refer patient and carer to support group if available. If not, consider starting one at the health facility.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Treat the patient with psychosis

- Give medication as in the table below. Use lowest effective dose. Give one medication at a time. Allow 6 weeks on typical effective dose before considering medication ineffective.
- If repeated adherence problems, consider changing from oral to long-acting intramuscular medication.
- If unsure or more than typical effective dose needed, discuss with specialist.

Medication	Starting dose	Typical effective dose	Note
Haloperidol	1mg PO BID	2-10mg/day	Increase by 1mg/dose until psychosis symptoms resolve. If > 60 years, start at a lower dose and increase more slowly.
Trifluoperazine	5mg PO daily	15-20mg/day	-
Chlorpromazine	100mg PO daily in a single or divided dose	100-300mg/day in a single or divided dose	• Increase every 2 weeks if needed. Give as a single dose at night once symptoms controlled. • Advise patient to avoid the sun.
Fluphenazine decanoate	12.5mg deep IM injection every 2-4 weeks	25mg every 2-4 weeks	Expect full response to take 2 months.

Look for and manage psychosis treatment side effects

Urinary retention	Stop treatment and refer same day.
Blurred vision	Refer same day.
Painful muscle spasms (acute dystonic reaction)	Usually within 2 days of starting medication. Give benzhexol 2-5mg PO TID if needed. Refer same day.

Extra-pyramidal side effects	Abnormal involuntary movements	Reduce dose. If no better, stop treatment and refer.
	Slow movements, tremor or rigidity	May occur after weeks or months on treatment, refer.
	Muscle restlessness	Stop treatment and refer same day.

Breast enlargement, nipple discharge	Discuss with specialist whether to change medication.
Amenorrhoea	Discuss with specialist whether to change medication.
Dizziness/fainting on standing	Usually when starting/increasing dose. Usually self-limiting over hours to days. Advise patient to stand up slowly.
Dry mouth/eyes	Usually self-limiting.
Constipation	Usually self-limiting. Advise high fibre diet and adequate fluid intake.

- Review the patient with psychosis 8 weekly once stable. Advise patient to return immediately if symptoms of psychosis.
- If restarting treatment after patient has interrupted treatment, review after 2 weeks, sooner if symptoms worsen.
- If first episode psychosis, ensure patient receives 12 months of treatment after symptoms have resolved, then stop treatment.
- Review the patient monthly for 6 months after stopping to check for recurrence of psychosis.
- If 2 or more episodes, refer for specialist review.

Dementia: diagnosis and routine care

- Consider dementia in the patient who has the following for at least 6 months and which are getting worse:
  - Problems with memory: test this by asking patient to repeat 3 common words immediately and then again after 5 minutes.
  - Disorientated to time (unsure what day/season it is) and place (unsure of church or mosque closest to home or where the consultation is taking place).
  - Difficulty with speech and language (unable to name parts of the body).
  - Struggles with simple tasks, decision making and carrying out daily activities.
  - Is less able to cope with social and work function.
  - If patient has HIV, has difficulty with coordination.
- Refer to hospital to confirm the diagnosis of dementia and identify treatable causes of dementia.

Assess the patient with dementia with the help of the carer

Assess	When to assess	Note
Symptoms	Every visit	• If recent change in mood, energy/interest levels, sleep or appetite, consider depression and refer. • If suicidal thoughts or plans ⮌62. • If sudden deterioration in behaviour ⮌64. • If hallucinations (seeing or hearing things), delusions (unusual/bizarre beliefs), agitation or wandering, refer to hospital. • Manage other symptoms as on symptom pages.
Side effects	If on treatment	If abnormal movements or muscle restlessness, stop treatment and refer same day. If painful muscle spasms, manage below.
Vision/hearing problems	Every visit	Refer to hospital for testing and proper devices.
Nutritional status	Every visit	Ask about food and fluid intake. BMI = weight (kg) ÷ height (m) ÷ height (m). If pregnant/breastfeeding and MUAC < 23cm or if not pregnant/breastfeeding and BMI < 17.5 or MUAC < 21cm ⮌70.
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌84. • If CVD risk < 10% with CVD risk factors or 10-20%, reassess after 1 year; if > 20% reassess after 6 months.
Palliative care	Every visit	If any of: bed-ridden, unable to walk and dress alone, incontinence, unable to talk meaningfully or do activities of daily living, also give palliative care ⮌120.
HIV	At diagnosis or if status unknown	Test for HIV ⮌75. If HIV positive, give routine care ⮌76. If new HIV diagnosis with dementia, refer to hospital.
Syphilis	At diagnosis	If positive, refer.

Advise the patient with dementia and his/her care giver

- Discuss what can be done to support the patient, carer/s and family. Identify local resources, social worker, counsellor.
- Advise the carer/s to:
  - Give regular orientation information (day, date, weather, time, names)
  - Stimulate memories and give current information with newspaper, radio, TV, photos.
  - Use simple short sentences.
  - Maintain a routine.
  - Remove clutter and potential hazards at home.
  - Maintain physical activity and plan recreational activities.

Treat the patient with dementia

- HIV-associated dementia often responds well to ART ⮌76.
- If psychotic symptoms, night-time disturbance, wandering or persistent aggression or anxiety, give haloperidol 0.5mg PO BID. If patient has parkinson's disease, refer.

Review the patient with dementia every 6 months.

Chronic arthritis: diagnosis and routine care

- If patient has episodes of joint pain and swelling that completely resolve in between, consider **gout** →108.
- The patient with chronic arthritis has had continuous joint pain for at least 6 weeks. Distinguish mechanical osteoarthritis from inflammatory rheumatoid arthritis:

Osteoarthritis likely if:
- Affects joints only.
- Weight-bearing joints and possibly hands and feet
- Joints may be swollen but not warm.
- Stiffness on waking lasts less than 30 minutes.
- Pain is worse with activity and gets better with rest.

Inflammatory arthritis likely if:
- May be systemic: weight loss, fatigue, poor appetite, muscle wasting.
- Hands and feet are mainly involved.
- Joints are swollen and warm.
- Stiffness on waking lasts more than 30 minutes.
- Pain and stiffness get better with activity.

If inflammatory arthritis likely or uncertain of diagnosis, refer.

Assess the patient with chronic arthritis

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
Activities of daily living	Every visit	Ask if patient can walk as well as before, can cope with buttons and use knife and fork properly.
Sleep	Every visit	If patient has difficulty sleeping ⮌67.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Joints	Every visit	Look for warmth, tenderness and limitation in range of movement of joints.
BMI	At diagnosis	BMI = weight (kg) ÷ height (m) ÷ height (m). BMI > 25 puts stress on weight-bearing joints. Assess CVD risk ⮌84.
ESR/Rheumatoid factor (RF)	If inflammatory arthritis likely or unsure	If ESR raised or RF positive, refer as inflammatory arthritis is more likely.
HIV	At diagnosis	Test for HIV ⮌75.

Advise the patient with chronic arthritis
- If BMI > 25 advise to reduce weight to decrease stress on weight-bearing joints like knees and feet. Help the patient to manage his/her CVD risk ⮌85.
- Encourage the patient to be as active as possible, but to rest with acute flare-ups.
- Refer patient and care giver for education about chronic arthritis.
- Advise the patient with rheumatoid arthritis that it must be treated early with disease modifying anti-rheumatic medication to control symptoms, preserve function, and minimise further damage.
- Ensure the patient using disease modifying medication knows to have regular blood monitoring depending on the prescribed medications from the specialist clinic.

Treat the patient with chronic arthritis
- Refer the patient with inflammatory arthritis for treatment.
- If rheumatoid arthritis or difficulty with activities of daily living, refer to physiotherapist.
- Give paracetamol 1g PO QID as needed or give ibuprofen[1] 400mg PO QID with food only as needed for up to 1 month.

Review monthly until symptoms controlled, then 3-6 monthly. If poor response to treatment, refer.

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Gout: diagnosis and routine care

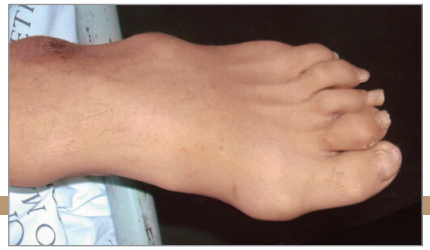
- An acute gout attack tends to affect a single joint, most commonly the big toe or knee. There is a sudden onset of severe pain, redness and swelling. It resolves completely, usually within days.
- Chronic tophaceous gout tends to asymmetrically affect > 1 joint and may not be very painful. Deposits can be seen or felt at the joints and there is incomplete recovery.

Assess the patient with gout

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
Substance use/abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩103.
Medication	Every visit	• Hydrochlorothiazide, furosemide, ethambutol, pyrazinamide and aspirin may induce a gout attack. Refer to hospital to review medication. • Continue aspirin given for CVD risk.
Joints	Every visit	• Recognise the acute gout attack: sudden onset of 1-3 hot, extremely painful, red, swollen joints (often big toe or knee). • Recognise chronic tophaceous gout: deposits appear as painless yellow hard irregular lumps around the joints (picture).
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ↩84. If < 10% with CVD risk factors or 10-20% reassess after 1 year, if > 20% reassess after 6 months. • If BMI < 18.5 or patient < 40 years, refer within 1 month to exclude possible cancer cause for gout.
eGFR[2] (by referral to hospital)	At diagnosis, then 6 monthly	If eGFR < 60mL/minute/1.73m², refer.
Urate	• At diagnosis • On allopurinol	• Wait at least 2 weeks after an acute gout attack before checking urate level. • If on allopurinol, repeat monthly and adjust allopurinol dose until urate level < 6mg/dL, then repeat 6 monthly.

Advise the patient with gout

- Help the patient to manage his/her CVD risk ↩85.
- Give dietary advice:
  - Reduce alcohol (especially beer), sweetened drinks and meat intake.
  - Increase low-fat dairy intake.
  - Avoid fasting and dehydration as they may increase the risk of an acute gout attack.
- Advise patient to remind her/his health worker about gout before starting any new medication.



Treat the patient with gout

Treat the patient with an acute gout attack:

- Give ibuprofen 800mg PO TID with food until better, then 400mg PO TID until 1 day after symptoms completely resolved (usually 5-7 days). If pain no better/worsens, refer.
- If peptic ulcer, asthma, hypertension, heart failure or kidney disease, give instead prednisolone 40mg PO daily, decrease by 10mg every 3rd day until stopped. If unsure, refer to specialist.
- If patient is already using allopurinol, avoid stopping it during an acute attack.

Treat the patient with chronic tophaceous gout:

- Patient needs allopurinol if: > 3 attacks per year, chronic tophaceous gout, kidney stones/kidney disease caused by gout.
- Wait at least 3 weeks after an acute gout attack before starting allopurinol.
- Give allopurinol 100mg PO daily. Use smallest dose to keep urate < 6mg/dL: increase monthly by 100mg, maintenance usually 300mg daily; maximum 800mg in divided doses.

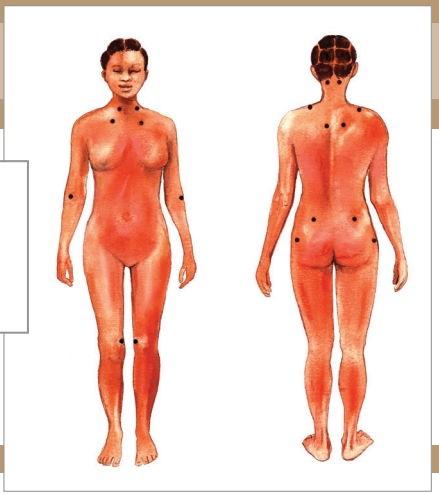
If no response to treatment or uncertain of diagnosis, refer.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela. [2]Calculate eGFR = [(140 - age) x weight (kg)]/[72x creatinine (mg/dL)]. If patient is a woman, multiply by 0.85.

Fibromyalgia: diagnosis and routine care

- Consider fibromyalgia if the patient has had general body pain above and below the waist, affecting both sides of the body for more than 3 months associated with at least 11 of 18 tender points (see picture) on palpation.
- Fibromyalgia diagnosis more likely if any of: woman, family history, fatigue, reduced ability to think and remember clearly, mood or sleep disturbances.
- Check for other causes of general body pain:
  - If weight loss ⮌16.
  - Screen for a joint problem: patient to place hands behind head; then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded. If unable to do screen comfortably →46.
  - Check ESR, Hb, TSH and test for HIV ⮌75.
- Consider another diagnosis and refer if joint problem, HIV positive, blood results abnormal or uncertain of diagnosis.
- Refer to hospital for confirmation of diagnosis.

Press tender points with the pressure that would blanch a fingernail. Compare with a control site on forehead.



Assess the patient with fibromyalgia

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. Ask patient to identify the 3 symptoms that bother her/him most and focus on these. • Avoid dismissing all symptoms as fibromyalgia: exclude treatable and serious illness. If unsure, refer.
Sleep	Every visit	If patient has difficulty sleeping ⮌67.
Stressors	Every visit	Help identify psychosocial stressors that may exacerbate symptoms. Assess and manage stress ⮌65.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Chronic arthritis	Every visit	If patient also has chronic arthritis, give routine care ⮌107.

Advise the patient with fibromyalgia

- The cause is unknown but may be a result of generalised hypersensitivity of the nervous system, so patient feels more pain than others, despite normal muscles and joints.
- The patient may also have irritable bowel syndrome, tension-headache, chronic fatigue syndrome, interstitial cystitis, sleep disturbances or depression.
- Explain that treatments may help (patients will have good days and bad days), fibromyalgia does not get worse over time and is not life-threatening, but there is no cure:
  - Advise the patient against overuse of painkillers (e.g. paracetamol and ibuprofen) as they are often not helpful for fibromyalgia and may have unwanted side effects.
  - Advise patient to keep as active as possible: start with 5 minutes of gentle walking every day and build up by 1 minute a day until able to walk or run for 30 minutes at least 3 times per week.
  - Encourage good sleep habits ⮌67.

Treat the patient with fibromyalgia

- If no better with education and exercise, give amitriptyline 12.5mg PO at bedtime. Increase by 5mg every 2 weeks until improvement (maximum dose 75mg).
- If no improvement after 3 months of advice, exercise and medication, refer for medical and psychiatric evaluation at hospital.

A supportive relationship with the same health practitioner can contain frequent visits for multiple problems. Review patient 6 monthly once stable.

Contraception

Give emergency contraception if patient had unprotected sex in past 5 days and does not want pregnancy:

- If within 72 hours of unprotected sex, give as soon as possible: single dose levonorgestrel 1.5mg PO.
  - If patient taking ART (or post-exposure prophylaxis), rifampicin or phenytoin, offer copper intrauterine device instead or increase single dose levonorgestrel to 3mg.
  - If patient vomits < 2 hours after taking levonorgestrel, repeat the dose or offer copper intrauterine device instead.
  - Offer to start contraceptive at same visit (if intrauterine device not chosen). Use condoms or abstain for next 7 days and check pregnancy test in 3 weeks.
- If within 5 days of unprotected sex or patient chooses, insert emergency copper intrauterine device instead.
- Consider need for HIV and hepatitis B post-exposure prophylaxis ↩69.

Assess the patient starting and using contraception

Assess	When to assess	Note
Symptoms	Every visit	• Check for symptoms of STIs: vaginal discharge, ulcers, lower abdominal pain. If present ↩36. If sexual problems ↩43. • If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ↩119. If menopausal, decide how long to continue contraceptive ↩119. • Manage other symptoms as on symptom pages.
Adherence	Every visit	• If already on contraceptive, ask about concerns and satisfaction with method. • If patient has missed injections or pills, manage ↩111.
Side effects	Every visit	If already on contraceptive, ask about side effects of method ↩111.
Safe sex	Every visit	Ask about risky sexual behaviour: patient or regular partner has new or multiple partner/s, uses condoms unreliably or has risky alcohol/drug use ↩103
Other medication	Every visit	If on ART, TB or epilepsy treatment, check method is suitable ↩111. If not suitable, choose/change to IUD or injectable.
Vaginal bleeding	Every visit	If abnormal vaginal bleeding: if already on contraceptive, first exclude pregnancy, then see method to manage ↩111. If not yet on contraceptive ↩42.
Weight (BMI)	First visit, then yearly	BMI = weight (kg) ÷ height (m) ÷ height (m). If BMI > 25 assess and manage CVD risk ↩84.
BP	First visit, every visit on pill or injectable	• Check BP ↩89. • If known hypertension or BP ≥ 140/90, avoid/change from combined oral contraceptive. If BP ≥ 160/100, also avoid/change from injectable.
Breast check	First visit, then yearly	Check for lumps in breasts ↩31 and axillae ↩18.
Pregnancy	Every visit	• Before starting contraception, exclude pregnancy[1]. If pregnant →112. • If pregnancy suspected (significant nausea/breast tenderness or if patient using IUD/combined oral contraceptive misses period), check pregnancy test. If pregnant →112.
HIV	Every visit	Test for HIV ↩75.
Cervical screen (VIA)	When needed	• If HIV negative and asymptomatic: screen 5 yearly from age 30-49. • If HIV positive and asymptomatic: screen at HIV diagnosis (regardless of age) then 5 yearly. • If abnormal ↩40.

Advise the patient starting and using contraception

- Educate patient to use contraceptive reliably. Advise to discuss concerns/problems with method and find an alternative, rather than just stopping it and risking unwanted pregnancy.
- Advise patient on pill or implant to tell clinician if starting ART, TB or epilepsy treatment as these may interfere with pill or implant effectiveness.
- If on combined oral contraceptive pill and ≥ 72 hours diarrhoea/vomiting, advise to use condoms or abstain (continue for 7 days once resolved).
- Demonstrate and give male/female condoms. Recommend dual contraception: one method of contraception *plus* condoms to protect from STIs and HIV.
- Encourage patient to have 1 partner at a time and if HIV negative to test for HIV between partners. Advise partner/s to be tested for HIV.
- Educate about the availability of emergency contraception (see above) and abortion ↩113 to prevent unwanted pregnancy.

[1]If after day 7 of cycle and patient has had unprotected sex since last period, advise patient to abstain or use condoms until next period. Start contraception when period starts. If period delayed, do pregnancy test.

Treat the patient starting and using contraception

If already using contraceptive and patient satisfied with method, check method is still suitable. If starting or changing contraceptive, help patient to choose method:

Method	Help patient to choose method	Instructions for use	Side effects
Intrauterine device (**IUD**) • Copper IUD (Cu-IUD)	• Effective for 10 - 12 years. • Fertility returns immediately on removal. • Avoid if current STI, unexplained vaginal bleeding, abnormal cervix/uterus.	• If inserted after day 12 of cycle, exclude pregnancy first. • Can be inserted within 48 hours of delivery. • Must be inserted/removed by trained staff.	• Heavy or painful periods: reassure usually improve within 3-6 months. To assess and manage ↩42. If excessive bleeding occurs after insertion or if tired and Hb < 11g/dL, refer. • Irritation of partner's penis during sex: cut IUD strings shorter.
Subdermal implant • Implanon: Etonogestrel (one-rod: 3 years)	• Lasts for 3 years. • Fertility returns immediately on removal. • Avoid if unexplained vaginal bleeding, previous breast cancer or active liver disease. • Use with caution[1] if BMI > 28 or on ART, rifampicin or phenytoin.	• Plastic rod just under skin of upper arm. • If inserted after day 5 of cycle, use condoms or abstain for 7 days. • Must be inserted/removed by trained staff.	• Amenorrhoea: reassure that this is common. • Abnormal bleeding: common. To assess and manage ↩42. • Acne: change to combined oral contraceptive or non-hormonal method. • Headaches: if severe, change to non-hormonal method. • Weight gain (less with progesterone-only pill) • Moodiness: reassure that this should resolve. In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any, consider changing method and ↩99.
Progestogen injection • Medroxyprogesterone acetate (DMPA) IM 150mg every 3 months	• 3 monthly injection • Fertility can be delayed for up to 1 year after last injection. • Avoid if diabetic complications.	• If started after day 5 of cycle, use condoms or abstain for 7 days. • No need to adjust dosing interval for ART, TB or epilepsy treatment.	
Progestogen-only pill (**POP**) • Levonorgestrel 30mcg PO (especially if postpartum or breastfeeding)	• Must be motivated to take pill reliably every day. • Fertility returns once pill is stopped. • Avoid both if active liver disease or on rifampicin or phenytoin. • Use both with caution[2] if on ART. • Also avoid COC if smoker ≥ 35 years, migraines and ≥ 35 years or visual disturbances, postpartum[3], BP ≥ 140/90, hypertension, CVD risk > 10%, current or previous deep vein thrombosis/pulmonary embolus, previous stroke, ischaemic heart disease or diabetic complications.	• Must be taken every day at the same time (no more than 3 hours late). • If started after day 5 of cycle, use condoms or abstain for 2 days.	
Combined oral contraceptive (**COC**) • Ethinylestradiol/ levonorgestrel 30/150mcg PO		• Must be taken every day at the same time. • If started after day 5 of cycle, use condoms or abstain for 7 days. • If ≥ 72 hours diarrhoea/vomiting, advise to use condoms or abstain (continue for 7 days once resolved).	• Abnormal bleeding: common in first 3 months. To assess and manage ↩42. • Breast tenderness, nausea: reassure usually resolve within 3 months. • Headaches: if migraines and ≥ 35 years or visual disturbances, change to non-hormonal method. • Moodiness: reassure that this should resolve.In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any, consider changing method and ↩99.
Sterilisation • Tubal ligation/vasectomy	• Permanent contraception • Surgical procedure	• Refer for assessment. • Written informed consent is needed.	Wound pain, infection or bleeding: refer.

Manage the patient who has missed injections or pills

Late injection

- If ≤ 2 weeks late for the DMPA: give the injection.
- If > 2 weeks late for the DMPA:
  - Exclude pregnancy. If pregnant →112.
  - If not pregnant: give injection and use condoms or abstain for 7 days. If unprotected sex in past 5 days, also offer emergency contraception ↩110.

