adult primary care

Consider COVID-19

Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Symptom-based integrated approach to the adult in primary care

EMERGENCIES
SYMPTOMS
TB
HIV
ASTHMA/COPD
CARDIOVASCULAR DISEASE
DIABETES
MENTAL HEALTH CONDITIONS
EPILEPSY
MUSCULOSKELETAL DISORDERS
WOMEN'S HEALTH
PALLIATIVE CARE

2019/2020

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

2030 NDP

PREFACE

ADULT PRIMARY CARE (APC) 2019/2020

Commissioned and published by: The South African National Department of Health.

What is APC?

The Adult Primary Care (APC) clinical tool is a comprehensive approach to the primary care of the adult 18 years or older. APC has been developed using approved clinical policies and guidelines issued by the National Department of Health and is intended for use by all health care practitioners working at primary care level in South Africa as a clinical decision-making tool.

Along with guiding the delivery of sound clinical care, APC aims to uphold its key values:

- Acknowledgement of each patient's uniqueness and multiple roles within a family and community
- Respect for a patient's concerns and choices
- The development of a trusting relationship with a patient
- Communication with a patient should be effective, courteous and empathic
- The delivery of follow-up care especially for patients with chronic conditions
- Linking the patient to community-based resources and support
- Ensuring continuity of care, where possible.

A training package that consists of short on-site sessions using simulated case scenarios accompanies this tool. APC is being implemented as part of the Integrated Clinical Services Management (ICSM), a key focus within the Ideal Clinic Realisation and Maintenance (ICRM) initiative to improve the quality of care delivered, and is complemented by the Health for All health promotion tool to promote healthy lifestyles and health education.

APC 2019/2020 aligns with National Department of Health policies and clinical protocols:

- Standard Treatment Guidelines and Essential Medicine List for South Africa, Primary Healthcare Level, 2018 Edition
- Standard Treatment Guidelines and Essential Medicine List for South Africa, Adult Hospital Level, 2019 Edition (draft)
- 2019 ART Clinical Guidelines for the Management of HIV in Adults, Pregnancy, Adolescents, Children, Infants and Neonates, 2019
- Guideline for the Prevention of Mother-To- Child Transmission of communicable infections, 2019
- National Guidelines for the management of Viral Hepatitis, 2019
- National Department of Health HIV Testing Services Policy, 2016
- National Tuberculosis Management Guidelines, 2014
- Management of Rifampicin-Resistant TB Tuberculosis: A Clinical Reference Guide, September 2019
- Comprehensive STI clinical management guidelines. Review version for provincial dissemination and consultation meetings, May 2017
- National Contraception Clinical Guidelines, 2012 (including circular updates)
- Guidelines for Maternity Care in South Africa (4th edition), 2016
- Basic Antenatal Care Plus Handbook, 2nd edition, 2016
- Cervical cancer prevention and control policy, 2017
- South African guidelines for the prevention of Malaria, 2019
- Guidelines for the treatment of Malaria in South Africa, 2018
- Adherence guidelines for HIV, TB and NCDs. Policy and service delivery guidelines for linkage to care, adherence to treatment and retention in care, 2016

What are the APC 2019/2020 updates?

This APC 2019/2020 edition includes improvements to algorithm and checklist design.

New pages and extensively revised sections include:

- Address the patient's general health
- Emergency section including CPR, anaphylaxis and glucose management.
- Revised HIV section reflects policy changes on TB Preventive Therapy, Universal Test and Treat, same-day ART initiation and dolutegravir-based ART regimens.
- Revised maternal section reflects latest PMTCT changes.
- Revised rifampicin-resistant TB (RR-TB) section reflects the latest policy changes.
- Revised mental health section including management of aggressive patient, abnormal thoughts/behaviour and depression.
- New palliative care section including support for the dying patient.
- New pages: How to collect a good sputum specimen for TB testing; Pallor or anaemia; Gums/teeth symptoms; Menstrual symptoms; Scalp problems; Hair loss; Tobacco smoking; Support the patient to make a change

How to use APC?

APC is designed to reflect the process of conducting a clinical consultation with an adult patient in primary care:

- It is divided into three main sections: Address the patient's general health, Symptoms and Chronic Conditions.
  - In the stable patient start by addressing the patient's general health then address the patient's symptom/s and/or chronic conditions.
  - In the patient presenting with one or more symptoms, start by identifying the patient's main symptom. Use the Symptoms contents page to find the relevant symptom page in the clinical tool. Decide if the patient needs urgent attention (indicated 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 clinical tool.
  - In the patient known with a chronic condition, use the Chronic Conditions contents page to find that condition in the clinical tool. 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 the clinical tool:
  - The return arrow (⮌) indicates that you need to consult another page once you have completed the current page. We suggest you make a note of additional pages to consult.
  - The direct arrow (→) guides you to leave the current page and 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.
- All medications have been colour coded in either orange, blue or purple to indicate prescriber level for that particular indication and at that dose:
  - Orange-highlighted medications may be prescribed by a **doctor or a nurse** according to his/her scope of practice.
  - Purple-highlighted medications are **doctor-initiated** medications. This means a doctor needs to start the medication and a nurse can continue it according to his/her scope of practice.
  - Blue-highlighted medications are **doctor-prescribed** medications. This means that these medications may only be prescribed by a doctor.
- Refer to the Health for All health promotion tool when you see the icon below.

Health for All

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APC and its preceding versions have been developed, tested and refined over 18 years by the Knowledge Translation Unit (KTU), University of Cape Town Lung Institute, in consultation with the South African National Department of Health, particularly the National Essential Medicines List Committee and Clinical Programmes, and a wide range of clinicians, policy makers and end-users. This work has been funded over its various iterations by National Department of Health and PEPFAR through its implementing agencies of USAID and CDC. Find more details about the development and role of contributors at www.knowledgetranslation.co.za.

NEMLC/Affordable Medicines Directorates endorse all recommendations in APC approved through the NEMLC process as published in the STGs and EML.

Feedback: APC is revised and improved based on feedback from end-users. Send us your feedback: www.knowledgetranslation.co.za/feedback

GLOSSARY

3TC	lamivudine

A

ABC	abacavir
ADR	adverse drug reaction
AHR	abacavir hypersensitivity reaction
ALP	alkaline phosphatase
ALT	alanine aminotransferase
ART	antiretroviral therapy
ATVr	atazanavir/ritonavir
AZT	zidovudine

B

BAL	balanitis/balanoposthitis
BMI	body mass index
BP	blood pressure measured in millimeters of mercury [mmHg]

C

CCMDD	central chronic medicine dispensing and delivery
CD4	CD4 count of the lymphocytes with a CD4 surface marker
CNS	central nervous system
COPD	chronic obstructive pulmonary disease
CPR	cardiopulmonary resuscitation
CPT	co-trimoxazole preventive therapy
CrAg	cryptococcal antigen
CrCl	creatinine clearance
CRP	c-reactive protein
CVD	cardiovascular disease

D

DBP	diastolic blood pressure
DMPA	depot medroxyprogesterone acetate
DS-TB	drug-sensitive tuberculosis
DST	drug susceptibility testing
DTG	dolutegravir
DVT	deep vein thrombosis

E

ECG	electrocardiogram
EDD	estimated date of delivery
EFV	efavirenz
eGFR	estimated glomerular filtration rate
ELISA	enzyme-linked immunosorbent assay

F

FBC	full blood count
FT4	free thyroxine
FTA	fluorescent treponemal antibody
FTC	emtricitabine

G

GCS	Glasgow Coma Scale
GUS	genital ulcer syndrome

H

Hb	haemoglobin
HbA_{1c}	glycated haemoglobin
HBsAb	hepatitis B surface antibody
HBsAg	hepatitis B surface antigen
HIV	human immunodeficiency virus
HPV	human papillomavirus

I

IM	intramuscular
IMCI	Integrated Management of Childhood Illness
INH	isoniazid
INR	international normalized ratio
IU	international units
IUCD	intrauterine contraceptive device
IV	intravenous

L

LAM	lipoarabinomannan (urine TB test)
LAP	lower abdominal pain
LLETZ	large loop excision of the transformation zone
LP	lumbar puncture
LPA	line probe assay
LPVr	lopinavir/ritonavir

M

MCS	microscopy, culture and sensitivity
MCV	mean cell volume
MHCA	mental health care act
MIC	Medicines Information Centre
MTB	mycobacterium tuberculosis
MU	million units
MUAC	mid upper arm circumference
MUS	male urethritis syndrome

N

NCAC	national clinical advisory committee
NDoH	National Department of Health
NSAIDs	non-steroidal anti-inflammatory drugs
NVP	nevirapine

P

PCAC	provincial clinical advisory committee
PCR	polymerase chain reaction
PEFR	peak expiratory flow rate
PEP	post-exposure prophylaxis
PJP	pneumocystis jiroveci pneumonia
PMTCT	prevention of mother-to-child-transmission
POP	progestogen-only pill
PPE	papular pruritic eruption
PROM	prelabour rupture of membranes
PTB	pulmonary tuberculosis
Pulse rate	measured in beats per minute
PVD	peripheral vascular disease

R

RF	rheumatoid factor
RDT-Tp	rapid diagnostic test for treponema pallidum
Respiratory rate	measured in breaths per minute
RPR	rapid plasmin reagin
RR-TB	rifampicin-resistant tuberculosis
RtHB	road to health booklet

S

SAMF	South African Medicines Formulary
SBP	systolic blood pressure
SFH	symphysis-fundal height
SSW	scrotal swelling
STI	sexually transmitted infection

T

TB	tuberculosis
TBSA	total body surface area
Td	tetanus and diphtheria vaccine
TDF	tenovofir
TIA	transient ischaemic attack
TOP	termination of pregnancy
TPAb	treponema pallidum antibody
TPHA	treponema pallidum hemagglutination assay
TPPA	Treponema pallidum particle agglutination assay
TPT	TB preventive therapy
TSH	thyroid stimulating hormone

U

UTI	urinary tract infection

V

VDS	vaginal discharge syndrome
VL	viral load

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PRESCRIBE RATIONALLY

Assess the patient needing a prescription

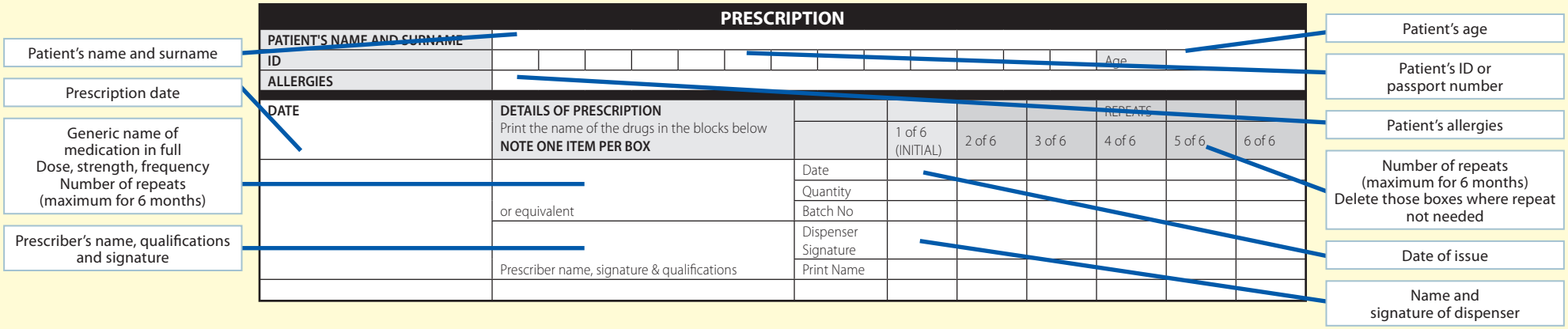
Assess	Note
Diagnosis	Confirm the patient's diagnosis, that the medication is necessary and that its benefits outweigh the risks.
Other conditions	If necessary adjust the dose (e.g. simvastatin, hydrochlorothiazide in liver disease; tenofovir in kidney disease) or change medication (e.g. avoid ibuprofen in hypertension, asthma).
Other medications	Check all medication (prescribed, over-the-counter, herbal) is necessary and for possible interactions especially if on hormonal contraceptive or treatment for TB, HIV, epilepsy.
Allergies	If known allergy or previous bad reaction to medication, record in patient's notes and discuss alternative with doctor.
Age	If > 65 years consider lowering the dose or frequency of medication. Discuss with doctor if patient on amitriptyline, theophylline, ibuprofen, amlodipine or fluoxetine or is using > 5 medications.
Pregnant/breastfeeding	If pregnant or breastfeeding check if the medication is safe. Ensure patient receives routine antenatal care ⮌141.
Response to treatment	• If the patient's condition does not improve, first exclude poor adherence, then consider changing the treatment or an alternative diagnosis. • Check for side effects and report reactions to the medication. Fax adverse drug reaction (ADR) form[1] to 086 620 7253 or (012) 395 8468 or (021) 448 6181. Or scan and email form to adr@health.gov.za.

Advise the patient needing a prescription

- Explain to the patient when and how to take the medication and what to do if side effects occur. Ask the patient to repeat your explanation to ensure s/he understands how to take the medication.
- Ensure patient knows the generic name of all his/her medication and advise to ask prescriber/pharmacist if s/he does not understand a change to regular medication.
- Educate the patient on the importance of adherence and that not adhering to medication may lead to relapse or worsening of the condition and in some instances, resistance to the medication.
- 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

- Ensure that the appropriate prescriber writes the prescription: orange-highlighted medications may be prescribed by a doctor or a nurse according to his/her scope of practice. Purple-highlighted medications may be initiated by a doctor and continued by a nurse according to his/her scope of practice. Blue-highlighted medications may be prescribed by a doctor only.
- Consult the South African Medicines Formulary (SAMF) or MIC helpline (021) 406 6829 if unsure about your medicine choice and dosing, side-effects or drug interactions.
- If medications listed in APC are not available, check Therapeutic Class list[2] and local formulary to identify specific medicine that has been approved for use in your facility.
- Once patient stable on chronic medication and agrees to be registered for Central Chronic Medicines Dispensing and Distribution (CCMDD) programme, help patient select a pick up point (PuP). Then create 6-month repeat prescription (see below). Write neatly. Patient will collect first supply at facility, then next 5 months from chosen PuP. Patient to return to facility every 6 months.



[1]Adverse drug reaction report forms available from clinic pharmacy or may be accessed via website: www.sahpra.org.za. [2] Primary Health Care Essential Medicines List, 2018 edition: Therapeutic classes and members list can be accessed via: www.health.gov.za/index.php/standard-treatment-guidelines-and-essential-medicines-list/category/285-phc

INITIAL ASSESSMENT OF THE PATIENT

Consider COVID-19

Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the patient with any of:

- Decreased consciousness
- Fitting
- Difficulty breathing or breathless while talking
- Respiratory rate ≥ 30 breaths/minute
- Chest pain
- Headache *and* vomiting
- Aggressive, confused or agitated
- Overdose of drugs/medication
- Recent sexual assault
- Vomiting or coughing blood
- Bleeding
- Burn
- Eye injury
- Severe pain
- Suspected fracture or joint dislocation
- Recent sudden onset weakness, numbness or visual disturbance
- Unable to pass urine
- Sudden facial swelling
- Pregnant *with* abdominal pain/backache/vaginal bleeding
- Purple/red rash that does not disappear with gentle pressure

Management:

- Check and record BP, pulse, respiratory rate and temperature and ensure patient is urgently seen by nurse or doctor.
- If decreased consciousness, fitting, confused, unable to sit up or known diabetic, also check glucose.

Do routine prep room tests on the patient not needing urgent attention

- Routinely check and record weight, BP, pulse and temperature.
- If coughing/difficulty breathing, also check respiratory rate.
- If known diabetic *and* feeling unwell, also check glucose.

Ensure the patient with any of the following is seen promptly by nurse or doctor:

- BP ≥ 180/130 or BP < 90/60
- Pregnant with BP ≥ 140/90
- Pulse irregular, ≥ 100 or < 50
- Temperature ≥ 38°C
- Respiratory rate ≥ 30
- Glucose < 3 (or < 4 if diabetic) or ≥ 11.1

Continue to assess the pregnant patient and the patient with hypertension and/or diabetes:

Patient is pregnant

Check at booking visit:

- Mid Upper Arm Circumference (MUAC)
- Height to calculate BMI[1]
- Hb
- Rapid rhesus
- Syphilis

Check at every visit:

- BP
- Urine dipstick
- Fingerprick glucose *only* if glucose on urine dipstick
- HIV

Patient has hypertension

Check at every visit:

- BP
- At first visit also check height to calculate BMI[1].

Check once a year:

- Weight, waist circumference (also check 3 monthly if trying to lose weight)
- Urine dipstick
- Fingerprick glucose (also check if glucose on urine dipstick)

Patient has diabetes

Check at every visit:

- BP
- Fingerprick glucose (only if unwell or not yet stable on medications)
- Urine dipstick only if fingerprick glucose ≥ 11.1

At first visit also check height to calculate BMI[1].

Check once a year:

- Weight, waist circumference (also check 3 monthly if trying to lose weight)
- Urine dipstick
- Visual acuity

[1]BMI = weight (kg) ÷ height (m) ÷ height (m).

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 or fever, exclude TB ⮌81.
Family planning	Every visit	• Assess patient's contraceptive needs ⮌136 and pregnancy plans. If pregnant, give antenatal care ⮌141. • If HIV positive and planning pregnancy, advise patient to use contraception until viral load lower is suppressed[1].
Sexual health	Every visit	• Ask about genital symptoms ⮌41 and sexual problems ⮌50. • Ask about risky sexual behaviour (patient or regular partner has new or multiple partner/s or uses condoms unreliably) and sexual orientation.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Smoking	Every visit	If patient smokes, encourage to stop ⮌123.
Older person risk	If > 65 years: at every visit	• If patient has a change in function, check for symptoms suggesting a cause: fever ⮌20, urinary symptoms ⮌51, confusion ⮌74. • Consider using lower medication doses (give full doses of antibiotics and ART). Avoid unnecessary medications. Discuss with doctor if patient on diazepam, amitriptyline, theophylline, codeine, ibuprofen, amlodipine or fluoxetine or is using ≥ 5 medications. • If memory problems and disorientation for at least 6 months, consider dementia ⮌130.
CVD risk	If ≥ 40 years or ≥ 2 risk factors	• Assess CVD risk ⮌111 at first visit, then depending on risk. • Risk factors: smoking, BMI > 25, waist circumference > 80cm (woman) or 94cm (man), hypertension, diabetes, cholesterol > 5.2, parent/sibling with early onset CVD[3] (man < 55 years or woman < 65 years).
BP	First visit, then depending on result	Check BP: if ≥ 140/90 ⮌114. If pregnant and BP ≥ 140/90 ⮌138.
Weight (BMI)	Yearly	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If BMI > 25 ⮌110. If BMI < 18.5, refer for nutritional support.
Diabetes risk	At first visit if: • If ≥ 45 years or • If BMI ≥ 25 and ≥ 1 other risk factor	• If not known diabetic, check glucose ⮌13. • Risk factors: physical inactivity, hypertension, parent or sibling with diabetes, polycystic ovarian disease, Indian ethnicity, cardiovascular disease, diabetes during pregnancy or previous big baby > 4000g, previous impaired glucose tolerance or impaired fasting glucose or TB in past year.
HIV	• If status unknown • If sexually active: 6-12 monthly • If pregnant: every antenatal visit • If breastfeeding: 3 monthly	Test for HIV ⮌95.
Cervical screen (if woman)	When needed	• HIV negative: do 3 routine cervical screens in a lifetime from age 30, with a 10-year interval between each screen ⮌47. • HIV positive: do routine cervical screen every 3 years from time of HIV diagnosis, regardless of age ⮌47.
Breast check (if woman)	• First visit • On contraceptive or hormone therapy: yearly • If > 40 years: 6 monthly	• Check for lumps in breasts ⮌36 and axillae ⮌21. • If on hormone therapy, refer for mammogram at initiation if available.

Continue to manage the patient's general health →9.

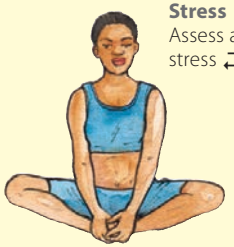
[1]Viral load < 50. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.

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 patient that not all tests, treatments and procedures help prevent or treat disease. Some provide little or no benefit and may even cause harm (like doing x-rays or giving antibiotics unnecessarily).
- Advise the woman to do monthly breast self-examinations and to return if any lump/s found.
- Help the patient to choose lifestyle changes to improve and maintain his/her general health. Support the patient to change ⮌154.

Smoking
Alert patient to the risks and encourage to stop ⮌123.

Stress
Assess and manage stress ⮌75.



Be sun safe
- Avoid sun exposure, especially between 10h00 and 15h00.
- Use sunscreen and protective clothing (e.g. hat) when outdoors.
- If albinism ⮌68.

Have safe sex
- Have only 1 partnership at a time.
- If HIV negative, test for HIV between partners and consider male medical circumcision.
- Advise partner/s and children to test for HIV.
- Use condoms.

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.

Avoid alcohol/drug use
In the past year, has patient:
1) drunk ≥ 4 drinks[1]/session,
2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.

Road safety
- Use pedestrian crossings to cross the road.
- Use a seat belt.

Diet
- Eat a variety of foods in moderation. Reduce portion sizes.
- Increase fruit, vegetables, nuts and legumes.
- Choose whole grain bread/rice or potatoes rather than white bread/rice.
- Replace brick margarine/butter with vegetable oil or soft tub margarine. Remove skin and fat from meat.
- Reduce salty processed foods like gravies, stock cubes, packet soup. Avoid adding salt to food.
- Avoid/use less sugar.

Treat preventively to maintain the patient's general health

- If woman planning pregnancy:
  - Give folic acid 5mg daily up to 13 weeks gestation. If on anticonvulsants, family history or previous baby with neural tube defect, continue folic acid throughout pregnancy.
  - If on valproate or dolutegravir, refer to doctor to consider switching medications before patient falls pregnant (risk of birth defects).
- Review the patient's immunisation history and give if needed:

Vaccine	When	Note
Influenza	• > 65 years • HIV positive • Chronic heart or lung disease • Pregnant woman at time of annual campaign	• Give influenza vaccine 0.5mL IM yearly. • Avoid if HIV positive with CD4 < 100.
Hepatitis B	If working in a health care facility (medical and non-medical staff)	If not given before, give 3 doses of hepatitis B vaccine 1mL IM immediately, at 4 weeks and 6 months.
Tetanus toxoid	If pregnant	If not already given, give 1 dose of tetanus toxoid (TT) or tetanus, diphtheria (Td) vaccine 0.5mL IM into arm and record in maternity case record.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

THE EMERGENCY PATIENT

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the emergency patient:

Does the patient respond to voice or physical stimulation?

- **Yes**
- **No**
  - Call for help and an automated external defibrillator (AED) or defibrillator.
  - Feel for carotid pulse for maximum of 10 seconds.
    - **No pulse felt or unsure** → Start CPR[1] →11.
    - **Pulse felt** → Check breathing:
      - **Patient breathing well**
      - **Patient gasping or not breathing**
        - Check airway clear.
        - Give 1 breath with bag valve mask attached to oxygen every 6 seconds.
        - Recheck pulse every 2 minutes. If no pulse, start CPR[1] →11.

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.
- Intubate if unable to maintain airway with oro- or nasopharyngeal airway.

Breathing

- If difficulty breathing or oxygen saturation < 94%, 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.
- Intubate if using bag valve mask and still difficulty breathing, oxygen saturation < 94% or blue lips/tongue.
- If sudden breathlessness, more resonant/ decreased breath sounds/pain on 1 side, deviated trachea: **tension pneumothorax** likely:
  - Insert large bore cannula above 3rd rib in mid-clavicular line.
  - Arrange urgent chest tube.

Circulation

- Establish IV access.
- If BP < 90/60, pulse ≥ 100 or heavy bleeding, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. If known heart problem or severe infection suspected, give instead sodium chloride 0.9% 500mL IV over 30 minutes, 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 tourniquet above injury.

Level of consciousness

- Assess 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 a single score out of 15:
  - If GCS ≤ 8, intubate patient.

Manage further and refer urgently:

- While awaiting transport, continue to assess and manage airway, breathing, circulation and level of consciousness.
- If injured →14, if fitting/just had fit →15, if decreased consciousness →12, if burns →17, if bite/sting →18, if fever →20, if rash →58, if anaphylaxis →16.
- If other symptom, manage as on symptom page.

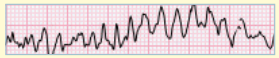
[1]If the patient has a life-limiting illness, consider whether or not to proceed. If CPR not needed in the palliative care patient, address the dying patient's needs →150.

CARDIOPULMONARY RESUSCITATION (CPR)

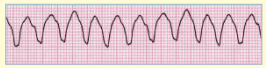
In the patient with no pulse, record the time and start chest compressions:

- Give continuous cycles of 30 chest compressions and 2 breaths with bag-valve-mask attached to 100% oxygen at 10-15L/min.
- Attach monitor/defibrillator and pause compressions to check initial heart rhythm:

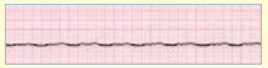
Ventricular fibrillation (VF)



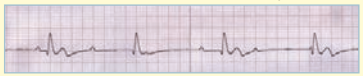
Pulseless ventricular tachycardia (pVT)



Asystole



Any other rhythm:
Pulseless electrical activity (PEA)



Give shock of 120-150J.
If monophasic defibrillator, give instead shock of 360J.

- Immediately restart CPR, starting with compressions.
- **After 2 minutes of CPR, pause compressions and recheck heart rhythm:**

VF | pVT | Asystole | Other rhythm

Give shock of 120-150J (increase joules with each shock given).
If monophasic defibrillator, give instead shock of 360J.

Feel for carotid pulse for up to 10 seconds.

No pulse felt | Unsure | Pulse felt

PEA

Stop CPR and check breathing →10.

- Immediately restart CPR, starting with compressions.
- Give adrenaline[1] 1mL (1:1000 solution) IV, followed by 5mL sterile water or sodium chloride 0.9%. Repeat adrenaline every 2 cycles (every 3-5 minutes).
- **After every 2 minutes of CPR, pause compressions, recheck heart rhythm and manage as above.**

While giving continuous CPR:

- If **VF** or **pVT**: after 3rd shock, give amiodarone 300mg IV, followed by 5mL sodium chloride 0.9%.
  - If VF or pVT persists after next shock or recurs, give further amiodarone 150mg IV.
- Doctor to consider intubation. If intubated, give 1 breath every 6 seconds and continuous chest compressions.
- Look for and manage possible cause:
  - If trauma, diarrhoea/vomiting or dehydration, give sodium chloride 0.9% 1L IV rapidly. Repeat if needed. If unsure, discuss with doctor.
  - If glucose < 3 or unable to measure ↩13. If temperature ≤ 35°C ↩12. If overdose/poisoning, discuss with specialist or local poison helpline ↩155.
  - If more resonant/decreased breath sounds on 1 side or deviated trachea, **tension pneumothorax** likely: insert large bore cannula above 3rd rib in mid-clavicular line.

Decide when to stop CPR:

- If no pulse after 30 minutes of continuous CPR:
  - If ongoing VF/pVT, temperature ≤ 35°C or overdose/poisoning, continue CPR and discuss/transfer urgently.
  - If none of above, stop CPR and pronounce dead. Arrange bereavement counselling for family.

How to give chest compressions

- Ensure patient is lying on firm surface. If on bed, use backboard or move patient onto floor.
- Place heel of one hand over lower half of sternum. Place heel of second hand on top of first hand.
- Push down quickly, hard (depth of 5-6cm) and fast (100-120 per minute).
- Allow chest to return to normal shape between compressions.
- Do not interrupt compressions unless giving ventilations or checking heart rhythm.
- Swop with colleague every 2 minutes to avoid fatigue.

[1]Adrenaline is also known as epinephrine.

DECREASED CONSCIOUSNESS

Give urgent attention to the patient with decreased consciousness:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- 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 fits, injuries or burns, also manage on symptom pages.
- If sudden decreased consciousness and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ⮌16.
- Check glucose, temperature and pupils:

Glucose

< 3 or unable to measure

- Give dextrose 10%[2] 5mL/kg IV. If known alcohol user, give thiamine 100mg IM/IV before dextrose.
- Recheck glucose after 15 minutes: if still < 3, give further dextrose 10%[2] 2mL/kg IV.
- Once glucose ≥ 3, continue dextrose 5% 1L IV 6 hourly.

≥ 11.1

- Give sodium chloride 0.9% 15-20mL/kg IV over the first hour, then 10mL/kg/ hour thereafter.
- Stop if breathing worsens.
- If known diabetes and referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)[3].

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, also use a warming device.

≥ 38°C

- Give ceftriaxone 2g IV[4]/IM to cover for possible **meningitis**.
- If patient was in malaria area and malaria test[5] positive, also give artesunate 2.4mg/kg IM. Notify. Refer urgently within 6 hours. Record artesunate dose in referral letter.
  - If artesunate unavailable, give quinine: dilute quinine 20mg/kg in dextrose 5% 5-10mL/kg. Give as slow IV infusion over 4 hours. If IV not possible, give in 2 IM[6] doses diluted in sodium chloride 0.9%.
- If temperature > 40°C:
  - Remove clothing.
  - Use fan and water spray to cool patient.
  - Apply ice-packs to axillae, groin and neck.

Pupils

Pinpoint

Illegal drug use and/or respiratory rate < 12

Opioid overdose likely

- Give 100% face mask oxygen.
- Give naloxone 0.4mg IV/ IM[7] immediately.
- Reassess every 2 minutes: if respiratory rate < 12, give increasing doses naloxone (0.8mg, 2mg, 4mg) every 2 minutes, up to a total of 10mg. Naloxone wears off quickly, monitor closely and give further doses later if needed.

Excessive secretions or muscle twitching

Organophosphate poisoning likely

- Give atropine 1mg IV immediately.
- Then give atropine 2-4mg IV every 5 minutes until secretions controlled.
- Remove contaminated clothes and wash skin.

Both equally dilated

Stimulant or other drug overdose likely

Unequal or respond poorly to light:

- 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, discuss with specialist or local poison helpline ⮌155.

- 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 < 94% or drop in GCS, reassess and manage airway, breathing, circulation and level of consciousness ⮌10.

[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution. [3]Avoid IV insulin as it may cause low potassium and heart dysrhythmia. Avoid using an insulin needle to give IM insulin. [4]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [5]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy. [6]To give IM quinine: first calculate volume of sodium chloride 0.9% in mL: weight x 20 ÷ 100. Then add this volume of sodium chloride 0.9% to quinine 20mg/kg and inject half the volume into each thigh. [7]Give naloxone IM only if IV not possible.

ASSESS AND MANAGE GLUCOSE

If known diabetes →112.

Interpret and manage random fingerprick glucose:

Glucose < 3
Patient has **hypoglycaemia**.

Give urgent attention

Is patient alert?

Yes

- Give glucose[1] 5mL/kg orally.
- If unable to take orally, give instead glucose[1] or dextrose 10%[2] 5mL/kg via nasogastric tube (NGT).
- Check glucose after 15 minutes:

< 3 → Give further glucose[1] or dextrose 10%[2] 2mL/kg orally/via NGT and discuss/refer.

≥ 3 → Look for cause. Return to symptom page.

No

- If known alcohol user, give thiamine 100mg IM/IV.
- Give dextrose 10%[2] 5mL/kg IV.
- If decreased consciousness →12.
- If fits ⮌15.
- Check glucose after 15 minutes:

< 3
- Give dextrose 10%[2] 2mL/kg IV.
- Then give dextrose 5% 1L IV 6 hourly.
- Refer.

Glucose 3-6.0

Does patient have BMI[3] ≥ 25 *and* ≥ 1 of:
- Physical inactivity
- Hypertension
- Parent or sibling with diabetes
- Polycystic ovarian disease
- Indian ethnicity
- Cardiovascular disease
- Diabetes during pregnancy
- Previous big baby > 4000g
- Previous impaired fasting glucose
- TB in past year

No → Recheck glucose 3 yearly once over 45 years.

Yes → Check fasting plasma glucose after an 8-hour overnight fast.

< 6.1 → Repeat fasting plasma glucose after 3 years or 1 year if CVD[4] or hypertension.

6.1-6.9
- Patient has impaired fasting glucose.
- Repeat fasting plasma glucose after 1 week.

< 7 → Repeat fasting glucose after 1 year.

≥ 7 → Repeat fasting plasma glucose 1 week later.

< 7 → Repeat fasting glucose after 1 year.

≥ 7 → **Diagnose diabetes**
- If < 35 years, type 1 diabetes likely. Refer.
- If ≥ 35 years, give routine diabetes care →112.

Repeat fasting glucose after 1 year. → Assess CVD risk ⮌110.

Glucose 6.1-11

Check fasting plasma glucose after an 8-hour overnight fast.

≥ 7 → Repeat fasting plasma glucose 1 week later.

< 7 → Repeat fasting glucose after 1 year.

≥ 7 → **Diagnose diabetes**
- If < 35 years, type 1 diabetes likely. Refer.
- If ≥ 35 years, give routine diabetes care →112.

Glucose ≥ 11.1

Check if patient needs urgent attention:
- Decreased consciousness →12
- Chest pain →33
- Fits ⮌15
- Drowsiness
- Confusion
- Nausea or vomiting
- Abdominal pain
- Rapid deep breathing
- Temperature ≥ 38°C
- Dehydration[5]

No — Check urine for ketones.

No ketones — Has patient had weight loss, thirst (especially at night) or been passing excessive amounts of urine often?

No → Check fasting plasma glucose after an 8-hour overnight fast.

Yes → **Diagnose diabetes**
- If < 35 years, type 1 diabetes likely. Refer.
- If ≥ 35 years, give routine diabetes care →112.

Yes — Ketones present

- Give sodium chloride 0.9% 20mL/kg IV over the first hour, then 10mL/kg/hour thereafter. Stop if breathing worsens.
- If referral delay > 2 hours: give short-acting insulin 0.1units/kg IM (not IV)[6]. Avoid using insulin needle to give IM insulin. Use 22-25 gauge needle depending on weight of patient.
- Refer urgently.

[1]Three teaspoons sugar (15g) in 1 cup (200mL) water. [2]If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution. [3]BMI = weight (kg) ÷ height (m) ÷ height (m). [4]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. [5]Thirst, dry mouth, poor skin turgor, BP < 90/60, pulse ≥ 100. [6]Avoid IV insulin as may cause low potassium and heart dysrhythmia. Monitoring needed.

THE INJURED PATIENT

Give urgent attention to the injured patient:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- 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 sodium chloride 0.9% 1L IV hourly for 2 hours, then 500mL hourly. Aim for urine output > 200mL/hour. Stop if breathing worsens.

Wound and any of:

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

- If BP < 90/60, give sodium chloride 0.9% 1L 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.

Fracture and any of:

- Poor perfusion (cold, pale, numb, no pulse) below fracture
- Increasing pain, muscle tightness, numbness in limb
- Suspected femur, pelvis or spine fracture
- Weak/numb below fracture
- Open fracture
- > 2 rib fractures
- Severe deformity

- If pain severe, give morphine 10mg IM or 3-10mg slow IV[1]. Avoid if severe head injury.
- If poor perfusion, weakness/numbness below fracture: gently re-align into normal position.
- If open fracture: remove foreign material, irrigate with sodium chloride 0.9% and cover with saline-soaked gauze. Give ceftriaxone 1g IV[2]/IM.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

Head injury and any of:

- Any loss of consciousness
- Seizure/fit
- 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 fits, avoid diazepam/midazolam, give phenytoin[3] 20mg/kg IV in sodium chloride 0.9% (not dextrose) over 60 minutes.

- 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 < 94% or drop in GCS, reassess airway, breathing, circulation, level of consciousness ⮌10.

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 ⮌77.
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.

Wound

- Apply direct pressure to stop bleeding. Remove foreign material, loose/dead skin. Wash well with chlorhexidine 0.05% aqueous solution under running water for 5 minutes. Apply povidone iodine 10% solution if dirty.
- If sutures needed: inject lidocaine 1% or 2% 3mg/kg[5] around wound to numb area. 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:
  - If not suitable for suturing: pack wound with saline-soaked gauze and give cephalexin[6] 500mg 6 hourly for 5 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 6 hourly as needed for up to 5 days.
- Advise patient to return if signs of infection (red, warm, painful, swollen, foul-smell or pus).
- 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 6 hourly and add ibuprofen[7] 400mg 8 hourly with food for up to 5 days if needed.
- Do x-ray and refer to doctor same day.

Head injury

- Observe for 2 hours before discharging.
- If mild headache, dizziness or mental fogginess, **concussion** likely:
  - Advise complete rest for 2 days. If no symptoms ≥ 3 days, gradually increase exertion.
  - Advise that recovery can take > 1 month.
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise to return immediately if any of above symptoms of severity develop.

[1]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 3mL IV over 3 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60. [2]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [3]IV phenytoin can cause low blood pressure and heart dysrhythmia: maximum infusion rate is 50mg/minute; monitor ECG and BP. If IV phenytoin unavailable, give face mask oxygen and refer urgently. [4]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [5]To calculate volume to inject, use 0.15mL/kg of lidocaine 2% and 0.3mL/kg of lidocaine 1%. [6]If cephalexin unavailable, use instead flucloxacillin 500mg 6 hourly for 5 days. If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give azithromycin 500mg daily for 3 days instead. [7]Avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure, kidney disease.

SEIZURES/FITS

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

- If current head injury ⮌14.
- Place in left lateral lying (recovery) position and give 100% face mask oxygen.
- Establish IV access.
- If glucose <3 or unable to measure, give dextrose 10%[1] 5mL/kg IV. If known alcohol user, give thiamine 100mg IM/IV before dextrose. Recheck glucose after 15 minutes: if still < 3, give further dextrose 10%[1] 2mL/kg IV. Once glucose ≥ 3, continue dextrose 5% 1L 6 hourly.
- If ≥ 20 weeks pregnant up to 1 week postpartum →138.
- If not pregnant or < 20 weeks pregnant, give diazepam 10mg IV over at least 2 minutes or midazolam 10mg IM/buccal[2]. If still fitting after 5 minutes, repeat diazepam/midazolam dose.
- If still fitting 5 minutes after second dose of diazepam/midazolam *or* patient does not recover consciousness between fits, refer urgently. If available, doctor to give phenytoin 20mg/kg IV in sodium chloride 0.9% (not dextrose) in a different line to diazepam, over 60 minutes with BP and ECG monitoring. If dysrhythmia develops, interrupt infusion and restart slowly. Refer urgently.

Approach to the patient who is not fitting now

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

Yes

Refer patient same day if any of:

- Temperature ≥ 38°C, headache, neck stiffness or purple/red rash, **meningitis** likely: give ceftriaxone 2g IV[3]/IM.
- If patient was in malaria area and malaria test[4] positive, also give artesunate 2.4mg/kg IM. If artesunate unavailable, give quinine as slow IV infusion over 4 hours: dilute quinine 20mg/kg in dextrose 5% 5-10mL/kg. If IV not possible, give IM[5] diluted in sodium chloride 0.9%.
- New/different headache or headache getting worse/more frequent
- Patient with HIV and no known epilepsy
- Decreased consciousness > 1 hour after fit
- Glucose < 4 one hour after treatment or patient on glimepiride/insulin
- Glucose ≥ 11.1 →13
- New sudden asymmetric weakness or numbness, difficulty speaking or visual disturbance
- BP ≥ 180/130 more than 1 hour after fit has stopped
- Alcohol/drug use: overdose or withdrawal
- Recent head injury
- Pregnant or up to 1 week postpartum. If ≥ 20 weeks pregnant and just had fit →138.

No

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

Stroke or **TIA** likely →118.

Collapse with twitching lasting < 15 seconds following flushing, dizziness, nausea, sweating and with rapid recovery

Common faint likely →24.

If diagnosis uncertain, refer.

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

Is the patient known with epilepsy?

Yes

Give routine **epilepsy** care →131.

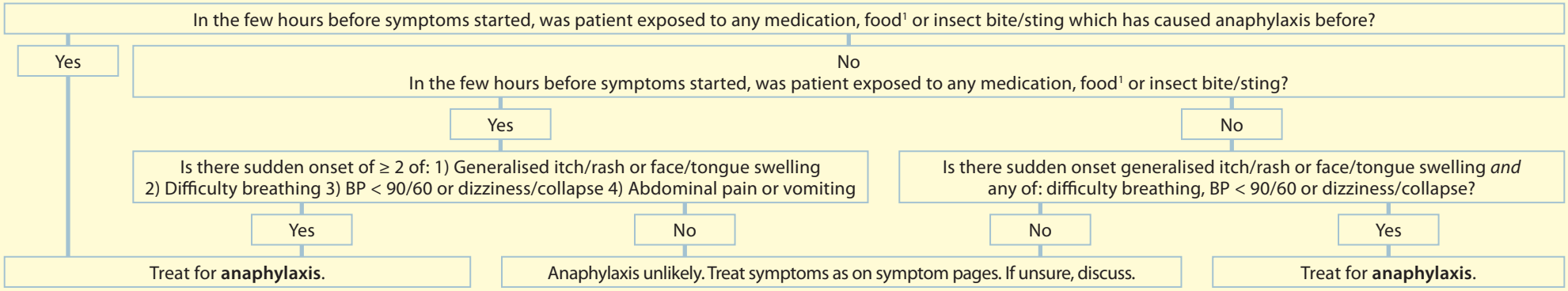
No

- Doctor to check full blood count, creatinine (eGFR), urea, sodium, calcium and review results.
- If focal seizures or new fits after meningitis, stroke or head injury, discuss with specialist.
- If patient had ≥ 2 definite fits with no identifiable cause, doctor to consider epilepsy and give routine care →131.

[1]If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution. [2]Buccal: use 5mL syringe to draw up correct dose, remove needle and give midazolam between the cheek and gum. [3]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [4]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy. [5]To give IM quinine: first calculate volume of sodium chloride 0.9% in mL: weight x 20 ÷ 100. Then add this volume of sodium chloride 0.9% to quinine 20mg/kg and inject half the volume into each thigh.

ANAPHYLAXIS

Give urgent attention to the patient with possible anaphylaxis:



Manage anaphylaxis and refer urgently:

- Give immediately adrenaline[2] 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5 minutes if needed.
- Raise legs and give 100% face mask oxygen.
- Give sodium chloride 0.9% 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give sodium chloride 0.9% 500mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If persistent wheeze or difficulty breathing despite adrenaline[2], also give 1mL salbutamol 0.5% solution and 2mL ipratropium bromide solution in 4mL sodium chloride 0.9% via nebuliser every 20 minutes for 3 doses. If needed, assess and further manage airway ⮌10.
- Give hydrocortisone 200mg IM/slow IV immediately *and* promethazine 50mg IM/slow IV.

Assess the patient with previous anaphylaxis

Assess	When to assess	Note
Trigger	At diagnosis	Ensure a specialist has reviewed the patient with anaphylaxis to confirm trigger/s. Common triggers include medications, food[1] and insect bites/stings.
Other allergy	At diagnosis	• If recurrent cough, wheeze, tight chest or difficulty breathing, exclude **asthma** ⮌106. If known asthma, give routine asthma care ⮌108. • If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely ⮌60. • If itchy, red, raised wheals that appear suddenly and usually disappear within 24 hours, **urticaria** likely ⮌60. • If recurrent sneezing or itchy/runny/blocked nose most days for > 4 weeks, **allergic rhinitis** likely ⮌30. • If both eyes watery and itchy, **allergic conjunctivitis** likely ⮌27.

Advise the patient with previous anaphylaxis

- Advise to avoid identified trigger/s and if trigger is a medication, to always inform health worker.
- Ensure patient has a plan in case of anaphylaxis: ambulance telephone number, nearest hospital and reliable transport plan.
- If adrenaline[2] auto-injector device (like EpiPen®) prescribed, ensure patient knows when and how to use it:
  - If exposed to trigger, use immediately if any of: itch/rash, face/tongue swelling, itchy/tight throat, cough, wheeze, difficulty breathing, dizziness/collapse, abdominal pain or vomiting. After use, immediately phone for ambulance.
  - Advise to read instructions found in packaging.
- Arrange a MedicAlert® bracelet ⮌155 and advise patient to always wear it.

[1]Common foods causing anaphylaxis include peanuts, tree nuts, egg, milk and fish. [2]Adrenaline is also known as epinephrine.

BURNS

Calculate the percentage total body surface area (% TBSA) burnt using the figure below.

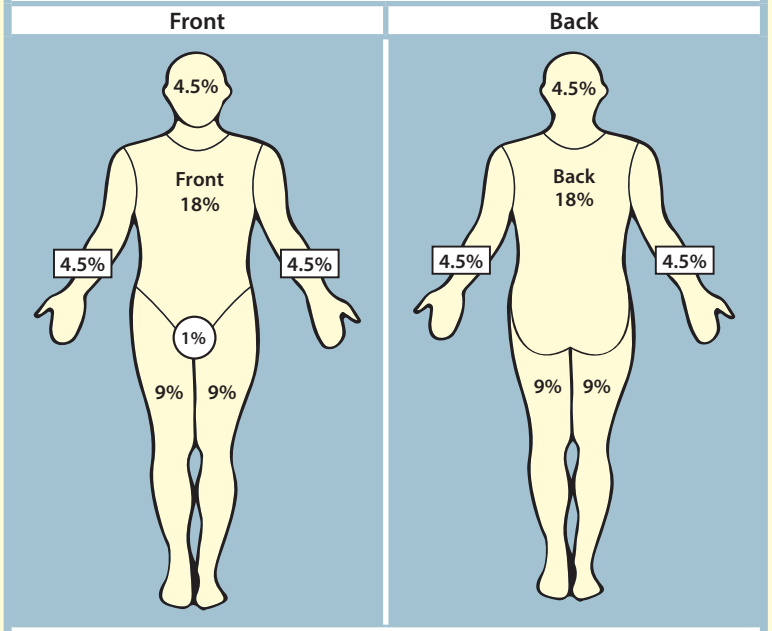
Give urgent attention to the patient with burn/s and any of:

- Drowsy or confused
- Electric/chemical burn
- Full-thickness burn (white/black, painless, leathery, dry)
- Partial thickness burn (pink/red, blisters, painful, wet) > 10% TBSA
- **Inhalation injury** likely (burns to face/neck, difficulty breathing, hoarse, stridor or black sputum)
- Circumferential burn of chest/limbs
- Burn to face, hand/foot, genitals, joint
- Oxygen saturation < 94%
- Temperature ≥ 38°C
- BP < 90/60
- Other injury

Management:

- Remove clothing. Cool burn with cool tap water or wet towel/s for 30 minutes. Keep warm with clean, dry sheet.
- Give face mask oxygen if burn > 10% TBSA, inhalation injury, oxygen saturation < 94% or drowsy/confused. Doctor to consider intubation.
- If > 10% TBSA:
  - Give sodium chloride 0.9% IV 4mL x weight (kg) x % TBSA over 24 hours. Give half this volume in first 8 hours from time of burn. Calculate the hourly volume (mL) = total volume (mL) ÷ 2 ÷ 8.
  - Insert a urine catheter and document urine output every hour.
- Give paracetamol 1g orally 6 hourly.
- If pain severe, give morphine 3-10mg slow IV[1].
- If other injuries, manage ↩14.
- Clean and dress burn gently:
  - Remove loose/dead skin and clean burn with sodium chloride 0.9%.
  - If full thickness or > 10% TBSA burn, apply paraffin gauze and cover with plastic wrap.
  - If hospital transfer delayed > 12 hours, apply paraffin gauze and cover with dry gauze and bandage.
  - If none of above, apply Burnshield® and cover with bandage. If not available, use a non-adherent dressing or wrap in clean, dry sheet and blanket.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.
- Monitor hourly while awaiting transport: BP, pulse, respiratory rate, oxygen saturation, level of consciousness and urine output.
- Refer urgently.

How to calculate %TBSA of burn



The patient's open palm (including fingers) represents 1% TBSA.
Exclude simple redness from calculation.

Approach to the patient with burn/s not needing urgent attention

- Cool burn < 3 hours old with cool tap water or wet towel/s for 30 minutes.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Remove loose/dead skin and gently clean burn with sodium chloride 0.9%. Then cover with paraffin gauze dressing.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.
- If cigarette burns, burn with specific shape of object (e.g. iron, grid, knife/fork, car cigarette lighter, light bulb), repeated/unexplained burns or other unexplained injuries, consider abuse ↩77 and self-harm ↩72.
- Review daily until burn healed:
  - Dress burn with paraffin gauze dressing. If signs of infection (redness, swelling), apply povidone iodine 5% cream daily.
  - If severe infection (extensive redness or swelling, foul-smell, pus or temperature ≥ 38°C), pain despite medication or burn not healed within 2 weeks, refer

[1]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 3mL IV over 3 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60.

BITES AND STINGS

Give urgent attention to the patient with a bite/sting and any of:

- **Snake bite** (even if bite marks not seen)
- If sudden generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain or vomiting, check for anaphylaxis ⮌16.
- 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:**
  - Keep patient calm and still. Remove jewellery and immobilise bitten limb.
  - Clean bite with chlorhexidine 0.05% solution. Avoid applying tourniquet or sucking out venom.
  - Discuss with local poison helpline ⮌155.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Remove loose/dead skin. Clean wound with chlorhexidine 0.05% or povidone iodine 10% solution and irrigate under running water for 10 minutes. Avoid suturing the wound.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.
- Refer urgently.

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

Human or animal bite/s

- Remove loose/dead skin. Clean wound with chlorhexidine 0.05% or povidone iodine 10% solution and irrigate under running water for 10 minutes.
- Avoid suturing puncture wounds.
- If animal bite, consider rabies post-exposure prophylaxis:
  - If bite/scratch with visible blood, licking of eyes/mouth/broken skin by a dog, cat, mongoose, jackal, cattle or goat; or any contact with a bat:
    - Inject rabies immunoglobulin 20IU/kg at the site of the bite *and*
    - Inject rabies vaccine 1 ampoule IM into deltoid muscle (not buttock). Repeat vaccine on days 3, 7 and 14 (if impaired immunity[1], also give a 5th dose on day 28).
  - If scratch with no visible blood, give rabies vaccine only as above.
  - If rabies immunoglobulin or vaccine unavailable, refer. If unsure, contact rabies hotline for advice ⮌155.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If bite punctured the skin with visible bleeding, bite to hand or from human or bat: give amoxicillin/clavulanic acid 875/125mg 12 hourly for 5 days. If severe penicillin allergy[2], give instead azithromycin 500mg daily for 3 days and metronidazole 400mg 8 hourly for 5 days.
- If human bite, severe enough to cause bleeding, also assess need for hepatitis B post-exposure prophylaxis (PEP) ⮌78. Risk of HIV transmission through biting is negligible and HIV PEP not needed.
- If bite infected and no response to antibiotics within 48 hours, refer.

Insect/spider/scorpion bite or sting

- Remove stinger. Clean wound with soap and water. Apply ice pack for pain/swelling.
- If severe pain, redness, swelling or itch:
  - Give chlorphenamine 4mg 8 hourly for up to 5 days.
  - Apply calamine lotion as needed.
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If spider bite, advise patient to return if signs of infection (skin red, warm, painful) and give flucloxacillin 500mg 6 hourly for 5 days. If severe penicillin allergy[2], give instead azithromycin 500mg daily for 3 days.
- If very painful scorpion sting, inject lignocaine 2% 2mL around site.

Give tetanus toxoid 0.5mL IM if none in past 5 years.

[1]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [2]History of angioedema, anaphylaxis or urticaria.

WEIGHT LOSS

- Check that the patient that says s/he has unintentionally lost weight has indeed done so. Compare current weight with previous records and ask if clothes still fit.
- Investigate unintentional weight loss of > 5% of body weight.
- Calculate % weight loss = (previous weight - current weight) ÷ previous weight x 100

STEP 1. Check for TB, HIV and diabetes

Exclude TB
- Start workup for TB ⮌81.
- At the same time, test for HIV and diabetes (see adjacent) and consider other causes below.

Test for HIV
Test for HIV ⮌95. If HIV positive, give routine care ⮌96.

Check for diabetes
Check glucose ⮌13.

STEP 2. Then ask about symptoms of common cancers

Abnormal vaginal discharge/bleeding	Breast lump/s or nipple discharge	Urinary symptoms in man	Change in bowel habit	Cough ≥ 2 weeks, blood-stained sputum, long smoking history
Consider **cervical cancer.** Do a speculum examination and a cervical screen if needed →47.	Consider **breast cancer.** Examine breasts and axillae for lumps →36.	Consider **prostate cancer.** Do rectal examination. If hard, nodular prostate, refer same week.	Consider **bowel cancer.** If mass on abdominal or rectal examination or stool occult blood positive, refer same week.	Consider **lung cancer.** Do chest x-ray. If suspicious, refer same week.

STEP 3. Ask if food intake is adequate: if inadequate look for reason:

Nausea or vomiting	Loss of appetite	If stress or anxiety ⮌75.	No money for food	The patient has a life-limiting illness.	Sore mouth or difficulty swallowing
→38.	• Eat small frequent meals. • Drink high energy drinks (milk, maas, mageu, soup). • Increase energy value of food by adding milk powder, peanut butter, oil or margarine.		Refer to social worker to help organise nutritional support.	Consider giving palliative care ⮌148.	**Oral/oesophageal candida** likely →31.

STEP 4. Screen for thyroid problem, depression, substance misuse and neglect:

- If pulse ≥ 100, palpitations, tremor, dislike of hot weather or thyroid enlargement, check TSH. If abnormal, refer to doctor.
- Screen for depression: in the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
- Ask about neglect in the older or ill patient needing care. If yes, refer to social worker.

Review in one month. If no better or no cause found, discuss/refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

FEVER

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

A patient with a fever has a temperature ≥ 38°C now or in past 3 days.

Give urgent attention to the patient with a fever and any of:

- Fits or just had a fit ⮌15.
- Decreased consciousness ⮌12
- Neck stiffness, drowsy/confused or purple/red rash, **meningitis** likely
- Respiratory rate > 30 or difficulty breathing
- BP < 90/60
- Tender in right lower abdomen, **appendicitis** likely
- Severe abdominal or back pain
- Jaundice
- Easy bleeding or bruising

Management:

- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If likely **meningitis**, decreased consciousness, fits or respiratory rate > 30/difficulty breathing: give ceftriaxone 2g IV[1]/IM.
- If patient was in a malaria area in past 3 months and malaria test[2] positive: give artesunate 2.4mg/kg IM and notify. Refer urgently within 6 hours. Record artesunate dose in referral letter. If artesunate unavailable, give quinine as slow IV infusion over 4 hours: dilute quinine 20mg/kg in dextrose 5% 5-10mL/kg. If IV not possible, give IM[3] diluted in sodium chloride 0.9%.
- If glucose < 3 or ≥ 11.1 ⮌13.
- Refer urgently.