Missed progestogen-only pill (> 3 hours late)

- Take pill as soon as remembered, continue pack and use condoms or abstain for 2 days.
- If unprotected sex in past 5 days, also offer emergency contraception ↩110.

Missed combined oral contraceptive (> 24 hours late)

- 1 or 2 active pills missed: take 1 pill immediately and take next pill at usual time.
- ≥ 3 active pills missed: take 1 pill immediately and take next pill at usual time. Use condoms or abstain for 7 days:
  - If 2 or more pills missed in last 7 active pills of pack: omit inactive pills and start next active pill.
  - If 2 or more pills missed in first 7 active pills of pack and patient has had unprotected sex in past 5 days: also offer emergency contraception ↩110.

Follow up the patient on combined oral contraceptive pill after 3 months, then yearly. Follow up patient with IUD 6 weeks after insertion to check strings.

[1]The subdermal implant may be less effective on ART, rifampicin and phenytoin. Advise patient to use condoms as well. [2]The oral contraceptive may be less effective on ART. Advise patient to use condoms as well. [3]Avoid COC for 6 weeks after delivery and for 6 months if breastfeeding.

The pregnant patient

Give urgent attention to the pregnant patient with one or more of:

- Convulsing or just had a convulsion
- BP ≥ 140/90 *and* persistent headache/blurred vision/abdominal pain: treat as **severe pre-eclampsia**
- BP ≥ 160/110 *and* ≥ 1+ proteinuria: treat as **severe pre-eclampsia**
- BP ≥ 160/110 *without* proteinuria: treat as **severe hypertension**
- Temperature ≥ 38°C and headache, weakness, back pain, abdominal pain
- Difficulty breathing
- Swollen painful calf
- Vaginal bleeding
- Decreased/absent fetal movements ⮌114
- Painful contractions < 37 weeks: **preterm labour** likely
- Sudden gush of clear or pale fluid from vagina with no contractions: **premature rupture of membranes** (**PROM**) likely

Management:

- If difficulty breathing, give face mask oxygen and refer urgently.
- If BP < 90/60, give normal saline 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If temperature ≥ 38°C, give ceftriaxone[1] 1g IM/IV or ampicillin[1] 2g IV/IM and gentamicin 80mg IM and refer urgently.

Convulsing or just had a convulsion

- If < 20 weeks →15.
- If between 20 weeks and 1 week postpartum, treat for **eclampsia**:
  - Lie patient in left lateral position.
  - Avoid placing anything in mouth.
  - Give 100% face mask oxygen.
  - Give magnesium sulphate:
- Give magnesium sulphate 4g in 200mL normal saline IV over 20 minutes. Also give 5g IM mixed with 1mL of lidocaine 2% in each buttock, and then 5g IM 4 hourly.
- Continue 1L normal saline IV 12 hourly.
- Insert urethral catheter and record urine output every 4 hours.
- Stop magnesium sulphate if urine output < 100mL in 4 hours or respiratory rate < 16[2] or knee reflexes disappear.
- If convulsion recurs or does not respond, refer urgently to hospital.

Severe pre-eclampsia

- Give magnesium sulphate 4g in 200mL normal saline IV over 20 minutes. Also give 5g IM mixed with 1mL of lidocaine 2% in each buttock, and then 5g IM 4 hourly.
- Continue 1L normal saline IV 12 hourly.
- Insert urethral catheter and record urine output every 4 hours.
- Stop magnesium sulphate if urine output < 100mL in 4 hours or respiratory rate < 16[2] or knee reflexes disappear.
- If convulsion recurs or does not respond, refer urgently to hospital.

Severe hypertension

- If BP ≥ 160/110, give hydralazine 5mg IV over 4 minutes. Also give 200mL normal saline IV. If BP still ≥ 150/100, repeat hydralazine 5mg every 30 minutes to a total maximum of 20mg.
- Arrange urgent referral after giving the first doses of medications.

Vaginal bleeding

Early pregnancy < 24 weeks[3]

Cervical os open/dilated or products of conception in cervical os/vagina?

No

Threatened or **complete miscarriage** likely

Refer same day to exclude ectopic pregnancy.

Yes

Incomplete or **inevitable miscarriage** likely

- If ≥ 12 weeks, refer same day.
- If < 12 weeks, do MVA.
- If pain, give ibuprofen 400mg PO TID.
- If bleeding heavy (pad soaked in < 5 minutes):
  - Give IV fluids as above.
  - Give single dose misoprostol 800mcg intravaginally.
  - Refer same day

If temperature ≥ 38°C, pulse ≥ 100 or smelly vaginal discharge, give ceftriaxone[1] 1g IM/IV or ampicillin[1] 2g IV/IM and gentamicin 80mg IM.

Late pregnancy ≥ 24 weeks[3]

- Avoid digital vaginal examination.
- Give IV fluids as above.
- Refer urgently.

If Rh-negative, give anti-D immunoglobulin 250mcg IM.

Preterm labour

- **If < 24 weeks:** refer.
- **If 24-34 weeks:**
  - Give dexamethasone 6mg IM, record time given in referral letter.
  - Give nifedipine 30mg PO, then 10mg 4 hourly until transferred.
  - Check BP every 30 minutes. If BP < 90/60, give IV fluids as above.
- **If > 34 weeks:** allow labour to continue.
- Refer urgently.

Premature rupture of membranes (PROM)

- Confirm amniotic fluid with sterile speculum: examination.
- Avoid digital vaginal examination.
- If chorioamnionitis[4]:
  - Give ceftriaxone[1] 1g IV/IM or ampicillin[1] 2g IV/IM and gentamicin 80mg IM.
  - Refer urgently to hospital.
- If no chorioamnionitis[4]:
  - If ≥ 37 weeks: if not in active labour 8 hours after PROM, give ampicillin[1] 1g IV/IM and refer urgently.
  - If < 37 weeks: give erythromycin 250mg 6 hourly. If 24-34 weeks, also give dexamethasone 6mg IM, record time given in referral letter. Refer same day.

Give routine antenatal care to the pregnant patient not needing urgent attention →113.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid and refer. [2]If respiratory rate < 16, give calcium gluconate 10% 1g IV slowly over 10 minutes. [3]If gestation not known, manage as late pregnancy if uterus palpable above umbilicus. [4]Temperature ≥ 38°C, maternal pulse ≥ 100, fetal heart rate ≥ 160, painful abdomen or smelly amniotic fluid.

Approach to the newly diagnosed pregnant patient not needing urgent attention.

Does the patient want the pregnancy?

No or unsure

Yes

- Discuss the options around continuing with pregnancy, choosing adoption or abortion. Refer to social worker.
- Determine gestational age by dates and on examination. If unable to determine gestational age, arrange ultrasound.

Patient requests abortion

Patient decides to continue with pregnancy.

Any one of < 18 years old, pregnant following incest or rape, severe mental illness or congenital malformation?

Yes

- < 12 weeks: do MVA or provide medical abortion.
- ≥ 12 weeks: refer to hospital for TOP.
- Discuss future contraception ⮌110.

No

- Abortion is not an option.
- Discuss possibility of adoption.
- Give routine antenatal care.

Identify the pregnant patient who needs referral level antenatal care

- Current medical problems: diabetes, heart/kidney disease, asthma, epilepsy, on TB treatment, substance use/abuse, hypertension, HIV stage 3 or 4.
- Current pregnancy problems: rhesus negative with antibodies, multiple pregnancy, < 18 years old, vaginal bleeding or pelvic mass
- Previous pregnancy problems: stillbirth or neonatal loss, ≥ 3 consecutive miscarriages, birth weight < 2500g or > 4500g, admission for hypertension or pre-eclampsia, congenital abnormality
- Previous reproductive tract surgery (including caesarean section)

If not needing referral level antenatal care, give routine antenatal care in health centre →114.

Routine antenatal care

Assess the pregnant patient at first visit and then at 16, 24–26, 32, 36-38 weeks.

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Check if patient needs urgent attention ⮌112.
Estimated delivery date	Every visit	Plot on antenatal card. If patient ≥ 41 weeks, confirm EDD and refer for fetal evaluation and possible induction of labour.
Fetal movements	Every visit from 20 weeks	If decreased or absent fetal movements, assess fetal heart rate (FHR): if FHR > 160 or < 110 or absent, refer to hospital.
TB	Every visit	If cough > 2 weeks, weight loss, night sweats or fever, exclude TB ⮌71.
Mental health	Every visit	• In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99. • If taking ≥ 14 units of alcohol/week or misusing illicit or prescription drugs, refer for secondary hospital antenatal care.
Weight	Every visit	Expect weight gain of 1-2kg at each visit. If < 1kg gain over 2 visits, refer to hospital.
BMI[2]	First visit	• BMI < 18.5: exclude TB ⮌71 and give routine malnutrition care ⮌70. • BMI > 30: refer to hospital for CVD risk assessment and management.
Mid upper arm circumference	First visit	MUAC < 23cm: exclude TB ⮌71, HIV ⮌75 and give routine malnutrition care ⮌70.
Abdominal examination	Every visit	• If mass other than uterus in abdomen or pelvis, refer for assessment. • Plot symphysis-fundal height (SFH) on, antenatal card: measurement in centimeters is roughly gestational age in weeks. If SFH is not within 3cm from expected gestational age, refer to hospital. • If breech or non-cephalic presentation at 37 weeks, refer to hospital.
Vaginal discharge	Every visit	• If abnormal discharge, treat for STI ⮌36. • If sudden gush of clear or pale fluid with no contractions: premature rupture of membranes likely ⮌112. If small amounts of clear/pale fluid, refer. Avoid digital examination.
BP (BP is normal if < 140/90)	Every visit	If BP ≥ 140/90, repeat after 1 hour lying on left side. If 2nd BP normal, repeat after 2 days. If 2nd BP still raised, check urine dipstick for protein: • No proteinuria: start methyldopa 250mg PO TID and refer to hospital. • If BP ≥ 140/90 and ≥ 1+ proteinuria, refer to hospital. If BP ≥ 140/90 and symptoms or BP ≥ 160/110, manage as severe pre-eclampsia →112.
Arrange ultrasound	First visit	Book ultrasound before 24 weeks.
Urine dipstick: test clean, midstream urine	Every visit	• If dipstick normal with dysuria (burning urine) or if leucocytes or nitrites present, treat for complicated urinary tract infection ⮌44. • If proteinuria, check BP: - BP ≥ 160/110, manage as severe pre-eclampsia →112. - BP < 140/90 and ≥ 2+ proteinuria, refer to hospital to exclude kidney disease. If BP < 140/90 and < 2+ proteinuria, reassess at next antenatal visit. • If glucose in the urine, check random blood sugar ⮌86.
Diabetes screen	• 26 weeks • If high risk[3]: also at first visit	• At 26 weeks, do oral glucose tolerance test[4]: if fasting glucose ≥ 120mg/dl or following a 75gm oral glucose lose, 1-hour > 180mg/dl or 2-hour ≥ 140mg/dl, refer to hospital. • If high risk at first visit, check blood glucose ⮌86. If diabetes, refer to hospital.
Haemoglobin (Hb)	First visit or if patient pale	• If Hb < 8g/dL at < 34 weeks or Hb < 10g/dL at > 34 weeks or pallor with respiratory rate > 30, dizziness/faintness or chest pain, refer to hospital same day. • If Hb 8-10g/dL at the first visit , treat ⮌115 and repeat Hb monthly until Hb > 10g/dL.
Rh status	First visit	• If Rh-positive, continue routine care. • If Rh-negative, give anti-D immunoglobulin 250mcg IM at 28 weeks and immediately after delivery. Also give if miscarriage, ectopic or abdominal trauma.

Continue to assess the pregnant patient ⮌115.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela. [2]BMI = weight (kg) ÷ height (m) ÷ height (m). [3]High risk of gestational diabetes if any of: previous gestational diabetes, glucose in urine, family history of diabetes, BMI > 30 or previous large baby > 4.5kg. [4]Oral glucose tolerance test: take fasting blood glucose specimen after overnight fast. Give oral glucose 75g in 250mL water to drink within 5 minutes. Take blood glucose specimen 1 hour and 2 hours later.

Continue to assess the pregnant patient

Syphilis	First visit, 32 week	If positive ⮌41.
HIV	First visit and at 36 weeks if negative	• Test for HIV ⮌75. If patient refuses, offer test at each visit, even in early labour. • If HIV positive give routine care ⮌76 and start ART same week ⮌115.
HIV viral load	At first visit if HIV positive; On ART: 6 months, 12 months, then yearly	• If viral load > 1000copies/mL for 1st time, give increased adherence support ⮌78 and repeat viral load after 3 months. • If viral load > 1000copies/mL for 2nd time, patient has virological failure: refer to hospital.

Advise the pregnant patient

- Advise to stop smoking, drinking alcohol, using drugs and/or misusing medications. Support patient to change ⮌125. Advise patient not to take medications unless prescribed by clinician.
- Advise patient to avoid potentially harmful foods: unpasteurised milk, soft cheeses, raw or undercooked meat, poultry, raw eggs and shellfish. Advise to cut down on caffeine.
- Advise patient to reduce indoor pollution (rural setting) and avoid smoking (urban setting).
- Discuss safe sex. Advise patient to have only 1 partner at a time. Discuss contraception following delivery ⮌110.
- Ensure patient knows the danger signs of a pregnancy ⮌112.
- Give patient advice to avoid mosquito-transmitted diseases:
  - Avoid travel to malaria areas.
  - If in malaria area: Use insect repellent and cover exposed skin with long-sleeved shirt/pants and hat. Stay and sleep in screened or air-conditioned room if possible. Sleep under insecticide dipped net.
- Regardless of HIV status, encourage exclusive breastfeeding for 6 months: only breast milk (no formula, water, cereal) and if HIV-exposed, nevirapine and co-trimoxazole prophylaxis.
- Refer for support if mental health risk: previous depression/anxiety or family history, < 20 years, unwanted pregnancy, poor social/family support, no/unsupportive partner, violence at home, difficult life event in last year or undisclosed HIV.

Treat the pregnant patient

- Give iron/folic acid 60mg/400mcg PO daily. Avoid tea/coffee 2 hours after taking tablet. If Hb < 10g/dL, give iron/folic acid 60mg/400mcg PO TID for 3 months and reassess.
- Check if tetanus immunisations are up to date (3 doses of tetanus in the past):
  - If up to date, give 1 dose of tetanus vaccine at 27-36 weeks gestation.
  - If not up to date/unknown, give 3 doses of tetanus vaccine: at first visit , then after 1 month and then after 6 months.
- Be cautious of the risk of pre-eclampsia if first pregnancy, hypertension, diabetes, kidney disease, twin pregnancy, BMI > 30, previous pre-eclampsia or family history, < 18 years or > 35 years, > 10 years since last pregnancy.
- Prevent malaria in a malaria area: if not on co-trimoxazole, give chloroquine 300mg weekly from 14 weeks.
- Treat the HIV positive patient:
  - If stage 3 or 4 or CD4 ≤ 350cells/mm³, give co-trimoxazole 160/800mg PO daily.
  - If on ART, continue. If on efavirenz, no need to change regimen.
  - If not on ART, start ART within 2 weeks ⮌80.

Treat the HIV positive patient in labour

- If HIV positive on ART, continue ART throughout delivery and breastfeeding.
- If newly diagnosed HIV positive or known HIV positive and not on ART, start ART ⮌80.
- Ensure mother gets routine HIV care after delivery ⮌76.

Treat the HIV-exposed baby immediately after birth

- Give the baby born to an HIV positive mother a dose of nevirapine syrup (10mg/mL) as soon as possible after birth ⮌118.

Give postnatal care to mother and baby ⮌116.

Routine postnatal care

Give urgent attention to the postnatal patient with one or more of:

- Heavy bleeding (soaks pad in < 5 minutes): **postpartum haemorrhage** likely
- Convulsing or just had a convulsion up to 1 week postpartum →112.
- BP ≥ 140/90 *and* persistent headache/blurred vision/abdominal pain: treat as **severe pre-eclampsia** →112.
- Feeling unwell and temperature > 38°C
- BP < 90/60
- Pulse ≥ 100
- Tear extending to anus or rectum
- Pallor with respiratory rate > 30, dizziness/faintness or chest pain
- Pallor with Hb < 7g/dL

Management:

- If BP < 90/60 or bleeding with pulse ≥ 100, give normal saline 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **postpartum haemorrhage** likely:
  - Look for and repair any perineal tears.
  - Massage uterus and empty bladder (with catheter if needed).
  - Give oxytocin 10IU IM, then 30IU in 1L normal saline at 40 drops/minute IV.
  - Ensure placenta is delivered. If controlled cord traction fails, try manual delivery and give ampicillin[1] 2g IV/IM.
  - If uterus still soft after this, give ergometrine[2] 0.2mg IM/IV or misoprostol 400mcg sublingual and continue massaging uterus.
  - If still bleeding heavily, apply bimanual[3] or external aortic compression[4] or non-pneumatic anti-shock garments (if available) during referral.
- If feeling unwell and temperature > 38°C: give ceftriaxone[1] 1g IM/IV or amoxicillin[1] 1g PO with metronidazole 1g PO.
- Refer urgently.

Assess the mother and her baby within 24 hours, 2-3 days, 1 week and 6 weeks following delivery

Assess	When to assess	Note
Symptoms	Every visit	• Manage mother's symptoms as on symptom pages. Manage baby's symptoms with IMCI guide. • Ask about urinary incontinence (leaking or dribbling urine). If still present at 6 weeks, treat for flow problem ⮌44.
Depression	Every visit	If patient not interacting with baby and 2 or more of: a difficult life event in the last year, unhappy about pregnancy, absent or unsupportive partner, previous depression or anxiety, violence at home ⮌99.
Substance use/abuse	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[5]/session, 2) used khat or illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌103.
Family planning	Every visit	Assess patient's contraception needs ⮌110.
Baby feeding	Every visit	• If breastfeeding: check for breast problems ⮌31. Check that baby latches well and is not mixed feeding. • If formula feeding: ensure correct mixing of formula and water and that it is affordable, feasible, acceptable, safe and sustainable.
Baby	Every visit	Assess and manage the baby according to the IMNCI guide. Ensure baby received immunisations at birth and ensure baby is immunised at 6 week visit.
Abdomen and perineum	Every visit	• If perineal or abdominal wound: check healing. • If painful abdomen, smelly discharge or poorly contracted uterus: check temperature and refer.
BP	Every visit	Check BP. If BP ≥ 140/90, recheck after 1 hour rest. If BP still ≥ 140/90 and ≤ 1 week postpartum, refer urgently.

Continue to assess the mother and her baby →117.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), avoid and refer. [2]Avoid if eclampsia, pre-eclampsia or known hypertension. [3]Bimanual compression: insert clenched fist into vagina, back of hand directed posteriorly, knuckles in anterior fornix. Place other hand on abdomen behind uterus and squeeze uterus firmly between hands. [4]External aortic compression: press down with fist just above umbilicus until femoral pulse not felt. [5]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Assess	When to assess	Note
HIV test in mother	• If not done • At 6 weeks • If breastfeeding: 3 monthly	• Test for HIV ⮌75. If HIV positive, give routine care ⮌76. If not on ART, start ART ⮌79. • If mother tests HIV positive, do HIV PCR on baby same day and start post-exposure prophylaxis in baby while waiting for PCR result ⮌118.
HIV test in HIV-exposed baby	• 6 weeks • 9 months if previous test negative • 18 months if previous test negative	• Decide which HIV test to do: - If < 9 months, do PCR. If positive, start ART and confirm result with 2nd PCR. - If 9 - 17 months, do rapid test. If positive, do PCR. If PCR positive, start ART and confirm result with 2nd PCR. - If ≥ 18 months ⮌75. • If mother diagnosed with HIV while breastfeeding or baby unwell, do HIV test same day.
Haemoglobin (Hb)	If pale	If Hb < 7g/dL, refer same day. If Hb 7-11g/dL, treat as below.
Syphilis	If not done	Test mother for syphilis: if positive, treat mother and baby ⮌41.
Cervical screen (VIA)	At 6 weeks if needed	• If HIV negative: screen every 5 years if patient between 30-49 years. • If HIV positive: screen at HIV diagnosis (regardless of age) then 5 yearly. • If abnormal ⮌40.

Advise the mother

- Encourage mother to become active soon after delivery, rest frequently and eat well. If mother has little support at home, arrange support.
- Advise mother to keep perineum clean and to change pads 4-6 hourly.
- Advise to return urgently if heavy bleeding, smelly vaginal discharge, red/smelly/oozing wound, fever, dizziness, severe headache, blurred vision, severe abdominal pain, severe calf pain or baby unwell.
- Give feeding advice:
  - Encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, nevirapine and co-trimoxazole prophylaxis.
  - Refer to an infant feeding support group.
  - If patient chooses to formula feed, ensure it is affordable, feasible, acceptable, safe and sustainable. Check formula is correctly prepared. Discourage mixed feeding before age 6 months.
  - From 4-6 months, introduce food while continuing with feeding choice.
  - If mother HIV positive, continue breastfeeding until 1 year if mother on ART and until at least 2 years if baby diagnosed HIV positive.
  - If mother HIV negative: continue to breastfeed until at least 2 years. Explain importance of regular HIV testing while breastfeeding.
- If mother HIV positive: ensure mother knows how to give nevirapine syrup correctly.
- Advise that mother and baby sleep under an insecticide dipped bed net if in a malaria area.
- Advise mother to reduce indoor pollution (rural setting) and avoid smoking (urban setting).

Treat the mother

- Continue iron/folic acid 60mg/400mcg PO daily for 6 weeks post partum. If Hb 7-11g/dL, give iron/folic acid 60mg/400mcg PO TID for 3 months and reassess Hb.
- Check antenatal Rh-status: if Rh-negative, confirm anti-D immunoglobulin was given at delivery. If not given within 72 hrs of delivery, give anti-D immunoglobulin 250mcg IM.
- Check tetanus immunisation is up to date: 5 doses in a lifetime. If not up to date: give 1 dose of tetanus vaccine. Repeat at 4 weeks, then 6, 18 and 30 months after first dose.
- If painful perineal or abdominal wound, give paracetamol 1g PO QID as needed for up to 5 days.
- If HIV positive and not on ART, start ART ⮌79. If mother is already on ART, continue.

Treat the HIV-exposed baby

Give eMTCT regimen →118.

Elimination of mother-to-child transmission (eMTCT) of HIV

Approach to the HIV-exposed baby (mother is known with HIV[1])
Start post-exposure prophylaxis as soon as possible within 6 hours of birth:

- Mother on ART
  - Did mother initially test HIV negative and then became HIV positive during this pregnancy?
    - No
      - Was there poor adherence to ART or mother in stage 3 or 4?
        - No → **Low risk of HIV transmission** → Give nevirapine PO daily for 6 weeks (see table).
        - Yes → **High risk of HIV transmission** → Refer to hospital.
    - Yes → **High risk of HIV transmission** → Refer to hospital.
- Mother not on ART → Start ART in mother same day ⮌79. → **High risk of HIV transmission** → Refer to hospital.

Treat the HIV-exposed baby

- Give eMTCT: nevirapine. Dose according to weight and age (see table). If ≤ 35 weeks gestation, discuss dose.
- Start co-trimoxazole at 6 weeks of age. Dose according to weight (see table). Stop if HIV negative 6 weeks after last breastfeed.

Nevirapine syrup (10mg/mL)		
Birth weight (born > 35 weeks)	**Age**	**Dose**
< 2.0kg	Birth up to 6 weeks	0.2mL/kg daily
2.0-2.49kg	Birth up to 6 weeks	1mL daily
≥ 2.5kg	Birth up to 6 weeks	1.5mL daily
-	6 weeks to 12 weeks	2mL daily

Co-trimoxazole syrup (40/200mg/5mL)	
Weight	**Dose**
3.0-5.9kg	2.5mL daily
6.0-13.9kg	5mL daily

[1]If mother's HIV status is unknown and mother not available, do rapid HIV test on baby. If positive, send HIV PCR test and refer to hospital. If negative, there is no need for eMTCT.

Menopause

- Exclude pregnancy before diagnosing menopause. If pregnant →112.
- Menopause is no menstruation for at least 12 months in a row in a woman above 40 years of age. Most women have menopausal symptoms and irregular periods during perimenopause.
- If woman is < 40 years, refer to hospital.

Assess the menopausal patient

Assess	When to assess	Note
Symptoms	Every visit	• Ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping ⮌67 and sexual problems ⮌43. • If night sweats, ask about other TB symptoms: if cough ≥ 2 weeks, weight loss or fever, exclude TB ⮌71. • Manage other symptoms as on symptom pages.
Depression	Every visit	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Thyroid function	At diagnosis	If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, refer to hospital.
Vaginal bleeding	Every visit	If bleeding between periods, after sex or after being period-free for 1 year, refer to hospital.
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌84. • If < 10% reassess after 1 year. If 10% to < 20%, reassess after 6 months.
Osteoporosis risk	At diagnosis	Refer for possible treatment if high osteoporosis risk: < 60 years with loss of > 3cm in height and fractures of hip/wrist/spine; previous non-traumatic fractures; corticosteroid treatment > 3 months; onset of menopause < 45 years; BMI < 18.5; > 2 alcoholic drinks/day; smoker.
Family planning	At diagnosis	• If on combined oestrogen/progestogen pill or progestogen injection, change to non-hormonal method or progestogen only pill or subdermal implant when ≥ 50 years. • If on non-hormonal method, continue for 2 years after last period if < 50 years and for 1 year after last period if ≥ 50 years. • If on progestogen only pill or subdermal implant, continue until 55 years, or if still menstruating, until 1 year after last period.
Breast check	At diagnosis	If any lumps found in breasts or axillae, refer same week to hospital.
Cervical screen	When needed	If HIV negative, screen every 5 years if patient between 30-49 years. If HIV positive, screen at HIV diagnosis (regardless of age) then 5 yearly. If abnormal ⮌40.

Advise the menopausal patient

- To cope with the hot flushes, advise patient to dress in layers and to decrease alcohol, avoid spicy foods, hot drinks and warm environments.
- Advise increased weight bearing exercise, such as walking.
- If patient smokes tobacco ⮌102. Support patient to change ⮌125.
- Help patient to manage CVD risk if present ⮌85.
- If patient is having mood changes or not coping as well as in the past, refer to counsellor or support group.
- Educate the patient about the risks, contraindications and benefits of hormone therapy and that it can be used to treat menopausal symptoms for up to 5 years. Long term use can increase risk of breast cancer, deep vein thrombosis (DVT) and cardiovascular disease.

Treat the menopausal patient

- Give calcium 500-1000mg daily.
- If menopausal symptoms interfere with daily function and no history of abnormal vaginal bleeding, cancer of uterus/breast, previous DVT or pulmonary embolism, recent heart attack, uncontrolled hypertension or liver disease, refer to hospital for initiation and routine follow up of hormone therapy.

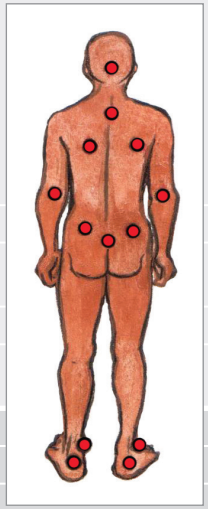
Life-limiting illness: routine palliative care

A patient can be given curative and palliative care at the same time. A doctor should confirm the patient with a life-limiting illness's need for palliative care:

- If patient terminally sick and survival is predicted to be short then s/he needs palliative care *and/or*
- Patient with advanced disease chooses palliative care only and refuses curative care *and/or*
- Patient with advanced disease not responding to treatment: heart failure, COPD, kidney failure, cancer, dementia, HIV, TB.

Assess the patient needing palliative care

Assess	Note
Symptoms	• Manage on symptom pages: fever, constipation, nausea/vomiting, difficulty swallowing, difficulty breathing/cough, sore mouth, weight loss, incontinence, vaginal discharge. • If patient concerned about appetite loss, reassure that this is normal at the end of life. Consider trying a short course of prednisolone ⮌121.
Pain	• If new or sudden pain, temperature ≥ 38°C, tender swelling, redness or pus, also treat on symptom page. If no better or uncertain of cause, refer. • Assess the severity of the patient's pain to help the patient to decide which pain medications s/he needs to start or increase : • Ask the patient to point on the pain scale whether his/her pain is mild, moderate or severe. no pain | mild pain | moderate pain | severe pain | worst possible pain 0 1 2 3 4 5 6 7 8 9 10 • Ask patient to describe the pain: muscles spasms, bone pain; if burning or electric like sensations, **nerve pain** likely; if cramping, colicky pain in abdomen, **organ pain** likely.
Sleep	If patient has difficulty sleeping ⮌67.
Depression	In the past month, has patient: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things? If yes to any ⮌99.
Side effects	Manage side effects on symptom pages. Nausea, confusion and sleepiness on morphine usually resolve after a few days.
Chronic care	• Assess how much patient and family understands about the condition and ask what further information the patient and carer need. • Assess ongoing need for chronic care in discussion with patient and health care team.
Carer	Ask how the carer is coping and what support s/he needs. Assess for stress or distress ⮌65.
Mouth	Check oral hygiene and look for dry mouth, ulcers and oral candida ⮌27.
Bed sores	If patient is bedridden, check common areas for damaged skin (change of colour) and bedsores (see picture). If patient has bedsore ⮌59.
Smelly wound/discharge	If patient has a malignant wound or discharge not responding to treatment that is smelly and causing embarrassment, treat with metronidazole solution to reduce smell ⮌121.

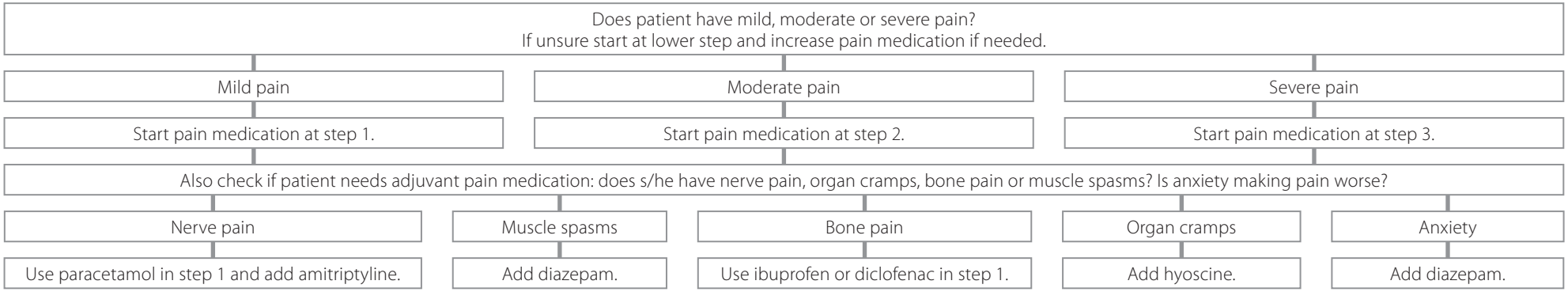


Advise the patient needing palliative care and his/her carer

- Explain about the condition and prognosis. Explaining what is happening relieves fear and anxiety. Support the patient to give as much self care as possible.
- Discuss the plan for caring for the patient. Advise whom to contact when pain or other symptoms get severe.
- Educate the carer to recognise signs of deterioration and impending death: s/he may be less responsive, become cold, sleep a lot, have irregular breathing, and will lose interest in eating.
- Refer patient and carer to available palliative carer, support group, counsellor, spiritual counsellor. Deal with bereavement issues ⮌65.
- Prevent bedsores if bedridden: wash and dry skin daily. Keep linen dry. Move (lift, avoid dragging) patient every 1-2 hours if unable to shift own weight. Look daily for skin colour changes (see picture).
- Prevent contractures if bedridden: at least twice a day, gently bend and straighten joints as far as they go. Avoid causing pain. Massage muscles.
- Prevent mouth disease: brush teeth and tongue regularly using toothpaste or dilute bicarbonate of soda if available. Rinse mouth with ½ teaspoon of salt in 1 cup of water after eating and at night.
- The patient's appetite will diminish as s/he gets sicker. Offer small meals frequently and allow the patient to choose what s/he wants to eat from what is available.
- Emphasize the importance of taking pain medication regularly (not as needed) and if using codeine/morphine to use a laxative daily to prevent constipation.

Treat the patient needing palliative care

- If smelly wound or discharge not responding to treatment, give metronidazole to control infection and smell: dissolve 5g in 2L normal saline and wash/douche daily.
- If poor appetite is distressing the patient at the end of life, give prednisolone 5mg PO daily in the morning to stimulate appetite. Increase up to 15mg if needed.
- Treat pain. Aim to have patient pain free at rest and as alert as possible. If the patient has any pain, start pain medication.



Step	Pain medication	Start dose	Maximum dose	Note
Step 1 Use one of:	Paracetamol	1g PO QID	4g daily	NSAIDS are very good for visceral and somatic pain. Start this if mild pain and also use in step 2 or 3 and in neuropathic pain with amitriptyline.
	Diclofenac	50mg BID or PO TID	150g daily	Give with/after food. Avoid if peptic ulcer, dyspepsia, bleeding problem, kidney or liver disease, asthma.
	Ibuprofen	400mg PO QID	2.4g daily	Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.
Step 2 Add one of:	Codeine	30mg PO 4 hourly	240mg daily	If no diarrhoea , give bisacodyl 5-15mg PO daily to prevent constipation.
	Tramadol	50mg-100mg PO QID	400mg daily	• If no diarrhoea, give bisacodyl 5-15mg PO daily to prevent constipation. • Avoid in epilepsy
Step 3 Stop step 2 and add:	Morphine oral syrup	2.5mg-5mg PO 4 hourly	None. If respiratory rate < 12, skip 1 dose, then halve dose.	• If no diarrhoea, give bisacodyl 5-15mg PO daily to prevent constipation. • If pain persists after first 24 hours, increase dose by 1.5-2 times. • If patient has severe nausea, give metoclopramide 10mg PO TID for 1 week only • Dizziness should clear in few days. Advise to avoid driving, heavy machinery. If persists > 1 week, lower dose.
Add adjuvant pain medication to any step if needed.	Amitriptyline	25-75mg PO	75mg/daily	Use at night. Advise it may cause dizziness and sedation and to avoid driving and using heavy machinery.
	Diazepam	5mg PO TID	15mg/daily	Explain about dizziness which will clear in few days but avoid driving, heavy machinery
	Hyoscine	10-40mg PO TID	120mg /daily	-

- If pain persists/increases, increase dose to maximum and then move to next step. If pain decreases, step down.
- Review 2 days after starting or changing medication. If side effects intolerable after decreasing dose, refer.

Review the patient needing palliative care and his/her carer regularly.

Protect yourself from occupational infection

Give urgent attention to the health worker who has had a sharps injury or splash to eye, mouth, nose or broken skin with exposure to one or more of:

- Blood
- Blood-stained fluid/tissue
- Pleural/pericardial/peritoneal/amniotic/synovial/cerebrospinal fluid
- Vaginal secretions
- Semen
- Breast milk

Management:

- If broken skin, clean area immediately with soap and water.
- If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water or normal saline.
- If health worker has had contact with viral haemorrhagic fever[1] suspect, discuss with specialist[2].
- Assess need for HIV and hepatitis B post-exposure prophylaxis ⮌68.

Adopt measures to diminish your risk of occupational infection

Protect yourself

Adopt standard precautions with every patient:

- Wash hands with soap/water or use alcohol-based cleaner before and after contact with patients or body fluids.
- Do not recap or bend needles
- Safely pass sharp instruments
- Dispose of sharps correctly in sharps bins.

Wear personal protective equipment:

- Wear gloves when handling blood, body fluids, secretions or non-intact skin.
- Wear face mask if in contact with respiratory virus suspects
- Wear N95 respirator if caring for MDR TB patient.
- Wear face mask with a visor or glasses if at risk of splashes.
- Wear personal protective equipment if in contact with viral haemorrhagic fever[1] suspects.

Get vaccinated:

- Get vaccinated against hepatitis B and yearly against influenza.

Know your HIV status:

- Test for HIV ⮌75. ART and IPT can decrease the risk of TB.
- If HIV positive, you are entitled to work in an area of the facility where exposure to TB is limited.

Protect your facility

Clean the facility:

- Clean frequently touched surfaces (door handles, telephones, keyboards) daily with soap and water.
- Disinfect surfaces contaminated with blood/secretions with 70% alcohol or chlorine-based disinfectant.

Ensure adequate ventilation:

- Leave windows and doors open when possible and use fans to increase air exchange.

Organise waiting areas:

- Prevent overcrowding in waiting areas.
- Fast track influenza and presumed TB patients.

Manage sharps and other infectious wastes safely:

- Ensure sharps bins are easily accessible and regularly replaced.
- Segregate and dispose wastes properly

Manage infection control in the facility:

- Appoint an infection control officer for the facility to coordinate and monitor infection control policies.

Manage possible occupational exposure promptly

Reduce TB risk

Identify the presumed TB patient promptly:

- The patient with cough ≥ 2 weeks is a presumed TB patient.
- Separate presumed TB patient from others in the facility.
- Educate about cough hygiene and give face mask/tissues to cover mouth/nose to protect others.

Diagnose TB rapidly:

- Fast track TB workup and start treatment as soon as diagnosed.

Protect yourself from TB:

- Wear an N95 respirator (not a face mask) if in contact with an infectious MDR TB patient.

Reduce risk of respiratory viruses (including influenza)

- Wash hands with soap and water.
- Wear a face mask over mouth and nose during procedures on patient.
- Encourage patient to cover mouth/ nose with a tissue when coughing/sneezing, to dispose of used tissues correctly and to wash hands regularly with soap/water.
- Advise patient to avoid close contact with others.

[1]Suspect viral haemorrhagic fever in patient who lived in or travelled to an endemic area or had contact with confirmed viral haemorrhagic fever in past 21 days and has fever and ≥ 1 of: bloody diarrhoea, bleeding from gums, bleeding into skin, eyes.
[2]Report to the head of the health centre who will contact the Public Emergency Management unit within the Public health institute.

Protect yourself from occupational stress

Experiencing pressure and demands at work is normal. However, if these demands exceed knowledge and skills and challenge your ability to cope, occupational stress can occur.

Give urgent attention to the health worker with occupational stress and one or more of:
- Alcohol or drug intoxication at work
- Aggressive or violent behaviour at work
- Inappropriate behaviour at work
- Suicidal thoughts or behaviour ⮌62

Management:
- Arrange assessment same day with mental health practitioner.

Adopt measures to diminish your risk of occupational stress

Protect yourself

Look after your health:
- Get enough sleep.
- Exercise, eat sensibly, minimise alcohol and don't smoke ⮌85.
- Get screened for chronic conditions.

Look after your chronic condition if you have one:
- Adhere to your treatment and your appointments.
- Don't diagnose and treat yourself.
- If you can, confide in a trusted colleague/manager.

Manage stress:
- Delegate tasks as appropriate, develop coping strategies.
- Talk to someone (friend, psychologist, mentor).
- Do a relaxing breathing exercise each day.
- Find a creative or fun activity to do.
- Spend time with supportive friends or family.

Have healthy work habits:
- Manage your time sensibly.
- Take scheduled breaks.
- Remind yourself of your purpose as a clinician.
- Be sure you are clear about your role and responsibilities.

Protect your team

Decide on an approved way of behaving at work:
- Communicate effectively with your patients and colleagues ⮌124.
- Treat colleagues and patients with respect.
- Support each other. Consider setting up a staff support group.
- Instead of complaining, rather focus on finding solutions to problems.

Cope with stressful events:
- Develop procedures to deal with events like complaints, harassment/bullying, accidents/mistakes, violence or death of patient or staff member.

Look at how to make the job less stressful:
- Examine the team's workload to see if it can be better streamlined.
- Identify what needs to be changed to make the job easier and frustrations fewer: equipment, drug supply, training, space, décor in work environment.
- Discuss each team member's role. Ensure each one has say in how s/he does his/her work.
- Support each other to develop skills to better perform your role.

Celebrate:
- Acknowledge the achievements of individuals and the team.
- Organise or participate in staff social events.

Identify occupational stress in yourself and your colleagues:

Possible alcohol or drug problem
- In the past year, have you or your colleague: drunk ≥ 4 drinks[1]/session, used khat or illegal drugs, or misused prescription or over-the-counter medications?
- Smells of alcohol

Change in mood
- Indifferent, tense, irritable or angry
- In the past month, have you or colleague: felt depressed, sad, hopeless or irritable or worrying a lot, had multiple physical complaints, felt little interest or pleasure in doing things?

Recent distressing event
- Diagnosis of chronic condition
- Bereavement
- Needlestick injury
- Traumatic event

Poor attendance at work
- Frequent absenteeism

Marked decline in work performance
- Reduced concentration
- Fatigue

If you or your colleagues have any of the above you may have substance abuse, stress, depression/anxiety or burnout. Ensure that you seek help.

[1]One drink is 1 shot (25mL) of spirits (whiskey, vodka, areke, gin), or 1 small glass (125mL) of wine/tej or 1 can/bottle (330mL) of beer/tela.

Communicate effectively

- Communicating effectively with your patient during a consultation need not take much time or specialised skills.
- Try to use straightforward language and take into account your patient's culture and belief system.
- Integrate these four communication principles into every consultation:

Listen

Listening effectively helps to build an open and trusting relationship with the patient.

Do	The patient might feel:	Don't	The patient might feel:
• Give all your attention • Recognise non-verbal behaviour • Be honest, open and warm • Avoid distractions e.g. phones	• 'I can trust this person' • 'I feel respected and valued' • 'I feel hopeful' • 'I feel heard'	• Talk too much • Rush the consultation • Give unwanted advice • Interrupt	• 'I am not being listened to' • 'I feel disempowered' • 'I am not valued' • 'I cannot trust this person'

Discuss

Discussing a problem and its solution can help the overwhelmed patient to develop a manageable plan.

Do	The patient might feel:	Don't	The patient might feel:
• Use open ended questions • Offer information • Encourage patient to find solutions • Respect the patient's right to choose	• 'I choose what I want to deal with' • 'I can help myself" • 'I feel supported in my choice' • 'I can cope with my problems'	• Force your ideas onto the patient • Be a 'fix-it' specialist • Let the patient take on too many problems at once	• 'I am not respected' • 'I am unable to make my own decisions' • 'I am expected to change too fast'

Empathise

Empathy is the ability to imagine and share the patient's situation and feelings.

Do	The patient might feel:	Don't	The patient might feel:
• Listen for, and identify his/her feelings e.g. 'you sound very upset' • Allow the patient to express emotion • Be supportive	• 'I can get through this' • 'I can deal with my situation' • 'My health worker understands me' • 'I feel supported'	• Judge, criticise or blame the patient • Disagree or argue • Be uncomfortable with high levels of emotions and burden of the problems	• 'I am being judged' • 'I am too much to deal with' • 'I can't cope' • 'My health worker is unfeeling'

Summarise

Summarising what has been discussed helps to check the patient's understanding and to agree on a plan for a solution.