Approach to the patient with a fever not needing urgent attention

- If on abacavir, check for abacavir hypersensitivity reaction (AHR) ⮌102.
- Has patient been in a malaria area in past 3 months?

Yes: arrange same day malaria test[2]. If not available same day, refer.

No

Malaria test positive

Malaria likely

- Notify and give artemether/lumefantrine 80/480mg with food/milk: immediately, then after 8 hours, then 12 hourly for 2 days (total of 6 doses). If patient vomits within the 1st hour of taking treatment, give the same dose again.
- Also consider other cause of fever (see adjacent).
- Check Hb and glucose.
- Give urgent attention and refer same day if: Hb < 7, glucose < 3, unable to take orally or symptoms worsen.
- Refer same day if: > 65 years old, pregnant, known HIV/diabetes or malaria treatment not available.

Malaria test negative

Consider other cause of fever:
Does patient have a tick bite (small dark brown/black scab) or tick present?

Yes

Tick bite fever likely:

- May also have headache, body pain, rash or localised lymphadenopathy.
- If tick present, grip tick close to skin using forceps and remove.
- Give doxycycline 100mg 12 hourly for 7 days. If pregnant, give instead azithromycin 500mg 12 hourly for 3 days.
- Give paracetamol 1g 6 hourly as needed for 5 days.
- If severe headache or no better after 3 days, refer.

No

- If cough →34, blocked/runny nose →30, sore throat →31, abdominal pain →37, nausea/vomiting →38, diarrhoea →39, burning urine →51.
- If *recent* onset fever and headache/body pain, **influenza** (**flu**) likely →30.

If none of above:

- Check urine dipstick: if blood, leucocytes or nitrites →51.
- If fever ≥ 2 weeks, exclude TB ⮌81.
- Test for HIV ⮌95.
- Advise patient to return if other symptoms develop.
- If previous malaria test negative and fever persists after 2 days, repeat malaria test[2].
- If fever persists for > 5 days and cause still uncertain, discuss/refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy. [3]To give IM quinine: first calculate volume of sodium chloride 0.9% in mL: weight x 20 ÷ 100. Then add this volume of sodium chloride 0.9% to quinine 20mg/kg and inject half the volume into each thigh.

LUMP/SWELLING IN NECK, AXILLA OR GROIN

Give urgent attention to the patient with lump/swelling in groin and any of:

- Lump in groin that gets bigger when standing/coughing/passing stool and any of: severe pain, vomiting, no stools or flatus/wind for past 24 hours, or lump cannot be reduced: **incarcerated/strangulated inguinal hernia** likely
- Pulsating lump: **aneurysm** likely

Refer urgently.

Approach to the patient with lump/swelling in neck, axilla or groin not needing urgent attention:

- If lump is in the skin →58.
- If lump is beneath the skin, first exclude thyroid mass and hernia:
  - Lump in neck that moves up when patient swallows, **thyroid mass** likely: check TSH and refer same week for further investigation.
  - Lump in groin that gets bigger when standing/coughing/passing stool, **inguinal hernia** 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 ↩95 and syphilis. If HIV positive, give routine care ↩96. If syphilis positive ↩45.
- If cough, weight loss, night sweats or fever, exclude TB ↩81. Also aspirate lymph node for TB microscopy and cytology (see adjacent). If no TB found, aspirate does not confirm diagnosis and symptoms persist, refer same week.
- Check full blood count. If abnormal, discuss with doctor.
- Review medication: atenolol, allopurinol, co-trimoxazole, antibiotics and phenytoin can cause lymphadenopathy. Discuss with doctor.
- If none of above, decide how to manage further:

Localised lymphadenopathy *and* well

- Reassure patient.
- Advise to return if symptoms develop.
- If lymph node persists > 4 weeks, refer.

- Generalised lymphadenopathy *or*
- Unwell *or*
- Lymph node/s getting bigger quickly

Refer same week.

Localised lymphadenopathy: ask about other symptoms and look for cause (infection, 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 →36.

Groin
Is the groin lymph node hot and tender?

No: check lower abdomen, legs, buttocks, genitals, anal region.

Has a cause been found?

No

- Manage as on symptom page.
- Reassure patient lymphadenopathy should resolve with treatment.
- If lymph node persists > 4 weeks, refer.

Yes

Yes: treat for **bubo**:

- First assess and advise the patient ↩41.
- Give azithromycin 1g weekly for 3 weeks.
- If fluctuant lymph node, aspirate pus through healthy skin in sterile manner every 3 days as needed.
- If pain, give ibuprofen[1] 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: Bubo.
- Review in 14 days: if no better, refer.

How to aspirate lymph node for TB microscopy and cytology:

- Clean skin over largest node with alcohol 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 (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 onto a glass slide.
- Lay another slide on top and pull the slides apart to spread the material.
- Allow one slide to air dry and spray other slide with cytology fixative spray. Send slides for TB microscopy and cytology. If enough aspirate, also send in sputum bottle for Xpert MTB/RIF, TB culture and LPA.

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

WEAKNESS OR TIREDNESS

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

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

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →118.
- Chest pain →33.
- Difficulty breathing or respiratory rate ≥ 30 →34.
- Glucose < 3 (or < 4 if diabetes)
- Glucose ≥ 11.1
- Dehydration: thirst, dry mouth, poor skin turgor, drowsiness/confusion, BP < 90/60, pulse ≥ 100
- Worsening weakness of leg/s

Management:

- If dehydrated, give oral rehydration solution (ORS) and observe. If unable to drink or BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, 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 < 3 or ≥ 11.1 ↩13 or if diabetes and glucose < 4 ↩112.
- If worsening weakness of leg/s, refer urgently.

Approach to patient with tiredness not needing urgent attention:

- Look for a cause for tiredness when it persists so that the patient is unable to complete routine tasks and it disrupts work, social and family life.
- First check symptoms, medications, mental health and for chronic conditions:

Check symptoms

- If fever now or in past 3 days ↩20.
- If cough, weight loss, night sweats or fever, exclude TB ↩81.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →117.
- If patient has difficulty sleeping ↩76.
- If weight gain, low mood, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.

Check medications

- If on abacavir or zidovudine, check for urgent side effects ↩102.
- Chlorphenamine, enalapril, amlodipine, fluoxetine, amitriptyline, metoclopramide, sodium valproate, phenytoin and spironolactone can cause weakness or tiredness. Discuss with doctor.

Check mental health

- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ↩125.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.
- If none of the above, assess for stress and anxiety ↩75.

Check chronic conditions

- Test for HIV ↩94. If HIV positive, give routine care ↩95.
- Exclude pregnancy. If pregnant →137.
- If patient has a life-limiting illness, also consider giving palliative care ↩147.

If none of the above, do tests to exclude diabetes, anaemia and kidney disease:

- Exclude anaemia: check Hb. If < 12 (woman) or < 13 (man), **anaemia** likely ↩23.
- Exclude diabetes: check glucose ↩13.
- Look for kidney disease: do urine dipstick. If patient has proteinuria on dipstick, diabetes, hypertension or is > 50 years, check creatinine (eGFR). If eGFR < 60, refer to doctor.

If persistent tiredness and no obvious cause, refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

PALLOR AND ANAEMIA

- Patient has pallor if s/he has pale conjunctiva or palms. Compare patient's palms to your own.
- Check Hb: **anaemia** likely if:
  - Non pregnant woman has Hb < 12.
  - Pregnant woman has Hb < 11 →140.
  - Man has Hb < 13.

Give urgent attention to the patient with pallor/anaemia and any of:

- Hb < 6
- Pulse ≥ 100
- Respiratory rate ≥ 30
- BP < 90/60
- Dizzy/faint
- Chest pain or palpitations
- Swollen legs
- Jaundice
- Black[1] or bloody stools
- Widespread/easy bruising
- Purple/red rash that does not disappear with pressure

Manage and refer urgently:

- If respiratory rate increased, give face mask oxygen.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

Approach to the patient with pallor/anaemia not needing urgent attention

- Test for HIV ⮌95 and TB ⮌81.
- Exclude pregnancy. If pregnant, give routine antenatal care →138.
- If fever now or in past 3 days, and in a malaria area in past 3 months, arrange same day malaria test[2]. If positive, **malaria** likely →20.
- If not pregnant, send full blood count (FBC) and manage further according to mean cell volume (MCV)[3] result:

MCV[3] low

Iron deficiency anaemia likely
Is patient a man or a woman who no longer has periods?

Yes

Discuss/ refer to look for hidden blood loss.

No

- Ask about abnormal vaginal bleeding: if abnormal ⮌49.
- Give ferrous sulphate compound BPC 170mg *or* ferrous fumarate 200mg 12 hourly with food.
  - Repeat Hb monthly on treatment: if Hb decreases or if no better after 4 weeks, refer.
  - Continue treatment until 3 months after Hb reaches normal value.
- Advise:
  - To eat foods rich in iron: liver, kidney, meat, eggs, spinach, beans, peas, lentils, nuts, dried fruit and fortified cereals. Foods rich in vitamin C help iron absorption: guavas, peppers, oranges, strawberries, broccoli, cauliflower.
  - Avoid drinking tea/coffee with meals as these interfere with iron absorption. Also avoid taking iron tablets with milk or calcium tablets.
  - Warn that stools may become black with treatment, reassure this is normal.

MCV[3] normal

Systemic disease or **chronic condition** likely

If HIV, TB and pregnancy excluded, discuss/refer.

MCV[3] high

Macrocytic anaemia likely
Patient postpartum or known to misuse alcohol[4]?

Yes

Folate deficiency likely

- Review medication: if on zidovudine or anticonvulsants, discuss with doctor.
- Give folate 5mg daily until Hb normal.
- Repeat Hb monthly on treatment: if Hb decreases or if no better after 4 weeks, refer.
- Advise:
  - To eat foods rich in folic acid: liver, eggs, fortified cereals, citrus fruit, spinach, other green vegetables, lentils, dry beans, peanuts.
  - Avoid alcohol ⮌124.
- If chronic diarrhoea, refer.

No

Refer to investigate for vitamin B12 deficiency.

[1]Black stools may be caused but iron tablets. Only refer if black stools started before iron treatment. [2]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy. [3]Mean cell volume (MCV) helps identify cause of anaemia. Check on FBC result sheet if MCV low, normal or high compared to reference range. [4]Drinks > 14 drinks/week or ≥ 4 drinks/session. One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

COLLAPSE/FALLS

Give urgent attention to the patient who has collapsed and any of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →118.
- Decreased consciousness →12
- Fit →15
- Chest pain →33
- Difficulty breathing →34
- Glucose < 3 (or < 4 if diabetes) ↩13
- If sudden collapse and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ↩16.
- Recent injury
- Systolic BP < 90
- Pulse < 50 or irregular
- Palpitations
- Family history of collapse or sudden death
- Abnormal ECG
- 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

Management:

- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient who has collapsed not needing urgent attention:

- Ensure patient has had an ECG. If abnormal, refer same day.
- Check Hb: if <12 (woman) or < 13 (man), **anaemia** likely ↩23.
- Screen for alcohol/drug use. In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.
- Check BP: if ≥ 140/90 ↩114. Then measure BP after lying for 5 minutes and repeat after standing for 3 minutes. Does systolic BP drop by ≥ 20 *or* diastolic BP drop by ≥ 10?

Yes

Orthostatic hypotension likely

- This is common in the elderly.
- Review medications: e.g. fluoxetine, amitryptyline, amlodipine, enalapril, furosemide, hydrochlorothiazide, isosorbide dinitrate can cause syncope. Discuss with doctor.
- If diarrhoea ↩39, if vomiting ↩38, if fever ↩20, if poor fluid intake, encourage fluids and give oral rehydration solution.
- Advise patient to sit first before standing up from lying down.
- Refer if:
  - Diabetes
  - Peripheral neuropathy (pain/numbness of feet)
  - Tremor, slow movements or stiffness
  - History of constipation or erection problems

No

Was patient breathing very quickly or deeply immediately before or during the collapse?

No

Did patient have dizziness, light-headedness, nausea, sweating, weakness or vision changes before the collapse?

Yes

Common faint likely

- Advise to avoid triggers like overheating, dehydration and prolonged standing.
- Advise to lie flat with legs raised as soon as symptoms occur.

No

- If collapse associated with coughing, swallowing, head turning, refer.
- If known diabetes ↩112.

Yes

Hyperventilation likely

- Reassure and encourage patient to breathe at a normal rate.
- Assess for stress and anxiety ↩75.

- If none of the above, look for and manage likely cause: if vision problems ↩27, joint problems ↩53, foot problems ↩57, leg problems ↩56, dementia ↩130.
- Refer if patient > 65 years with possible heart disease, patient collapses/falls repeatedly or cause for collapse/falls is uncertain.

[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

DIZZINESS

Give urgent attention to the patient with dizziness and any of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →118.
- BP < 90/60
- Pulse < 50 or irregular
- Glucose < 3 (or < 4 if diabetes) ⮌13
- Chest pain →33
- Difficulty breathing, especially on lying flat with leg swelling →117
- Recent head injury
- Unable to stand without support
- New sudden severe dizziness with nausea/vomiting, abnormal eye movements or walk

Management:

- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, 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 ⮌29. If hearing loss, refer same week.
- Ask about fainting/collapse attacks. If present, do ECG. If ECG abnormal, refer same day.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
- Review medication: antidepressants, hypertension and epilepsy treatment, furosemide and efavirenz can cause dizziness. Discuss with doctor.
- Check Hb: if < 12 (woman) or < 13 (man), **anaemia** likely ⮌23.
- Check BP: if ≥ 140/90 ⮌114. Measure BP after lying for 5 minutes and repeat after standing for 3 minutes. Does systolic BP drop by ≥ 20 or diastolic BP drop by ≥ 10?

Yes

Orthostatic hypotension likely

- This is common in the elderly.
- If diarrhoea ⮌39, if vomiting ⮌38, if fever ⮌20, if poor fluid intake, encourage fluids and give oral rehydration solution.
- Advise patient to sit first before standing up from lying down.

No

Was patient breathing very quickly or deeply immediately before or during the collapse?

Yes

Hyperventilation likely

- Usually associated with emotional stress. May also have light-headedness, chest tightness, tingling of hands/feet and visual changes.
- Encourage to breathe at a normal rate and depth.
- Assess for stress and anxiety ⮌75.
- If recurrent episodes, refer to psychologist.

No

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

Yes

Refer.

No

Sudden dizziness lasting seconds, precipitated by head movements

Positional vertigo likely

- Reassure patient that dizziness is self-limiting and usually resolves within 6 months.
- If no neck or heart problems, doctor to perform particle repositioning (Epley) manoeuvre.
- If headaches, visual symptoms or hearing loss/tinnitus develop, refer.

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

Vestibular neuronitis likely

- Mobilise as soon as possible.
- If hearing loss/tinnitus develop or no better after 2 weeks, refer.

- If none of the above, check TSH. If abnormal, refer to doctor.
- Refer if no cause is found, dizziness persists despite above treatment or uncertain of diagnosis.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

HEADACHE

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the patient with headache and any of:

- Decreased consciousness →12
- BP ≥ 180/130 and not pregnant →114
- Pregnant or 1 week postpartum, and BP ≥ 140/90 →138
- Sudden weakness/numbness of face/arm/leg or speech problem →118
- New vision problems or eye pain →27
- Sudden severe headache or dizziness
- Headache that is getting worse and more frequent
- Headache that wakes patient or is worse in the morning
- Neck stiffness, drowsy/confused or purple/red rash: **meningitis** likely
- Persistent nausea/vomiting
- Persistent headache since starting ART
- Following a first seizure
- Recent head injury
- Unequal pupils

Manage and refer urgently:

- If temperature ≥ 38°C or **meningitis** likely: give ceftriaxone 2g IV[1]/IM.
- If in a malaria area in past 3 months and malaria test[2] positive: give artesunate 2.4mg/kg IM. If artesunate unavailable, give quinine as slow IV infusion over 4 hours: dilute quinine 20mg/kg in 5% dextrose 5-10mL/kg. If IV not possible, give IM[3] diluted in sodium chloride 0.9%.

Approach to the patient with headache not needing urgent attention

Has patient had recent common cold and now any of: thick nasal/postnasal discharge, pain when pushing on forehead/cheeks, headache worse on bending forward?

Yes

Sinusitis likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Give sodium chloride 0.9% nose drops as needed.
- Give oxymetazoline 0.05% 2 drops in each nostril 8 hourly for up to 5 days. Advise against overuse which may worsen blocked nose.
- If symptoms ≥ 10 days, fever ≥ 38°C, purulent nasal discharge, facial pain or symptoms worsen after initial improvement, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy[4], give instead azithromycin 500mg daily for 3 days.
- If recurrent, test for HIV ↩95.
- If tooth infection or swelling over sinus/around eye, refer same day.

No: does patient have fever and body pain?

Yes

- If in a malaria area in past 3 months, arrange same day malaria test[2]. If positive, **malaria** likely →20.
- If patient has a tick bite (small dark brown/black scab) or tick present, **tick bite fever** likely →20.

Influenza likely

- Advise on cough/sneeze hygiene and to wash hands regularly.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Explain antibiotics are not needed.
- Advise to return if symptoms persist > 7 days, or if fever returns and any of:
  - Cough →34
  - Ear pain →29
  - Pain over cheeks, **sinusitis** likely (see adjacent)
- Advise yearly influenza vaccination if > 65 years, pregnant, HIV, chronic heart/lung disease.

No: does patient get recurrent headaches that are throbbing, disabling with nausea or light/noise sensitivity, that resolve completely within 72 hours?

Yes: **migraine** likely

- Give immediately and then as needed paracetamol 1g 6 hourly or ibuprofen[5] 400mg 8 hourly with food for up to 5 days.
- If nausea, also give metoclopramide 10mg 8 hourly up to 3 doses.
- Advise 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 triggers like lack of sleep, hunger, stress, caffeine, chocolate, cheese. Avoid if possible.
- Avoid oestrogen-containing contraceptives ↩136.
- If ≥ 2 attacks/month, refer/discuss for medication to prevent migraines.

No

- Check BP. If ≥ 140/90 ↩114.
- Ask about type and site of pain:

Tightness around head or generalised pressure-like pain

Tension headache likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Assess for stress and anxiety ↩75.
- Advise regular exercise.

Constant aching pain, tender neck muscles

Muscular neck pain likely →55.

Patient > 50 years, pain over temples

Giant cell arteritis likely

- Check CRP.
- Give paracetamol 1g 6 hourly for up to 5 days.
- Review next day: if CRP > 5, discuss with specialist same day.

Advise to only use analgesia when necessary. Overuse may cause headaches: if using analgesia > 2 days/week for ≥ 3 months, advise to reduce amount used. Headache should improve within 2 months.

If diagnosis uncertain or poor response to treatment, discuss/refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy. [3]To give IM quinine: first calculate volume of sodium chloride 0.9% in mL: weight x 20 ÷ 100. Then add this volume of sodium chloride 0.9% to quinine 20mg/kg and inject half the volume into each thigh. [4]History of anaphylaxis, urticaria or angioedema. [5]Avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure, kidney disease.

EYE/VISION SYMPTOMS

Give urgent attention to the patient with eye or vision symptoms and any of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA →118.
- BP ≥ 180/130 and not pregnant →114.
- Pregnant or up to 1 week post-partum, and BP ≥ 140/90: treat as **severe pre-eclampsia** →138.
- Yellow eyes: **jaundice** likely →68.
- Whole eyelid swollen, red and painful: **orbital cellulitis** likely
- One painful red eye
- Sudden loss or change in vision (including blurred or reduced vision)
- Shingles involving eye or nose
- Penetrating injury
- Eyelid laceration
- Penetrating or metallic foreign body
- Chemical burn
- Corneal ulcer
- Hazy cornea
- Sudden drooping of eyelid

Manage and refer urgently:

- If painful eye with redness, blurred vision, haloes around light, dilated unreactive pupil, headache or nausea/vomiting, **acute glaucoma** likely. Give acetazolamide orally 500mg immediately and then 250mg 6 hourly.
- If **orbital cellulitis** likely, give ceftriaxone 2g IV[1]/IM.
- If **chemical burn**: wash eye continuously for at least 20 minutes with sodium chloride 0.9% or clean water.
- If **penetrating** or **metallic foreign body**: do not try to remove. Cover gently and avoid lying flat.

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

Eyes discharging or watery. Is there a prominent itch?

Yes: is there eczema, hayfever or asthma and are both eyes involved?

No

Localised cause likely

- Wash eye with clean water.
- Identify and remove cause.
- If no better after 24 hours, advise patient to return: refer.

Yes

Allergic conjunctivitis likely

- Help to identify and advise to avoid triggers[2].
- Apply cold compresses.
- Give oxymetazoline 0.025% eye drops 1-2 drops in each eye 6 hourly up to 7 days. If no better, give instead anti-allergy eye drops (e.g. sodium cromoglycate 2% 1 drop 6 hourly) for 1-3 months or long-term.
- If symptoms > 1 month, add cetirizine 10mg once daily until itch controlled.
- If recurrent nose problem, exclude allergic rhinitis ↩30. If recurrent skin problem, exclude urticaria and eczema ↩58. If recurrent cough or wheeze, exclude asthma ↩106.
- If no better after 2 weeks, refer.
- If very sensitive to light, corneal ulcer or poor vision, refer urgently.

No: is the discharge clear or pus?

Clear

Viral conjunctivitis likely

- Apply cold compresses.
- Give oxymetazoline 0.025% eye drops 1-2 drops 6 hourly up to 7 days.
- Advise to avoid work for one week or when no discharge.

Pus

Bacterial conjunctivitis likely

- Wipe eyes gently from inside to outside with clean cotton wool soaked in sodium chloride 0.9% until pus clears.
- Give chloramphenicol 1% ointment 6 hourly in each eye for 7 days.
- Advise to avoid work until completed 2 days of treatment and no pus.

- Advise to avoid sharing towels/bedding and to wash hands regularly.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If no better after 5 days or one red eye for >1 day, refer.

Red or swollen eyelid/s

- Wash lid/s twice a day with warm water.
- Give chloramphenicol 1% ointment 6 hourly for 7 days.
- If yellow lump on eyelid, apply frequent warm compresses.
- Refer to eye OPD if:
  - Lump no better with warm compresses
  - Eyelashes touching cornea
  - Eyelids bent in/out.

Superficial foreign body

- Wash out eye with clean water or sodium chloride 0.9%.
- If possible, gently remove foreign body with cotton tipped stick.
- If under eyelid, pull top eyelid over bottom eyelid and release.
- Refer same day if:
  - Removal unsuccessful
  - Damage to eye
  - Abnormal vision or eye movement
  - No better 24 hours after removal

Poor vision

- Check vision using Snellen E chart and pinhole test:
  - If vision improves when looking through pinhole and service available, refer for glasses.
  - If vision no better with pinhole, service not available or unsure, refer for full assessment.
- Exclude diabetes ↩13 and hypertension ↩114.
- Test for HIV ↩95.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Common triggers include pollens, household pets, house dust mite, cockroaches and moulds.

FACE SYMPTOMS

Give urgent attention to the patient with face symptoms and any 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** →118.
- If sudden face/tongue swelling and any of: difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ⮌16.
- Painful red facial swelling and temperature ≥ 38°C: **facial cellulitis** likely
- New swelling of face and blood/protein in urine: **kidney disease** likely

Manage and refer urgently:

- If **facial cellulitis** likely, give ceftriaxone 2g IV[2]/IM.
- If **kidney disease** likely: if pulse > 100 or respiratory rate > 30, give face mask oxygen and furosemide 80mg slow IV, avoid IV fluids. If BP > 150/100, give amlodipine 5mg and furosemide 40mg orally.

Approach to patient with face symptoms not needing urgent attention

- If rash on face →58.
- If gum or tooth problem ⮌32.
- Manage according to face symptom/s:

Face pain

Pain on one side of face

Recurrent intense, superficial, stabbing pain

Trigeminal neuralgia likely

- Give paracetamol 1g 4-6 hourly as needed.
- Refer.

Previous shingles on same side of face

Post-herpetic neuralgia likely

- Give amitriptyline[3] 25mg at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.
- If poor response, refer.

Pain when pushing on forehead/cheeks, headacheworse on bending forward. Thick nasal/ postnasal discharge, recent common cold.

Sinusitis likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Give sodium chloride 0.9% nose drops as needed.
- Give oxymetazoline 0.05% 2 drops in each nostril 8 hourly as needed for a maximum of 5 days. Advise against overuse which may worsen blocked nose.
- If symptoms ≥ 10 days, fever ≥ 38°C, purulent nasal discharge, face pain or symptoms worsen after initial improvement of common cold, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy[4], give instead azithromycin 500mg daily for 3 days.
- If recurrent, test for HIV ⮌95.
- Refer if:
  - Tooth infection
  - Swelling over sinus or around eye
  - Neck stiffness
  - Poor response to treatment

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

Bell's palsy likely

- Give prednisone as soon as possible (within 48 hours of onset): give 60mg daily for 7 days. If no better after 10 days, refer.
- Protect eye:
  - Advise patient not to rub eye.
  - Keep eye moist with drops.
  - Cover eye with transparent eye shield during the day, if available.
  - Tape eyelid closed at night.
- Refer same day if:
  - Otitis media
  - Change in hearing
  - Recent head injury
  - Damage to cornea
  - Unsure of diagnosis

Swelling of face

Painless swelling of lips/eyes

Angioedema likely

- If on enalapril: stop enalapril, never restart and educate patient to avoid it in future. Doctor to review medication.
- If not on enalapril, give chlorphenamine 4mg *or* promethazine 25-50mg IM immediately. Observe closely until resolved: if airway obstruction, assess and manage airway ⮌10 and manage for anaphylaxis ⮌16. Help to identify and advise to avoid triggers[5].
- If swelling not resolving or no obvious cause, refer same day.
- Record in patient's notes.
- Advise to return urgently if difficulty breathing or symptoms worsen.

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

Mumps likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise patient s/he can return to work after 5 days and that symptoms usually resolve within 2 weeks.
- Refer if:
  - Neck stiffness
  - Painful scrotal swelling
  - Loss of hearing
  - Abdominal pain

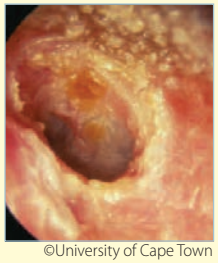
[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [3]Avoid if on bedaquiline. [4]History of anaphylaxis, urticaria or angioedema. [5]Common triggers include foods (milk, eggs, nuts, wheat, seafood), medications, insect bites/stings and latex.

EAR/HEARING SYMPTOMS

Ask about ear itch, discharge from ear, ear pain or difficulty hearing/tinnitus (ringing/buzzing in ear/s). Then look in ear.

Itchy ear

Redness, swelling and/or pus in ear canal



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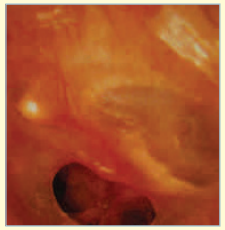
Otitis externa likely
- Clean ear[1].
- After cleaning, instil acetic acid 2% in aqueous 4 drops in ear 6 hourly for 5 days.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If severe pain, firm red swelling or temperature ≥ 38°C, give flucloxacillin[2] 500mg *or* cephalexin 500mg 6 hourly for 5 days.
- Refer if:
  - No better after 5 days
  - Blisters on ear, **herpes zoster** likely
  - Red swollen painful ear lobe, **cellulitis** likely

Discharge from ear

Symptoms ≥ 2 weeks, hole in eardrum



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Chronic suppurative otitis media likely
- Clean ear[1].
- If poor response to treatment, test for HIV ⮌95 and TB ⮌81.
- Refer if:
  - No better after 4 weeks
  - Hole in eardrum large, not getting smaller after 3 months, or persists > 6 months.
  - Difficulty hearing
  - Yellow/white deposit on eardrum, **cholesteatoma** likely.
- Refer same day if:
  - Painful swelling behind ear, **mastoiditis** likely
  - Neck stiffness

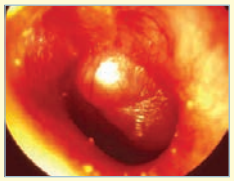
Symptoms for < 2 weeks

Painful ear

- If ear also itchy, consider otitis externa (see adjacent).
- Able to view eardrum?