Do	The patient might feel:	Don't	The patient might feel:
• Get the patient to summarise • Agree on a plan • Offer to write a list of his/her options • Offer a follow-up appointment	• 'I can make changes in my life' • 'I have something to work on' • 'I feel supported' • 'I can come back when I need to'	• Direct the decisions • Be abrupt • Force a decision	• My health worker disapproves of my decisions' • 'I feel resentful' • 'I feel misunderstood'

Support the patient to make a change

Use the five-A's approach to help the patient make a change in behaviour to help avoid or lessen a health risk:

Ask the patient about the risks

- Identify with the patient the risk/s to his/her health.
- Ask what the patient already knows about these risks and how they will affect the patient's health.

Alert the patient to the facts

- Request permission to share more information on this risk.
- Use a neutral, non-judgemental manner. Avoid prescribing what the patient must do.
- Build on what the patient already knows or wants to know.
- Discuss results of tests or examination that indicate a risk.
- Link the risk to the patient's health problem.

Assess the patient's readiness to change

- Assess the patient's response about the information on his/her risk. 'What do you think/feel about what we have discussed?'
- Use the scale to help patient assess the importance of this issue for him/her. Also rate how confident s/he feels about making a change.

Not at all important or confident	1	2	3	4	5	6	7	8	9	10	Very important/very confident

- Ask the patient why s/he rated importance/confidence at this number and not lower. Ask what might help improve this rating.
- Summarise the patient's view. Ask how ready s/he feels to make a change at this time.

Assist the patient with change

If the patient is ready to change:

- Assist the patient to set a realistic change goal.
- Explore the factors that may help the patient to change or may make it difficult.
- Help the patient plan how s/he will fit the change into the routine of the day. Encourage patient to use strategies s/he used successfully in the past.

If the patient is not ready to change:

- Respect the patient's decision.
- Invite patient to identify the pros and cons of change.
- Acknowledge patient's concerns about change.
- Explore ways of overcoming the difficulties preventing change.
- Offer more information or support if the patient would like to consider the issue further.

Arrange support and follow up

- Offer referral to counselor and available support services (social worker, health promoter, health extension worker).
- Identify a friend, partner, or relative to support the patient and if possible attend clinic visits.
- Document decision and goals set by the patient.
- Schedule follow-up contact (clinic visit, email, phone) to review readiness and goals.

Child contents

Symptoms

Long-term health conditions

The emergency child

Give urgent attention to the emergency child

Does child respond to voice or physical stimulation?

- **No** — Feel for pulse for maximum of 10 seconds: feel carotid pulse.
  - No pulse felt or no signs of life. → Call for help and start CPR →129.
  - Pulse felt
    - Pulse rate < 60 → Call for help and start CPR →129.
    - Pulse rate ≥ 60 → Check breathing:
      - Child gasping or not breathing
        - Check airway clear and give 1 breath with bag valve mask attached to oxygen every 4 seconds.
        - Recheck pulse every 2 minutes.
      - Child breathing well
- **Yes**

Assess and manage airway, breathing, circulation and level of consciousness:

Airway
- If noisy breathing, position in 'sniffing position'. If injured, keep neck stable, use instead jaw-thrust[1] only.
- Check for foreign body in mouth: if easy-to-reach, remove. Suction secretions.
- If unresponsive, insert an oropharyngeal airway[2].

Breathing
- If difficulty breathing or oxygen saturation ≤ 92%, give facemask oxygen ⮌141.
- If respiratory rate decreased, or blue lips/tongue, assist each breath with bag valve mask attached to oxygen (at least every 4 seconds).

Circulation
- Establish IV access: try 3 times for < 90 seconds each, if unsuccessful and trained to do so, insert external jugular or intra-osseous line[3].
- If ≥ 2 of: 1) cold hands/feet, 2) weak/fast pulse, 3) capillary refill[3] > 3 seconds, 4) decreased level of consciousness 5) decreased urine output: **shock** likely ⮌130.
- If actively bleeding or enlarging/ pulsating swelling, elevate and apply direct pressure. If unsuccessful, compress the nearest large artery.

Glucose/level of consciousness
- Check fingerprick glucose:
  - If glucose if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[4] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[4] bolus.
- Determine AVPU:
  - **A:** alert
  - **V:** responds to voice
  - **P:** responds to pain
  - **U:** unresponsive
- If decreased level of consciousness ⮌132.

Manage further according to disability and symptoms and refer urgently:
- If injured:
  - If head injury, neck/spine tenderness, decreased level of consciousness or weak/numb limb, immobilise head with tape and sandbags/bags of IV fluid on either side of head. Use spine board if needing to move patient.
  - Identify all injuries: undress child fully and assess front and back using log-roll to turn. Then cover and keep warm. Manage injuries ⮌133.
- If pupils unequal or respond poorly to light, tilt bed to raise head by 30 degrees. If injured, avoid bending spine: keep body straight with head/neck in midline.
- Manage further according to symptoms: if covulsing →131, if just had convulsion →131, if unconscious →132, if burn →134.
- Keep child warm.

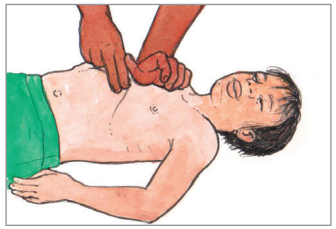
[3]If trained, insert an intraosseous line:
Clean with antiseptic, locate site on medial surface of tibia, 2 finger breadths below tibial tuberosity, stabilize thigh/knee, insert 15-18 gauge intraosseous needle 90o angle to bone with bevel towards foot. Advance with twisting motion, stop when sudden decrease in resistance (needle should be fixed in bone). Remove stylet (if present) and confirm position by aspirating 1mL of blood/marrow with 5mL syringe. Flush with 5mL IV fluid. Apply dressing and secure. Monitor for calf swelling.

[1]Lift chin forward with fingers under bony tips of jaw. [2]Size oropharyngeal airway: flat rim at middle of mouth (front incisors), laid on side of face, tip at angle of jaw. If child resists, coughs or gags, likely too alert to tolerate airway. [3]Capillary refill time: hold hand/foot higher than level of heart. Press soft pad of finger/toe until it turns pale, then release pressure and take note of time taken for colour to return. [4]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline).

Cardio-pulmonary resuscitation (CPR) of the child

In the unresponsive child with no pulse or pulse < 60, start chest compressions:

- Note start time.
- Give cycles of 15 compressions and 2 breaths with bag valve mask attached to oxygen at a flow rate of 10-15L/min. If only one rescuer, give 30 compressions and 2 breaths. Ensure correct CPR technique:
  - For chest compressions:
    - Find correct hand position: palpate xiphoid process and place hands directly above this area on the sternum. Place one hand on top of the other and push down onto the chest, making sure to keep your shoulders directly over your hands and elbows locked.
    - Push hard (≥ ⅓ of depth of chest) and fast (100/minute).
    - Allow full chest recoil (chest to return to normal shape in between compressions).
    - Minimise interruptions in compressions.
  - For breaths:
    - Check airway clear and head and neck in the 'sniffing position'. If injured, keep neck stable, use instead jaw thrust[1]



Use heel of hand/s.

- Give adrenaline 1:10 000, which is 1mL adrenaline (1:1000) diluted in 9mL normal saline, 0.1mL/kg IV/IO every 3 minutes (for quick reference, use the table below):

Dose IV/IO adrenaline (1:10 000) according to age
1:10 000 concentration: dilute 1mL adrenaline (1:1000) diluted in 9mL normal saline.

Age	Volume
5-7 years	2mL
7-11 years	3mL
11-15 years	5mL

- If glucose if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- Treat for likely shock ⮌130.
- Warm child.
- Check for pulse after every 2 minutes of CPR.

Decide when to stop CPR:

Return of pulse ≥ 60
→128.

No return of pulse after 20 minutes
- If hypothermia, near drowning or poisoning, continue prolonged CPR and transfer urgently.
- If no pulse and fixed dilated pupils after 20 minutes of effective CPR, stop CPR and pronounce dead.
- Arrange bereavement counselling for family.

[1]Lift chin forward with fingers under bony tips of jaw. [2]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline).

Assess and manage child's fluid needs

Assess the child's fluid needs:
Is there ≥ 2 of 1) cold hands/feet, 2) weak/fast pulse, 3) capillary refill time (CRT)[1] > 3 seconds, 4) decreased level of consciousness 5) decreased urine output?

Yes: **shock** likely
- Establish IV access: try 3 times for < 90 seconds each, if unsuccessful, insert external jugular or intra-osseous (IO) line. If IV access not possible, refer urgently with ORS 20mL/kg/hour NGT or orally if NGT not possible.
- Is there ≥ 1 of: 1) severe acute malnutrition[4] 2) difficulty breathing 3) suspected meningitis?

No
- Give normal saline 20mL/kg bolus IV/IO rapidly.
- Then assess response: feel hands, check pulse and CRT.

Good response: hands warmer, CRT faster, pulse slower and stronger

No longer shocked.

Continue with normal saline 30mL/kg over 30 minutes, then give 70mL/kg for 2½ hours.

Poor response: hands still cold or pulse weak or not felt, CRT > 3 seconds

Still shocked
Is pulse rate up by 25 beats/minute or respiratory rate up by 5 breaths/minute or eyelids puffy?

No

Give 2nd bolus: normal saline 20mL/kg bolus IV/IO and urgently refer to hospital.

Yes

Stop IV fluids, give oxygen 2L/minute via nasal prongs, and refer urgently to hospital.

Yes
- Give DNS 10mL/kg IV/IO over 20 minutes.
- Then assess response: feel hands, check pulse and CRT.

Poor response: hands still cold or pulse weak or not felt, CRT > 3 seconds

Still shocked
Are eyelids puffy, leg swelling worse, is pulse rate up by 25 beats/minute or respiratory rate up by 5 breaths/minute?

No

Give 2nd bolus: DNS 15mL/kg IV/IO over 1 hour and urgently refer to hospital.

Continue ORS 10mL/kg/hour orally (or NGT if vomiting).

Yes

Good response: hands warmer, CRT faster, pulse slower and stronger

No longer shocked.

No
- If lethargic, check finger prick glucose if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- Is there ≥ 2 of: 1) sunken eyes, 2) drinking poorly, 3) lethargic, 4) very slow skin pinch[3] (≥ 2 seconds) 5) decreased urine output?

Yes
Severe dehydration (**10%**) likely
Is there ≥ 1 of: 1) severe acute malnutrition[4], 2) difficulty breathing, 3) suspected meningitis?

No

Give normal saline 30mL/kg over 30 minutes, then give 70mL/kg for 2½ hours.

Yes

Give DNS 10mL/kg IV/IO over 1 hour, then give ORS 10mL/kg/hour via NGT/oral until transfer. If IV access not possible, give 10mL/kg/hour via NGT or orally if NGT not possible.

No
Is there ≥ 2 of: 1) sunken eyes, 2) thirsty/drinks eagerly, 3) restless/irritable, 4) slow skin pinch[3]?

Yes
Moderate dehydration (**5%**) likely
Is there ≥ 1 of: 1) severe acute malnutrition[4], 2) difficulty breathing, 3) suspected meningitis?

No
Give ORS 20mL/kg/hour orally, using small frequent sips, for 4 hours.

Yes
Give ORS 10mL/kg/hour orally using small frequent sips, for 4 hours.
- Record weight.
- If child vomits, wait 10 minutes, then continue more slowly.
- If refusing to drink, give via NGT.
- Give more ORS if child wants it.
- Check fingerprick glucose and manage as above, if necessary.

Reassess after 4 hours:
- If still dehydrated or weight not up, refer to hospital.
- If no longer dehydrated and child has diarrhoea →145.
- Address other symptoms on symptom page.

No
Child not dehydrated

Return to relevant symptom page to assess and manage symptom/s.

Refer urgently. While awaiting transfer:
- If not already done, check finger prick glucose: if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- If not due to watery diarrhoea or trauma, or if child has severe acute malnutrition[4], give ceftriaxone 100mg/kg (up to 2g) IV/IM.
- Reassess fluid status hourly and keep warm: cover with blanket.

[1]Capillary refill time (CRT): hold hand/foot higher than level of heart. Press soft pad of finger/toe until it turns pale, then release pressure and note time taken for colour to return. [2]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [3]Pinch skin on abdomen between 2 fingers. Release. Skin usually snaps rapidly back to its normal position. A slow skin pinch takes longer. [4]Severe acute malnutrition: BMI below -3 line or very low MUAC (< 13cm in a child 5-9 years old or < 16cm in a child 10-14 years old).

Seizures/convulsions

Give urgent attention to the child who is unconscious and convulsing:
Give medication to stop the convulsion whilst giving supportive treatment. Then treat possible causes.

Stop the convulsion that has lasted > 5 minutes

- Give rectal[1] diazepam 0.1mL/kg PR or if IV line already inserted, give diazepam 0.05mL/kg IV slowly (see table below).
- Expect a response within 5 minutes. Monitor breathing: if decreased respiratory rate, breathing stops or gasping, ventilate with bag-valve mask (1 breath every 3-5 seconds) ⮌128.
- If child still convulsing after 5-10 minutes, give a 2nd dose of diazepam. If child still convulsing 5-10 minutes after this, give a 3rd dose of diazepam.

Weight/age	Rectal[1] diazepam (10mg/2mL) 0.1mL/kg	IV diazepam (10mg/2mL) 0.05ml/kg
18-25kg (5-8 years)	1.5mL	0.9mL
≥ 25kg (≥ 8 years)	2mL	1mL

- If child still convulsing or repeated convulsions without regaining consciousness despite diazepam: give phenytoin 20mg/kg PO via nasogastric tube (NGT) *or* phenobarbitone 20mg/kg (up to 1g) PO via NGT.
- Refer to hospital urgently.

Give supportive treatment and treat possible causes

- Open airway: clear mouth, stabilise neck if trauma patient and suction secretions.
- If not trauma patient, place in recovery position[2]. Avoid placing anything in mouth.
- Give facemask oxygen 5 L/minute.
- Check fingerprick glucose: if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[3] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[3] bolus.
- If **meningitis**[4] likely, give ceftriaxone 100mg/kg (up to 2g) IV.
- If malaria is suspected/confirmed[5]: give artesunate 3mg/kg IM or artemether 3.2mg/kg IM.

Approach to the child who is not convulsing now:

- If child known with epilepsy, give routine epilepsy care →155.
- If not know with epilepsy: confirm that child indeed had a convulsion: jerking movements, loss of consciousness, eyes open during convulsion, incontinence, post-convulsion drowsiness and confusion. If not, refer to hospital.

Refer patient same day if one or more of:

- Temperature ≥ 38°C
- Convulsion > 15 minutes
- Unresponsive to voice > 1 hour after convulsion
- > 1 convulsion in 24 hours
- Convulsion occurs only on one side
- Neck stiffness/ meningism
- Weakness of arm/leg/face, even if resolved
- Dehydration[6]
- Suscpted/confirmed malaria[5]
- Ingestion of medication/potentially harmful substance
- Previous birth trauma, head injury, meningitis
- Family history of epilepsy[7]
- HIV positive
- Head injury within past week
- Close TB contact

Has child had ≥ 2 convulsions in the last year on 2 different days?

Yes
Refer to hospital.

No
- If talking/understanding problems, refer to hospital.
- If otherwise well, review in 3 months for further convulsions, new symptoms or delayed milestones.

Advise the caretaker on what to do if child has a convulsion at home

- Place child in safe place (on floor or bed) away from objects that may cause injury.
- Lie child on left side in recovery position[2]. Avoid placing anything in his/her mouth. Wipe away secretions.
- Time convulsion: get help if convulstion continues for more than 3 minutes or child does not wake up properly between convulsions.
- Encourage caretaker/s to have a plan ready if medical attention needed urgently: know where nearest clinic is, have reliable transport plan.

[1]Rectal administration: draw up correct dose, remove needle and connect to an NGT that has been cut to a length of 5cm (length of baby finger). Insert into rectum, inject diazepam solution and hold buttocks together. [2]Recovery position: turn onto left side, place left hand under cheek with neck slightly extended and bend the right leg to stabilise position (see picture above). [3]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [4]**Meningitis** likely if: temperature ≥ 38°C, neck stiffness, headache and/or vomiting. [5]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [6]Dehydration: ≥ 2 of: 1) sunken eyes, 2) thirsty/drinks eagerly, 3) restless/irritable, 4) slow skin pinch. [7]Family history of epilepsy refers to a parent or sibling with childhood onset epilepsy.

Decreased level of consciousness

Assess the AVPU scale. The child with a decreased level of consciousness is not alert and does not responds voice, s/he only responds to pain or is unresponsive.

Give urgent attention to the child with a decreased level of consciousness

- If not already done, assess and manage airway, breathing and circulation ⮌128.
- If no history of trauma, place child in recovery position: turn left side, place left hand under cheek with neck slightly extended and bend the right leg to stabilise position.
- Ask about possible causes and manage symptoms: trauma or injury ⮌133, ulsing or just had a convulsion ⮌131, burns ⮌134.
- If known allergy with exposure to allergen, manage as anaphylaxis below.
- If **poisoning** likely, refer to hospital urgently.
- Check fingerprick glucose, temperature, pupils and skin:

Glucose

- If glucose < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[1] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[1] bolus.
- If glucose ≥ 200mg/dL, **DKA** likely. Assess fluids needs ⮌130.

Temperature

≤ 35.5° C

- Clothe including head and cover with warmed blankets. Place near heater.
- Give ceftriaxone 100mg/kg (up to 2g) IV/IM.

≥ 38°C

Treat for likely **infection**:

- Give ceftriaxone 100mg/kg (up to 2g) IV/IM.
- If malaria is suspected/confirmed[2]: give artesunate 3mg/kg IM or artemether 3.2mg/kg IM.

Pupils

Both pupils dilated or pinpoint

Poisoning likely

- If pinpoint pupils, excessive drooling/sweating, coughing up or choking on secretions, slow pulse, **organo-phosphate poisoning** likely: give atropine 0.05mg/kg IV. If no response, double the dose every 3 minutes until improving.

Unequal or respond poorly to light

Tilt bed to raise head by 30 degrees. If injured, avoid bending spine: keep body straight with head and neck in midline.

Skin rash

Purple/red rash that does not disappear with pressure.

Meningococcal disease likely

- Establish IV/IO.
- If ≥ 2 of: 1) cold hands/feet, 2) weak/fast pulse, 3) capillary refill time[3] > 3 seconds, 4) decreased level of consciousness 5) decreased urine output: **shock** likely ⮌130.
- Give ceftriaxone 100mg/kg (up to 2g) IV/IM.

Sudden rash

There may be swelling of face/tongue or wheezing.

Anaphylaxis likely

- Lie child flat and give 100% facemask oxygen at 5L/minute.
- Give adrenaline (1mg/mL, 1:1000) 0.3mL IM into mid-outer thigh. If no better, repeat every 5 minutes. Give normal saline 20mL/kg IV bolus. Also give diphenhydramine 1mg/kg IM/IV (up to 50mg).

- Consider child abuse if any of: history inconsistent with examination, delay in presentation, skull fracture, old and new scars on body, unusual or patterned wounds, burns, wounds around ano-genital region, refer to hospital.
- If child aggressive or violent: ensure safety, assess child with help of other staff, use security personnel if needed. Discuss with hospital doctor before sedating.
- Refer urgently with advanced life support ambulance. While waiting for transport:
  - Check pulse, respiratory rate, oxygen saturation (if available) and capillary refill time[3] every 15 minutes.
  - If pulse/respiratory rate abnormal, oxygen saturation drop ≤ 92%, or capillary refill time[3] > 3 seconds, reassess airway, breathing and circulation ⮌128.

[1]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [2]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [3]Capillary refill time: hold hand/foot higher than level of heart. Press soft pad of finger/toe until it turns pale, then release pressure and note time taken for colour to return.

The injured child

Give urgent attention to the injured child with any of:

- Decreased level of consciousness
- Difficulty breathing: abnormal respiratory rate, grunting, nasal flaring or chest indrawing
- Distended abdomen
- Bleeding despite direct pressure
- Pulsatile or growing swelling
- Burns ⮌134
- Weak/numb limb
- Multiple injuries
- Poor perfusion below injury: cold, pale, numb, no pulse
- Weak/numb limb
- Stab or gunshot wound
- Severe mechanism: high speed collision, car accident, fall from height

Also give urgent attention to the child with a head injury and any of:

- Lethargy or decreased level of consciousness
- History of loss of consciousness
- Strange behaviour or memory loss since injury
- Suspected skull fracture
- Vomiting ≥ 2 episodes
- Severe headache
- Pupils unequal or respond poorly to light
- Blurry/double vision
- Blood or clear fluid leaking from ear/nose
- Bruising around eyes or behind ears
- Blood behind eardrum
- Drug or alcohol intoxication

Management:

- Assess and manage airway, breathing, circulation ⮌128. Establish IV access and assess and manage fluid needs ⮌130.
- If actively bleeding or enlarging/pulsating swelling, apply direct pressure while arranging urgent ambulance transfer to hospital.
- If severe head injury, neck/spine tenderness, decreased level of consciousness or weak/numb limb, immobilise head with tape and sandbags/bags of IV fluid. Use spine board if moving child.
- If pupils unequal/respond poorly to light, keep body straight, raise head by 30 degrees (do not bend spine) and keep head in midline.
- Identify all injuries: undress child fully and assess front and back using log-roll to turn. Then cover and keep warm.
- While awaiting transport, monitor every 15 minutes: pulse, respiratory rate, oxygen saturation (if available). If deteriorates, reassess and manage airway, breathing and circulation ⮌128.
- Refer urgently to hospital.

Approach to the injured child not needing urgent attention

Wound

- Apply direct pressure to stop bleeding.
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[1]: if no hypersensitivity, give single dose TAT 3000U SC.
- Remove foreign material, loose/dead skin. Irrigate with normal saline or if dirty, dilute povidone iodine solution.
- If sutures needed: suture and apply non-adherent dressing for 24 hours. Plan to remove sutures after 5 days (face), 4 days (neck), 10 days (leg) or 7 days (rest of body).
- Avoid suturing if wound > 12 hours old (or > 24 hours on head/neck), infected, remaining foreign material or deep puncture, instead:
  - Pack wound with saline-soaked gauze *and*
  - Give cloxacillin[2] 25mg/kg QID PO *plus* metronidazole 7.5mg/kg (up to 400mg) TID PO for 7-10 days.
  - Review in 2 days. If no infection, suture now if still needed, unless deep puncture (irrigate and dress every 2 days instead).
- Advise to return if skin red, warm, painful: **infection** likely.
- If unable to close wound easily, cosmetic concerns or child needs sedation to suture, refer to hospital.