Yes

- If normal looking ear, **referred pain** likely, check mouth and face:
  - If gum or tooth problem →32.
  - If painful swelling of one/both sides of face, **mumps** likely →28.
  - If pain in temporo-mandibular joint, check for joint problem →53.
- If red bulging eardrum, **acute otitis media** likely:



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No

Any of:
- Pain > 2 days
- Pain that wakes patient at night
- Temperature ≥ 38°C in past 2 days

Yes

Treat for **acute otitis media**:

No

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If no better in 2 days, advise to return: treat for **acute otitis media:**

Acute otitis media likely
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Give amoxicillin[2] 1.5g 12 hourly for 5 days. If patient has had amoxicillin in last 30 days: give instead amoxicillin/clavulanic acid[2] 875/125mg 12 hourly for 5 days.
- If discharge, clean ear[1] and avoid getting it wet.
- If recurrent episodes, test for HIV ⮌95 and refer.
- If no response to treatment after 3 days, refer.
- Refer same day if:
  - Painful swelling behind ear, **mastoiditis** likely
  - Neck stiffness

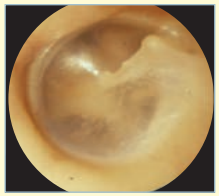
Difficulty hearing or tinnitus

- If on amikacin, discuss with TB doctor.
- If itchy/painful ear or discharge from ear, see adjacent column/s.
- Look in ear for foreign body and wax:

Foreign body / Wax

- Syringe ear/s with warm water.
- Avoid syringing and refer instead if:
  - Hole in eardrum
  - Chronic suppurative otitis media
- If unsuccessful after 3 attempts or causes pain, stop and refer/discuss with doctor.
- If hearing no better after foreign body/wax removal, refer for hearing test.

Normal looking ear



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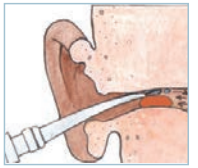
- Arrange hearing test.
- Look for cause: Ask about prolonged exposure to loud noise.
- Review medication: aspirin, NSAIDs and furosemide.
- Refer if :
  - Sudden onset
  - One-sided
  - Dizziness/vertigo
  - Patient taking amikacin

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 soft tissue 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 ear. The ear can only heal if dry. [2]If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily for 3 days.

NOSE SYMPTOMS

Give urgent attention to the patient with nose symptoms and:
- Head injury with clear watery discharge from nose →14.

Refer urgently.

Approach to the patient with nose symptoms not needing urgent attention
Manage according to nose symptom/s:

Blocked/runny nose or persistent snoring
Ask about duration and associated symptoms:

Sore throat *or* fever

Any of: temperature ≥ 38°C, chills or body pain?

- No → **Common cold** likely
- Yes → **Influenza** likely

- For pain, give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise:
  - On cough/sneeze hygiene and to wash hands regularly.
  - Rest and adequate hydration, especially if fever.
  - To limit strenuous activity.
  - That antibiotics are not needed.
- Advise to return if symptoms persist > 7 days, or if fever returns and any of:
  - Cough →34
  - Ear pain →29
  - Pain over cheeks, **sinusitis** likely (see adjacent)
- Advise yearly influenza vaccination if > 65 years, pregnant, HIV, chronic heart/lung disease.

Pain when pushing on forehead/ cheeks, headache worse on bending forward, recent common cold

Sinusitis likely
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Give sodium chloride 0.9% nose drops as needed.
- Give oxymetazoline 0.05% 2 drops in each nostril 8 hourly as needed for a maximum of 5 days. Advise against overuse which may worsen blocked nose.
- If symptoms ≥ 10 days, fever ≥ 38°C, purulent discharge, face pain or symptoms worsen after initial improvement, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- If recurrent, test for HIV ⮌95.
- If poor response to antibiotic, refer.
- Refer same day if:
  - Tooth infection
  - Swelling over sinus or around eye
  - Neck stiffness

Recurrent sneezing or itchy/runny/blocked nose most days for > 4 weeks. May have itchy eyes, ears or throat.

Allergic rhinitis likely
- Help to identify and advise to avoid triggers[2].
- Give fluticasone[3] nasal spray 100mcg (1 spray) in each nostril twice a day. Advise patient to aim nozzle outwards and upwards and avoid sniffing vigorously.
- Give chlorphenamine 4mg 6-8 hourly as needed for up to 5 days only when symptoms worsen (side effect is sedation).
- If nose very blocked at night, give oxymetazoline 0.05% 2 drops in each nostril at night for a maximum of 5 days. Advise against overuse which may worsen blocked nose.
- If recurrent eye problem, exclude allergic conjunctivitis ⮌27.
- If recurrent skin problem, exclude urticaria and eczema ⮌58.
- If recurrent cough or wheeze, exclude asthma ⮌106.
- Review after 3 months: if symptoms still not controlled despite good adherence to nasal spray, add cetirizine 10mg at night.
- If symptoms severe and persist despite treatment, refer.

Persistent snoring or poor sleep

Obstructive sleep apnoea likely
- If overweight ⮌110.
- Refer if:
  - Enlarged tonsils
  - Stops breathing, chokes or gasps while sleeping.

Bleeding nose

- Firmly pinch nostrils together for 10 minutes with patient sitting and leaning forward.
- Check BP:
  - If < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
  - If ≥ 140/90 ⮌114.
- If still bleeding, insert bismuth iodoform paraffin paste (BIPP) soaked ribbon gauze into nostril/s:
  - If bleeding stops, advise to return next day to remove BIPP gauze.
  - If bleeding persists, refer urgently.
- If patient on aspirin or warfarin, doctor to review medication and if on warfarin, check INR.
- Advise to avoid nose-picking and contact sport if recurrent bleeds.
- If continually rubbing or itchy nose, consider allergic rhinitis (see adjacent).
- If recurrent bleeds and no improvement with above management, refer.

[1]History of anaphylaxis, urticaria or angioedema. [2]Common triggers include pollens, household pets, house dust mite, cockroaches and moulds. [3]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid fluticasone, discuss/refer instead.

MOUTH/THROAT SYMPTOMS

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the patient with mouth/throat symptoms and any of:

- Red swelling blocking airway
- Unable to open mouth
- Unable to swallow at all

Refer urgently.

- If sudden face/tongue swelling and any of: wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ↩16.

Approach to the patient with mouth/throat symptoms not needing urgent attention

- If on abacavir, check for abacavir hypersensitivity reaction (AHR) ↩102. If swelling of lips →28. If gum or tooth problem →32.
- Ask about dry mouth and swallowing problems. If food/liquid gets stuck with swallowing, refer.
- Examine mouth and throat for redness, white patches, blisters, ulcers or cracks:

Red throat
Are there enlarged tonsils?

No

Viral pharyngitis likely
Explain that antibiotics are not necessary.

Yes
Is there pus/white patches on tonsils?

No
Is there cough or runny nose?

Yes to one or both

Viral pharyngitis likely
Explain that antibiotics are not necessary.

No to both

Yes

Bacterial pharyngitis/tonsillitis likely

- If ≤ 21 years old, give single dose benzathine benzylpenicillin 1.2MU IM[3] or phenoxymethylpenicillin[4] 500mg 12 hourly for 10 days. If penicillin allergy[5], give instead azithromycin 500mg daily for 3 days.
- If > 21 years old, advise to return if symptoms persist/worsen: discuss/refer.
- If ≥ 6 episodes per year, refer for ENT assessment.

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise to gargle with salt water[2] for 1 minute twice a day.

White patches on cheeks, gums, tongue, palate.

Oral candida likely

- Give nystatin suspension 100 000IU/mL (1mL) 6 hourly after meal for 7 days. Keep inside mouth for as long as possible. Continue for 2 days after white patches resolved.
- If on inhaled corticosteroids, advise to rinse mouth with water after use.
- Test for HIV ↩95 and diabetes ↩13.
- If patient has a life-limiting illness, also consider giving palliative care ↩148.

If difficulty or pain on swallowing, **oesophageal candida** likely:

- Give fluconazole 200mg daily for 14 days.
- If HIV positive, start ART ↩96.
- If no better, refer.

Painful blisters on lips/mouth

Herpes simplex likely

- Test for HIV ↩95.
- Advise to rinse mouth with salt water[2] for one minute twice a day.
- Apply petroleum jelly to blisters on lips.
- For pain, give paracetamol 1g 6 hourly as needed for up to 5 days.
- If extensive, apply tetracaine 0.5% gel to blisters 6 hourly.
- If HIV, give aciclovir 400mg 8 hourly for 7 days.
- If severe or no better after 1 week of treatment, refer.

Painful ulcer/s with central white patch

Aphthous ulcer/s likely

- Apply tetracaine 0.5% gel on ulcers 6 hourly.
- Refer if:
  - Ulcer > 1cm
  - Not healed within 10 days

Dry mouth

- If thirst, urinary frequency, weight loss, exclude diabetes ↩13.
- If runny or blocked nose ↩30.
- Look for and treat oral candida as in adjacent column.
- Review medication: furosemide, amitriptyline, chlorphenamine, antipsychotics and morphine can cause dry mouth. Discuss with doctor.
- Advise to sip fluids frequently. Sucking on oranges, pineapple, lemon or passion fruit may help.
- If patient has a life-limiting illness, also consider giving palliative care ↩23.

Red, cracked corners of mouth

Angular stomatitis likely

- Apply zinc and castor oil ointment 8 hourly.
- If patient also has oral candida, treat as in adjacent column and apply clotrimazole cream 12 hourly for 2 weeks.
- If crusts and blisters around mouth, **impetigo** likely ↩67.
- If very itchy, **contact dermatitis** likely. Identify and remove irritant.
- If dentures, ensure good fit and advise to clean every night.
- If on inhaled corticosteroids, advise to rinse mouth after use.
- If no better or uncertain of cause:
  - Check Hb. If < 12g/dL (woman) or < 13g/dL (man), **anaemia** likely ↩23.
  - Test for HIV ↩95 and diabetes ↩13.
  - 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. Keep mouth and teeth clean by brushing and rinsing regularly.

Health for All ↩137

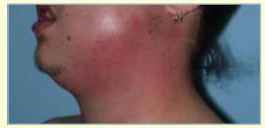
[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Add 2.5mL (½ teaspoon) of table salt to 200mL lukewarm water. [3]For benzathine benzylpenicillin 1.2MU injection: dissolve benzathine benzylpenicillin 1.2MU in 3.2mL lidocaine 1% without epinephrine (adrenaline). [4]If phenoxymethylpenicillin not available, give instead amoxicillin 1g 12 hourly for 10 days. [5]History of anaphylaxis, urticaria or angioedema.

GUM/TEETH SYMPTOMS

Give urgent attention to the patient with gum/teeth symptoms and any of:

- Temperature ≥ 38°C and swelling of face/jaw/next to tooth
- Unable to eat or drink
- Tooth pain that is felt without touching tooth/gum or that wakes patient at night

Refer urgently.



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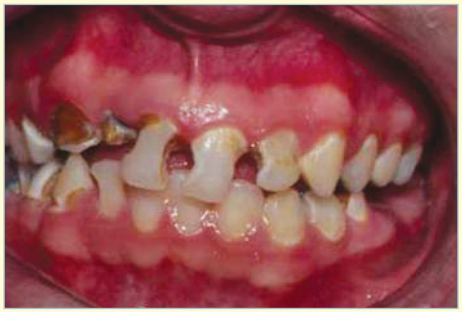
Approach to the patient with gum/teeth symptoms not needing urgent attention:

- Is there tooth pain, red or bleeding/enlarged gums?
- Look in mouth: lift lips to look at teeth and gums:

Brown/black staining of teeth at gumline, holes, pits or missing teeth. May have tooth pain with hot or cold food/drink.



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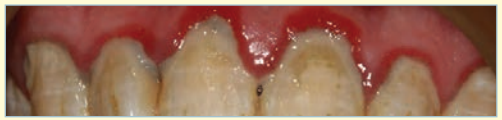
Dental caries likely

- Advise patient to care for his/her mouth (below).
- Refer to dentist.

Gums red/bleeding or enlarged



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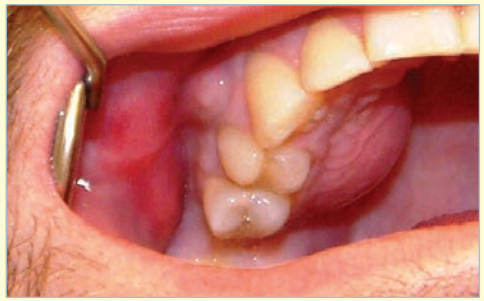
Gum problem likely

- Advise patient to care for his/her mouth (below).
- Review medication: phenytoin and amlodipine may cause gum overgrowth. Discuss with doctor.
- Rinse mouth with salt water mouthwash[1] for 1 minute twice a day.
- If no better with good mouth care, rinse with chlorhexidine 0.2% mouthwash twice a day for 5 days, after brushing teeth:
  - Swirl in mouth but do not swallow.
  - Avoid repeated use as can damage teeth.
  - Advise to avoid eating/drinking for 30 minutes after rinsing.
- Give as needed for pain paracetamol 1g 6 hourly for up to 5 days.
- Refer to dentist if:
  - No better after 5 days
  - Foul-smelling breath
  - Swollen gums
  - Temperature ≥ 38°C
  - Mobile teeth
  - Loss of gum or bone around tooth
  - HIV or diabetes

Previous/current tooth pain with pus in mouth, swelling next to tooth



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Dental abscess likely

- Give paracetamol 1g 6 hourly for up to 5 days.
- Give amoxicillin 500mg 8 hourly for 5 days. If penicillin allergic, give instead azithromycin 500mg daily for 3 days.
- Give metronidazole[2] 400mg 8 hourly for 5 days.
- Refer to dentist.
- Advise to return and refer urgently if symptoms worsen, temperature ≥ 38°C or no better after 2 days.
- Refer same day if > 65 years, alcohol/drug misuse, HIV or diabetes.

Advise the patient with gum/teeth symptoms to care for his/her mouth

- Advise a healthy diet ↩9.
- Advise to brush and floss teeth twice a day.
- If dentures, advise to clean thoroughly every day. If poorly fitting dentures or discomfort, refer to dentist.
- Ask about smoking and alcohol/drug use. If patient smokes, encourage to stop ↩123. If alcohol/drug use ↩124.

Health for All ↩136

[1]Mix ½ teaspoon salt in ½ cup lukewarm water. [2]Advise no alcohol until 24 hours after last dose of metronidazole.

CHEST PAIN

Give urgent attention to the patient with chest pain and any of:

- Respiratory rate ≥ 30 or difficulty breathing
- BP ≥ 180/130 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)

Do an ECG.

ECG abnormal (ST elevation, ST depression or left bundle branch block)

Ischaemic heart disease likely →119.

ECG normal/other abnormalities or unavailable or uncertain

Is chest pain worse on lying down, palpation or breathing deeply?

No

Yes

Manage and refer urgently:

- If oxygen saturation < 94%, oxygen saturation 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:
  - Doctor to insert large bore cannula above 3rd rib in mid-clavicular line and arrange urgent chest tube.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If BP > 180/130, give single dose amlodipine 10mg orally.
- If temperature ≥ 38°C, give ceftriaxone 1g IV[1]/IM to cover for possible severe pneumonia/lung infection.

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 →119.
- If cough, fever or pain on breathing deeply ↩34.
- 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 stop NSAIDS (ibuprofen/aspirin), quit smoking ↩123, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ↩110.
- Give lansoprazole[2] 30mg daily for up to 14 days.
- Refer same week if any of: no better after 7 days treatment, symptoms return, painful/difficulty swallowing, persistent vomiting, abdominal mass, blood in vomit or stool (occult blood positive), weight loss, Hb < 12 (woman) or < 13 (man), new pain and > 50 years, or family history of stomach/oesophageal cancer.

Tender at costochondral junction, no fever or cough

Musculoskeletal problem likely

- Give ibuprofen 400mg 8 hourly with food for up to 5 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 →59.

If diagnosis uncertain, refer same week.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Avoid if on atazanavir/ritonavir. Discuss with specialist.

COUGH OR DIFFICULTY BREATHING

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the patient with cough or difficulty breathing and any of:

- Wheeze/tight chest →35
- Difficulty breathing worse on lying flat and leg swelling: **heart failure** likely →117
- Confused or agitated
- BP < 90/60
- Breathless at rest or while talking
- Respiratory rate ≥ 30
- Oxygen saturation < 94%
- Coughs ≥ 1 tablespoon fresh blood
- Swelling and pain in one calf
- Sudden breathlessness, more resonant/decreased breath sounds/pain on 1 side, deviated trachea, BP < 90/60: **tension pneumothorax** likely

Manage and refer urgently:

- Give 40% face mask oxygen (if known COPD give 24-28% face mask oxygen).
- If rapid deep breathing, check glucose: if ≥ 11.1 →13.
- Check temperature: if ≥ 38ºC, **severe pneumonia** likely. Give ceftriaxone 1g IV[1]/IM.
- If **tension pneumothorax** likely: insert large bore cannula above 3rd rib in mid-clavicular line. Arrange urgent chest tube.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, 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 ⮌95. If on abacavir, check for abacavir hypersensitivity reaction (AHR) ⮌102. If patient smokes, encourage to stop ⮌123.
- Ask about duration and recurrence of cough or difficulty breathing:

One episode < 2 weeks

Is patient coughing sputum?

No

No: is pulse rate ≥ 100 or respiratory rate ≥ 20 or is there chest pain or difficulty breathing?

- **No**: **Common cold**/**Influenza** (**flu**) likely →30.
- **Yes**: Discuss/refer same day.

Yes

Yes: is pulse rate ≥ 100 or respiratory rate ≥ 20 or temperature ≥ 38°C?

- **No**: **Acute bronchitis** likely
  - If known COPD *and* sputum increased or colour changed to yellow/green, give antibiotics ⮌108. Otherwise reassure antibiotics are not necessary.
  - Advise to return same day if symptoms worsen or fever develops.
- **Yes**: **pneumonia** likely
  - Confirm on chest x-ray or with crackles/bronchial breathing on auscultation.
  - Exclude TB ⮌81.
  - If poor adherence likely or access to urgent care difficult, refer.
  - Any of: HIV, > 65 years, lung/heart/liver/kidney disease, diabetes or alcohol misuse?
    - Yes: give amoxicillin/clavulanic acid[2] 875/125mg 12 hourly for 5 days.
    - No: give amoxicillin[2] 1g 8 hourly for 5 days.

Review after 2 days: if no better, refer. Advise to return same day if symptoms worsen.

≥ 2 weeks or recurrent episodes

- Exclude TB ⮌81.
- If life-limiting illness, also consider giving palliative care ⮌148.
- Also consider asthma and COPD ⮌106 and other cause for cough or difficulty breathing:

HIV with CD4 < 200 and dry cough, worsening breathlessness on exertion.

Pneumocystis pneumonia (**PJP**) likely

- Doctor to confirm on chest x-ray.
- Give co-trimoxazole according to weight[3], 6 hourly for 3 weeks.
- Give HIV routine care and ensure CPT[4] started ⮌96.
- Refer same day if:
  - Doctor or x-ray unavailable
  - Atypical x-ray or unsure
  - Patient is taking co-trimoxazole prophylaxis and is adherent.

Blocked/runny nose or persistent snoring ⮌30

Recent upper respiratory tract infection, no difficulty breathing

Post-infectious cough likely

- Reassure cough should resolve on its own.
- Advise to return if cough persists > 8 weeks.

Smoker or recently stopped

- If weight loss, consider **lung cancer** ⮌19.
- If coughing sputum most days of 3 months for ≥ 2 years, **chronic bronchitis** likely. Discuss.

If diagnosis uncertain or poor response to treatment, refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]If penicillin allergy, give instead moxifloxacin 400mg daily for 5 days. [3]If < 40kg, give 160/800mg; if 40-56kg, give 240/1200mg; if ≥ 56 kg, give 320/1600mg. [4]Co-trimoxazole Preventive Therapy (CPT).

WHEEZE/TIGHT CHEST

- If sudden wheeze/tight chest and any of: generalised itch/rash, face/tongue swelling, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ⮌16.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →117.

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**

Yes → **Severe**

- Give inhaled salbutamol via spacer 400-800mcg (4-8 puffs) or nebulise 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9%, with oxygen at flow rate of 8L/minute. If no better, repeat salbutamol every 20 minutes during first hour.
- If known asthma or COPD, give prednisone 40mg orally.
- Monitor response regularly:

Improving or no change after 1 hour of treatment

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 →106.
- If known asthma/COPD, give routine care: if asthma →108, if COPD →109.

Wheeze/tight chest still present

- Repeat salbutamol every 2-4 hours as needed.
- Is wheeze/tight chest still present after 3 hours of treatment?

No → Continue salbutamol every 2-4 hours as needed and refer.

Yes

Unable to talk normally or has respiratory rate ≥ 20

Worsening despite treatment

- Refer urgently.
- While awaiting transport:
  - Give 40% face mask oxygen (if known COPD, give 24-28% face mask oxygen) while preparing nebuliser and between nebulisations/doses.
  - Nebulise 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9% with oxygen at flow rate of 8L/minute, every 20 minutes (or continuously if needed). If nebuliser unavailable, give instead inhaled salbutamol via spacer 400-800mcg (4-8 puffs) every 20 minutes.
  - If not already given, give single dose prednisone 40mg orally. If unable to take oral medication, give single dose hydrocortisone 100mg IM/slow IV.
  - If poor response to salbutamol, add 2mL (0.5mg) ipratropium bromide solution to salbutamol nebuliser every 20 minutes for 3 doses only. If nebuliser unavailable, add instead inhaled ipratropium bromide via spacer 80-160 mcg (2-4 puffs), every 20 minutes as needed for up to 3 hours.

[1]Common allergens include medication, food or insect bite/sting within the past few hours.

BREAST SYMPTOMS

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

Breast lump/s

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

- **Yes** → Refer same week.
- **No**
  - **One breast** → Re-examine breast on day 7 of menstrual cycle. If lump persists, refer same week.
  - **Both breasts** → **Fibrocystic change** likely
    - Pain usually occurs before period and improves with period.
    - Reassure this is common and advise a well-fitting bra.
    - If pain, give paracetamol 1g 6 hourly as needed with food for up to 5 days.
    - May be a side effect of hormonal contraception. If no better after 3 months on contraception, change method ↩136.
    - Advise to return if symptoms change/worsen.

Breast pain

- Reassure that pain is unlikely due to breast cancer.
- If lump/s, see adjacent.
- Exclude pregnancy. If pregnant, reassure and give antenatal care ↩138.

Nipple discharge

- Refer same week if any of:
  - Blood-stained
  - One-sided discharge
  - Patient ≥ 50 years
  - Male
  - Skin/nipple changes
  - Breast/axillary lump
- If pregnant, reassure and give antenatal care ↩140.
- Review medication: antipsychotics, antidepressants, oral contraceptive and metoclopramide can cause nipple discharge. Discuss with doctor.
- If cause uncertain, refer.

Breast enlargement

- If only one breast enlarging, refer.
- Check if this is obesity. If BMI[1] > 25 assess CVD risk ↩110.
- Review medication: antipsychotics, antidepressants, efavirenz, nifedipine, amlodipine can cause breast enlargement. Discuss with doctor. If on efavirenz, doctor to consider switching medication ↩101.

Approach to the patient with a breast symptom who is breastfeeding

Painful/cracked nipples

- Usually due to poor latching: help to latch baby properly.
- Avoid using soap on nipples.
- Advise to apply breastmilk to nipples after feeding and expose to air. Apply zinc and castor oil ointment between feeds.

Painful breast/s *without* lump

Temperature ≥ 38°C or body pain?

Yes: **mastitis** likely
- Give flucloxacillin[3] 500mg 6 hourly for 5 days and paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise warm compresses.
- If no better after 2 days or breast lump (abscess) develops, refer.

Painful breast/s *with* lump

Temperature ≥ 38°C or body pain?

- **No** → **Engorgement** likely
- **No** → **Blocked duct** likely
- **Yes** → **Breast abscess** likely → Refer same day.

Engorgement / Blocked duct

- Advise frequent breastfeeds, warm compresses and to gently massage breast.
- Advise to return if fever/body pain develops or if breast lump persists: consider other causes and discuss/refer.

Painful/cracked nipples / Painful breast/s *without* lump

- If HIV negative, advise to continue breastfeeding.
- If HIV positive:
  - If only one breast affected, express and discard milk from this side. Continue breastfeeding from other side.
  - If both breasts affected, advise to temporarily stop feeding from breast, express, heat-treat[2] milk, and cup-feed baby until cracks/mastitis resolve. If heat treating not possible, advise to continue breastfeeding and emphasize importance of strict ART adherence and viral suppression.

Refer to breastfeeding counsellor/lactation consultant or support group. If HIV positive, give routine HIV care ↩96 and PMTCT ↩145.

[1]BMI = weight (kg) ÷ height (m) ÷ height (m). [2]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. [3]If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily for 3 days.

ABDOMINAL PAIN

Give urgent attention to the patient with abdominal pain and any of:

- Chest pain →33
- Pregnant →138
- Recent delivery/miscarriage/termination of pregnancy →143
- Glucose ≥ 11.1 →13
- Unable to pass urine →51
- Jaundice
- Abdominal or pelvic mass
- Pulsatile abdominal mass: **abdominal aortic aneurysm** likely
- Pain in right lower abdomen with nausea/vomiting/fever: **appendicitis** likely
- Guarding, rigidity or rebound tenderness: **peritonitis** likely
- Severe pain in right upper abdomen with nausea/fever/loss of appetite: **cholecystitis** likely
- Sudden severe upper abdominal pain spreading to back with nausea/vomiting: **pancreatitis** likely
- No stools or flatus/wind for past 24 hours
- If sudden abdominal pain and any of: generalised itch/rash, face/tongue swelling, difficulty breathing, BP < 90/60, dizziness/collapse or exposure to possible allergen[1] check for anaphylaxis ↩16.

Manage and refer urgently:

- If **abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen rupture).
- If BP < 90/60 or **pancreatitis** likely, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If pain severe, give morphine 10mg IM or diluted morphine[2] 3-10mg slow IV: start with 3mL IV over 3 minutes. If needed, give another 1mL/minute until pain improved, up to 10mL. Stop if BP drops < 90/60.

Approach to the patient with abdominal pain not needing urgent attention:

- If cramping abdominal pain with recent onset vomiting, diarrhoea, loss of appetite, body pain or fever, **gastroenteritis** likely →38.
- If on ART, check for urgent side effects ↩102.
- If urinary symptoms (burning/frequency/urgency) or leucocytes/nitrites/blood on dipstick →51.
- Is pain in the lower abdomen and is patient a woman?