Head injury

- Advise caretaker to observe child carefully for 24 hours and limit activity for at least 48 hours.
- Advise to return immediately if any of: blurred vision, vomiting, headache despite paracetamol, difficult to wake, balance problem.

Painful limb

- Give single dose paracetamol 15mg/kg (up to 1g) PO.
- Apply firm, supportive bandage, refer to hospital.

Consider child abuse, if any of: clear history of abuse, history inconsistent with exam, delayed presentation, skull fracture, old and new scars, burns, unusual or patterned wounds, grasp marks on arms/chest/face, bruises on trunk, different colour bruises, wounds around anus/genital region.

[1]Inject 0.1mL TAT SC and 0.1mL normal saline at separate site as control: if wheal with redness develops around TAT site, child has TAT hypersensitivity. Refer to hospital. [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 7-10 days.

Burns

Calculate percentage total body surface area (%TBSA) burnt using below figure.

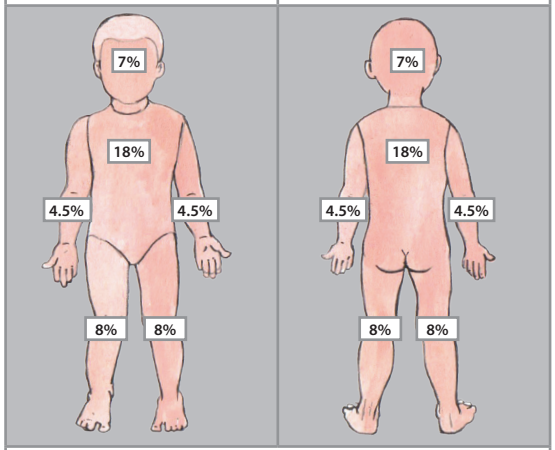
Give urgent attention to the child with burn/s and any of:

- Electric/chemical burn
- Full-thickness burn (white/black, painless, leathery, dry)
- Partial thickness burn (pink/red, blisters, painful, wet) > 10% TBSA
- Likely **inhalation burn** (burns to face/neck, hoarse, stridor or black sputum)
- Circumferential burn of chest/limbs
- Temperature ≥38°C
- Sudden skin swelling with redness, pain or warmth
- Burn of face, hand, foot, genitals, joint
- ≥ 2 of: 1) cold hands/ feet, 2) weak/fast pulse, 3) capillary refill time[1]> 3 seconds, 4) decreased level of consciousness: **shock** likely

Management:

- Remove burnt/hot and tight clothing. Cool burn with water or wet towel for 30 minutes unless ≥ 20% TBSA burn. Avoid hypothermia.
- If burn > 10% TBSA, inhalational burn, oxygen saturation ≤ 92%, drowsy/confused, give face mask oxygen 5L/minute.
- Give IV fluid:
  - If **shock** likely, assess and manage child's fluid needs ⮌130. If TBSA ≥ 20%, give normal saline 20mL/kg IV bolus.
  - If > 10% TBSA: give normal saline IV 4mL x weight(kg) x %TBSA over first 24 hours. Give half this volume in first 8 hours from time of burn. If delay in transfer > 8 hours from time of burn: give the second half of the fluid volume over the next 16 hours.
  - *In addition*, begin maintenance fluids[2] according to table below.
- Give paracetamol 20mg/kg (up to 1g) and then 15mg/kg 4 hourly PO. If severe pain, give morphine sulphate 0.4mg/kg PO 4 hourly as needed. Monitor breathing, if respiratory rate decreases or oxygen saturation < 92%, give face mask oxygen 5L/minute.
- Clean burn with water or normal saline, remove loose/dead skin and apply thin film of silver sulfadiazine 1% or fusidic acid 2% cream.
  - If hospital transfer within 12 hours, no need to apply dressing. Wrap child in clean dry sheets and keep warm.
  - If delayed > 12 hours, apply vaseline® gauze and cover with dry gauze.
  - If full thickness/>10%TBSA burn, cover with vaseline® gauze occlusive dressing and cover with plastic wrap (cling film).
- Give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[3]: if no hypersensitivity, give single dose TAT 3000U SC.
- Reassess airway, breathing and circulation hourly ⮌128.
- If other injuries, manage ⮌133.
- Check fingerprick glucose: if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[4] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[4] bolus.
- Refer urgently.

How to calculate %TBSA of burn



Child's open hand (area of palm) represents is 1% TBSA.
Do not include simple erythema (redness) in calculation.

Approach to the child with burn/s not needing urgent attention:

- Cool burnt area < 3 hours old with cold tap water for 30 minutes. Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Clean with water or normal saline, apply thin film of silver sulfadiazine 1% or fusidic acid 2% cream and cover with vaseline gauze dressing.
- Give tetanus toxoid 0.5mL IM if none in past 5 years. If unavailable, check for tetanus antitoxin (TAT) hypersensitivity[3]: if no hypersensitivity, give single dose TAT 3000U SC.
- If cigarette burn, glove and stocking type burn or history given inconsistent with burn, consider **child abuse**, refer to hospital.
- Review daily the child with burn/s not needing urgent attention:
  - Dress wound daily with **vaseline®** gauze dressing. If pain/anxiety with dressing changes, give paracetamol 15mg/kg (up to 1g) PO 1 hour before changing dressing.
  - Refer if **infection** likely (skin red, warm, painful), rash develops, pain despite medication or burn not healing.

Decide on maintenance fluid[2] rate

Weight	24 hour fluid need
10-20kg	1000mL + (50mL for every kg body weight over 10kg) e.g.: if 14kg: 1000mL + (50 x 4) = 1200mL/24 hours
≥ 20kg	1500mL + (20mL for every kg body weight over 20kg) Up to 2000mL in girls and 2500mL in boys e.g.: if 23kg: 1500mL + (20 x 3) = 1560mL/24 hours

[1]Capillary refill time: hold hand/foot higher than level of heart. Press soft pad of finger/toe until it turns pale, then release pressure and note time taken for colour to return. [2]To make 1000mL: mix 500mL 5% DW + 500mL DNS + 5 vials of 40% glucose (or mix 500mL 5% DW + 500mL NS + 9 vials of 40% glucose). [3]Inject 0.1mL TAT SC and 0.1mL normal saline at separate site as control: if wheal with redness develops around TAT site, child has TAT hypersensitivity. Refer to hospital. [4]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline).

Fever

Give urgent attention to the child with a fever (temperature ≥ 38°C now or in the past 3 days) and any of:

- Just had convulsion →131
- Decreased level of consciousness
- Headache
- Neck stiffness
- Purple/red rash that does not disappear with pressure
- Increased respiratory rate and/or difficulty breathing ⮌141
- Tenderness right lower abdomen, **appendicitis** likely
- Jaundice
- Little or no urine ⮌146
- Features of **rheumatic fever**[1]
- Previous rheumatic fever or known with **rheumatic heart disease**

Manage and refer urgently:

- If decreased level of consciousness, assess and manage airway, breathing and circulation ⮌128.
- Assess and manage child's fluid needs ⮌130.
- Check fingerprick glucose: if glucose if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- If headache, decreased level of consciousness, neck stiffness, and/or purple/red rash, **meningitis** likely, give ceftriaxone 100mg/kg (up to 2g) IV/IM.
- If **appendicitis** likely, give ceftriaxone 100mg/kg (up to 2g) IV/IM.
- If malaria is suspected/confirmed[3]: give artesunate 3mg/kg IM or artemether 3.2mg/kg IM.
- If **rheumatic fever** likely, give benzathine benzylpenicillin[4] IM according to weight: < 20kg, 600 000 units and if ≥ 20kg, 1.2 million units and report as a reportable disease.
- Give paracetamol 15mg/kg (up to 1g) PO.

Approach to the child with fever (temperature ≥ 38°C now or in the past 3 days) not needing urgent attention

- If lumps/swellings in neck, axilla or groin ⮌137, ear pain ⮌139, sore throat ⮌140, cough ⮌141], abdominal pain/swelling ⮌144, diarrhoea ⮌145, urinary symptoms ⮌146, limping/difficulty moving limb ⮌147.
- Give paracetamol 15mg/kg QID PO as needed for up to 5 days.

Do a peripheral blood film examination or a malaria rapid diagnostic test

Positive for malaria

Manage according to type of parasite/s seen:

Plasmodium vivax

Give chloroquine: 16.6mg/kg (up to 1g) PO initially, then 8.3mg/kg (up to 500mg) at 6, 24 and 48 hours (total of 4 doses) *and* primaquine 0.25mg/kg daily PO for 14 days.

Plasmodium falciparum

Both Plasmodium falciparum and Plasmodium vivax

- Give artemether/lumefantrine 20/120mg BID PO for 3 days according to weight:
  - 15-24kg: 2 tablets;
  - 25-34kg: 3 tablets;
  - ≥ 35kg: 4 tablets
  - *Also* give single dose primaquine 0.25mg/kg PO.

Advise patient to return if no better.

Positive for Borrelia (relapsing fever)

- Report. Delouse, shave hair and change clothes.
- First insert IV line, then give procaine penicillin[5] 200 000-400 000IU IM. Monitor for reaction every 15 minutes for next 2 hours, then every 30 minutes for next 4 hours: if drop in BP, increased pulse rate, collapse, give 20mL/kg normal saline bolus.
- Repeat peripheral blood film after 12 hours:
  - If negative: give tetracycline 250mg TID PO for 3 days *or* erythromycin 10mg/kg TID PO for 3 days.
  - If positive: repeat procaine penicillin[5] and monitoring as above, every 12 hours until blood film negative.
- Advise family members to wash well, reduce crowding and wash clothes.
- If no overnight facilities, refer to hospital.

Negative for malaria & Borrelia[6]

Ask about pattern of fever, personal hygiene, headache, diarrhoea/constipation and look for lice on body:

If intermittent fever with any of: headache, lives in overcrowded setting, poor personal hygiene or body lice, **typhus fever** likely:

- Give doxycycline for 7-10 days according to weight:
  - < 45Kg: 2.2mg/kg (up to 200mg) BID PO
  - ≥ 45kg: 100mg BID PO
- *Or* give chloramphenicol 25mg/kg QID PO for 7 days.

If persistent fever with any of: diarrhoea followed by constipation or poor food hygiene, **typhoid fever** likely: give ciprofloxacin 25mg/kg BID PO for 10-14 days *or* amoxicillin 10mg/kg TID PO for 14 days.

If fever ≥ 2 weeks, exclude TB and test for HIV.

- If none of above, advise cold compresses and review after 2 days.
- If cause uncertain, refer.

[1] ≥ 2 of: joint pain/swelling that moves from joint to joint, strange movements of limbs/face, lumps over joints/tendons, rash (round pink lesions with pale centre. [2] If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [3] Do a peripheral blood film examination or a malaria rapid diagnostic test. [4] If penicillin allergy, refer to hospital for doctor decision. [5] If penicillin allergy (anaphylaxis, urticaria, angioedema), give instead single dose tetracycline 250mg PO or single dose erythromycin 10mg/ kg PO. [6] Widal and Weil felix tests not recommended, as not specific and do not show new infection.

Headache

Give urgent attention to the child with headache and any of:

- Sudden severe headache
- Headache/vomiting on awakening or waking from sleep
- Headache getting worse and more frequent
- Temperature ≥ 38°C
- Decreased level of consciousness
- Neck stiffness/meningism
- Head tilted to one side (torticollis)
- Pupils different size
- Weakness of arm or leg
- Vision problems (e.g. double vision)
- Head trauma in last week →133
- Abnormally large head
- Elevated BP[1]

Manage and refer urgently:

- If neck stiffness/meningism or decreased level of consciousness, **meningitis** likely: give ceftriaxone 100mg/kg (up to 2g) IV/IM.
- If malaria is suspected/confirmed[1]: give artesunate 3mg/kg IM or artemether 3.2mg/kg IM.
- If temperature ≥ 38°C ⮌135.
- Give paracetamol 15mg/kg (up to 1g) PO.

Approach to child with headache not needing urgent attention

Is headache throbbing, disabling and recurrent with nausea/vomiting or light/noise sensitivity, that resolves completely within 72 hours?

Yes

Migraine likely

- Give immediately and then as needed: paracetamol 15mg/kg (up to 1g) QID PO or if ≥ 20kg and able to swallow tablet, ibuprofen[2] 200mg TID PO with meals. Advise to return if no better after 24 hours and refer to hospital.
- Advise child/caretaker with migraine:
  - Recognise migraine early and rest in dark, quiet room.
  - Draw up a headache calendar to identify and avoid triggers like lack of sleep, stress, prolonged screen time, hunger and some food or drink.
  - Migraine may occur at start of menstrual period. Reassure.
  - Give letter with advice on care if migraine occurs at school.
- If ≥ 2 attacks/month or no response to treatment, refer to hospital.

No

Pain over cheeks, thick nasal (or postnasal) discharge, recent common cold, headache worse on bending forward?

Yes

Sinusitis likely

- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Give normal saline drops into nostrils as needed.
- If no better, give oxymetazoline 0.025% 2 drops TID into each nostril for up to 5 days.
- If symptoms > 10 days: give amoxicillin[3] 50mg/kg (up to 1g) BID PO for 10 days.
- If > 1 episode, test for HIV.
- If poor response to antibiotic or > 4 episodes per year, refer to hospital.
- If swelling around sinus/eye or tooth infection, refer same day to hospital.

No

Consider tension headache and muscular neck pain

Tightness around head or generalised pressure-like pain

Tension headache likely

- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Do vision test, if problem, refer to hospital.

Constant aching neck pain, tender neck muscles

Muscular neck pain likely

- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Advise sleeping on different pillow, avoid prolonged screen time (TV, cellphones and computers) and correct posture.

If unsure or poor response to treatment refer to hospital.

[1]Do a peripheral blood film examination or a malaria rapid diagnostic test. [2]Avoid if asthma, heart failure or kidney disease. [3]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days.

Lumps/swellings in neck, axilla or groin

Give urgent attention to the child with lumps/swellings in groin:
- Severe abdominal pain, vomiting or not passing stool, **incarcerated/strangulated inguinal hernia** likely

Refer urgently.

Approach to the child with lumps/swellings in neck, axilla or groin not needing urgent attention:
- First exclude thyroid mass and hernia:
  - Lump in neck that moves on swallowing, **thyroid mass** likely: refer to hospital.
  - Lump in groin that bulges on crying/coughing/passing stool, **inguinal hernia** likely: refer to hospital.
- If none of the above, a lump/swelling in neck, axilla or groin is likely an **enlarged lymph node** (**lymphadenopathy**). If unsure, refer.

Is lymphadenopathy localised (neck or axilla or groin) or generalised (≥ 2 areas)?

Localised lymphadenopathy: is lymph node hot, red and painful?

Generalised lymphadenopathy

Yes

Bacterial lymphadenitis likely
- If painful neck lymphadenopathy with sore throat, **tonsillitis** likely →140.
- Give amoxicillin 30mg/kg (up to 500mg) TID PO for 5 days. If penicillin allergy (previous anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days.
- If poor response to treatment after 2 days, change amoxicillin to cephalexin 12-25mg/kg (up to 500mg) QID for 7 days.
- Review in 2 weeks: if no better, refer to hospital.

No

- Look for likely cause: check face, skin, gums/teeth and throat. If sore throat ⮌140.
- If lymph node in groin and if sexually active, treat child and partner for **lymphogranuloma venereum** →36. If child abuse suspected, refer to hospital.

If local cause found:
- Treat the cause.
- Advise to return in 4 weeks if no better on treatment and refer to hospital.

If no cause found:
- If close TB contact or TB symptoms (cough or fever ≥ 2 weeks, not growing well/losing weight, tired/less playful), exclude TB.
- If status unknown, test for HIV. If HIV positive, manage according to national HIV programme guidelines.
- If none of the above:

Localised lymphadenopathy
Any of: weight loss, fever, night sweats, lymph node growing quickly, weakness, pallor[1]?

Generalised lymphadenopathy

No

- If lymph node > 1cm persists for > 2 weeks, refer to hospital.
- Advise to return if new symptoms or lymph nodes grow.

Yes

Refer to hospital.

[1]If child's palm significantly less pink than your own.

Pallor

This refers to the child with pale palms[1] and/or conjunctiva. If possible, check Hb: if Hb < 11g/dL, child has **anaemia**.

Give urgent attention to the child with a low Hb and/or pallor and any of:

- Hb < 7g/dL
- Jaundice
- Swollen legs
- Widespread/easy bruising
- Increased respiratory rate
- Increased pulse rate
- Palpitations or chest pain
- Bone or joint pain
- Lethargy or decreased level of consciousness
- Purple/red rash that does not disappear with pressure

Manage and refer urgently:

- If increased respiratory rate, give oxygen 2L/minute via nasal prongs.
- Check for malaria[2]: if malaria test positive, give artesunate 3mg/kg IM or artemether 3.2mg/kg IM.

Approach to the child with pallor not needing urgent attention

Are laboratory services available to take blood for complete blood count (CBC)?

No

Iron deficiency anaemia likely

- Deworm: give single dose albendazole 400mg PO every 6 months.
- Give ferrous gluconate *or* ferrous lactate *or* ferrous sulphate according to weight TID PO with food. Check Hb monthly. Continue treatment until Hb ≥ 11g/dL:

Weight (kg)	Ferrous gluconate elixir (30mg iron per 5mL)	Ferrous lactate drops (25mg iron per 1mL)	Ferrous sulphate tablets (60mg iron per tablet)
10-25kg	5mL TID PO	0.9mL TID PO	-
≥ 25kg	-	-	1 tablet TID PO

- If girl who has started menstruation, ask about heavy bleeding and/clots. If problem ↩42.
- If no response to treatment after 2 months, refer to hospital.

Yes

Take blood for complete blood count (CBC) and manage further according to MCV[3] result:

MCV[3] low

Iron deficiency anaemia likely

- Deworm: give single dose albendazole 400mg PO every 6 months.
- Give ferrous gluconate *or* ferrous lactate *or* ferrous sulphate according to weight TID PO with food. Check Hb monthly. Continue treatment until Hb ≥ 11g/dL:

Weight (kg)	Ferrous gluconate elixir (30mg iron per 5mL)	Ferrous lactate drops (25mg iron per 1mL)	Ferrous sulphate tablets (60mg iron per tablet)
10-25kg	5mL TID PO	0.9mL TID PO	-
≥ 25kg	-	-	1 tablet TID PO

- If girl who has started menstruation, ask about heavy bleeding and/clots. If problem ↩42.
- If no response to treatment after 2 months, refer to hospital.

MCV[3] normal

Systemic disease or **long-term health condition** likely

- Exclude TB and HIV.
- If no cause found, refer to hospital.

MCV[3] high

Folate and/or **vitamin B12 deficiency** likely

Start treatment and refer to hospital: give folic acid 5mg daily PO and vitamin B12 500mcg IM monthly.

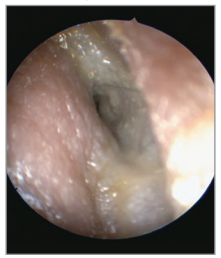
[1]If child's palm significantly less pink than your own. [2]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [3]MCV: Mean Corpuscular Volume. The MCV helps to decide the underlying cause of anaemia and can be found on FBC result sheet. Check if MCV high, low or normal compared to the reference range for age of child.

Ear symptoms/difficulty hearing

Is ear itchy, painful, discharging or is there difficulty hearing?

Itchy ear

Ear canal red/swollen (pus may be present)



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Otitis externa likely
- Clean ear[1].
- Apply hydrogen peroxide solution 1.5% 5-10 drops BID topically to affected ear for 5 days.
- Give paracetamol 15mg/kg (up to 1g) QID PO for 5 days as needed.
- If severe pain, firm red swelling behind ear or temperature ≥ 38°C, give amoxicillin[2] 50mg/kg (up to 1g) TID PO for 7-10 days.
- If blisters on ear, **herpes zoster** likely, refer to hospital.

Painful ear

- Ear canal not red/swollen.
- Able to view eardrum?

No
Pain > 2 days or pain waking at night?

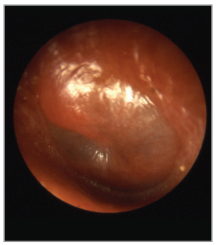
No
Has temperature been ≥ 38°C in last > 2 days?

No
- Give paracetamol 15mg/kg QID PO for 5 days as needed.
- Review in 2 days if no better.

Yes

Yes

Red bulging eardrum



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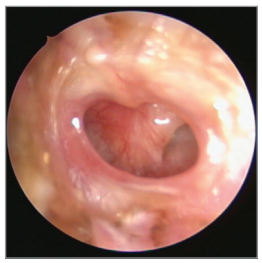
Acute otitis media likely
- Give paracetamol 15mg/kg (up to 1g) QID PO for 5 days as needed.
- Give amoxicillin[2] 50mg/kg (up to 1g) TID PO for 7-10 days.
- Clean ear[1] if discharge and avoid getting ear wet.
- If > 1 episode, test for HIV.
- Refer to hospital same day if:
  - No response to treatment *or* > 5 episodes per year.
- Refer same day if:
  - Painful swelling behind ear, **mastoiditis** likely
  - Neck stiffness
- If treated above but communication problem present, refer to hospital for hearing test.

Yes

Discharge from ear[3]

Discharge for ≤ 2 weeks

Discharge ≥ 2 weeks *or* hole in eardrum



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Chronic suppurative otitis media likely
- Clean ear[1].
- Apply hydrogen peroxide solution 3% 5-10 drops BID topically to affected ear for 5 days.
- Give amoxicillin[2] 50mg/kg (up to 1g) TID PO for 7-10 days.
- If poor response to treatment, test for HIV and TB.
- Refer to hospital if:
  - No better after 4 weeks
  - Large hole in drum
  - Difficulty hearing
- Refer to hospital same day if:
  - Neck stiffness
  - New pain in or behind ear
  - Yellow/white deposit on eardrum, **cholesteatoma** likely

Difficulty hearing

- If on drug resistant TB medication, discuss with TB health worker.
- If itchy or painful ear or discharge from the ear, see left algorithm/s.
- Look in ear for foreign body, wax or fluid behind eardrum. If normal looking ear, refer to hospital for hearing test.

Foreign body

- Syringe ear[4] with warm water.
- Avoid syringing and refer to hospital if:
  - Hole in eardrum
  - Grommets
  - Battery/ food in ear.
  - Recent trauma to head or ear
  - Neck stiffness

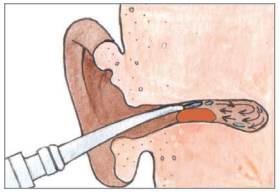
Wax

Syringe ears[4] with warm water unless child has grommets/ uncooperative/ has chronic suppurative otitis media.

- Stop and refer to hospital if unsuccessful after 3 attempts/ causes pain or if foreign body remains in ear.
- If no better, refer to hospital for hearing test.

Fluid behind eardrum

Otitis media with effusion likely
- Keep ear dry.
- Advise that this usually resolves on its own.
- If communication problem, refer to hospital for hearing test.
- If concerns about hearing remain after 3 months or if child clumsy/poor balance, refer to hospital.



[4]How to syringe an ear: fill a 50-200mL syringe with warm water. Ask child/caretaker to hold container under ear to catch water. Pull ear upwards and backwards to straighten ear canal. Place tip of syringe at opening (no further than 8mm into canal) and spray water upwards into canal. Check after syringing to see if wax cleared.

[1]Cleaning the ear (dry mopping): roll a piece of clean soft tissue into a wick. Insert wick into ear with twisting action. Remove and replace with clean dry wick. Repeat until wick is dry when removed. Never leave wick or other object inside ear. The ear can only heal if dry. [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg QID PO for 7-10 days. [3]If child has grommets (small tubes in eardrum) and purulent discharge persists > 2 weeks, refer to hospital.

Mouth and throat symptoms

Give urgent attention to the child with mouth and throat symptoms with any of:
- Unable to open mouth or swallow at all
- Red swelling blocking airway

Refer urgently.

Assess the child with mouth and throat symptoms not needing urgent attention
Examine mouth and throat for a red throat, white patches, blisters or ulcers.

Red throat
Pus or white patches on tonsils?

No

Any of runny nose, cough, hoarseness, conjunctivitis or diarrhoea?

Yes

Viral tonsillo-pharyngitis likely
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed up to 5 days.
- Salt water gargle[1] may help.
- Explain that antibiotics are not necessary.

No

Bacterial tonsillopharyngitis likely
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Give single dose benzathine benzylpenicillin[2,3] < 30kg, give 600 000 units IM or ≥ 30kg, give 1.2 million units IM *or* phenoxymethylpenicillin[2] 250mg BID PO for 10 days.
- If mild, fine red rash after antibiotic, **glandular fever** likely.
  - Stop antibiotic. Reassure will resolve spontaneously.
  - Child may return to school when better but can only resume sporting activities > 3 weeks from onset of illness.
- If ≥ 5 episodes per year or persistent snoring, refer to hospital.

Yes

Advise to return to immediately if any of the following develop: painful or swollen joint/s, strange movements of limbs or face, lumps over joints/tendons or rash (round lesions with pale centre) to exclude rheumatic fever ↩135.

White patches on cheeks, gums, tongue, palate, or cracks in corners of mouth.

Oral thrush/candida likely
- Give nystatin suspension 1mL QID PO after meals for 7 days. Keep inside mouth for as long as possible.
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- If status unknown, test for HIV. If HIV positive, manage according to national HIV programme guidelines.

If difficulty/painful swallowing or refusing to eat, **oesophageal candida** likely. Refer to hospital.

Groups of painful blisters on lips/mouth

Herpes simplex likely
- Apply vaseline® to blisters on outside of mouth to prevent spread.
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- If HIV or extensive herpes (and < 72 hours from onset), give aciclovir 20mg/kg (up to 800mg) QID PO for 7 days.
- If extensive/recurrent or no better after 2 weeks, refer to hospital.
- If status unknown, test for HIV. If HIV positive, manage according to national HIV programme guidelines.

Painful ulcer/s with central white patch

Aphthous ulcer/s likely
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for up to 5 days.
- Rinse with salt water[1] for 1 minute BID.
- If recurrent, consider HIV.
- If large (> 1cm) or not healed within 3 weeks, refer to hospital.

Give bland, soft foods and advise to keep mouth and teeth clean by brushing and rinsing regularly.

[1]Mix ½ teaspoon of salt in ½ cup of lukewarm water. [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days. [3]For benzathine benzylpenicillin 1.2 million units injection: dissolve benzathine benzylpenicillin 1.2 million units in 3.2mL lidocaine 1% without adrenaline.

Cough and/or breathing problems

The child with breathing problems may have noisy breathing, wheeze, grunting, snoring or stridor (noisy, high-pitched breathing). If child not breathing ⮌128.

Give urgent attention to the child with cough and/or breathing problems and any of:

- Lower chest indrawing
- Nasal flaring
- Grunting
- Blue lips/tongue
- Oxygen saturation ≤ 92%
- Stridor (noisy, high-pitched breathing)
- Decreased level of consciousness/ lethargy
- Recent episode of choking
- Restless or irritable
- Known heart problem

Manage and refer urgently:

- If wheeze →142.
- Give oxygen 2L/minute via nasal prongs or 5L/minute via face mask.
- Check finger prick glucose:
  - If < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[1] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[1] bolus.
  - If ≥ 200mg/dL, **diabetic ketoacidosis** likely. Assess fluids needs ⮌130 and refer urgently.
- Give ceftriaxone 80mg/kg (up to 1.5g) IV/IM.
- If stridor (with no recent episode of choking), encourage caretaker to keep child calm.
  - Give dexamethasone 0.6mg/kg IM *or* prednisolone 2mg/kg (up to 60mg) PO *and*
  - Nebulise 1mL adrenaline (1:1000) in 5mL normal saline with oxygen 8L/minute, every 15 minutes until stridor disappears. Monitor closely for at least 3 hours.
- If sudden difficulty breathing *and* generalised itchy rash or face/tongue swelling, **anaphylaxis** likely: give adrenaline (1mg/mL, 1:1000) 0.3mL IM into mid-outer thigh. If no better, repeat every 5 minutes. Give normal saline 20mL/kg IV bolus. Also give diphenhydramine 1mg/kg IM/IV (up to 50mg).
- Refer urgently.

Approach to the child with cough and/or breathing problems not needing urgent attention:

- Approach to the child with cough and/or breathing problems not needing urgent attention:
- Reduce indoor pollution (rural setting) and avoid smoking (urban setting).
- If wheeze →142. If breathless on exertion, refer same day.
- If coughing attacks with "whoop" on breathing in, **pertussis** likely: give erythromycin 12.5mg/kg (up to 500mg) QID PO for 10 days, report as reportable disease and isolate for 2 days.
- Ask about duration and number of episodes:

1 episode of cough (or breathing problems) < 2 weeks

Is respiratory rate increased (≥ 25 breaths/minutes if 5-12 years old or ≥ 20 breaths/minute if ≥ 12 years old)?

Yes

Pneumonia likely

- Give amoxicillin[2] 30mg/kg (up to 1g) TID PO for 7 days.
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed for 5 days.
- Advise to return if condition worsens.
- Review after 2 days: if respiratory rate still increased, refer to hospital.

No

Runny/blocked nose

Common cold likely

- Check ears ⮌139, throat ⮌140.
- Reassure caretaker antibiotics not needed.
- Advise to drink warm liquids to relieve symptoms.

Barking cough, may be hoarse

Viral croup likely

- Give single dose dexamethasone 0.6mg/kg PO *or* prednisolone 2mg/kg (up to 40mg) PO.
- Advise to return immediately if worse or stridor develops.

Repeated episodes or cough (or breathing problems) ≥ 2 weeks

- Exclude TB.
- If recent common cold:
  - If wet cough ≥ 4 weeks, **chronic bronchitis** likely, refer to hospital.
  - If dry cough, **post-infectious cough** likely: should resolve by 8 weeks.
- If persistent snoring with poor sleep/apnoea[3], refer to hospital.

If none of above and repeated episodes of wheeze ⮌143.

If cause uncertain or not growing well, chest deformity, cough > 8 weeks cough worse despite treatment, refer to hospital.

[1]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days. [3]Episodes where breathing stops > 10 seconds.

Wheeze

Give urgent attention to the child with wheeze and any of:

- Oxygen saturation < 90%
- Marked accessory muscle use[1]
- Significantly reduced breath sounds
- Unable to talk or only able to talk in single words
- Agitation or confusion

Manage as severe asthma:

- Sit child up and give oxygen via face mask and reservoir bag or nasal prongs *and*
- Give salbutamol via spacer 1200mcg (12 puffs) every 20 minutes *and*
- Give prednisolone 2mg/kg (up to 60mg) PO. If unable to take orally, give hydrocortisone 4-5mg/kg (up to 250mg) slow IV *or* dexamethasone 0.6mg/kg (up to 20mg) IM.
- If child presents with absent air entry *or* no response after 3 doses of salbutamol, give adrenaline (1:1000) 0.01mL/kg (up to 0.4mL) IM/SC every 15-20 minutes. If pulse rate ≥ 180 beats/minute, avoid repeating adrenaline.
- Refer urgently to hospital while continuing to give salbutamol puffs.

Approach to the child with wheeze not needing urgent attention

Manage according to severity of symptoms:

- Oxygen saturation 91-94%
- Moderate accessory muscle use[1]
- Wheeze with reduced breath sounds
- Able to talk only in phrases

None of the above

Mild asthma likely

- Give salbutamol via spacer 1200mcg (12 puffs) every 20 minutes.
- Assess response after 20 minutes, repeat for 3 doses if needed:

Poor response after 1 hour (3 doses), reclassify.

≥ 1 of above

Moderate asthma likely

- Give oxygen via face mask and reservoir bag or nasal prongs *and*
- Give salbutamol via spacer 1200mcg (12 puffs) every 20 minutes *and*
- Give single dose prednisolone 2mg/kg (up to 60mg) PO. If unable to take orally, give single dose hydrocortisone 4-5mg/kg (up to 250mg) slow IV *or* dexamethasone 0.6mg/kg (up to 20mg) IM.

Good response

Wheeze improved, no accessory muscle use[1], oxygen saturation ≥ 94% and able to drink and talk

- Discharge on salbutamol 2-6 puffs inhaled every 4-6 hours as needed.
- If known asthma, also give prednisolone 1mg/kg (up to total daily dose 40mg) BID PO for 4 days.
- If respiratory rate ≥ 25, also give amoxicillin[2] 30mg/kg TID PO for 5 days.
- If not known with asthma and wheeze recurrent ↩143.

Poor response after 1 hour

- Refer to hospital while continuing oxygen *and* salbutamol via spacer 1200mcg (12 puffs) every 20 minutes.
- If child's condition deteriorates despite treatment, consider adrenaline (1:1000) 0.01mL/kg (up to 0.4mL) IM/SC every 15-20 minutes. If pulse rate ≥ 180 beats/minute, avoid repeating adrenaline.

[1]Accessory muscle use is any of: subcostal recession, intercostal recession, tracheal tug, use of neck muscles. [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days.

Recurrent wheeze or cough

Approach to the child with recurrent wheeze or cough

First exclude TB. While excluding TB, ask about the following:

- History of eczema/allergic rhinitis
- Parents with history of eczema/allergic rhinitis/asthma
- > 3 episodes wheeze per year
- Wheeze episode needing hospital admission
- Symptoms worse at night and in early morning
- Symptoms triggered by: smoking, pets, pollen, perfume, paint, hairspray, cleaning agents, change in weather or season, exercise, emotion, laughter or stress

≥ 1 of above

None of above: are symptoms triggered by common colds?

Yes

No

Do symptoms persist for > 10 days after a common cold or are there symptoms between colds?

Yes

No

Give a trial of treatment for 2 months:

- Give inhaled corticosteroid: beclomethasone 200mcg BID inhaled *and*
- Give salbutamol via spacer 100-200mcg (1-2 puffs) QID inhaled as needed.
- Demonstrate inhaler technique as below and encourage child/caretaker to identify and avoid triggers.
- Assess response to treatment after 2 months:

Symptoms improve with trial of treatment and worsen when treatment is stopped.

Asthma likely

- Continue beclomethasone 200mcg BID inhaled *and*
- Give salbutamol via spacer 100-200mcg (1-2 puffs) QID inhaled as needed.
- If symptoms controlled[1] reduce beclomethasone to 100mcg BID inhaled.

Symptoms remain the same.

Refer to hospital.

Does child have recurrent wheeze?

Yes

No

Recurrent virus-induced wheeze likely

- If wheeze is bronchodilator responsive[2] give salbutamol via spacer 100-200mcg (1-2 puffs) QID inhaled when needed for 5 days.
- Check ears ⮌139, throat ⮌140.

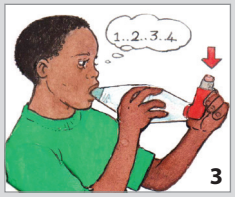
Refer to hospital.

How to use an inhaler with a spacer

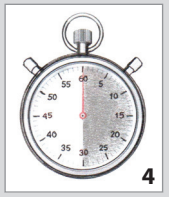
- Prime spacer initially with 10 puffs of medication. When medication is finished, replace only the canister. Clean spacer monthly: remove canister and wash spacer with soapy water. Do not rinse with water. Allow to drip dry (no need to re-prime).
- Demonstrate inhaler technique 2-3 times until child and/or caretaker understand. Then ask child and/or caretaker to show you how to use it.

- Remove cap from inhaler and spacer.
- Shake inhaler for 5 seconds and insert into spacer.

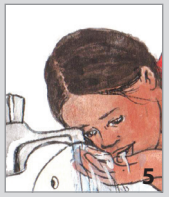
Put spacer into mouth and close lips around it and form seal with lips around mouthpiece. If needed, make a spacer from a plastic bottle ⮌81.



Press pump down once and allow 6 deep breaths before continuing.



Remove inhaler and spacer and wait for 30 seconds before repeat. Repeat for each puff prescribed.



Rinse mouth after using inhaled corticosteroids (beclomethasone).

[1]Acute exacerbations infrequent and not severe (child not hospitalised) and in past 4 weeks: daytime cough, wheeze or difficulty breathing < twice a week; able to run/play without easily tiring due to asthma; salbutamol needed < twice a week; little or no night waking /coughing due to asthma. [2]Wheeze improves 15 minutes after salbutamol via spacer 600mcg (6 puffs). If no better, child is not bronchodilator responsive.

Abdominal symptoms

Give urgent attention to the child with an abdominal symptom:

- Guarding, rebound tenderness or rigidity of abdomen[1], **peritonitis** likely
- Tender in right lower abdomen and vomiting, **appendicitis** likely
- Cramping pain and jelly-like stool
- No stool/wind for 24 hours and vomiting
- Bile-stained vomiting
- Tender, elevated testes
- Painful groin/umbilical swelling
- Rash and joint pain
- Vomiting, deep sighing respiration, fatigue, **acidosis** likely

Manage and refer urgently:

- Check fingerprick glucose:
  - If ≥ 200mg/dL, **diabetic ketoacidosis** likely. Assess fluids needs ⮌130 and refer urgently.
  - If < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- Assess and manage child's fluid needs ⮌130.
- Keep nil per os. Give maintenance fluid[3] IV according to table.
- If **peritonitis** or **appendicitis** likely, give ceftriaxone 80mg/kg (up to 1.5g) IV/IM.

Decide on maintenance fluid[3] rate

Weight	24 hour fluid need
10-20kg	1000mL + (50mL for every kg body weight over 10kg) e.g.: if 14kg: 1000mL + (50 x 4) = 1200mL/24 hours
≥ 20kg	1500mL + (20mL for every kg body weight over 20kg) Up to 2000mL in girls and 2500mL in boys e.g.: if 23kg: 1500mL + (20 x 3) = 1560mL/24 hours

Approach to the child with abdominal symptom not needing urgent attention

- If recent injury/trauma →133. If temperature ≥ 38°C or history of fever →135. Check throat: if white patches on throat →140. Check urine: if burning urine or nitrites/leucocytes/blood on dipstick →146.
- If close TB contact or TB symptoms (cough or fever ≥ 2 weeks, not growing well/losing weight, tired/less playful), exclude TB.
- Is there abdominal swelling?

Yes

Is swelling localised or generalised?

Localised

- If bulge on crying/coughing/passing stool in groin or umbilical area, **hernia** likely, refer to hospital.
- If mass felt in abdomen, refer to hospital.

Generalised

- Exclude TB.
- Do urine dipstick:
  - ≥ 3+ protein, **nephrotic syndrome** likely, refer to hospital.
- Assess growth (weight, height, MUAC):
  - If growth problem ⮌151.
  - If growth normal, refer to hospital.

No

- Ensure 6 monthly deworming in place. If worms, give single dose albendazole 400mg PO.
- Check growth (weight, height, MUAC): if growth problem ⮌151. If pallor[4] ⮌138.
- Is child constipated: stools infrequent and any of: pain, impaction, involuntary leakage or voluntary withholding?

Yes

- Advise a high fibre diet (vegetables, fruit, wholemeal cereals and bran).
- If no better despite diet change, refer to hospital.

No

- If girl and pain around time of period, **dysmenorrhoea** likely:
  - Give ibuprofen[5] 400mg TID PO for 3 days.
  - Reassure that is common and encourage to carry on with everyday activities.
- If girl and sexually active:
  - If lower abdominal pain and/or vaginal discharge, **pelvic infection** likely ⮌36.
  - If lower abdominal pain with amenorrhoea or vaginal bleeding 6-8 weeks after last period, **ectopic pregnancy likely**, refer to hospital.
  - If child abuse suspected, refer to hospital.

If cause unclear or not resolved, refer to hospital.

[1]Guarding: abdominal muscles tense on palpation. Rebound tenderness: pain on quick release after pressing down slowly on abdomen. Rigidity: abdominal wall is hard/board-like. [2]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [3]To make 1000mL: mix 500mL 5% DW + 500mL DNS + 5 vials of 40% glucose (*or* mix 500mL 5% DW + 500mL NS + 9 vials of 40% glucose). [4]If child's palm significantly less pink than your own. [5]Avoid if peptic ulcer, asthma or kidney disease.

Diarrhoea

First assess and manage child's fluid needs ⮌130.

Give urgent attention to the child with diarrhoea and any of:

- Guarding, rebound tenderness or rigidity of abdomen[1], **peritonitis** likely
- Unable to drink
- Shock or severe dehydration
- Distended abdomen
- Swelling of legs/ wasting
- Large volumes of rice colored watery stool: **cholera** likely

Manage and refer urgently:

- Check fingerprick glucose: if < 45mg/dL (or < 54mg/dL if malnourished), give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still low, repeat 10% glucose[2] bolus.
- If temperature ≥ 38°C or likely **peritonitis**, give ceftriaxone 80mg/kg (up to 1.5g) IV/IM.
- If **cholera** likely:
  - Report disease and isolate child and follow standard infection prevention precautions ⮌122. Assess and manage child's fluid needs ⮌130 and give doxycycline 6mg/kg daily PO for 3 days.
  - Discuss with the head of the facility and/or Woreda Health Office and review after 6 hours:
    - If no dehydration and < 3 liquid stools in past 6 hours, consider discharge. Give enough ORS for home treatment for 2 days. Advise to return if vomiting, diarrhoea worsens or drinking/eating poorly.
    - If still dehydrated or > 3 liquid stools in past 6 hours, continue rehydration. If poor urine output, refer to hospital.

Approach to the child with diarrhoea not needing urgent attention

- Confirm child has diarrhoea: ≥ 3 watery or loose stools/day. Ask about duration of diarrhoea.
- Do stool microscopy for ova or parasite and inflammatory cells.
- Advise child to take more fluids, eat small frequent meals when able and avoid sweet/caffeinated/fizzy drinks.
- Give oral rehydration solution to prevent dehydration.

Review stool microscopy result.

Positive

RBC/WBC only seen

Give ciprofloxacin 6-10mg/kg (up to 400mg) BID PO for 5 days.

Amoebic trophozoite and RBC/WBC seen

- Give metronidazole 7.5mg (up to 500mg) TID PO for 5-7 days.
- If no response after 2 days, add ciprofloxacin 6-10mg/kg (up to 400mg) BID PO for 5 days.

Ova or parasite only seen

- If **amoebiasis**, give metronidazole 7.5mg (up to 500mg) TID PO for 5-7 days.
- If **giardiasis**, give single dose tinidazole 50mg/kg (up to 2g) PO.
- If **strongyloidiasis**, give albendazole 400mg BID PO for 3 days.
- If **other parasites**, albendazole 400mg daily PO for 3 days.

If diarrhoea for > 2 weeks, test for HIV.

Review in 2 weeks if diarrhoea still present.

Negative

Diarrhoea for ≤ 2 weeks

Avoid antibiotics.

Diarrhoea for > 2 weeks

Knowing child's HIV status helps in the management. Test for HIV.