Yes

- If missed period or abnormal vaginal bleeding, check pregnancy test: if positive, refer urgently same day.
- If crampy lower abdominal pain only during periods, **dysmenorrhoea** likely →48.
- Ask about abnormal vaginal discharge and do bimanual palpation to check for pain on moving cervix:

Abnormal vaginal discharge *or* pain on moving the cervix

Treat for **lower abdominal pain** (**LAP**) syndrome:

- If temperature ≥ 38°C, pulse > 100 or BP < 90/60: give IV fluids as above, ceftriaxone 1g IV[3]/IM and metronidazole[4] 400mg orally and refer same day.
- Assess and advise patient ↩41.
- Give single dose ceftriaxone 250mg IM[5] *and* azithromycin 1g *and* metronidazole[4] 400mg 12 hourly for 7 days. If severe penicillin allergy[6], omit ceftriaxone and increase azithromycin dose to 2g.
- For pain, give ibuprofen[7] 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: LAP.
- Advise to return if no better within 3 days or urgently if worse: refer. Otherwise, review in 7 days.

No abnormal discharge *and* no pain on moving the cervix

- If weight loss ↩19.
- If recurrent pain/discomfort and ≥2 of: pain relieved with passing stool, abdominal distension, change in stool frequency/appearance, mucous in stool, **irritable bowel syndrome** (**IBS**) likely. Refer to doctor to confirm diagnosis and dietician for dietary advice.
- If constipated →40. If diarrhoea →39.

No

No

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

Yes

Dyspepsia (**heartburn**) likely

- Advise to stop NSAIDS (e.g. ibuprofen/aspirin), quit smoking ↩123, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.
- In past year, has patient: 1) drunk ≥ 4 drinks[8]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ↩110.
- Give lansoprazole[9] 30mg daily for 14 days.
- Refer same week if any of: Hb < 12 (woman) or < 13 (man), new pain and > 50 years, or family history of stomach/oesophageal cancer.
- Advise to return if: no better after 7 days, symptoms return, difficulty swallowing, persistent vomiting, blood in vomit or stool, weight loss. Refer.

If no better or diagnosis uncertain, discuss/refer.

[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. [3]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [4]Advise no alcohol until 24 hours after last dose of metronidazole. [5]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [6]History of anaphylaxis, urticaria or angioedema. [7]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [8]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [9]If HIV positive on atazanavir/ritonavir, avoid lansoprazole, discuss/refer.

NAUSEA/VOMITING

Give urgent attention to the patient with nausea/vomiting and any of:

- Headache →26
- Chest pain →33
- Neck stiffness, drowsy/confused or purple/red rash: **meningitis** likely
- Guarding, rigidity or rebound tenderness: **peritonitis** likely
- Tender in right lower abdomen: **appendicitis** likely
- Sudden severe upper abdominal pain spreading to back: **pancreatitis** likely
- BP < 90/60
- Vomiting blood
- Jaundice
- Abdominal pain/distention and no stools or flatus/wind
- Drowsy/confused/rapid deep breathing
- If sudden nausea/vomiting and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, BP < 90/60, dizziness/collapse or exposure to possible allergen[1], check for anaphylaxis ↩16.

Manage and refer urgently:

- If BP < 90/60 or **pancreatitis** likely, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **meningitis** likely, give ceftriaxone 2g IV[2]/IM.
- If pain severe, give morphine 10mg IM or diluted morphine[3] 3-10mg slow IV: start with 3mL IV over 3 minutes. If needed, give another 1mL/minute until pain improved, up to 10mL. Stop if BP drops < 90/60.
- If glucose < 3 or ≥ 11.1 ↩13 or if diabetes and glucose < 4 ↩112.

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

- If thirst, dry mouth, poor skin turgor or pulse ≥ 100, **dehydration** likely, give single dose metoclopramide 10mg orally/IM/IV. Then give oral rehydration solution and observe: encourage small frequent sips. Aim for 1-2L in first 2 hours. If vomits, wait 10 minutes and try again more slowly.
- If unable to drink or no better after 2 hours, give sodium chloride 0.9% 500mL IV over 30 minutes and refer.
- Exclude pregnancy. If pregnant, reassure that nausea/vomiting is common in first trimester. Encourage to eat smaller meals more frequently and drink fluids regularly. Give routine antenatal care ↩140.
- If associated dizziness ↩25.
- Review medication: NSAIDs (e.g. ibuprofen), metformin, contraceptives, hormone therapy, chemotherapy and morphine can cause nausea/vomiting. Discuss with doctor. If on DS-TB medication ↩85, RR-TB medication ↩93 or ART ↩102.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.

Is there recent onset vomiting with cramping abdominal pain, diarrhoea, loss of appetite, body pain or fever?

Yes

Gastroenteritis likely

- If nausea/vomiting, give metoclopramide 10mg 8 hourly as needed for up to 5 days.
- Give oral rehydration solution.
- If diarrhoea, give loperamide 4mg initially, then 2mg after each loose stool if needed, up to 12mg/day.
- If abdominal cramps are distressing, give hyoscine butylbromide 10mg 6 hourly for up to 3 days if needed.
- Advise patient to drink lots of fluids, eat small frequent meals as able and avoid fatty food.
- Advise patient to return if symptoms worsen, vomiting > 3 days or not tolerating oral fluids.

No

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

Yes

Dyspepsia (**heartburn**) likely

- Advise to stop NSAIDS (e.g. ibuprofen/aspirin), quit smoking ↩123, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ↩110.
- Give lansoprazole[5] 30mg daily for 14 days.
- Refer same week if any of: no better after 7 days treatment, symptoms return, painful/difficulty swallowing, persistent vomiting, blood in vomit or stool (occult blood positive), abdominal mass, weight loss, Hb < 12 (woman) or < 13 (man), new pain and > 50 years, or family history of stomach/oesophageal cancer.

No

- Assess for stress and anxiety ↩75.
- If patient has a life limiting illness, consider giving palliative care ↩148.
- Discuss/refer if:
  - Nausea/vomiting persists > 2 weeks.
  - Uncertain of diagnosis.

[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [3]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. [4]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [5]If HIV positive on atazanavir/ritonavir, avoid lansoprazole, discuss/refer.

DIARRHOEA

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

Give urgent attention to the patient with diarrhoea and any of:
- Thirst, dry mouth, poor skin turgor, sunken eyes, drowsiness/confusion, BP < 90/60, pulse ≥ 100, **dehydration** likely

Management:
- Give oral rehydration solution (ORS) and observe: encourage small frequent sips. Aim for 1-2L in first 2 hours. If patient vomits, wait 10 minutes and try again more slowly.
  - If no better after 2 hours, give IV fluids as below and refer same day.
- If unable to drink or BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. Refer same day.

Approach to the patient with diarrhoea not needing urgent attention
- Confirm patient has diarrhoea: ≥ 3 loose stools/day.
- If on abacavir or zidovudine, check for urgent side effects ⮌102.
- Ask about duration of diarrhoea:

Diarrhoea ≤ 2 weeks

Is there blood in the stool?

Yes

Dysentery likely
- Give ciprofloxacin 500mg 12 hourly for 3 days.
- If no response within 3 days, refer.

No

Has patient been in cholera outbreak area in past week?

Yes

Cholera likely
- Usually large volumes of rice water stool[1].
- Give ORS, advise at least 250mL after each stool, more may be needed. If severe disease[2] suspected, also give single dose ciprofloxacin[3] 1g.
- Notify and send stool specimen[4] for *Vibrio cholerae*.
- Advise to return if worsening, unable to drink enough, or becomes drowsy.

No

Gastroenteritis likely
- Give loperamide 4mg initially, then 2mg after each loose stool, up to 12mg/day.
- If vomiting, give metoclopramide 10mg 8 hourly as needed for up to 5 days.
- If abdominal cramps are distressing, give hyoscine butylbromide 10mg 6 hourly for up to 3 days.
- Advise antibiotics are not needed and to drink lots of fluids.
- Advise to return if: blood in stool, diarrhoea worsens or persists > 2 weeks, or patient becomes confused.

Diarrhoea > 2 weeks

- If blood/mucous in the stool, refer.
- Send stool for ova, cysts and parasites. Indicate on request form if patient has HIV.
- Test for HIV ⮌95 and manage according to result:

HIV positive

- Give routine HIV care ⮌96.
- Lopinavir/ritonavir can cause ongoing loose stools.
- Review symptoms and stool result in 1 week:

Isospora belli

Give co-trimoxazole 320/1600mg (4 tablets) 12 hourly for 10 days.

Cryptosporidium

Give loperamide 2mg as needed up to 8mg/day.

HIV negative or unknown

Treat for **giardiasis**: give metronidazole[5] 2g daily for 3 days.

Review stool result:

- Stool negative
- Stool positive: Treat according to result.

If diarrhoea persists despite treatment, refer for specialist review.

- Advise to increase fluid intake. Advise frequent handwashing, with soap and water, before preparing food/after going to toilet. Wash all surfaces/equipment used in food preparation. Wash and peel all fruit and vegetables. Use only safe/disinfected water for preparing food/drinks/ice. Cook food thoroughly, avoid raw/uncooked food, especially meat and shellfish.
- If repeated episodes of diarrhoea and no access to clean water, refer to health promotion officer/social worker.
- If > 65 years, bed-bound or receiving palliative care, check for solid immobile bulk of stool in rectum. If present, impaction likely: gently remove stool using lubrication. If unsuccessful, refer.
- If patient has a life-limiting illness, also consider giving routine palliative care →148.

[1]Rice water stool is cloudy watery diarrhoea with no blood/pus and no faecal odour (may have fishy odour). [2]Suspect severe disease if diarrhoea causing moderate to severe dehydration (dry mouth, severe thirst, poor skin turgor, sunken eyes). [3]If source of cholera is suspected to be from Zimbabwe, give instead single dose azithromycin 1g. [4]Only send if specimen will reach the laboratory within 2 hours. [5]Advise no alcohol until 24 hours after last dose of metronidazole.

CONSTIPATION

Give urgent attention to the patient with constipation and:

- No stools or flatus/wind in the past 24 hours with abdominal pain/distension

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: discuss with doctor). Ask about regular use of enemas or laxatives.
- Exclude pregnancy. If pregnant, advise that constipation is common during pregnancy. Give routine antenatal care ⮌140 and give advice as below.
- If weakness/tiredness, weight gain, low mood, dry skin or cold intolerance, check TSH. If abnormal, refer to doctor.
- If patient is bed-bound or has a life-limiting illness, also consider giving palliative care ⮌148.
- If > 65 years, bed-bound or receiving palliative care, check for solid immobile bulk of stool in rectum. If present, impaction likely: gently remove stool using lubrication. If unsuccessful, refer.
- Advise a high fibre diet (vegetables, fruit, coarse mielie meal, 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 sennosides A and B 13.5mg at night or lactulose 10-20 mL once or twice daily.
- If no response after 1 week of laxative use, or if recent change in bowel habits, weight loss, blood in stool or occult blood positive, or cause uncertain, refer.

ANAL SYMPTOMS

Give urgent attention to the patient with anal symptoms and any of:

- Extremely painful lump on anus
- Unable to pass stool because of anal symptoms

Refer same day.

Approach to the patient with anal symptoms not needing urgent attention

If patient has anal sex, also ask about genital symptoms ⮌41. Then examine anal area to look for cause:

Crack/s

If constipated, also advise and treat as above.

Lump/pile

- Advise and treat as for constipation above, and advise to avoid straining.
- If pile cannot be reduced or is thrombosed, refer.

Ulcer/s

Treat as for genital ulcer →41.

Perianal wart/s

Treat as for genital wart/s →41.

Red/raw skin

- Advise good hygiene.
- Look for contact cause. If diarrhoea ⮌39.
- Wash with aqueous cream, avoid soap.
- Apply zinc and castor oil ointment to raw areas. If severe itching, also apply hydrocortisone 1% cream twice a day for 5 days.

Suspected worms

- If tapeworm: give albendazole 400mg daily for 3 days. If other worm or unsure: give single dose mebendazole 500mg.
- Educate on personal hygiene and advise to avoid undercooked meat.
- Treat household members at the same time.

Apply bismuth subgallate compound ointment 6-12 hourly or lidocaine 2% cream before and after each bowel action.

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 lower abdominal pain and manage as below. Manage other symptoms as on symptom pages.
Sexual health	Ask about risky sexual behaviour (patient or partner has new or multiple partner/s or uses condoms unreliably) and sexual orientation. If sexual problems ⮌50.
Abuse	Ask about sexual assault. If yes ⮌77.
Family planning	Assess patient's contraceptive needs ⮌136 and discuss infertility. Exclude pregnancy. If pregnant ⮌138.
Examination	• Woman: examine abdomen for masses, look for discharge, ulcers, rash, lumps. Do bimanual palpation to check for pain on moving cervix/pelvic masses and speculum examination for cervical abnormalities. • Man: look for genital discharge, ulcers, rash, lumps, pubic lice or scrotal swelling, tenderness or masses.
HIV	Test for HIV ⮌95. If HIV positive, give routine care ⮌96.
Syphilis	• Check syphilis serology if: sexually assaulted, pregnant (booking visit and around 32 weeks), secondary/tertiary syphilis[1] suspected or atypical/fleshy/wet genital warts. If syphilis positive ⮌45. • Repeat RPR at 6 months in all treated with doxycycline/amoxicillin/probenecid. If pregnant, repeat syphilis test routinely around 32 weeks or after 3 months if RPR+.
Cervical screen	Do a cervical screen if needed ⮌47. If abnormal vaginal discharge, delay routine cervical screen until treated ⮌43. If discharge persists, do cervical screen. If cervix looks abnormal/suspicious of cancer, refer same week.

Health for All ⮌69

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

- Discuss safe sex. Provide male and female condoms, advise patient to stay with one partner at a time. Offer referral for medical male circumcision.
- If patient has a sexually transmitted infection (STI), educate about cause and increased risk of HIV transmission. Urge to adhere to treatment and abstain from sex for at least 1 week after treatment.
- Stress importance of partner treatment in STI treatment and issue partner notification slip with the patient's diagnosis code for each partner.

Treat the patient with genital symptoms

Discharge		Scrotal pain/swelling	Itch			Ulcers/sores	Lump/s		Warts
Woman →43	Man →42	→42	Discharge in woman →43	Glans penis →42	Pubic area →46	→44	Groin →21	Skin →46	

Treat the partner/s according to code given on notification slip

Notification code	Treat the asymptomatic partner/s below. If partner has other STI symptoms and signs, manage as per relevant STI algorithm found on pages listed above.
VDS or LAP	Give partner single dose ceftriaxone 250mg IM[3] and azithromycin 1g orally and metronidazole[2] 2g. If severe penicillin allergy[4], omit ceftriaxone and increase azithromycin to 2g.
MUS or SSW	Give partner single dose ceftriaxone 250mg IM[3] and azithromycin 1g orally. If severe penicillin allergy[4], omit ceftriaxone and increase azithromycin to 2g.
GUS (no discharge)	Give partner doxycycline 100mg 12 hourly for 14 days. If partner pregnant, give instead single dose benzathine benzylpenicillin 2.4MU IM[5].
GUS with VDS	Give partner single dose ceftriaxone 250mg IM[3] and azithromycin 1g orally and metronidazole[2] 2g. If severe penicillin allergy[4], omit ceftriaxone and increase azithromycin to 2g.
GUS with MUS	Give partner single dose ceftriaxone 250mg IM[3] and azithromycin 1g orally. If severe penicillin allergy[4], omit ceftriaxone and increase azithromycin to 2g.
RPR+	Test partner for syphilis: if positive ⮌45. If negative, give partner doxycycline 100mg 12 hourly for 14 days. If partner pregnant, give instead single dose benzathine benzylpenicillin 2.4MU IM[5].
Bubo	Give partner single dose azithromycin 1g.

VDS: vaginal discharge syndrome **LAP**: lower abdominal pain **MUS**: male urethritis syndrome **SSW**: scrotal swelling **GUS**: genital ulcer syndrome **RPR+**: syphilis positive result **BAL**: balanitis

[1]Secondary syphilis: 6-8 weeks after ulcer; generalised rash (includes palms/soles), flu-like symptoms, flat wart-like genital lesions, mouth ulcers, patchy hair loss. Tertiary syphilis: many years later; affects skin, bone, heart, nervous system. [2]Advise no alcohol until 24 hours after last dose of metronidazole. [3]Dissolve ceftriaxone 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [4]History of anaphylaxis, urticaria or angioedema. [5]Dissolve benzathine benzylpenicillin 2.4MU in 6mL lidocaine 1% without epinephrine (adrenaline). If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 14 days. If severe penicillin allergy, discuss/refer.

GENITAL SYMPTOMS IN A MAN

Give urgent attention to the man with genital symptoms and any 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 likely **torsion of testicle** or **priaprism:** refer urgently.
- If **paraphimosis** likely:
  - If glans blue/black: refer urgently.
  - If not, attempt manual reduction: wrap glans in gauze and 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 man with genital symptoms ↩41.
- If burning/frequency/urgency of urine and no urethral discharge →51.

Urethral discharge or dysuria/burning urine

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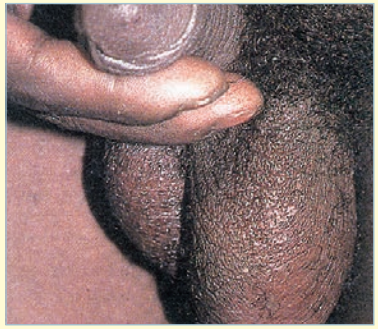
Treat for **male urethritis syndrome** (**MUS**):

- Give single dose ceftriaxone 250mg IM[1] *and*
- Give single dose azithromycin 1g.
- If severe penicillin allergy[2], omit ceftriaxone and increase azithromycin to 2g.
- If partner has vaginal discharge syndrome (VDS), add single dose metronidazole[3] 2g.
- Give partner notification slip/s with code: MUS.

Advise patient to return in 7 days if symptoms persist: ceftriaxone treatment failure likely. Refer within 7 days.

Scrotal swelling or pain



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Pain with/without swelling or discharge

Treat for **scrotal swelling** (**SSW**)**:**

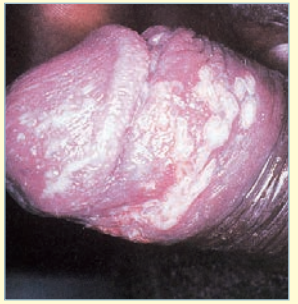
- Give single dose ceftriaxone 250mg IM[1] *and*
- Give single dose azithromycin 1g.
- If severe penicillin allergy[2], omit ceftriaxone and increase azithromycin to 2g.
- Give partner notification slip/s with code: SSW.
- For pain, give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Review after 7 days or earlier if needed: if no better, refer.

Painless lump

Testicular cancer likely

Refer.

Painful, itchy or foul-smelling glans, difficulty retracting foreskin



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If unable to retract foreskin, refer.

Treat for **balanitis/ balanoposthitis** (**BAL**)

- Advise patient to wash daily with water, avoid soap. Retract foreskin while washing, then dry fully.
- Give clotrimazole cream 12 hourly for 7 days.
- Check urine dipstick for glucose. If glucose present, check for diabetes ↩13.
- Offer referral for medical male circumcision.
- Advise to return if no better in 7 days:
  - If poor adherence, repeat treatment.
  - If still no better, refer.

[1]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [2]History of anaphylaxis, urticaria or angioedema. [3]Advise no alcohol until 24 hours after last dose of metronidazole.

ABNORMAL VAGINAL DISCHARGE

Abnormal vaginal discharges are itchy or different in colour/smell. First assess and advise the patient with an abnormal vaginal discharge ↩41.

Approach to a woman with an abnormal vaginal discharge

Has patient been sexually active in the last 3 months?

Yes

Ask about lower abdominal pain and do bimanual palpation to check for pain on moving cervix:

Is there lower abdominal pain or pain on moving cervix?

No

- Treat for **cervicitis**:
  - Give single dose ceftriaxone[1] 250mg IM[2] and azithromycin 1g and metronidazole[3] 2g.
  - Give partner notification slip/s with code: VDS.
- If discharge itchy or curd-like or vulva inflamed (red, swollen or painful), also treat for **vaginal candidiasis** (see adjacent).
- Advise to return if no better after 7 days.

If no better after 7 days, give metronidazole[3] 400mg 12 hourly for 7 days.

Advise to return if no better after 7 days: refer.

Yes

Give urgent attention if any of:

- Recent pregnancy
- Pregnant or missed/overdue period
- Abnormal vaginal bleeding
- Temperature ≥ 38°C
- Pulse > 100
- BP < 90/60
- Abdominal mass
- Peritonitis (guarding, rigidity, rebound)

Manage and refer urgently:

- If BP < 90/60, give sodium chloride 0.9% 500mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Give ceftriaxone[4] 1g IV (avoid diluting with lidocaine 1%) and metronidazole[3] 400mg orally.

Approach to the patient not needing urgent attention

Pain on moving cervix

Treat for **lower abdominal pain** (**LAP**) syndrome:

- Give single dose ceftriaxone[1] 250mg IM[2] and azithromycin 1g and metronidazole[3] 400mg 12 hourly for 7 days. For pain, give ibuprofen[5] 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: LAP.
- Advise to return if no better within 3 days or urgently if worse: refer. Otherwise, review in 7 days.

No pain on moving cervix: check urine dipstick:

Leucocytes and nitrites negative

Treat for **lower abdominal pain** (**LAP**) syndrome:

- Give single dose ceftriaxone[1] 250mg IM[2] and azithromycin 1g and metronidazole[3] 400mg 12 hourly for 7 days. For pain, give ibuprofen[5] 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: LAP.
- Advise to return if no better within 3 days or urgently if worse: refer. Otherwise, review in 7 days.

Leucocytes or nitrites positive

→51.

No

Is discharge itchy or curd-like or are vulva inflamed (red, swollen or painful)?

No

Treat for **bacterial vaginosis**:

- Give single dose metronidazole[3] 2g. Advise to return if no better after 7 days.
- If no better after 7 days, ask about lower abdominal pain, do bimanual palpation to check for pain on moving cervix and speculum examination to look for red/swollen cervix or discharge from cervix:

Is there lower abdominal pain or pain on moving cervix?

Yes

Is there red/swollen cervix or discharge from cervix?

Yes

Treat for **cervicitis**:

- Give single dose ceftriaxone[1] 250mg IM[2] and azithromycin 1g.
- Give partner notification slip/s with code: VDS.

No

Give metronidazole[3] 400mg 12 hourly for 7 days.

No

Advise to return if no better after 7 days: refer.

Yes

Vaginal candidiasis likely

- Give single dose clotrimazole vaginal pessary 500mg inserted at night or clotrimazole vaginal cream, inserted with applicator, 12 hourly for 7 days.
- If skin of vulva inflamed or itchy, also give clotrimazole topical cream, apply 12 hourly for 7 days.

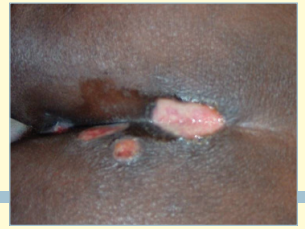
[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and increase azithromycin dose to 2g. [2]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine. [3]Advise no alcohol until 24 hours after last dose of metronidazole. [4]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [5]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

GENITAL ULCER SYNDROME

First assess and advise the patient with genital ulcer/s ⮌41. The patient may have a blister, sore or an ulcer.

First treat for **herpes**:

- Stress importance of condoms as herpes is a lifelong infection and transmission can occur even when no sores. HIV transmission risk increases when there are ulcers/sores.
- Advise to keep lesions clean and dry.
- If pain, give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Test for HIV ⮌95. If HIV positive or HIV unknown, give aciclovir 400mg 8 hourly for 7 days.
- If pregnant, give aciclovir 400mg 8 hourly for 7 days. If patient ≥ 28 weeks pregnant, refer (risk of neonatal herpes).
- If recurrent ulcers, refer for laboratory testing. If ≥ 4 episodes of laboratory-confirmed herpes simplex in 1 year, refer for ongoing suppressive therapy.



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If patient sexually active in the past 3 months, also treat for **genital ulcer syndrome** (**GUS**) below:
Does patient have a vaginal/urethral discharge?

No

Treat for **GUS**

Pregnant woman

Does patient have severe penicillin allergy[3]?

Yes

Refer for confirmation of diagnosis and possible penicillin desensitisation.

No

- Give single dose benzathine benzylpenicillin 2.4MU IM[1].
- If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly *and* probenecid 250mg 8 hourly for 14 days. Advise to return in 6 months for RPR: if positive ⮌45.
- Give partner notification slip/s with code: GUS.

Man or non-pregnant woman

- Give doxycycline 100mg 12 hourly for 14 days.
- Advise to return in 6 months for RPR: if positive ⮌45.
- Give partner notification slip/s with code: GUS.

Does patient also have enlarged, hot, tender lymph node/s in groin?

No

Review in 7 days

- If no better and patient already received azithromycin, discuss/refer, otherwise give single dose azithromycin 1g.
- Advise to return if still no better after 7 days: refer.

Yes

Also treat for **bubo**:

- Give azithromycin 1g weekly for 3 weeks.
- If fluctuant lymph node, aspirate pus through healthy skin in sterile manner every 3 days as needed.
- Give partner notification slip/s with code: Bubo.
- Review in 14 days: if no better, refer.

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Yes

Treat for **GUS with VDS/MUS**

- Give single dose ceftriaxone 250mg IM[2] and azithromycin 1g orally.
- If severe penicillin allergy[3], omit ceftriaxone, increase azithromycin to 2g and give doxycycline 100mg 12 hourly for 14 days. If pregnant/breastfeeding, refer instead.
- Advise to return in 6 months for RPR: if positive ⮌45.
- If patient or partner has vaginal discharge syndrome (VDS), also give single dose metronidazole[4] 2g orally.
- Give partner notification slip/s with code: GUS + VDS/MUS.

[1]For benzathine benzylpenicillin 2.4MU injection: dissolve benzathine benzylpenicillin 2.4MU in 6mL lidocaine 1% without epinephrine (adrenaline) and give half the volume into each buttock. [2]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [3]History of anaphylaxis, urticaria or angioedema. [4]Advise no alcohol until 24 hours after last dose of metronidazole.

POSITIVE SYPHILIS RESULT

Approach to the patient with a positive syphilis result

- If rapid fingerprick syphilis test done, send blood for syphilis serology to confirm result. If pregnant, also start treatment same day as below.
- Check T.pallidum antibodies (TPAb)[1] and RPR results:

TPAb non-reactive

RPR non-reactive

- No treatment for syphilis needed.
- If sexual assault, repeat syphilis test at 4 months.

TPAb reactive

RPR reactive

Treat for **syphilis**: decide what treatment to give.

Man or non-pregnant woman

Is previous RPR result available?

No

Does patient have a genital ulcer or signs of secondary syphilis[3]?

No

Treat for **late syphilis**
- Give benzathine benzylpenicillin 2.4MU IM[2] weekly for 3 weeks. If penicillin allergy[4], or benzathine benzylpenicillin unavailable, give instead doxycycline[5] 100mg 12 hourly for 30 days and repeat RPR in 6 months.
- Give partner notification slip/s with code: RPR+.

Yes

Treat for **early syphilis**
- Give single dose benzathine benzylpenicillin 2.4MU IM[2]. If penicillin allergy[4], or benzathine benzylpenicillin unavailable, give instead doxycycline[5] 100mg 12 hourly for 14 days and repeat RPR in 6 months.
- Give partner notification slip/s with code: RPR+.

Yes

New RPR titre is either:
- ≤ 1:8 and unchanged or
- At least 4 times lower than before (e.g. was 1:32, now 1:8)

No

Is there a negative RPR from the last 2 years?

Yes

- No further treatment needed.
- If partner/s not treated in the past, give partner notification slip/s with code: RPR+.

No

Treat for **late syphilis**
- Give benzathine benzylpenicillin 2.4MU IM[2] weekly for 3 weeks. If penicillin allergy[4], or benzathine benzylpenicillin unavailable, give instead doxycycline[5] 100mg 12 hourly for 30 days and repeat RPR in 6 months.
- Give partner notification slip/s with code: RPR+.