HIV positive

- Give routine HIV care according to national HIV programme guidelines.
- Lopinavir/ritonavir can cause ongoing diarrhoea.
- If ART not started or ART failed, treat for possible *Isospora belli* and microsporidiosis with co-trimoxazole 20mg/kg BID PO for 21 days and albendazole 400mg BID PO for 14 days.

HIV negative/ unknown

Avoid antibiotics.

- Check ears ⮌139, check urine ⮌146. Assess growth (weight, height, MUAC): if growth problem ⮌151.
- If close TB contact or TB symptoms (cough or fever ≥ 2 weeks, not growing well/losing weight, tired/ less playful), exclude TB.
- Give single dose vitamin A 200 000IU PO.
- Give zinc 20mg daily PO for 14 days.

If diarrhoea persists despite treatment or cause is not clear, refer to hospital.

[1]Guarding: abdominal muscles tense on palpation. Rebound tenderness: pain on quick release after pressing down slowly on abdomen. Rigidity: abdominal wall is hard/board-like. [2]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline).

Urinary symptoms

The child with urinary symptoms may have pain on passing urine, urinating very often/large volumes, urgency, new incontinence, bed-wetting, bloody/brown urine, unable to pass urine or foul-smelling urine.

Give urgent attention to the child with urinary symptoms and any of:

- Passing little amounts or unable to pass urine
- Temperature ≥ 38°C/rigors/flank pain, **pyelonephritis** likely
- Swelling of face/feet *and* either blood in urine or passing little amounts of urine, **nephritis** likely

Management:

- If **nephritis** likely and signs of fluid overload (increased pulse/respiratory rate or puffy eyes), give oxygen 2L/minute via nasal prongs and give furosemide 1mg/kg (up to 40mg) IV over 5 minutes (avoid IV fluids). Then check BP. If increased, give nifedipine 0.25mg/kg (up to 10mg) squirted into mouth.
- If **pyelonephritis** likely, give ceftriaxone 80mg/kg (up to 1.5g) IV/IM.
- Refer urgently.

Approach to the child with urinary symptoms not needing urgent attention

- Check urine dipstick: look for blood, leucocytes and nitrites on dipstick.
  - If glucose/ketones in urine, check finger prick glucose: if ≥ 200mg/dL, **diabetic ketoacidosis** likely. Assess fluids needs ⮌130 and refer to hospital.
  - Manage further according to results:

Blood on dipstick, no leucocytes or nitrites

Is there protein on urine dipstick?

No

Has child been in a bilharzia area?

Yes

Schistosomiasis likely

- Send urine for S. *haematobium* ova.
- Give single dose praziquantel 40mg/kg (up to 3g) PO.
- Advise to avoid contaminated water to prevent re-infection.
- Review results in 3 days, repeat dipstick and refer if:
  - Urine schistosomiasis test negative
  - Blood not cleared
  - Symptoms not resolved.
- Advise to return if swelling of face or feet and refer to hospital.

No

Refer to hospital.

Yes

Refer to hospital.

Leucocytes/nitrites on dipstick

Urinary tract infection likely

- Send urine for microscopy.
- Give amoxicillin[1] 15mg/kg (up to 500mg) TID PO for 5 days.
- Advise to wipe from front to back.
- Encourage child to drink frequently.
- Avoid irritant soaps and bubble baths.
- If no response to treatment after 2 days, refer to hospital.
- Recurrent urinary tract infections might indicate an abnormal urinary tract, if ≥ 2 urinary tract infections, refer to hospital for investigations once antibiotic complete.

No blood *or* leucocytes/nitrites
Is bed-wetting a problem?

No

Reassure and reassess in one week if not better.

Yes

- If previously dry, ask about recent stressful events. Discuss possible solutions. If daytime incontinence, to finger prick glucose to exclude diabetes and refer.
- Give advice:
  - Reduce fluid intake during evening: avoid fluids 1 hour before bedtime.
  - Teach child to wake with urination urge by initially waking him/her to urinate.
  - Suggest a reward system like a star chart for a dry bed.
  - Advise to avoid punishing child.
  - Refer if above measures unhelpful.

Ask caretaker if aware of abuse of child. Ask child if anyone hurts or upsets him/her.
If yes to either, **child abuse** likely, refer to hospital.

[1]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give erythromycin 12.5mg/kg QID PO for 7 days.

Leg symptoms/limp/walking problems

Give urgent attention to the child with leg symptoms with any of:

- Sudden refusal to sit, stand or walk
- Sudden onset weakness in leg/s
- Leg pain and temperature ≥ 38°C
- Limping and weight loss/lethargy
- Unable to bear weight after leg injury
- Any of: strange movements of limbs or face, lumps over joints/tendons or rash (round pink lesions with pale centre), **rheumatic fever** likely

Management:

- If **rheumatic fever** likely, give benzathine benzylpenicillin[1,2] IM according to weight: < 30kg, 600 000 units and if 30kg, 1.2 million units.
- Refer urgently.

Approach to the child with leg symptom not needing urgent attention

- If any of: weight loss, night sweats, weakness, fatigue, generalised rash or early morning joint stiffness lasting > 15 minutes, refer to hospital.
- Identify leg problem:

Problem walking
Is child limping?

Yes

Ask about duration of limp.

Limp < 48hrs

Sprain/strain likely

- Ensure can bear weight on leg, otherwise refer to hospital.
- Rest and elevate leg.
- Apply pressure bandage.
- If skin marks, bruises of different ages or poor growth, suspect neglect and refer to hospital.
- Advise child to move leg after 2-3 days if not too painful.
- Give paracetamol 15mg/kg (up to 1g) QID PO as needed up to 5 days. If pain not responding to paracetamol, give ibuprofen[3] 200mg TID PO with food for up to 5 days.
- Review after 1 week (or sooner if symptoms worsen): if no better, refer to hospital.

Limp ≥ 48hrs

Refer to hospital.

No

Abnormal leg shape

- If bow-legs, look for forehead prominence, bowing of arms, bony lumps along ribcage. If present, **rickets** likely: refer to hospital.
- If shape otherwise not normal, refer to hospital.

Leg pain

- If injury →133.
- If well and leg pain only at night and active during day, **growing pains** likely, reassure pain will resolve.
- If leg pain occurs in day and night, refer to hospital.

Leg swelling

- If swelling of 1 leg and no history of injury, refer.
- If swelling of *both* legs, do urine dipstick:

< 3+ protein

Assess growth (weight, height, MUAC). Is there a growth problem?

No

Heart failure likely. Refer to hospital.

Yes

Severe acute malnutrition likely. Manage and refer urgently →151.

≥ 3+ protein

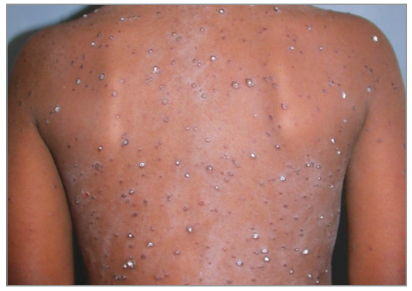
Nephrotic syndrome likely. Refer to hospital.

[1]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), refer. [2]For benzathine benzylpenicillin 1.2 million units injection: dissolve benzathine benzylpenicillin 1.2 million units in 3.2mL lidocaine 1% without adrenaline. [3]Avoid if peptic ulcer, asthma or kidney disease.

Generalised rash

If patches of red, scaly, crusted skin in infant or dry scaly skin in older child, usually on flexor surfaces of elbows, knees and on scalp and neck, **eczema** likely.

Bumps become weeping blisters and crusts on face, scalp, trunk and limbs.



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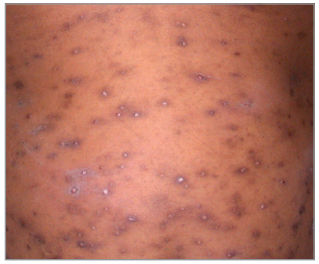
Chicken pox likely

- Apply calamine lotion and give paracetamol 15mg/kg (up to 1g) QID PO for up to 5 days. If very itchy, give cetirizine, according to weight, until itch controlled (up to 2 weeks): 12-21kg: give 5mg daily PO, ≥ 21kg: give 10mg daily PO.
- If rash extensive or child has HIV, give aciclovir 20mg/kg (up to 800mg) QID PO for 7 days.
- If rash and surrounding skin red, painful and swollen with temperature ≥ 38°C, **impetigo** likely ↩149.
- Refer to hospital if any of:
  - Does not resolve by 10 days.
  - Difficulty breathing
  - Signs of meningitis (≥ 2 of: temperature ≥ 38°C, headache, decreased level of consciousness, neck stiffness)
- If recurrent, test for HIV.
- Highly contagious (spreads in air).
  - Allow return to school once blisters crusted.
  - Avoid contact with pregnant women.

Hyper-pigmented bumps, surrounding skin often hyper-pigmented (not on face)



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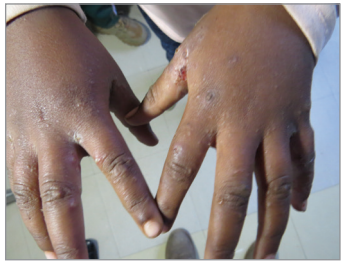
Papular pruritic eruption (**PPE**) likely

- If HIV unknown, test for HIV. If HIV positive, manage according to national HIV programme guidelines.
- Exclude scabies.
- Apply hydrocortisone 1% cream in morning *and* moisturise with liquid paraffin at night until improvement.
- Give cetirizine, according to weight, until itch controlled (up to 2 weeks): 12-21kg: give 5mg daily PO, ≥ 21kg: give 10mg daily PO.
- Advise child/caretaker:
  - Explain that PPE may be long-standing.
  - May temporarily worsen on starting ART.
  - Reduce exposure to insect bites.

A widespread very itchy rash with burrows in web-spaces of hand and feet, axillae and genitalia.



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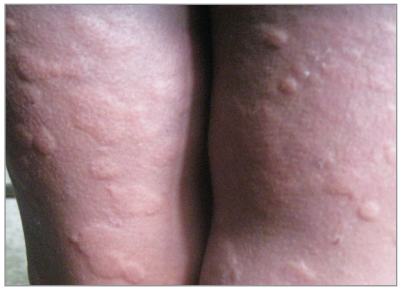
Scabies likely

- Apply benzyl benzoate lotion 25% to whole body from neck to feet after hot bath and dry well. Wash off next day and repeat next night. Repeat treatment after 1 week.
- Give cetirizine, according to weight, until itch controlled (up to 2 weeks): 12-21kg: give 5mg daily PO, ≥ 21kg: give 10mg daily PO.
  - 12-21kg: 5mg, ≥ 21kg: 10mg
- Treat all house members at same time.
- Wash linen and clothes in hot water and expose bedding to direct sunlight.
- Keep finger nails short and clean.
- If blisters and yellow crusts appear, **impetigo** likely ↩149.

Red raised wheals that appear suddenly, disappear and then reappear elsewhere.



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Urticaria likely

If sudden onset (few hours) of generalised itchy rash or face/tongue swelling and 1 or more of: 1) difficulty breathing, 2) fainting/ dizziness/collapse, 3) abdominal pain/vomiting, **anaphylaxis** likely:

- Give adrenaline (1mg/mL, 1:1000) 0.3mL IM into mid-outer thigh. If no better, repeat every 5 minutes.
- Give normal saline 20mL/kg IV bolus.
- Also give diphenhydramine 1mg/kg IM/IV (up to 50mg).

- If recently started new medication, consider drug reaction.
- Consider possible triggers[1].
- Give cetirizine, according to weight, for itch (until 72 hours after resolution of wheals): 12-21kg: give 5mg daily PO, ≥ 21kg: 10mg daily PO.
- If not better after 24 hours, refer to hospital within one month.
- If repeated episodes, **allergy** likely. Refer to hospital.
- Advise to return immediately if any symptoms of anaphylaxis occur.

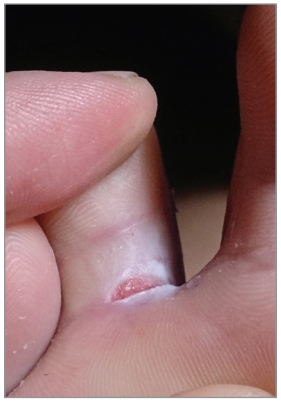
If no response to treatment, refer to specialist for review.

[1]Possible triggers can be a viral infection, food (commonly peanuts, eggs milk, fish), medication or insect sting.

Localised rash

- If itchy rash on scalp/neck, look for nits/eggs in hair. If found, **lice** likely.
- If dry, itchy, scaly skin, usually on flexor surfaces of elbows, knees and on scalp and neck, **eczema** likely.
- Manage according to presenting symptom/s:

Scaling moist lesions between toes and on soles of feet



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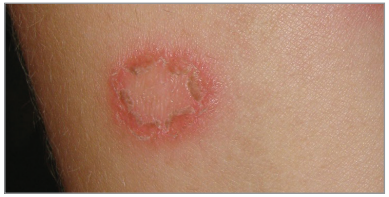
Athlete's foot likely

Encourage open shoes/sandals.

- Apply clotrimazole 2% cream BID topically for 2 weeks.
- Avoid sharing towels/clothes.
- Wash skin well before applying treatment and dry well between toes.

Ring shaped patches, red, scaly edge

Vesicles, pimples (pustules) in centre



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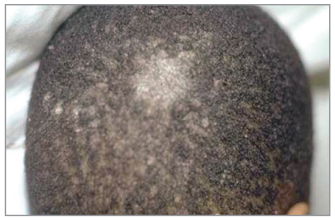
Tinea (**ring worm**) likely

- If multiple or large lesions, test for HIV.
- If HIV positive, manage according to national programme guidelines.
- Apply clotrimazole 2% cream 8 hourly for 2 weeks.
- Avoid sharing towels/clothes.
- Wash skin well before applying treatment.
- If lesions on scalp or hair loss:



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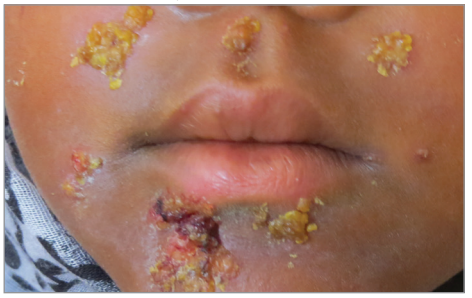
Tinea capitus likely

Look hair and scalp symptoms page ⮌150.

Look for blisters/honey coloured crusts and flaky/greasy crusts, flaky pink raised plaques

Pus-filled blisters which dry to form honey coloured crusts



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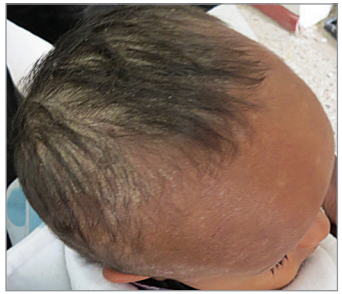
Impetigo likely

- Keep nails short. Wash and soak sores in soapy water to soften and remove crusts. Cover draining lesions with saline-soaked gauze dressing.
- Apply povidone iodine 5% cream TID topically and give cephalexin[1] 12-25mg/kg (up to 500mg) QID PO for 7-10 days *or* cloxacillin[1] 12.5-25mg/kg (up to 500mg) QID PO for 7 days.
- If rash does not resolve completely, repeat treatment.
- Look for cause: if scabies ⮌148. Also consider eczema and insect bites.
- Advise caretaker that impetigo is contagious:
  - Ensure regular hand-washing to prevent spread.
  - May return to school 1 day after starting antibiotic.
- Refer if:
  - Extensive lesions
  - Cellulitis or abscess
  - Temperature ≥ 38°C
  - No better after the above treatment
- Advise to return immediately if blood in urine or limb/face/feet swelling and refer to hospital same day.

Flaky or greasy crusts with underlying red base on face, forehead, behind ears, eyebrows, eyelids and nasal creases. May be itchy.



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Seborrhoeic dermatitis likely

- Reassure caretaker that it will resolve without treatment in few weeks/months.
- If extensive and HIV status unknown, test for HIV. If HIV positive, manage according to national HIV programme.
- Advise caretaker to:
  - Trim nails and avoid scratching.
  - Wash body with aqueous cream and avoid perfumed soap.
- If in > 1 area, apply hydrocortisone cream 1% BID topically until improved.
- If extensive and no response to hydrocortisone cream, refer.

If rash extensive, recurrent or responds poorly to treatment, refer.

[1]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg (up to 500mg) QID PO for 7-10 days.

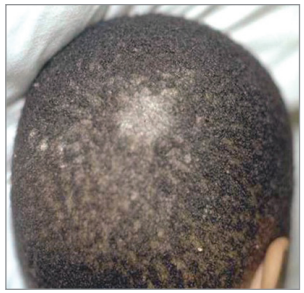
Hair and scalp symptoms

If brown hair has turned reddish or hair become sparse/brittle, assess growth (weight, height, MUAC): if problem ⮌151.

Does child have scale, itch, patches of hair loss or pimples/pustules?

Itchy scaly patches or plaques

- If flaky or greasy crusts with underlying red base, consider **seborrhoeic dermatitis** ⮌149.
- If patches of hair loss:



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Tinea capitus likely

- Give griseofulvin 20-25mg/kg daily PO for 6-8 weeks *or* fluconazole 4-6mg/kg daily PO for 4 weeks.
  - Use ketoconazole 2% shampoo twice a week to reduce sheddin of spores
- Advise child/caretaker to avoid:
  - Shaving head.
  - Sharing combs and hairbrushes.

Patches of hair loss

Is there scaling?

Yes

No

Alopecia areata likely

- Give betamethasone 0.1% gel to apply topically daily for 3 months.
- If no response to treatment, refer to hospital.

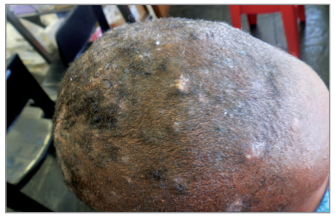
Itchy scalp

Look for lice or nits.
If no lice/nits seen, exclude tinea capitus.

Lice/nits likely

- Apply malathion 1% shampoo to scalp after bath at night: Comb into hair repeatedly until whole scalp is covered:
  - Dip a fine-toothed comb in vinegar and remove lice by combing entire head twice.
  - Then rinse hair with lukewarm water and wash malathion out with normal shampoo.
- Advise to:
  - Avoid broken skin and contact with eyes.
  - Wash bed linen in very hot water.
  - Treat all household contacts.
  - If lice/nits persist, shave hair.
- Consider child abuse if lice on pubic, peri-anal areas or eyelashes /eyebrows, refer to hospital.

Pimples/pustules



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Folliculitis likely

- Keep area clean and dry.
- If extensive or redness/pain/swelling/temperature ≥ 38°C, give cloxacillin[2] 12.5-25mg/kg (up to 500mg)QID PO *or* cephalexin[2] 12-25mg/kg (up to 500mg) QID PO for 5 days.
- Wash hands regularly to prevent spread.

[1]If malathion 1% lotion unavailable: give benzyl benzoate lotion 25%. Apply benzyl benzoate to whole body from neck to feet after hot bath and dry well. Wash off next day and repeat next night. Put on cleaned washed clothes after treatment. Repeat treatment after 1 week. [2]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead erythromycin 12.5mg/kg QID PO for 5 days.

The underweight child

Measure child's weight and height and calculate body mass index (BMI): weight (kg) ÷ height (m) ÷ height (m), then plot BMI ⮌152 (if girl) or ⮌153 (if boy). Also measure MUAC[1].

Approach to the underweight child with one or more of:
- Visible wasting
- BMI below -2 line
- Low MUAC[1] (< 14cm in a child 5-9 years old or < 18cm in a child 10-14 years old).

Does child have swelling of both feet?

Yes
Severe acute malnutrition (**SAM**) likely

No: does child a BMI below -3 line or very low MUAC[1] (< 13cm in a child 5-9 years old or < 16cm in a child 10–14 years old)?

Yes: **severe acute malnutrition** (**SAM**) likely

No

Moderate acute malnutrition (**MAM**) likely
Do appetite test (see below).

Does child have any of:
- Vomits everything
- Unable to eat/drink
- Temperature < 35.5°C or ≥ 38°C
- Glucose < 54mg/dL
- Hb < 10g/dL
- Increased respiratory rate
- Diarrhoea (> 3 watery stools/ 24 hours)
- Weeping skin lesions
- Lethargy or decreased level of consciousness

Yes

No: **severe acute malnutrition (SAM) without medical complications.** Do appetite test (see below).

Fails the appetite test

Passes the appetite test
Is outpatient care available, home circumstances reliable and caretaker willing?

Fails the appetite test

Yes

Give routine malnutrition care →154.

No

Refer to hospital for inpatient care.

Give urgent attention to the child with severe acute malnutrition (SAM) with medical complications:
- If fast breathing: give oxygen 2L/min via nasal prongs.
- Manage and assess child's fluid needs ⮌130.
- If glucose < 54mg/dL give 10% glucose[2] 5mL/kg IV/IO. Recheck glucose after 30 minutes. If still < 54mg/dL, repeat 10% glucose[2] bolus.
- Feed at least 2 hourly until transfer. If refusing, give sugar water[3] via NGT.
- Treat infection: give ceftriaxone 80mg/kg (up to 1.5g) IV/IM.
- Give vitamin A: 200 000IU PO.
- Keep warm: cover with blanket.
- Refer urgently.

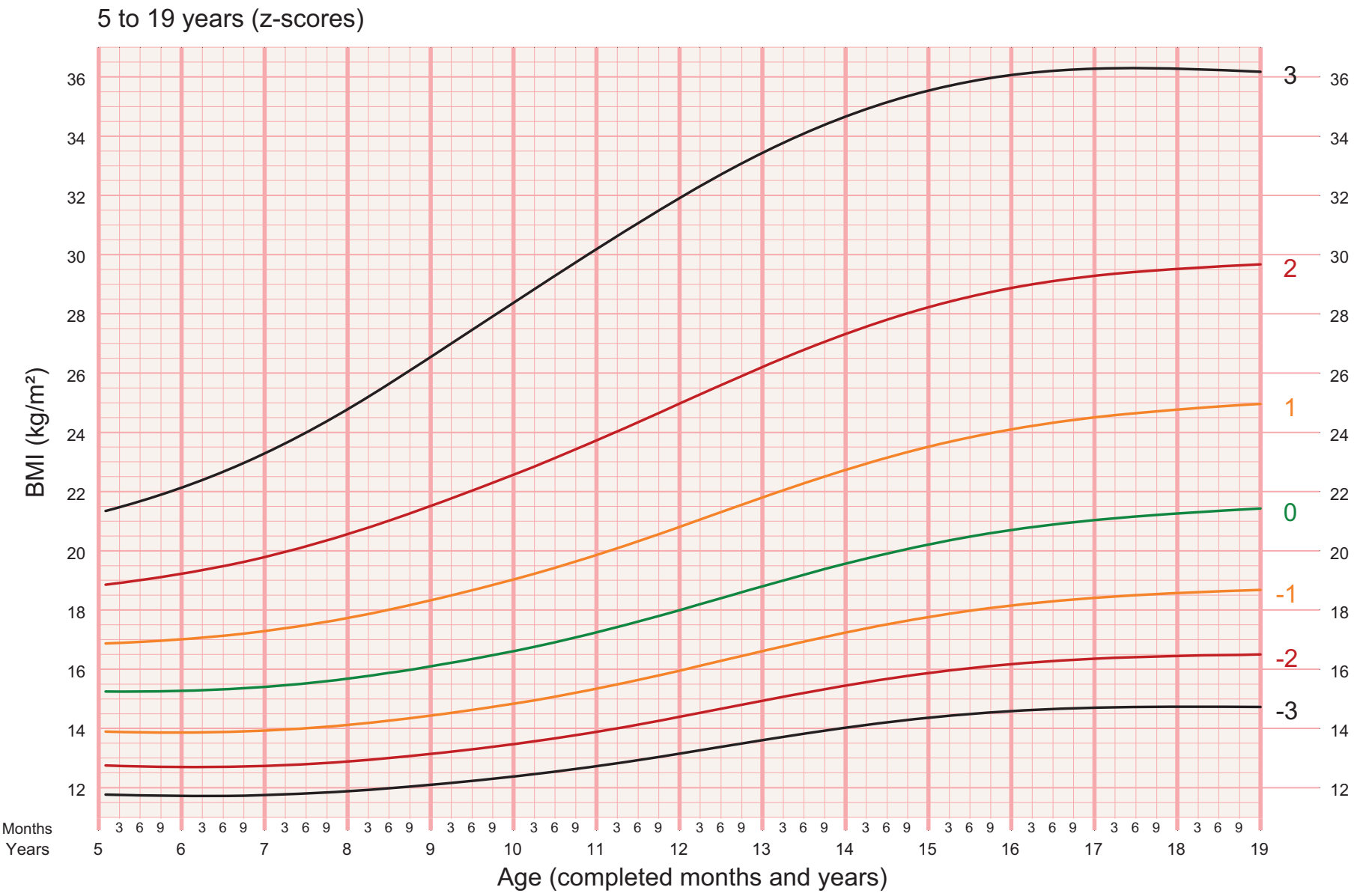
How to do an appetite test

- Give Ready-to-use-Therapeutic-Food (RUTF/F75®/10% dextrose) according to weight (see table).
- Test may take up to one hour. Do not force child to eat. Offer child plenty of water to drink.
- If child finishes minimum amount of feed, s/he passes the appetite test.
- If child does not finish minimum amount of feed: s/he fails the appetite test.

Minimum amount to be given to child			
Body weight (kg)	RUTF Imunut® Sachet (92g)	F75®	10% dextrose[2]
15 -30	70g	200mL	200mL
≥ 30	92g	250mL	250mL

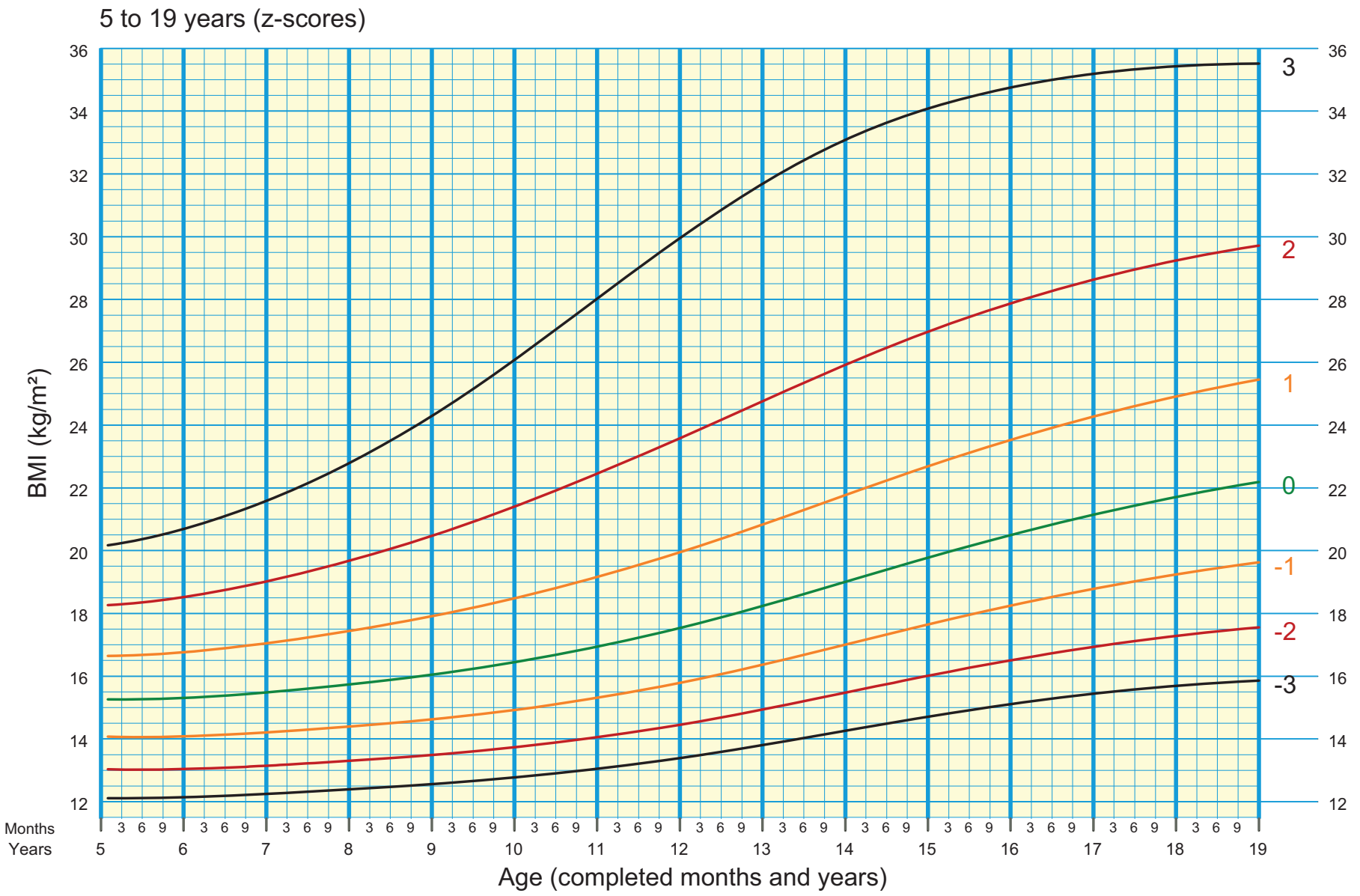
[1]Mid upper arm circumference. [2]If 10% glucose unavailable: make up with 1 part 40% glucose and 3 parts normal saline or distilled water (e.g. 20kg child will need 100mL 10% glucose: mix 25mL 40% glucose and 75mL normal saline). [3]Dissolve 4 teaspoons of sugar (20g) into 200mL water.

Girl's BMI chart



World Health Organization. BMI-for-age Girls 5-19 years (z-scores). 2007

Boy's BMI chart



World Health Organization. BMI-for-age Boys 5-19 years (z-scores). 2007

Malnutrition

- **Acute malnutrition** likely if visible wasting, low BMI < -2 line or low MUAC[1] (< 14cm in a child 5-9 years old or < 18cm in a child 10-14 years old).
- **Severe acute malnutrition** likely if BMI < -3 line or very low MUAC[1] (< 13cm in a child 5-9 years old or < 16cm in a child 10–14 years old) or if malnutrition with oedema.

Assess the child with acute malnutrition

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom page. Ask specifically about diarrhoea ⮌145. Check if urgent attention needed ⮌151.
Feeding	At diagnosis	Ask the following about diet: is child eating regular protein, dairy, vegetables, fruit; how often is child eating; what quantity is child eating; what fluids is child drinking and advise on correct habits depending on response.
TB risk	Every visit	If close TB contact or TB symptoms (cough or fever ≥ 2 weeks, not growing well/losing weight, tired/less playful), exclude TB.
Caretaker	Every visit	Check HIV status, contraceptive needs and TB symptoms.
Social	At diagnosis	Ask who looks after child most of the time. If concerns about neglect, refer to hospital.
Oedema	Every visit	If swelling of feet, hands or face, **severe acute malnutrition** (**SAM**) likely, refer to hospital.
Weight-for-age	Every visit	• If weight loss > 5% [(weight lost ÷ weight at last visit) x 100] at any visit; if child has lost weight on 2 consecutive visits or if no weight gain for 3 consecutive visits, refer to hospital. • If weight-for-age (WFA) still below -2 line after 2 months of supplements from Therapeutic Feeding Unit/Center (TFU/TFC), refer to hospital.
BMI	Monthly	If BMI still below -2 line after 2 months of supplements from Therapeutic Feeding Unit/Center (TFU/TFC), refer to hospital.
MUAC[1]	Monthly	If MUAC[1] still low (< 14cm in a child 5-9 years old or < 18cm in a child 10-14 years old) after 2 months of supplements from Therapeutic Feeding Unit/Center (TFU/TFC), refer to hospital.
Mouth/teeth	At diagnosis	If white patches in mouth (inside of cheeks/lips and on tongue), **oral thrush**/**candida** likely ⮌140. If dental caries, refer to hospital.
Hb	At diagnosis	Look for pallor[2] and if possible check Hb: if pallor or Hb < 11g/dL, **anaemia** likely ⮌138. If Hb < 7g/dL, refer to hospital.
HIV	At diagnosis	Test for HIV. If HIV positive, manage according to national HIV programme guidelines.

Advise the caretaker of child with acute malnutrition

- Educate caretaker that good nutrition is vital for the normal function of the body. Refer to social worker and link with local NGOs.
- Advise caretaker to give foods rich in protein[3], iron[4], vitamin A[5] and C[6], dairy, vegetables and fruits.
- Advise to feed child 5 times a day (3 meals with 2 nutritious snacks). Add a teaspoon of butter or vegetable oil to porridge.
- Give hygiene advice: wash hands with soap and water regularly, especially when handling food/after using toilet. Wash fruit/vegetables and use boiled water if no access to clean water.
- Refer for community health extension worker support and physiotherapy/occupational therapy for rehabilitation and physical and emotional stimulation.

Treat the child with acute malnutrition

- Check immunisations are up to date and give single dose vitamin A 200 000IU PO and albendazole 400mg PO.
- If severe acute malnutrition without danger signs, also give amoxicillin[7] 30-40mg/kg (up to 1g) BID PO for 5 day at diagnosis.
- Refer to Therapeutic Feeding Unit/Center (TFU/TFC): ensure a monthly supply of correct product and amount: enriched porridge plus energy drink plus Ready-to-use Therapeutic/Supplementary Food (RUTF/RUSF).

- Review weekly until stable (gaining weight at 3 consecutive visits). Then review every 2 weeks until growing well[8].
- Once child growing well[8] review monthly and continue on supplements from Therapeutic Feeding Unit/Center (TFU/TFC) until weight remains on upward growth curve > 3 months.

Advise caretaker to return immediately if condition worsens (unable to drink/eat, vomiting everything, fever, profuse watery diarrhoea, lethargy).

[1]Mid upper arm circumference. [2]If child's palm significantly less pink than your own. [3]Protein-rich foods: chicken, fish, cooked eggs, beans, lentils (shiro watt/thick soup), soya. [4]Iron-rich foods: liver, kidney, dark green leafy vegetables like spinach, cooked egg, beans, peas, lentils, fortified cereals. [5]Vitamin A-rich foods: vegetable oil, liver, yellow sweet potatoes, dark green leafy vegetables like spinach (imifino), mango, full cream milk. [6]Vitamin C-rich foods: oranges, melons, tomatoes. [7]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give erythromycin 12.5mg/kg (up to 500mg) QID PO for 5 days instead. [8]Growing well: MUAC ≥ 14 cm in a child 5-9 years old or ≥ 18 cm in a child 10-14 years old.

Epilepsy

- If child convulsing now or is not known with epilepsy and has had a recent convulsion →131
- A doctor decides to start long-term treatment in a child with ≥ 2 convulsions and no identifiable cause.

Assess the child with epilepsy: record epilepsy diagnosis and care plan in birth record.

Assess	When to assess	Note
Long term health conditions	Every visit	If other long-term health conditions present, ensure they are adequately treated.
Adherence and side effects	Every visit	Ask if child takes medication every day. If not, explore reasons for poor adherence. Ask about side effects of treatment (below).
Other medication	Every visit	If child started TB or HIV treatment or antibiotics, refer to hospital to assess for drug interactions.
Convulsion frequency	Every visit	Review convulsion diary. If still convulsing after 2 months *and* adherent to treatment (correct dose) with no obvious triggers[1] or medication interactions, refer to hospital.
School problems	Every visit	If failing grades, not coping with school work or bullying/violence at school, caretaker to arrange meeting with teacher.
Family planning	If sexually active girl	If on valproate, ensure child on reliable contraception ↩110.

Advise the caretaker of a child with epilepsy

- Explain what to do if child has a convulsion at home ↩131. Avoid possible triggers: lack of sleep, alcohol/drug use, dehydration and flashing lights.
- Educate about epilepsy and need for adherence to be convulsion free.
- Advise to keep a home record/convulsion diary to record frequency of convulsion, length of convulsion, possible triggers and changes in medication. Encourage caretaker to take a video of event.
- Help caretaker to get Medic alert bracelet. Refer for support. Caretaker to inform teachers, explain what to do if child has a convulsion and what activities child should avoid.
- Reduce chance of injury: supervise swimming/bathing/crossing roads (walking to school/shops), shield fireplaces/cookers, avoid contact sports (rugby), advise not to lock doors (bed/bathroom).

Treat the child with epilepsy

- A single medication is best. Start low dose and increase slowly every 2 weeks until convulsion free or side effects intolerable (treatment usually initiated at hospital).

Medication	Dose	Maximum dose	Indication	Side effects
Valproate[2]	• Start dose: 5mg/kg/dose 8-12 hourly • Increase to: 15-20mg/kg/dose 8-12 hourly • Maintenance dose: 20-30mg/kg/dose 8-12 hourly	40mg/kg/day in divided doses	• Choose if generalised tonic/clonic seizures, absence seizures, on ART. • Avoid if liver disease.	Urgent: jaundice, vomiting, abdominal pain: stop medications and refer urgently. Self-limiting: nausea, diarrhoea, constipation.
Carbamazepine[3]	• Start dose: 2mg/kg/dose 8-12 hourly • Increase to: 5-10mg/kg/dose 8-12 hourly • Maintenance:10-20mg/kg/day in divided doses	10mg/kg/day in divided doses	• Choose if focal seizures/convulsion. • Avoid in absence, myoclonic seizures or if child on ART.	Urgent: skin rash, refer. Self-limiting: drowsiness, dry mouth, dizziness, ataxia, nausea, loss of appetite, constipation, abdominal pain. If drowsiness affects school performance, refer to hospital.
Phenobarbitone	Start and maintain: 3-5mg/kg/dose as a single dose at night.	5mg/kg/day	Avoid in absence seizures.	Drowsiness, behaviour problems, hyperactivity.

- If convulsions worsen or persist despite maximum treatment or if loss of milestones, refer to hospital.
- If convulsion free, review 6 monthly. If no convulsions for 2 years: discuss stopping treatment with doctor in hospital. Gradually decrease dose of anticonvulsant over 2 months. If convulsions recur, refer to hospital.

[1]Triggers include: lack of sleep, dehydration, flashing lights, recent illness (fever), alcohol/drug use. [2]If unable to swallow tablet, give crushable formulation (100mg tablets) TID. If able to swallow, give controlled release (CR) formulation BID. [3]Give syrup formulation TID and tablet formulation BID.

Quick reference chart

Decide if respiratory rate is normal for age

Age	Respiratory rate (breaths/minute)	
	Respiratory rate decreased if:	Respiratory rate increased if:
5-12 years	< 20	≥ 25
≥ 12 years	< 15	≥ 20

Decide if pulse rate is normal for age

Age	Pulse rate (beats/minute)	
	Pulse rate decreased if:	Pulse rate increased if:
5-12 years	< 80	≥ 120
≥ 12 years	< 60	≥ 100

Estimate weight according to age

5-12 years	Weight (kg) = (3 x age in years) + 7

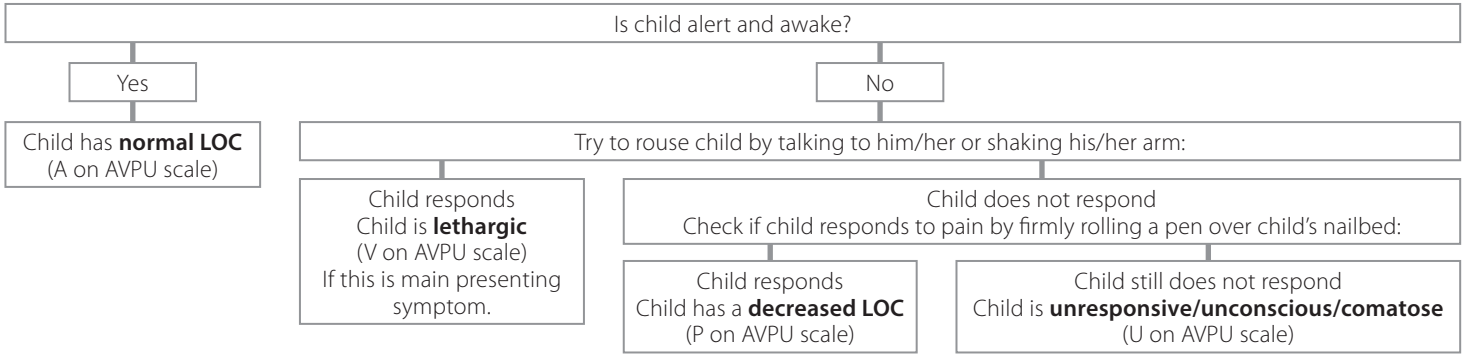
Decide if blood pressure is normal for age

Age	Blood pressure decreased if:		Blood pressure increased if:	
	DBP	SBP	DBP	SBP
6-10 years old	< 57	< 97	> 76	> 115
10-12 years old	< 61	< 102	> 80	> 120
12-15 years old	< 64	< 110	> 83	> 131

Decide on maintenance fluid rate

Weight	24 hour fluid need
< 10kg	120mL/kg
10-20kg	1000mL + (50mL for every kg body weight over 10kg) e.g.: if 14kg: 1000mL + (50 x 4) = 1200mL/24 hours
≥ 20kg	1500mL + (20mL for every kg body weight over 20kg) Up to 2000mL in girls and 2500mL in boys e.g.: if 23kg: 1500mL + (20 x 3) = 1560mL/24 hours

Assess level of consciousness (LOC) with the AVPU scale:



Assess level of consciousness with AVPU	
A	**A**lert
V	responds to **V**oice
P	responds to **P**ain
U	**U**nresponsive/**U**nconscious

About PACK Global

The Ethiopian Primary Health Care Clinical Guidelines were developed by localizing the PACK Global Adult (2017) and PACK Western Cape Child (2017) guides developed by the Knowledge Translation Unit of the University of Cape Town Lung Institute, South Africa. The Practical Approach to Care Kit (PACK) was developed, tested and refined since 1999 by the Knowledge Translation Unit (KTU) of the University of Cape Town Lung Institute Proprietary Limited in collaboration with clinicians, health managers and policy makers in South Africa, and expanded upon through research and localization throughout the world. This guide is a comprehensive tool to the commonest symptoms and conditions seen in primary care in low and middle-income countries. It integrates content on communicable diseases, non-communicable diseases, mental illness and women's health. Each of the almost 3000 screening, diagnostic and management recommendations is informed by evidence and guidance in the BMJ's (British Medical Journal) clinical decision support tool, Best Practice, as well as the latest World Health Organization guidelines, including the 2015 WHO Model List of Essential Medicines. The content has been carefully localised for health workers in Ethiopia and is, as of October 2017, believed to comprise best practice and comply with local guidelines and policies.

The KTU's involvement in the localisation work was supported by the United Kingdom's National Institute of Health Research (NIHR) using Official Development Assistance (ODA) funding (NIHR Global Health Research Unit on Health System Strengthening in Sub-Saharan Africa, King's College London (16/136/54)). The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the National Institute for Health Research or the English Department of Health. To the fullest extent permitted by law, the University of Cape Town Lung Institute (Pty) Ltd or BMJ Publishing Group Limited of Health shall not be held liable or be responsible for any aspect of healthcare administered in reliance upon, or with the aid of, this information or any other use of this information.

PACK is also being implemented in South Africa, Brazil and Nigeria, and the content is revised annually in line with latest evidence and WHO guidelines. For access to the most up-to-date templates, tools, associated training materials and a mentorship programme for countries wishing to localise it for their health systems visit:

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