Yes

- No further treatment needed.
- If partner/s not treated in the past, give partner notification slip/s with code: RPR+.

Pregnant woman

Treat for **late syphilis**
- Give benzathine benzylpenicillin 2.4MU IM[2] weekly for 3 weeks. If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 28 days.
- If severe penicillin allergy[4], refer to confirm diagnosis and for possible penicillin desensitisation.
- Repeat RPR 3 months after completing treatment: if repeat RPR reactive, discuss/refer.
- Give partner notification slip/s with code: RPR+.

Manage the newborn of the RPR positive mother:

Does newborn have any signs of congenital syphilis: rash (red/blue spots or bruising especially on soles and palms), jaundice, pallor, distended abdomen, swelling, low birth weight, runny nose, respiratory distress, hypoglycaemia?

No

Did mother complete 3 doses of IM injections at least 1 month before she delivered?

Yes

No treatment needed.

No

Give single dose benzathine benzylpenicillin 50 000units/kg IM, into outer thigh, and refer.

Yes

Refer same day.

[1]Some laboratories may use different specific treponemal tests (RDT-Tp, FTA, TPHA, TPAb, TPPA). [2]For benzathine benzylpenicillin 2.4MU injection: dissolve benzathine benzylpenicillin 2.4 MU in 6mL lidocaine 1% without epinephrine (adrenaline). [3]Secondary syphilis: 6-8 weeks after ulcer; generalised rash (includes palms/soles), flu-like symptoms, flat wart-like genital lesions, mouth ulcers, patchy hair loss. [4]History of anaphylaxis, urticaria or angioedema. [5]If breastfeeding, avoid doxycycline and refer.

OTHER GENITAL SYMPTOMS

- First assess and advise the patient ↩41.
- Then manage according to main symptom:

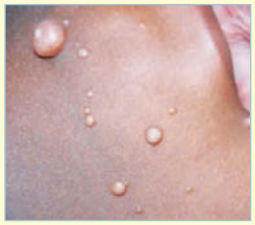
Lumps or warts

Painless, raised skin coloured growths with round/ cauliflower-like surface (skin around genitals, anus or cervix)

Genital warts likely

- If warts atypical/fleshy/wet, test for syphilis. If positive ↩45.
- Arrange a cervical screen for patient/partner if needed ↩47.
- Offer to arrange medical male circumcision for patient/partner.
- If available, protect surrounding skin with petroleum jelly and apply podophyllin 20% tincture of benzoin[1] to warts (avoid applying internally/self-medication). Wash off after 3 hours. Repeat weekly until lesions resolve completely.
- Reassure that most warts resolve spontaneously within 2 years.
- Refer if:
  - Warts > 10mm
  - Numerous lesions
  - Warts inside vagina, involving cervix or urethra
  - Pregnant with large warts
  - Bleeding or infected warts

Papules with central dent



Molluscum contagiosum likely

- Apply tincture of iodine BP topically with an applicator to the core of the lesions.
- If no response to treatment, refer.

Itchy rash in pubic area

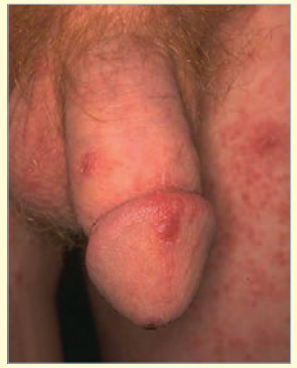
Intensely itchy bites
May see lice or nits (size of a pinhead) in pubic and peri-anal areas

Pubic lice (**pediculosis**) likely

- Apply benzyl benzoate 25% lotion to affected area for 24 hours. Avoid mucous membranes, face and eyes, urethral opening and raw areas. Repeat treatment after 1 week.
- Advise to shave genital area.
- Treat all sexual partners even if asymptomatic.
- Before treatment, wash and thoroughly dry clothing and linen that may have been contaminated within past 2 days.
- For itch, give chlorphenamine 4mg 8 hourly as needed for up to 10 days.

If eyelashes/eyebrows involved, **pediculosis of eyelashes/ eyebrows** likely.
Apply yellow petroleum jelly to eyelid margins to (cover eyelashes) and eyebrows daily for 10 days to smother lice/ nits. Caution patient to avoid getting petroleum in eye.

Itch worse at night, with red papules and nodules



Genital scabies likely

- Apply benzyl benzoate 25% lotion from neck to soles of feet and rub in well:
  - Leave on for 24 hours, then wash off with soap and water.
  - If severe, repeat once after 24 hours or within 5 days.
- If no better, apply permethrin 5% lotion at night from neck to soles of feet. Wash off after 8-12 hours. Repeat after 1 week if needed.
- For itch, give chlorphenamine 4mg 8 hourly for up to 10 days. If mild itch, use only at night.
- Advise can return to work after first treatment.
- Treat all household contacts and sexual partners at the same time, even if asymptomatic.
- Wash recently used linen and clothing in very hot water and dry well. Expose to direct sunlight.

If scratch marks infected (pus/red/swollen/crusts), also treat for likely **impetigo** ↩67.

[1]Avoid in pregnancy and breastfeeding.

CERVICAL SCREENING

A Pap smear (conventional cytology using glass slides/smear) is the common method of cervical screen. *If available*[1], use instead liquid-based cytology (LBC) and human papillomavirus (HPV) DNA testing. If cytology unavailable, use visual inspection with acetic acid (VIA).

Decide when the patient needs a cervical screen

- If no symptoms:
  - HIV negative: do 3 routine cervical screens in a lifetime from age 30, with a 10-year interval between each screen.
  - HIV positive: do cervical screen every 3 years from time of HIV diagnosis.
- If symptoms: do cervical screen if abnormal vaginal discharge/bleeding not responding to treatment, regardless of when routine screen was done.

Assess the patient needing a cervical screen

Assess	Note
Symptoms	• Manage symptoms as on symptom pages. If abnormal vaginal discharge ⮌43; if abnormal vaginal bleeding ⮌49. If routine cervical screen, delay until after treatment. • If abnormal vaginal discharge/bleeding not responding to treatment, do cervical screen at same visit.
Family planning	Assess patient's contraceptive needs ⮌136. If pregnant, do cervical screen safely up to 20 weeks gestation.
Examination	• Do bimanual palpation to check for pain on moving cervix and pelvic masses. If pain on moving cervix, treat for **lower abdominal pain** (**LAP**) syndrome ⮌37. If mass, refer. • Do speculum examination to look for abnormalities of cervix: if any lesion/mass/polyp/erosion/ulcer/sore, avoid cervical screening and instead refer same week for colposcopy/biopsy.
HIV	Test for HIV ⮌95. If HIV positive, give routine HIV care ⮌96, and repeat cervical screening 3 yearly.
Human papillomavirus (HPV) DNA test	*If liquid-based cytology (LBC) available*[1], also request HPV DNA test on same specimen.

Health for All ⮌50

Advise the patient needing a cervical screen

- Educate that cervical cancer is a disease that affects the mouth of the womb. Certain types of human papillomavirus (HPV) cause cervical cancer. HPV is transmitted sexually and can persist for years. Emphasise condoms.
- Cervical screening is able to prevent cervical cancer as it detects changes in the cervix years before cancer develops. Colposcopy is a closer examination of the cervix to confirm these abnormal changes.
- Advise that smoking increases the risk of cervical abnormalities. If patient smokes, encourage to stop ⮌123.
- Advise patient to return if symptoms of cervical cancer (abnormal vaginal bleeding, vaginal discharge) occur.

Manage the patient according to results:

If specimen unsatisfactory or result not found, repeat cervical screen within 3 months.

Normal
If available, check HPV DNA result:

Abnormal

HPV DNA negative *or* not done

HPV DNA positive

Cervical screen negative

- Explain that patient has *no* abnormal changes of her cervix.
- If HPV negative, explain that patient currently does not have the virus that can cause cancer changes.
- If HIV negative: repeat after 10 years if < 3 previous routine screens.
- If HIV positive: repeat screen after 3 years.

Cervical screen positive

- If abnormal Pap smear/LBC/VIA, explain that patient has changes on her cervix that need further examination to check for cancer.
- If normal Pap smear/LBC/VIA but HPV DNA positive, explain patient does not have cancer but needs referral as HPV can cause cancer.
- If VIA is positive or HPV DNA positive for HPV types 16 and 18: refer for cryotherapy/LLETZ.
- If abnormal Pap smear/LBC, VIA suspicious for cancer or HPV DNA positive for other HPV types: refer for colposcopy.
- Repeat screen in 1-3 years according to colposcopy findings/management needed.

[1]These tests are only available in designated pilot facilities.

MENSTRUAL SYMPTOMS

Approach to the patient with menstrual symptoms

Manage according to symptom: ask if abnormal periods, crampy pain during periods or bloating/headache/tender breasts/tired/moody around time of periods.

Abnormal periods

Heavy/prolonged/irregular bleeding

→49.

No bleeding

Amenorrhoea likely

- If period never started before age 16 years, refer.
- If period has stopped:
  - Exclude pregnancy. If pregnant →138.
  - If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems. If yes ⮌147.
  - Ask about contraception:

Is patient using injectable contraceptive or subdermal implant?

Yes

Reassure little to no period can be normal.

No

- Reassure period should start again.
- Advise to return if no period for > 6 months.

If no period > 6 months

- Look for and manage cause (like stress, excessive exercise, sudden weight loss, underweight).
- If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.
- If still no period after cause treated/resolved or unsure of cause, refer.

Crampy lower abdominal or back pain during periods. Headache, fatigue, nausea, vomiting and diarrhoea may also occur.

Dysmenorrhoea likely

- If abnormal vaginal discharge ⮌41.
- Give ibuprofen 400mg 8 hourly as needed with food for 3 days during periods. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.
- Discuss contraception: if contraception desired or if no better with ibuprofen, give oral contraceptive: ethinylestradiol/levonorgestrel 30mcg/150mcg for 6 months ⮌136, then review. If pregnancy desired, discuss/refer instead.

Bloated/headache/tender breasts/tired/moody around time of periods

Premenstrual syndrome (**PMS**) likely

- Educate that PMS can start 2 weeks before period and should get better by end of period.
- If low mood, stress or anxiety ⮌75.
- If symptoms severe, consider oral contraceptive ethinylestradiol/levonorgestrel 30mcg/150mcg for 6 months ⮌136.

If no response to treatment or symptoms interfere with daily activities, discuss/refer for further assessment of possible underlying causes like fibroids.

Advise the patient with menstrual symptoms

- Explain that menstruation (having a period) is normal and healthy, and educate what menstruation is: every month the uterus lining thickens to prepare for pregnancy. When pregnancy does not happen, the thickened lining is released through the vagina, as bleeding for a few days.
- Reassure that dysmenorrhoea (abdominal/back pain with periods) is common. Encourage to continue with daily activities and exercise.
- If premenstrual syndrome: advise to do daily exercise and try relaxation techniques ⮌75.

ABNORMAL VAGINAL BLEEDING

Give urgent attention to the patient with vaginal bleeding and any of:

- Pregnant →138
- Recent delivery/miscarriage/termination of pregnancy →143
- BP < 90/60
- Hb < 6
- Pallor with pulse ≥ 100, respiratory rate ≥ 30, dizziness/faintness or chest pain

Manage and refer urgently:

- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

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 if needed ⮌47. If abnormal, refer.
- If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ⮌147. If new bleeding occurs > 1 year after final period, refer within 2 weeks.
- If patient is not menopausal, determine the type of bleeding problem:

Heavy or prolonged periods

- If bleeding from elsewhere like easy bruising/purple rash/bleeding gums, arrange FBC and refer to doctor next day.
- If Hb < 12, treat for likely **anaemia** ⮌23.
- Give COC[1]: ethinylestradiol/ levonorgestrel 30mcg/150mcg for 3 months ⮌136. If pregnancy desired or COC contraindicated[2], discuss/refer.
- Give ibuprofen[3] 400mg 8 hourly with food for 3 days.
- If on injectable contraceptive or subdermal implant: reassure that abnormal bleeding is common in first 3 months.
- If bleeding persists > 3 months, give COC[1] 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 IUCD insertion
  - If sexual abuse suspected
  - If history of foreign body inserted into vagina

Irregular periods (cycle < 21 days or > 35 days)

- If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.
- Give COC[1]: ethinylestradiol/ levonorgestrel 30mcg/150mcg for 6 months ⮌136. If pregnancy desired or COC contraindicated[2], discuss/refer.

If pain during periods ⮌48.

Spotting between periods

- Assess for STI ⮌41.
- Check Hb: if Hb < 12, treat for likely **anaemia** ⮌23.
- If on hormonal contraceptive, manage according to method:

Oral contraceptive:

- Ensure correct use and reassure that spotting is common in first 3 months.
- If > 24 hours diarrhoea/vomiting, advise to use condoms (continue for 7 days once diarrhoea/vomiting resolved).
- If on ART, rifampicin, phenytoin or carbamazepine, change to copper IUCD or injectable ⮌136.
- If bleeding persists > 3 months:
  - If on progesterone-only pill and bleeding troublesome, change method ⮌136.
  - Switch to COC[1] containing lowest dose of ethinylestradiol (i.e. 30mcg). If bleeding persists, switch to cyproterone/ethinylestradiol 2mg/0.035mg daily or advise alternative method. If no better after 3 cycles, discuss.

Injectable contraceptive or **subdermal implant:**

- Reassure that spotting is common in first 3 months.
- If bleeding troublesome, give combined oral contraceptive (COC) ethinylestradiol/ levonorgestrel 30mcg/150mcg. Duration depends on contraceptive method:
  - If subdermal implant, give for 20 days.
  - If on injectable, give for 14 days.
- If COC contraindicated[2], give instead ibuprofen[3] 400mg 8 hourly for 3 days.

Bleeding after sex

- Assess for STI ⮌41.
- If assault or abuse ⮌77.

Refer the patient within 2 weeks if:

- Unsure of diagnosis.
- Patient complains of pelvic pain.
- Bleeding persists > 1 week after STI treatment or after diarrhoea/vomiting stop.
- Bleeding persists despite treatment.

[1]Combined oral contraceptive. [2]Avoid COC if smoker ≥ 35 years, migraines and ≥ 35 years old or visual disturbances, up to 6 weeks postpartum, BP ≥ 140/90, hypertension, CVD risk > 10%, current or previous deep vein thrombosis/pulmonary embolus, previous stroke, ischaemic heart disease or diabetes complications. [3]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

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 morning?

Yes

- If stress or anxiety ⮌75.
- Ask about relationship problems, anxiety/fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If sexual assault or abuse ⮌77.
- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
- Discuss condom use. Ensure patient knows how to use condoms correctly.

No

- Assess CVD risk ⮌110.
- Review medication: hydrochlorothiazide, spironolactone, risperidone, fluoxetine and amitriptyline can cause sexual problems. Discuss with doctor.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
- If patient smokes, encourage to stop ⮌123.
- If low mood, stress or anxiety ⮌75.
- If no better once chronic condition/s stable and treatment optimised, refer.

Painful ejaculation

- If genital symptoms ⮌41.
- If urinary symptoms ⮌51.
- Review medication: antidepressants and schizophrenia treatment can cause painful ejaculation. Discuss with doctor.
- If no cause found, refer.

Pain with sex (vaginal or anal).
If painful ejaculation, manage in adjacent column.

Is the pain superficial or deep?

Superficial pain

- If genital symptoms ⮌41.
- If anal symptoms ⮌40.
- If urinary symptoms ⮌51.
- Ask about vaginal dryness:
  - If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping. If yes ⮌147.
  - Review medication: oral contraceptive, antidepressants and hypertension treatment can cause vaginal dryness. Discuss with doctor.
- Advise patient to use lubricant during sex. Ensure it is condom-compatible, avoid using petroleum jelly with condoms.

Deep pain

- If genital symptoms ⮌41.
- If recurrent abdominal pain relieved by passing stool, with bloating, constipation and/or diarrhoea, **irritable bowel syndrome** likely. Refer to doctor.
- Refer if:
  - Heavy, painful or prolonged periods
  - Infertility
  - Abdominal/pelvic mass
  - Anal/rectal mass

- If low mood, stress or anxiety ⮌75.
- If sexual assault or abuse ⮌77.

Loss of libido

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

- If stress or anxiety ⮌75.
- Review medication: phenytoin, hydrochlorothiazide, spironolactone, chlorpromazine, risperidone, fluoxetine, amitriptyline and lopinavir/ritonavir can cause loss of libido. Discuss with doctor.
- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
- Ask about relationship problems, anxiety/fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping. If yes ⮌147.
- If sexual assault or abuse ⮌77.
- Assess the patient's contraceptive needs ⮌136.
- Offer referral to counsellor.

If sexual problems do not improve, refer to specialist.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

URINARY SYMPTOMS

Give urgent attention to the patient with urinary symptoms and any of:

- Unable to pass urine with lower abdominal discomfort/distention
- Blood/protein in urine and new swelling of face/feet, BP ≥ 140/90 or passing little urine: **kidney disease** likely
- Blood in urine and sudden, severe, one-sided pain in flank or groin: **kidney stone** likely
- Flank pain with leucocytes/nitrites on urine dipstick, and any of: vomiting, BP < 90/60, pulse ≥ 100, diabetes, male, pregnant or post menopause: **complicated pyelonephritis** likely

Manage and refer urgently:

- If unable to pass urine, insert urinary catheter.
- If **kidney disease** likely: if pulse > 100 or respiratory rate ≥ 30, give face mask oxygen and furosemide 80mg slow IV, avoid IV fluids. If BP > 150/100, give amlodipine 5mg and furosemide 40mg orally.
- If **kidney stone** likely: give sodium chloride 0.9% 1L IV 6 hourly. If pain severe, give morphine 10mg IM or 3-10mg slow IV. For IV: dilute 10mg morphine with 9mL of sodium chloride 0.9%.
- If **complicated pyelonephritis** likely: send urine for MCS and give ceftriaxone 1g IV[1]/IM. If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, 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 flank pain with leucocytes/nitrites, **uncomplicated pyelonephritis** likely: send urine MCS. Give ciprofloxacin 500mg 12 hourly for 7 days and paracetamol 1g 6 hourly. Advise to return if worse: refer.

Burning/frequency/urgency or leucocytes/nitrites on dipstick

Woman

- If no leucocytes or nitrites:
  - If glucose, exclude diabetes ↩13.
  - If frequency, exclude pregnancy.
  - If none of above, discuss/refer.
- If leucocytes or nitrites: is patient pregnant, catheterised[2] or has diabetes/urinary tract problem?

No → **Simple UTI** likely

Yes → **Complicated UTI** likely

- Pregnant → Give nitrofurantoin[3] 100mg 6 hourly for 5 days, or 7 days if pregnant.
- Not pregnant → Give ciprofloxacin 500mg 12 hourly for 7 days.

- If complicated/recurrent UTI or no better, send urine MCS. Review after 2 days: if resistant/no better, discuss/refer.
- If blood in urine, send urine for MCS after treatment completed. If blood persists, refer same week.

Man

- Check for urethral discharge. If present, **MUS** likely →42.
- Is temperature ≥ 38°C, perineal/body pain or prostate tender on rectal exam?

No → Leucocytes/nitrates

If no frequency/urgency, **MUS** likely →42. Otherwise treat for:

No leucocytes or nitrites:

- If glucose on dipstick, exclude diabetes ↩13.
- If no glucose, discuss/refer.

Yes → **Acute prostatitis** likely

- If ≤ 35 years, give ceftriaxone[4] 250mg IM[5] and azithromycin 1g.
- If > 35 years, give ciprofloxacin 500mg 12 hourly for 14 days.
- Give ibuprofen[6] 400mg 8 hourly with food for up to 5 days.
- Refer if temperature ≥ 38°C, difficulty passing urine, recurrent episodes, no better after 2 days or blood in urine persists.

No burning/frequency/urgency and no leucocytes/nitrites on dipstick

Blood on dipstick[7]

Send urine for microscopy. If at risk of bilharzia[8,9], also request for *Schistosoma* ova:

- Schistosoma negative *or* not at risk of bilharzia → If blood on microscopy, refer same week.
- Schistosoma positive → **Schistosomiasis** likely
  - If fever, cough, headache or urticaria, refer same day.
  - Give single dose praziquantel 40mg/kg.
  - Advise when in bilharzia area to boil water before use and avoid swimming in contaminated water.
  - Refer if swelling of face/feet develop or blood in urine persists ≥ 2 months.

Flow problem

- Leakage of urine
  - If on furosemide, doctor to review.
  - If vaginal atrophy ↩147, if constipation ↩40.
  - Advise to reduce alcohol and caffeine, and do pelvic muscle exercises[10].
  - If vaginal prolapse or no response, refer.
- Poor stream or difficulty passing urine → If on amitriptyline, doctor to review, otherwise refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]If catheterised, change catheter. [3]If nitrofurantoin not available, give instead single dose fosfomycin 3g or gentamicin 5mg/kg IM. Avoid in pregnancy/kidney disease, discuss instead. [4]If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), omit ceftriaxone and increase azithromycin to 2g. [5]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [6]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [7]If menstruating, repeat dipstick after period has finished. [8]Patient at risk of bilharzia if s/he has washed/swam in dams, streams or lakes in an endemic area (Limpopo, North West, Mpumalanga, KwaZulu-Natal and parts of Eastern Cape). [9]If microscopy not available and patient lives in endemic area, treat as schistosomiasis. [10]Repeated contraction and relaxation of pelvic floor muscles.

BODY/GENERAL PAIN

Consider COVID-19
Use precautions and consult APC COVID-19 clinical tool and latest local guidance available on the Knowledge Hub.

- A patient has body/general pain if his/her body aches all over or most of body is painful.
- If pain localised to one area: if in back →54, arm/hand →55, leg →56, foot →57, neck →55.

Approach to the patient with body/general pain

- If on abacavir or zidovudine, check for urgent side effects ⮌102.
- If fever now or in past 3 days, and in a malaria area in past 3 months, arrange same day malaria test[1]. If positive, **malaria** likely →20.
- If tick bite (small dark brown/black scab) or tick present, **tick bite fever** likely →20.
- If unintentional weight loss of ≥ 5% of body weight in past 4 weeks ⮌19.
- Are there any of: cough, blocked/runny nose, sore throat, abdominal pain, nausea/vomiting, diarrhoea, burning urine, headache, fever?

No

Screen for 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.
- Is patient able to do all actions comfortably?

No

Check joints: are joint/s warm, tender, swollen or have limited movement?

Yes

→53

No

- Test for HIV ⮌95.
- If low mood, stress or anxiety ⮌75.
- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, reduce simvastatin dose to 10mg daily or discuss with doctor/specialist.
- If patient has a life-limiting illness, also consider giving palliative care ⮌148.
- Ask about duration of pain:

< 4 weeks

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise to return if no better after 2 weeks.

≥ 4 weeks

- Give paracetamol 1g 6 hourly as needed for up to 5 days. Advise to only use analgesia when necessary and avoid long term regular use.
- Check glucose ⮌13.
- Check Hb: if < 12 (woman) or < 13 (man) ⮌23.
- Check CRP, creatinine (eGFR). If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance, also check TSH. Review in 2 weeks:
  - If blood results normal, consider **fibromyalgia** →135.
  - If blood results abnormal, refer to doctor.

Yes

- If cough →34.
- If blocked/runny nose →30.
- If sore throat →31.
- If abdominal pain →37.
- If nausea or vomiting →38.
- If diarrhoea →39.
- If burning urine →51.
- If none of above:

Is there *recent* onset body pain and headache/fever?

Yes

If neck stiffness, drowsy/confused or purple/red rash, **meningitis** likely →26.

Influenza likely
- Advise on cough/sneeze hygiene and to wash hands regularly.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise antibiotics are not needed.
- Advise to return if symptoms persist > 7 days, or if fever returns and any of:
  - Cough →34.
  - Ear pain →29.
  - Pain over cheeks, **sinusitis** likely →30.
- Advise yearly influenza vaccination if > 65 years, pregnant, HIV, chronic heart/lung disease.

No

Discuss.

[1]Test for malaria with rapid diagnostic test if available, and parasite slide microscopy.

JOINT SYMPTOMS

Approach to the patient with joint symptoms needing urgent attention

- Short history of single warm, swollen, extremely painful joint with limited range of movement, **septic arthritis** likely
- Injury in past 48 hours and severe pain/swelling or deformity, **fracture** likely →14.
- Temperature ≥ 38°C
- Unable to weight-bear

Management:

- If known gout and affected joint involves big toe, midfoot or ankle *and* no fever, wound, surgery or injection into joint, discuss with specialist if referral needed: if not,**acute gout** likely →134.
- Refer urgently.

Approach to the patient with joint symptoms not needing urgent attention

- Check joints and 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.
- Is there any of: joint warm/tender/swollen or unable to do all actions comfortably?

No

Joint problem unlikely

- If body/general pain →52.
- If back pain →54.
- If neck pain →55.
- If arm symptoms →55.
- If leg symptoms →56.
- If foot symptoms →57.

Yes

Has there been recent injury?

Yes

Sprain/strain likely

- Rest and elevate joint.
- Apply ice and a pressure bandage.
- Give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, give ibuprofen 400mg 8 hourly with food as needed for up to 7 days (avoid if peptic ulcer, asthma, hypertension, heart failure, kidney disease).
- Advise to mobilise joint after 2-3 days, if not too painful.
- Review after 1 week: if no better, arrange x-ray and doctor review.

No

Ask about duration of joint pain. Has joint pain lasted ≥ 6 weeks?

Yes

Chronic arthritis likely →133.

No

Has patient had recent genital discharge or painless non-itchy skin rash?

Yes

Gonococcal arthritis likely

- Usually involves wrists, ankles, hands and feet.
- Refer/discuss same day.
- Treat patient's partner/s as for cervicitis/male urethritis →41.

No

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

Yes

Acute gout likely →134.

No

- Give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, give ibuprofen 400mg 8 hourly with food as needed for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure, kidney disease).
- Test for HIV ↩95.
- Review after 1 month or sooner if joint pain worsens. If worsens, refer.
- While waiting for appointment, if pain in hands or feet, refer to occupational therapist and if pain in other joints, refer to physiotherapist.

BACK PAIN

Give urgent attention to the patient with back pain and any of:

- Bladder or bowel disturbance- retention or incontinence
- Numbness of buttocks, perineum or legs
- Leg weakness or difficulty walking
- Recent injury and x-ray unavailable or abnormal
- Sudden onset severe upper abdominal pain with nausea/vomiting: **pancreatitis** likely
- Pulsatile abdominal mass: **abdominal aortic aneurysm** likely
- If flank pain or fever, check urine dipstick:
  - If leucocytes/nitrites on urine dipstick, and any of: vomiting, BP < 90/60, pulse ≥ 100, diabetes, male, pregnant or post menopause: **complicated pyelonephritis** likely
  - If blood with sudden, severe, one-sided pain radiating to groin: **kidney stone** likely

Manage and refer urgently:

- If **abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen rupture).
- If BP < 90/60 or **pancreatitis** likely, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **complicated pyelonephritis** likely: send urine for MCS and give ceftriaxone 1g IV[1]/IM.
- If **kidney stone** likely: give sodium chloride 0.9% 1L IV 6 hourly. If pain severe, give morphine 10mg IM or 3-10mg slow IV[2].

Approach to patient with back pain not needing urgent attention

- If flank pain with leucocytes/nitrites on urine dipstick, **uncomplicated pyelonephritis** likely: send urine for microspcopy, culture, sensitivity. Give ciprofloxacin 500mg 12 hourly for 7 days and paracetamol 1g 6 hourly as needed for up to 5 days. If no better after 2 days, refer same day.
- Does patient have any of: cough, weight loss, night sweats or fever?

Yes

Exclude TB ⮌81 *and*

- Doctor to do back x-ray and CRP.
- Discuss results with specialist/refer.

No

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

Yes

- Doctor to do back x-ray and CRP.
- Discuss results with specialist/refer.

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 ⮌110.
- If low mood, stress or anxiety ⮌75.
- 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 to normal activity and avoid resting in bed.
- Advise patient that regular exercise may prevent recurrence of back pain.
- Give pain relief:
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
  - If poor response after 1 week, add ibuprofen[3] 400mg 8 hourly with food for up to 5 days.
  - If still a poor response add tramadol 50mg 6 hourly for up to 5 days.
- If pain persists > 2 weeks, or unable to cope with daily activities/work, refer for physiotherapy.
- If pain persists > 6 weeks, refer to doctor. If bladder/bowel disturbance, numbness or weakness develops, refer urgently.

Yes

Inflammatory back pain likely

Unsure

Doctor to:

- Check CRP and test for HIV ⮌95.
- Give ibuprofen[3] 400mg 8 hourly with food for up to 5 days.
- Do back x-ray.
- Discuss results with specialist/refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 3mL IV over 3 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60. [3]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.

NECK PAIN

Give urgent attention to the patient with neck pain and any of:

- Neck stiffness and any of: temperature ≥ 38°C, headache, drowsy/confused or purple/red rash: **meningitis** likely. Give ceftriaxone 2g IV[1]/IM.
- Neurological symptoms in arms/legs: weakness, numbness, clumsiness, stiffness, change in gait or difficulty with co-ordination
- Recent injury and x-ray unavailable/abnormal or neurological symptoms: apply rigid neck collar and immobilise head with tape and sandbags/IV fluid bags on either side of head.

Refer urgently.

Approach to the patient with neck pain not needing urgent attention

Any of: >50 years, pain progressive or lasting > 6 weeks, oral steroid use, HIV, diabetes, IV drug use, unexplained weight loss/fever or TB/neck surgery/previous cancer?

Yes

- Do cervical spine x-ray.
- Check CRP.
- Discuss with specialist.

No

- Give paracetamol 1g 6 hourly or give ibuprofen[2] 400mg 8 hourly with food for up to 5 days.
- If no better after 5 days and no arm pain, refer for physiotherapy.
- If no response after 6 weeks, arm pain, weakness/numbness develops or pain worsens, do cervical spine x-ray and refer.

ARM OR HAND SYMPTOMS

Screen for joint problem:

- Check joints and 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 joint warm/tender/swollen or unable to do all actions comfortably, **joint problem** likely →53.

Give urgent attention to the patient with arm or hand symptoms and any of:

- Arm pain with chest pain →33.
- If recent injury and severe pain/swelling or deformity, **fracture** likely →14.
- If new sudden onset of weakness of arm with/without difficulty speaking or visual disturbance: consider stroke or TIA →118.

Approach to the patient with arm or hand symptoms not needing urgent attention

Painful shoulder

Referred pain likely
Ask about neck pain (see above), cough/difficulty breathing →34, chest pain →33, abdominal pain →37, pregnancy →136.

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 likely

- Advise patient to apply ice to elbow and rest arm.
- Give ibuprofen[2] 400mg 8 hourly with food for 10 days.
- Refer for physiotherapy.
- 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 8 hourly with food for up to 5 days.
- If no better after 6 weeks or worsens, refer.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.

LEG SYMPTOMS

- Screen for joint problem:
  - Check joints and 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 joint warm/tender/swollen or unable to do all actions comfortably, **joint problem** likely →53.
- If the problem is only in the foot →57.

Give urgent attention to the patient with leg symptoms and any of

- Unable to bear weight following injury, **fracture** likely ↩14.
- Swelling and pain in one calf: **deep venous thrombosis** likely, especially if BMI[1] > 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

Refer urgently.

Approach to the patient with leg symptoms not needing urgent attention:

- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, reduce simvastatin dose to 10mg daily or discuss with doctor/specialist.
- Is there leg swelling?

No

Pain in buttock radiating down back of lower leg

Irritation of sciatic nerve likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- 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 →121.

Yes

Both legs swollen

Is there difficulty breathing worse on lying flat?

Yes

Heart failure likely →117

No

- Exclude pregnancy. If pregnant →138.
- Check for kidney disease on urine dipstick: if blood or protein, check BP ↩114 and refer to doctor.
- If none of the above or unsure of diagnosis, refer same week.

One leg swollen

Has there been a recent injury?

Yes

Sprain/strain likely

- If unable to weight-bear, refer same day.
- Rest and elevate leg.
- Apply ice and a pressure bandage.
- Give ibuprofen 400mg 8 hourly with food and paracetamol 1g 6 hourly as needed for up to 5 days. Avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease.
- Advise to mobilise leg after 2-3 days, if not too painful.
- Refer for physiotherapy.
- Review after 1 week: if no better, arrange x-ray and doctor review.

No

Check skin: are there painful areas, ulcer/s, lump/s or changes in skin colour?

Yes

→58

No

Is there a groin lump/s?

Yes

→21

No

Refer same week.

[1]BMI = weight (kg) ÷ height (m) ÷ height (m).

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 and problem seems to be specifically in the joint ⮌53.

Give urgent attention to the patient with foot symptoms and any 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, ulcer or gangrene on foot: **critical limb ischaemia** likely.

Refer urgently.

Approach to the patient with foot symptoms not needing urgent attention

If cracks/peeling/scaly lesions between toes or thickened scaly skin on soles/heels/sides of feet, **tinea pedis** (**athlete's foot**) likely →61.

Generalised foot pain

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

Peripheral neuropathy likely

- Test for HIV ⮌95 and syphilis. If HIV positive, give routine care ⮌96. If syphilis positive ⮌45.
- Exclude diabetes ⮌13.
- Give amitriptyline[1] 25mg (or 10mg if ≥ 65 years) at night. If needed, increase by 25mg (or 10mg if ≥ 65 years) every 2 weeks, up to 75mg at night.
- If on isoniazid, increase pyridoxine to 200mg daily for 3 weeks.
- If one-sided, weakness or severe numbness, refer same week.
- If no better with treatment, discuss/refer.

Foot pain with muscle pain in legs or buttocks

Peripheral vascular disease likely →121.

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[2] > 25, assess CVD risk ⮌110.
- Give as needed: paracetamol 1g 6 hourly or ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer 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 6 hourly or ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If severe pain or ulcer, refer.

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

- Skin: callus, corns, cracks, wet soft skin between toes ⮌61, ulcers ⮌66.
- Foot deformity: most commonly bunions (see above). If foot deformity, refer for specialist care.
- Sensation: light prick sensation abnormal after 2 attempts.
- Circulation: absent or reduced foot pulses.

Health for All ⮌59

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

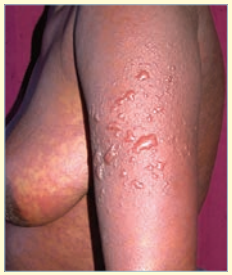
- Inspect and wash feet daily and carefully dry between the toes. Avoid soaking your feet.
- Moisten dry cracked feet daily with emulsifying ointment. Avoid moisturising between toes.
- Tell your health worker at once if you have any cuts, blisters or sores on the feet.
- Avoid walking barefoot or wearing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

[1]Avoid if on bedaquiline. [2]BMI = weight (kg) ÷ height (m) ÷ height (m).

SKIN SYMPTOMS

Give urgent attention to the patient with skin symptoms and any of:

- If sudden generalised itch/rash or face/tongue swelling and any of: wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen[1], check for anaphylaxis ⮌16.
- Purple/red rash with any of: neck stiffness, drowsy/confused, temperature ≥ 38°C, headache: **meningococcal disease** likely
- Diffuse rash appearing within 3 months of starting a new medication and any of the following, **serious drug reaction** likely:
  - BP < 90/60
  - Temperature ≥ 38°C
  - Abdominal pain
  - Vomiting or diarrhoea
  - Involves mouth, eyes or genitals
  - Blisters, peeling or raw areas
  - Jaundice



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Management:

- If **meningococcal disease** likely: give ceftriaxone 2g IV[2]/IM.
- If **serious drug reaction** likely: stop all medication. If peeling or raw skin, also manage as for burns before referral ⮌17.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

Approach to the patient with skin symptoms not needing urgent attention

Manage according to skin symptom/s:

- Pain → 59
- Itch
  - Rash
    - Generalised → 60
    - Localised → 61
  - No rash → 62
- Generalised, non-itchy rash → 63
- Lump/s, Pimples/blackheads → 65
- Ulcer/s → 66
- Crusts, Flaky skin → 67
- Changes in skin colour → 68
- Scalp symptoms → 69

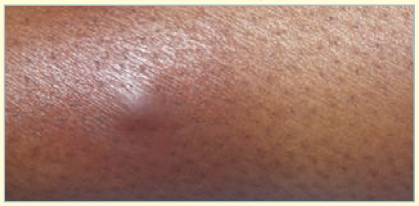
If rash is extensive, recurrent or difficult to treat, test for HIV ⮌95.

[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.

PAINFUL SKIN

Check if the patient needs urgent attention ⮌58.

Red, warm, painful lump which may be fluctuant in the centre. May discharge pus.



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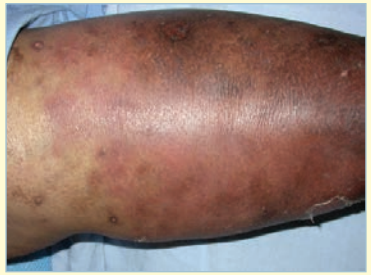
Boil/abscess likely

- If fluctuant, arrange incision and drainage.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If multiple lesions, lesion on face, extensive surrounding infection, temperature ≥ 38°C, HIV or diabetes, give antibiotic:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Advise to wash with soap and water, keep nails short and avoid sharing clothing or towels.
- If recurrent boils or abscesses, test for HIV ⮌95 and diabetes ⮌13.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Deep abscess difficult area to drain (hands, breast, perineum)
  - Poor response to treatment

Red, warm, swollen skin
Are borders poorly or clearly defined?

Poorly-defined borders



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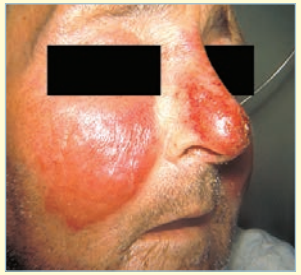
Clearly-defined raised borders



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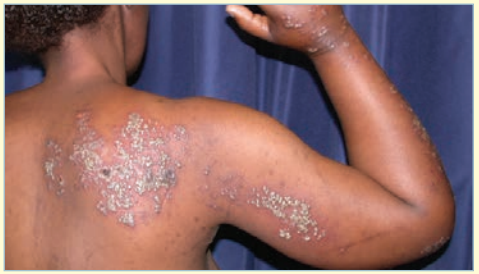
Cellulitis likely

Erysipelas likely

- Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If limb affected, advise to keep elevated.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Confused
  - Hand, face or scalp involvement
  - Extensive infection
  - Blisters or grey/black skin
  - Poorly controlled diabetes
  - Recurrent infections with underlying problem (like lympoedema)
  - Poor response to antibiotics

Painful blisters in a band along one side



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Herpes zoster (**shingles**) likely

- Test for HIV ⮌95.
- Advise to keep lesions clean and dry.
- If < 72 hours since rash started or if immunity impaired[2] with fresh vesicles, give aciclovir 800mg 5 times a day (4 hourly missing the middle of the night dose) for 7 days.
- For pain:
  - Give paracetamol 1g 4-6 hourly as needed.
  - If needed, add tramadol 50mg 6 hourly.
  - If poor response or pain persists after rash has healed, give amitriptyline[3] 25mg at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.
  - If still poor response, refer.
- If infected (skin red, warm, swollen):
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Refer same day if:
  - Eye, ear or nose involvement
  - Suspected meningitis (headache, temperature ≥ 38°C, neck stiffness)
  - Rash involves more than one region

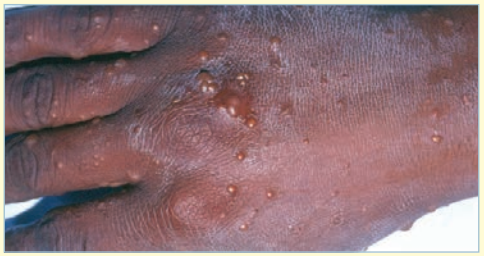
[1]History of angioedema, anaphylaxis or urticaria. [2]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [3]Avoid if on bedaquiline.

GENERALISED ITCHY RASH

Check if the patient needs urgent attention ⮌58.

If red itchy crops of bumps that may have blistered or healed with darkening of skin, may have scratch marks, **insects bites** likely →61.

Small red bumps and burrows in webspaces of fingers, axillae, waist and genitals. Very itchy, especially at night.



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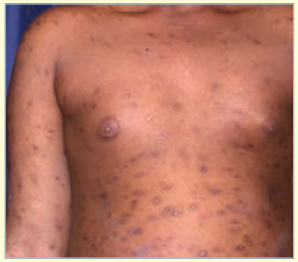
Scabies likely

- Apply benzyl benzoate 25% lotion from neck to soles of feet and rub in well:
  - Leave on for 24 hours, then wash off with soap and water.
  - If severe, repeat once after 24 hours or within 5 days.
- Only if no better, apply permethrin 5% lotion at night from neck to soles of feet. Wash off after 8-12 hours. Repeat after 1 week if needed. Avoid using permethrin and benzyl benzoate together as may be toxic.
- For itch, give chlorphenamine 4mg 8 hourly for up to 10 days. If mild itch, use only at night.
- Advise can return to work after first treatment.
- Treat all household contacts and sexual partners at the same time, even if asymptomatic.
- Wash recently used linen and clothing in very hot water and dry well. Expose to direct sunlight.
- If yellow crusts, also treat for likely **impetigo** ⮌67.

Hyperpigmented, itchy bumps on limbs, trunk or face



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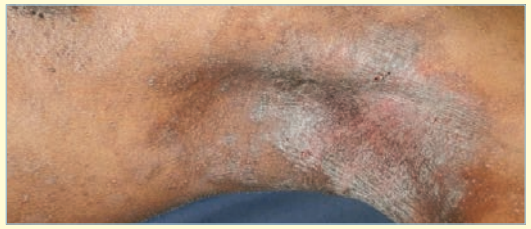
Papular pruritic eruption (**PPE**) likely

- Test for HIV ⮌95.
- If lesions in webspaces, axillae or genitals, also treat for scabies in adjacent column.
- Apply hydrocortisone 1% cream twice a day for 7 days (apply sparingly to face, avoid eyes)
- For itch, give certirizine 10mg daily.
- Advise patient:
  - Reduce exposure to insect bites.
  - May be long-standing and skin often remains hyperpigmented.
  - May temporarily worsen after starting ART.

If no response to treatment, discuss/refer.

Patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees.



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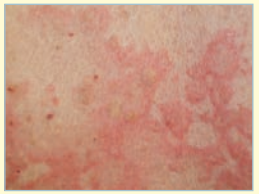
Eczema likely

- Advise that eczema is a chronic condition with episodes of acute exacerbations.
- Advise to avoid triggers such as soap, detergents, heat, fabrics that cause itch, overheating at night.
- If low mood, stress or anxiety ⮌75.
- Wash with aqueous cream instead of soap.
- Moisturise skin with emulsifying ointment twice a day and immediately after bathing.
- Apply hydrocortisone 1% cream twice a day for 7 days (apply sparingly to face, avoid eyes). If good response, reduce to once a day for 3 days, then stop.
- If poor response to hydrocortisone or severe eczema, apply instead betamethasone 0.1% ointment once a day for 7 days (avoid face and neck). If good response, reduce to once a day for 3 days, then stop.
- For itch, give certirizine 10mg daily.
- If oozing, pus or yellow crusts, treat for infection:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Refer if:
  - No better after 2 weeks
  - Extensive involvement
  - Painful pustules

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



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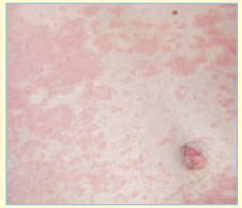
Urticaria likely

- Help to identify and advise to avoid triggers[2].
- Apply calamine lotion as needed.
- If recurrent eye problem, exclude allergic conjunctivitis ⮌27.
- If recurrent nose problem, exclude allergic rhinitis ⮌30.
- If recurrent cough or wheeze, exclude asthma ⮌106.
- For itch, give chlorphenamine 4mg 8 hourly.
- Advise to return immediately if any symptoms of anaphylaxis[3] occur.
- If no better after 24 hours, refer.

Diffuse red rash mainly on trunk, arms and legs, which appeared within 3 months of starting a new medication.



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Drug reaction likely →64.

[1]History of anaphylaxis, urticaria or angioedema. [2]Common triggers include foods (milk, eggs, nuts, wheat, seafood), medications, insect bites/stings and latex. [3]Symptoms of anaphylaxis include wheeze, difficulty breathing, dizziness/collapse, abdominal pain, vomiting.

LOCALISED ITCHY RASH

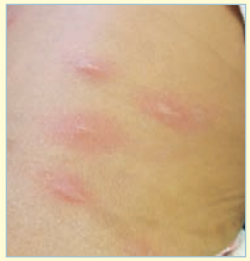
Check if the patient needs urgent attention ⮌58.

- If rash on scalp ⮌69.
- If very itchy, small red bumps and burrows in webspaces of fingers, axillae, waist or genitals, **scabies** likely →60.
- If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely →60.

Are there red itchy bumps that may have blistered or healed with darkening of skin?

Yes

Usually occurs in crops.



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Insect bites likely

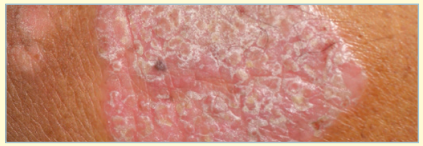
- Advise to reduce exposure to insects:
  - Treat pets, use bed nets, wash bedding, use insect repellents.
  - Clear away puddles of water around house.
- Advise to avoid scratching.
- Apply calamine lotion as needed.
- If severe itch, give chlorphenamine 4mg at night, or up to 8 hourly for up to 5 days.
- If yellow crusts, **impetigo** likely ⮌67.

No: check site of rash.

Head/face, trunk or limbs

Ask where rash started and how it has progressed. Look at distribution of rash, check for raised edges and check nails.

Well-defined, raised plaques covered with silvery scale. Often on knees, elbows, lower back, scalp. May have pitted nails.



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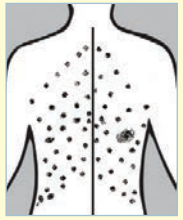
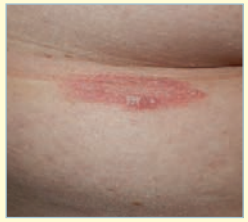
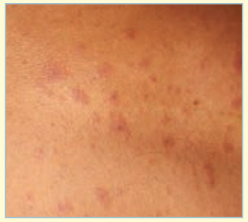
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment twice a day.
  - Apply betamethasone 0.1% ointment twice a day. Once improving, apply instead hydrocortisone 1% twice a day, then reduce to once a day. Stop as soon as better or
  - Apply liquor picis carbonis (LPC) BP 5% ointment once a day.
- Encourage to expose skin to sunlight before 10am or after 3pm for up to 30 minutes per day.

Started as one large ring on chest or back (herald patch) with fine scale in centre. Typically followed within 2 weeks by smaller, oval, scaly patches. May be in pattern of christmas tree on the back.







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Pityriasis rosea likely

- Reassure that rash will resolve within 2 months.
- Apply aqueous cream 3 times a day.
- For itch:
  - Give chlorphenamine 4mg at night.
  - If itch no better or severe daytime itch, give instead certirizine 10mg daily.

Slow-growing lesion/s with raised edges/ring of scale, clear in centre

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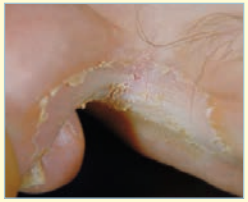
Tinea corporis (**ringworm**) likely

Feet

Cracks, peeling or scaly lesions between toes, or thickened scaly skin on soles, heels and sides of feet.



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

- Advise to keep skin clean, to dry well and avoid sharing towels, clothes, combs and hair brushes.
- If on feet, encourage open shoes and avoid socks of synthetic material.
- Apply clotrimazole 1% cream 3 times a day or, if on feet, twice a day. Continue for 2 weeks after rash has cleared.
- If extensive or recurrent, test for HIV ⮌95 and diabetes ⮌13.
- If involves nails ⮌71.
- If extensive or no better after 1 month, refer.

If diagnosis uncertain, discuss/refer.

ITCH WITH NO RASH

Check if the patient needs urgent attention ⮌58.

- Confirm there is no rash, especially scabies, lice or insect bites.
  - If generalised itchy rash →60.
  - If localised itchy rash →61.
- If itch around anus only →40.

Is the skin very dry?

Yes

Dry skin (**xeroderma**) likely

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 still necessary.
- Advise to return if rash develops or itch persists.

No

- If yellow skin/eyes, **jaundice** likely →68.
- If itch persists > 2 weeks:
  - Test for anaemia ⮌23, HIV ⮌95 and diabetes ⮌13.
  - Check CRP, creatinine (eGFR), ALT and TSH.
  - Refer to doctor.

- Advise to:
  - Avoid hot baths, wool/itchy fabrics and scratching as these may worsen itch.
  - Wash with aqueous cream instead of soap.
  - Moisturise skin with emulsifying ointment twice a day.
  - Avoid scrubbing the skin and washing more than once a day. Gently pat skin dry.
  - Keep nails short.
- If severe itch, give chlorphenamine 4mg at night, or up to 8 hourly for up to 5 days.
- If known with a life-limiting illness, consider giving palliative care ⮌148.
- If no better, discuss/refer.

If diagnosis uncertain, discuss/refer.

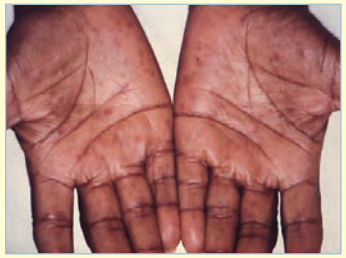
GENERALISED NON-ITCHY RASH

Check if the patient needs urgent attention ⮌58.

- Check for tick bite (small dark brown/black scab). If tick bite or tick present and headache, fever or body pain, **tick bite fever** likely →20.
- Test for syphilis and HIV ⮌95.

Syphilis 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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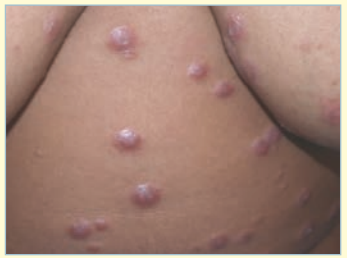

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Treat for early syphilis ⮌45.

HIV positive

Give routine HIV care ⮌96.

Syphilis and HIV negative

Was patient at risk[1] of HIV in the past 6 weeks?

Yes

- Rash may be part of HIV seroconversion illness. Repeat HIV test after 6 weeks.
- Encourage safe sex practices.

No

Has patient started anticonvulsant, ART, TB medication, co-trimoxazole or TPT in the past 3 months?

Yes

Consider drug rash →64.

No

Non-specific viral rash likely
- Patient may have fever, headache, lymphadenopathy, muscle pain/body aches.
- Reassure rash will resolve on its own.
- If fever with pain, give paracetamol 1g 6 hourly as needed for up to 5 days.

If rash persists ≥ 2 weeks or diagnosis uncertain, discuss/refer.

[1]HIV can be transmitted though 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.

DRUG RASH

- A drug rash can be caused by any medication, commonly antibiotics, anticonvulsants especially lamotrigine, ART, TB medication, co-trimoxazole, IPT and NSAIDs (like ibuprofen).
- Suspect a drug rash in a patient with a generalised rash which appeared within 3 months of starting a new medication.

Give urgent attention to the patient with a drug rash and any of:

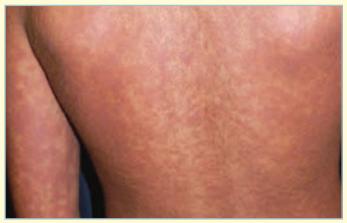
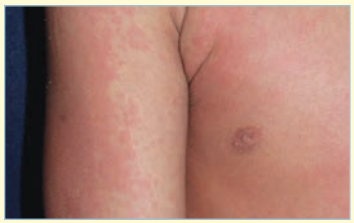
- Face or tongue swelling
- Difficulty breathing
- BP < 90/60
- Temperature ≥ 38°C
- Abdominal pain
- Vomiting or diarrhoea
- Involves mouth, eyes or genitals
- Blisters, peeling or raw areas
- Jaundice

Manage and refer urgently:
Serious drug reaction likely:

- Stop all medication. If peeling or raw skin, also manage as for burns before referral ↩17.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

Approach to the patient with a drug rash not needing urgent attention
Is patient on ART, first-line TB medication[1], co-trimoxazole (CPT) or isoniazid (TPT)?

Yes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- Refer to doctor if available.
- If on ART:
  - If on abacavir, check for abacavir hypersensitivity reaction (AHR) ↩102.
  - If on nevirapine, doctor to switch ART ↩101.
- If on first-line TB medication[1] or TPT, continue.
- If on co-trimoxazole prophylaxis[2], stop it until rash resolved. If rash resolves, discuss with doctor about re-starting co-trimoxazole or changing instead to dapsone 100mg daily.
- If on any other medications, discuss with doctor whether to stop or change them.
- If itch, give chlorphenamine 4mg at night, or up to 8 hourly for up to 5 days.

Check ALT. Review patient and result within 24 hours:

Patient unwell or ALT ≥ 120

Give urgent attention →58.

Patient well and ALT < 120

- Continue medications and review daily until improving.
- Advise to return urgently if rash worsens or markers of severity occur.
- Repeat ALT in 1 week. Review patient and result within 24 hours:

Patient unwell or ALT ≥ 120

Give urgent attention →58.

Patient well and ALT < 120
Continue medications at same dose.

Advise to return if rash persists ≥ 2 weeks: discuss/refer.

No

- Discuss with doctor whether to stop or change medication.
- If itchy, give chlorphenamine 4mg at night, or up to 8 hourly for up to 5 days.
- Advise to return urgently if markers of severity occur.

[1]First-line TB medications include isoniazid (INH), rifampicin (RIF) and pyrazinamide (PZA) and ethambutol (ETH). [2]If on co-trimoxazole treatment for pneumocystis pneumonia (PJP), toxoplasmosis or *Isospora belli* diarrhoea, discuss with specialist.

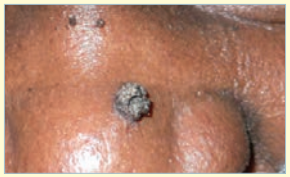
SKIN LUMP/S

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 →59.

Round, raised papules with rough surfaces



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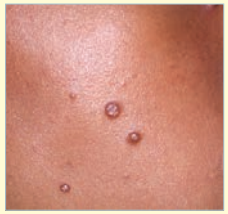
Warts likely

- 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 that warts often resolve spontaneously.
- If treatment desired:
  - Soften wart/s by soaking in warm water for 5 minutes at night and scrub gently with clean nail file.
  - After drying well, apply salicylic acid 15-30% to wart and cover with plaster.
  - Repeat every night and continue for a week after wart has come off.
- If extensive warts, refer.

Small, skin-coloured pearly bumps with central dimples



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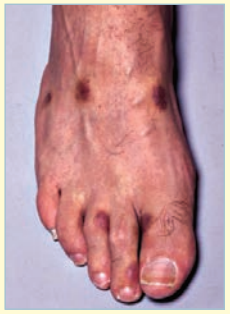
Molluscum contagiosum likely

- Test for HIV ↻95.
- Reassure that lesions often resolve spontaneously after several years or with ART.
- If treatment desired: open molluscum with sterile needle and apply tincture of iodine BP to center of each lesion.
- Refer if:
  - Extensive
  - Lesions on eyelid
  - Intolerable and not responding to treatment

Painless, purple/brown lumps on skin



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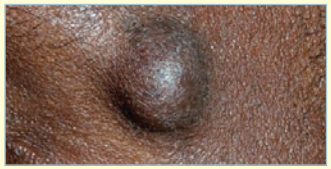
Kaposi's sarcoma likely

- Lesions vary from isolated lumps to large ulcerating tumours.
- May also appear in mouth and on genitals.

- Test for HIV ↻95.
- Refer for biopsy to confirm diagnosis and for further management.

Smooth, well defined lump beneath skin

Round, firm lump. May have central hole and discharge white substance.



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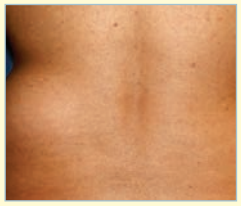
Epidermoid cyst likely
Usually found on face and trunk, uncommon on limbs.

- If not infected, reassure there is no need to treat.
- If infected (skin red, warm, painful):
  - If fluctuant, arrange incision and drainage. If on face, refer instead.
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- If intolerable or recurrent infections, arrange for excision once infection resolved.

Soft, doughy lump which is painless and moves easily.



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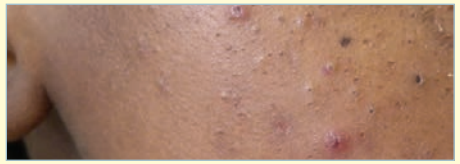
Lipoma likely
Usually found on trunk or upper limb.

- Reassure lump will not become cancer and usually does not need removal.
- Refer if:
  - > 3cm
  - Causing pain or discomfort
  - Getting bigger
  - Firm or deep beneath skin
  - New lump that persists > 1 month
  - Intolerable

Red papules, pustules, nodules and blackheads, usually on face.
May involve chest, back and upper arms



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Acne likely

- Advise to wash skin with mild soap twice a day and to avoid picking, squeezing and scratching.
- Advise to avoid oily cosmetics and hair products.
- If blackheads only:
  - Apply tretinoin 0.05% cream sparingly at night until better, for at least 6 weeks. Avoid if pregnant or breastfeeding and limit sun exposure. Acne may worsen before improving.
- If red and swollen areas:
  - Apply instead benzoyl peroxide 5% gel to affected areas in morning. Wash off in evening. If no better and tolerating gel, apply twice daily and give doxycycline[2] 100mg daily for 3 months.
- If woman needing contraception, advise combined oral contraceptive ↻136.
- Advise that response may take several weeks to months.
- If severe or poor response, refer.

If diagnosis uncertain, refer.

[1]History of angioedema, anaphylaxis or urticaria. [2]Doxycycline may interfere with oral contraceptive, advise patient to use condoms as well. Avoid if pregnant or breastfeeding.

SKIN ULCER/S

Check if the patient needs urgent attention ⮌58.

Is patient usually immobile in bed/wheelchair and is ulcer in common pressure ulcer/sore site (see below)?

No

Is ulcer on the leg or foot?

No

- If genital ulcer →41.
- 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? If unknown ⮌13.

No

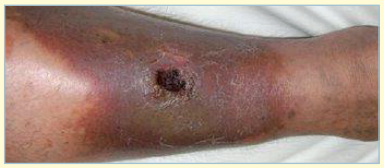
- If cough, weight loss, night sweats or fever, exclude TB ⮌81.
- Refer for further assessment.

Yes

Diabetic ulcer likely

- Avoid pressure/weight-bearing on ulcer.
- Give foot care advice ⮌57.
- Clean ulcer with sodium chloride 0.9% solution and apply paraffin gauze dressing.
- If infected (skin red, warm, painful), give amoxicillin/clavulanic acid[1] 875/125mg 12 hourly for 10 days.
- Give diabetes routine care ⮌112.
- Refer if
  - Fever
  - Pus or extensive infection
  - Ulcer > 2cm
  - Tendon or bone visible
  - No better after 1 month.

Yes



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Venous stasis ulcer likely

- Refer for specialist assessment.
- Encourage exercise.
- Avoid pressure on ulcer.
- Give foot care advice ⮌57.
- Advise elevating leg when possible and to avoid prolonged standing.
- Clean ulcer with sodium chloride 0.9% solution and apply paraffin gauze dressing.
- Apply compression bandage from foot to knee.
- Assess CVD risk ⮌110.
- Refer if:
  - No better after 1 month
  - Foot ulcer or atypical looking ulcer
  - Persistently infected or foul-smelling.

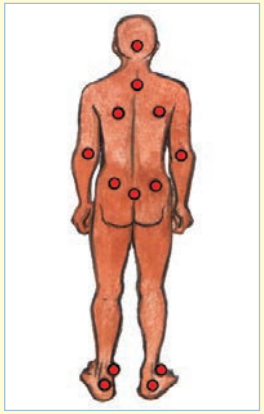
Pulses reduced or muscle pain in legs/buttocks on exercise that is relieved by rest

Peripheral vascular disease (**PVD**) likely

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

- Refer for specialist assessment.
- Clean ulcer with sodium chloride 0.9% solution and apply paraffin gauze dressing.
- Avoid compression bandage.
- Give PVD routine care →121.

Yes



Pressure ulcer/sore likely

- Relieve pressure on ulcer and reposition patient every 2-4 hours. Avoid repositioning onto already red areas.
- Gently clean ulcer twice a week with sodium chloride 0.9% solution, apply zinc and castor oil cream and cover with non-adherent dressing.
- If wound smells, use activated charcoal dressing.
- If infected (skin red, warm, painful), give amoxicillin/clavulanic acid[1] 875/125mg 12 hourly for 7 days and clean ulcer daily as above until infection better.
- Give paracetamol 1g 4-6 hourly as needed for up to 5 days.
- Refer to dietician to ensure adequate calorie and protein intake.
- If known with a life-limiting illness, consider giving palliative care ⮌148.
- Refer if:
  - Fat, bone, muscle or tendon visible
  - Yellow/grey/black tissue
  - Extensive or worsening infection
  - Ulcer not healing with treatment

[1]If penicillin allergy, discuss with doctor.

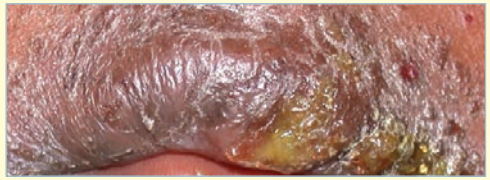
CRUSTS OR FLAKY SKIN

Check if the patient needs urgent attention ⮌58.

Are there crusts or flaky skin?

Crusts

Blisters which dry to form yellow crusts often around mouth or nose. May complicate insect bites, scabies or skin trauma.



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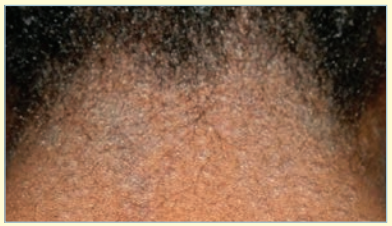
Impetigo likely

- Impetigo is contagious:
  - Advise to avoid close contact with others and sharing of towels, and to keep nails short.
  - Advise patient and household contacts to wash with soap and water twice a day.
- Apply povidone iodine 5% cream *or* povidone iodine 10% ointment to lesions 8 hourly.
- Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- If not completely resolved, repeat antibiotic course.
- If sores have been present for > 1 week, check urine dipstick.
- Refer if:
  - No better after 2nd course of antibiotics
  - If ≥ 1+ blood on urine dipstick or little/no urine.
  - Swelling of face or limbs.

Flaky skin

Red/pink scaly patches with fine, greasy scales. Usually on scalp, between eyebrows, in nose folds, behind ears, in axillae, groin, under breasts.



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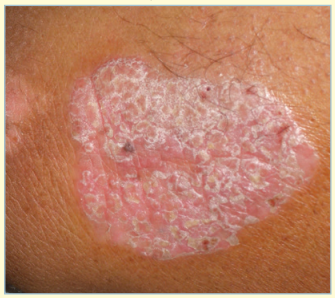
Seborrhoeic dermatitis likely

- If extensive, test for HIV ⮌95.
- If on scalp ⮌69.
- Advise patient to avoid scratching, keep nails short and to avoid scented soap.
- Apply hydrocortisone 1% cream twice a day. Once improved, reduce to once or twice a week as needed.
- If poor response or severe, apply instead betamethasone 0.1% ointment once a day for 7 days (avoid face).
- If no response within 3 months, refer.

Well-defined, raised plaques covered with silvery scale. Often on knees, elbows, lower back, scalp. May have pitted nails.



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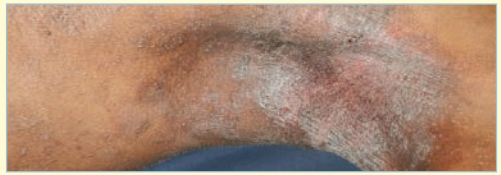
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment twice a day.
  - Apply betamethasone 0.1% ointment twice a day. Once improving, apply instead hydrocortisone 1% cream twice a day, then reduce to once a day. Stop as soon as better or apply liquor picis carbonis (LPC) BP 5% ointment once a day.
- Encourage to expose skin to sunlight before 10am or after 3pm for up to 30 minutes per day.

Patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees.



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Eczema likely

- Advise that eczema is a chronic condition with episodes of acute exacerbations.
- Advise to avoid triggers such as soap, detergents, heat, fabrics that cause itch, overheating at night.
- If low mood, stress or anxiety ⮌75.
- Wash with aqueous cream instead of soap.
- Moisturise skin with emulsifying ointment twice a day and immediately after bathing.
- Apply hydrocortisone 1% cream twice a day for 7 days (apply sparingly to face, avoid eyes). If good response, reduce to once a day for 3 days, then stop.
- If poor response to hydrocortisone or severe eczema, apply instead betamethasone 0.1% ointment once a day for 7 days (avoid face and neck). If good response, reduce to once a day for 3 days, then stop.
- For itch, give cetirizine 10mg daily.
- If oozing, pus or yellow crusts, treat for infection:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Refer if:
  - No better after 2 weeks
  - Extensive involvement
  - Painful pustules

[1]History of angioedema, anaphylaxis or urticaria.

CHANGES IN SKIN COLOUR

Is the skin yellow, too dark, too light or absent of colour?

Yellow skin

Jaundice likely

Refer urgently the patient with jaundice and any of:
- Temperature ≥ 38°C
- Hb < 12 (woman) or < 13 (man)
- BP < 90/60
- Severe abdominal pain
- Drowsy or confused
- Easy bruising or bleeding
- Pregnant
- Alcohol dependent ↩124 or recent alcohol binge (≥ 4 drinks[1]/session)
- Using any medication[2] or illegal drugs

- Send blood for ALT, ALP, total bilirubin, full blood count, INR, hepatitis A IgM, HBsAg,
- Advise to return if worsens.
- Review with results within 2 days:

Refer if ALT ≥ 200, INR ≥ 1.5, ALP raised out of proportion to ALT, Hb < 12 (woman), Hb < 13 (man) or plts < 150.

Hepatitis A IgM positive

Patient has acute hepatitis A infection
- Notify.
- Educate that infection will resolve by itself and no specific treatment needed. Advise strict handwashing practises, especially before handling food and after using toilet. Avoid alcohol and paracetamol whilst ill.
- Check HBsAg results →105.
- If nausea/vomiting and unable to tolerate fluids, refer.

Hepatitis A IgM negative

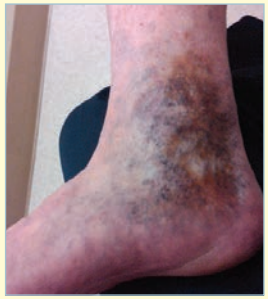
Check HBsAg results →105.

Dark patches

Where are patches on body?

Lower legs

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



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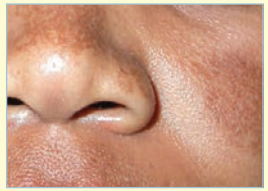
Venous stasis likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess CVD risk ↩110.
- Give foot care advice →57.
- If ulcer →66.

Face

Flat, brown patches on cheeks, forehead and upper lip



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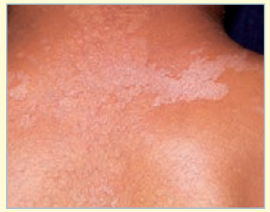
Melasma likely
- Hormones and sunlight will worsen melasma:
  - Advise to apply sunscreen daily and avoid sun exposure to face.
  - Avoid oral contraceptive, rather use a different method ↩136.
- Advise patient:
  - If pregnant, may take up to 1 year after pregnancy to resolve.
  - Often difficult to treat and may never completely resolve.
- If not responding to above and intolerable, refer.

Trunk

Light or dark patches with fine scale. Usually on trunk, neck and upper arms.



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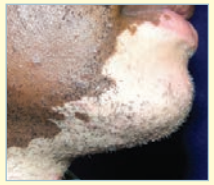
Tinea versicolor likely
- Advise to wear cool clothing in hot weather to reduce perspiration.
- Apply selenium sulphide 2.5% suspension. Lather on affected areas:
  - Apply daily for 3 days: leave on for 30 minutes then wash off *or*
  - Apply weekly for 3 weeks: leave on overnight then wash off.
- Advise that colour may take months to return to normal and that recurrence is common.

Light patches

Absence of colour

Is absence of colour patchy or generalised?

Patchy



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Vitiligo likely
- Refer to dermatologist.
- Advise to avoid sun-exposure where possible, between 10am and 3pm.
- Apply titanium dioxide ointment/cream (UV block) at least 15 minutes before going into sun between 10am and 3pm. Some sun-exposure is beneficial before 10am and after 3pm.

Generalised

Present from birth. Involves skin, hair and eyes.

Albinism likely
- Advise to avoid sunburn:
  - Avoid sun exposure where possible, especially between 10am and 3pm.
  - Apply zinc oxide ointment or titanium dioxide ointment/cream (UV block) daily at least 15 minutes before going into sun.
  - Use sun hat and sunglasses and wear long-sleeves.
- Refer to dermatologist and ophthalmologist.
- If any skin lesions develop, especially in sun-exposed areas, refer to exclude skin cancer.

If diagnosis uncertain, discuss/refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]If on atazanavir ↩102.

SCALP SYMPTOMS

- If hair loss with no rash/itch →70.
- Is there a rash or only an itch?

Itch without rash

Severe itch with lice or white eggs. May have small red bites on back of neck.

Lice likely

- Apply permethrin 5% lotion to towel-dried or dry hair:
  - Using normal comb, comb into hair to ensure whole scalp is covered and hair is saturated.
  - Then using fine lice comb, remove lice and eggs from hair in sections, combing away from scalp.
  - Rinse lice comb in hot water in white bowel or wipe on white tissue between strokes to identify black lice.
  - Rinse off after combing (up to 1 hour).
  - Repeat every 5 days for 3 weeks. Lice should get smaller with each treatment. If not, check patient is applying permethrin correctly.
  - Avoid broken skin/eyes.
- Wash clothes and linen used in past 2 days in very hot water.
- Treat household contacts.
- Consider shaving head only if acceptable to patient.

Fine, white flakes on hair and clothing

Dandruff likely

- Apply selenium sulphide 2.5% suspension:
  - Lather on scalp.
  - Rinse off after 10 minutes.
  - Use weekly until better, then every second week.

Rash with or without itch

Scaly patches

Red/pink patches with fine greasy scales. May also occur between eyebrows, in nose folds, behind ears. Usually itchy.

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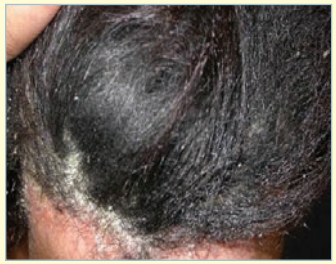
Seborrhoeic dermatitis likely

- If extensive, test for HIV ⮌95.
- Apply selenium sulphide 2.5% suspension:
  - Lather on scalp.
  - Rinse off after 10 minutes.
  - Use weekly until better, then every second week.
- Apply hydrocortisone 1% cream twice a day. Once improved, reduce to once or twice a week as needed.
- If poor response or severe, apply instead betamethasone 0.1% ointment once a day for 7 days (avoid face).
- If no response within 3 months, refer.

Well-defined, raised plaques covered with silvery scale. Often on knees, elbows, lower back, scalp. May have pitted nails.



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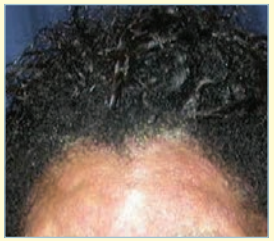
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment twice a day.
  - Apply betamethasone 0.1% ointment twice a day. Once improving, apply instead hydrocortisone 1% cream twice a day, then reduce to once a day. Stop as soon as better or apply liquor picis carbonis (LPC) BP 5% ointment once a day.
  - Encourage to expose skin to sunlight before 10am or after 3pm for up to 30 minutes per day.

Redness, swelling and burning/ itching after recent use of hair product. May have blisters.



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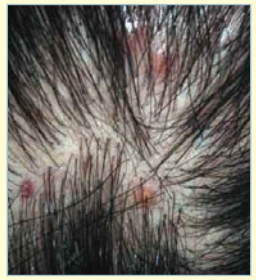
Contact dermatitis likely

- Identify and advise patient to avoid cause.
- Moisturise skin with emulsifying ointment twice a day.
- Apply betamethasone 0.1% ointment twice a day. Once improving, apply instead hydrocortisone 1% cream twice a day, then reduce to once a day. Stop as soon as better.
- If pus or yellow crusts, treat for infection:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- If no better, refer.

Red pimples, pustules or nodules around hair follicles



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Folliculitis likely

- Advise to wash with soap twice a day.
- Wash scalp with chlorhexidine scrub once a day until lesions resolve.
- If infection deep, extensive, recurrent or no response to above treatment:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days
  - Test for HIV ⮌95.

If diagnosis uncertain, discuss/refer.

[1]History of angioedema, anaphylaxis or urticaria.

HAIR LOSS

- If rash on scalp →69.
- Are hair follicle openings visible in area/s of hair loss?

Yes
Is hair loss patchy or generalised?

No

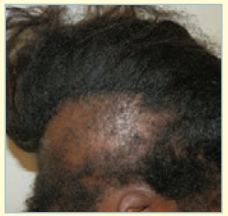
Scarring alopecia likely

Refer.

Patchy

- Test for syphilis. If positive ↩45.
- Does patient wear tightly-pulled ponytails, buns, braids or weaves, with hair loss along hairline or in area of braids/weave?

Yes



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Traction alopecia likely
- Explain cause.
- Advise to avoid tight or painful hairstyles.
- Reassure that hair will usually grow again once cause removed.
- If no better after 3 months, refer.

No

Are patches well-defined with healthy underlying scalp?

Yes

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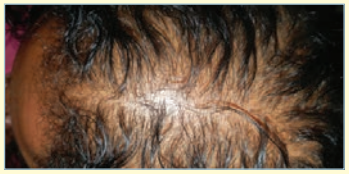
Alopecia areata likely
- Apply betamethasone 0.1% cream twice a day for 3 months.
- Check TSH. If abnormal, refer to doctor.
- Advise that hair may take up to 2 years to regrow.
- Refer if:
  - Extensive
  - No better with treatment
  - Recurrent

No: is patient a woman with thinning of hair over top of head?

Yes



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Female pattern hair loss likely
- Check TSH and ferritin. If abnormal, refer to doctor.
- Check Hb: if< 12 (woman) or < 13 (man) ↩23.
- Advise to use hair styles that may hide hair loss.
- Refer if:
  - Abnormal hair growth on face or body
  - Irregular periods or infertility in woman of child bearing age
  - Severe acne
  - Causing severe distress

No

- Refer if:
  - Syphilis negative
  - Syphilis positive and no improvement 3 months after syphilis treatment.

Generalised

- Ask about recent possible causes:
  - Major illness or surgery
  - Major stress
  - Childbirth
  - Poor diet
  - Significant weight loss
- Review medication: sodium valproate, simvastatin and hormonal contraceptives can cause hair loss. Discuss with doctor.
- Test for syphilis. If positive ↩45.
- Check TSH and ferritin. If abnormal, refer to doctor.
- Check Hb: if< 12 (woman) or < 13 (man) ↩23.
- Reassure that hair will grow again once cause treated/resolved.
- Refer if:
  - Cause unclear
  - Woman with abnormal hair growth on face or body, irregular periods, infertility or severe acne.
  - No improvement

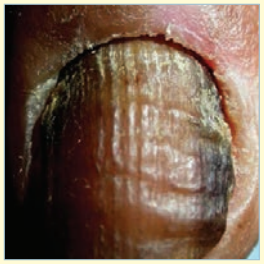
If causing patient distress, refer for counselling.

If diagnosis uncertain, discuss/refer.

NAIL SYMPTOMS

- If nails long and dirty and patient unkempt, screen for mental health problem and abuse/neglect ↩75.
- Manage according to type of nail problem:

Disfigured nail with swollen nail bed and loss of cuticle



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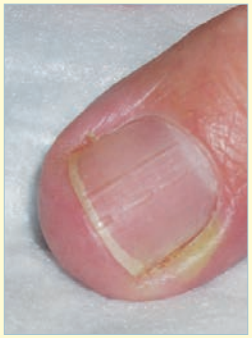
Chronic paronychia likely
Usually associated with excessive exposure to water and irritants like nail cosmetics, soaps and chemicals.

- Advise to avoid water and irritants or to wear gloves if unavoidable. Keep hands clean and dry.
- After washing hands, massage betamethasone 0.1% cream into nailfold at night.
- If nailfold painful or pus, treat for infection:
  - Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days
- If no better, refer.

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



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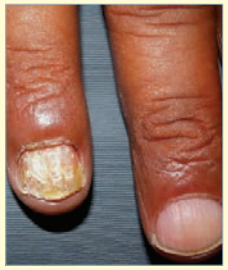
Acute paronychia likely
Often with history of trauma, such as nail biting, pushing the cuticle or cutting nails too short.

- Advise to avoid trauma to nail.
- If any pus, incise and drain.
- Give flucloxacillin 500mg 6 hourly *or* cephalexin 500mg 6 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days
- If no response, refer.

White/yellow disfigured or crumbling nails



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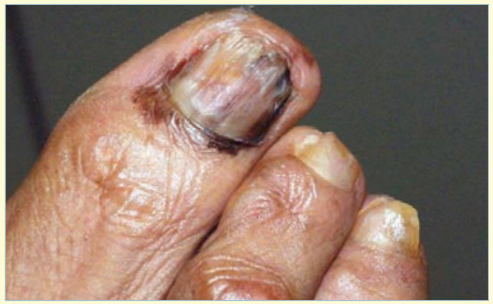
Fungal infection likely
- Test for HIV ↩95 and diabetes ↩13.
- Fungal nail infection is difficult to treat.
- If very distressing to patient, refer.

Blue/brown/black discolouration of nail



CDC Public Health Image Library

Has there been recent trauma to nail?

Yes

Haematoma likely
- Reassure patient.
- Treat if injury < 2 days old and painful:
  - Clean nail with povidone iodine 10% 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

- Psoriasis may discolour nails. If psoriasis on skin ↩61.
- Review medication: fluconazole, ibuprofen, lamivudine, phenytoin and zidovudine can cause discolouration of nails. Discuss with doctor.
- 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

Transverse dents in nails (Beau's lines)

- Check for paronychia in adjacent columns
- If above excluded, reassure likely due to previous illness/injury and will grow out with nail.

[1]History of angioedema, anaphylaxis or urticaria.

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 ⮌10.
- If oral overdose or harmful substance in past 1 hour and patient fully conscious, give activated charcoal 50g in 400mL water[1]. Avoid if paraffin, petrol, corrosive poisons (acids), iron, lithium or alcohol.
- If exposed to carbon monoxide (exhaust fumes): give 100% face mask oxygen.
- If opioid (morphine/codeine) overdose and respiratory rate < 12: connect bag valve mask to oxygen and slowly deliver each breath with patient. Also give naloxone 0.4mg IV/IM[2] immediately. Reassess every 2 minutes: if respiratory rate still < 12, give increasing doses of naloxone every 2 minutes: 0.8mg, 2mg, 4mg, up to a total of 10mg. Naloxone wears off quickly, monitor closely and give further doses later if needed.
- If no response, or overdose/poisoning with other or unknown substance, discuss with specialist or local poison helpline ⮌155.

No

Does patient have current thoughts or plans to commit suicide?

Yes

High risk of self-harm or suicide

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

Patient agitated, violent, distressed or uncommunicative?

Yes

High risk of self-harm or suicide

No

Low risk of self-harm or suicide

Manage patient as below.

No

Low risk of self-harm or suicide

Manage patient as below.

- Avoid leaving patient alone. 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 ⮌73.
- Refer urgently: while awaiting transport, monitor closely. If patient refuses admission, consider involuntary admission ⮌122.

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

Assess	When to assess	Note
Depression	Every visit	If known depression, give routine care ⮌126, otherwise ask: in the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Other mental illness	Every visit	• If hallucinations, delusions, disorganised speech, disorganised or catatonic behaviour, discuss with specialist same day. • If memory problem, screen for dementia ⮌130.
Stressors	Every visit	• If not known with a mental illness, assess for stress and anxiety ⮌75. • Help identify psychosocial stressors. Ask about trauma, sexual abuse/violence ⮌77, family or relationship problems, financial difficulty, bereavement, chronic ill-health.
Chronic condition	Every visit	• If chronic pain, assess and manage pain ⮌52 and underlying condition. Link patient with helpline or support group ⮌155. • If patient has a life-limiting illness, also consider giving palliative care ⮌148.

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 or helpline ⮌155.

- Discharge into care of family, if possible. Review patient at least weekly for 2 months: involve a counsellor, psychiatric nurse/psychologist or social worker if possible.
- 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]If able, give this charcoal mixture via nasogastric tube if the airway is protected and patient co-operative. [2]Give naloxone IM only if IV not possible.

AGGRESSIVE/DISRUPTIVE PATIENT

Give urgent attention to the aggressive/disruptive patient with any 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. Assess in a safe room with other staff. 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 cooldrink or food.
  - Listen to patient, identify his/her feelings and desires and offer choices. Take all threats seriously.
- 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 ⮌122.
- Restrain and/or sedate only if 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 ⮌74.
  - If restraints used, check restraint sites every 30 minutes.

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

Yes

- Give buccal[1] midazolam 7.5-15mg *or* diazepam 5mg orally.
- Assess response after 30 minutes:

Patient calm

Patient still aggressive/disruptive after 30 minutes

No

Decide which medication to use according to likely cause:

Exact cause unknown	Alcohol/drug withdrawal	Stimulant drug intoxication	Alcohol intoxication	Psychosis[2]
Give midazolam 7.5-15mg IM.			Give haloperidol 5mg (2mg if > 65 years) IM *and* promethazine 25mg IM.	

Assess response after 30 minutes:

Patient calm	Partial response only. Repeat same dose of IM medication used above.	No response • If midazolam used above, give haloperidol 5mg (2mg if > 65 years) IM *and* promethazine 25mg IM. • If haloperidol/promethazine used above, give midazolam 7.5-15mg IM.

- Monitor and record temperature, BP, respiratory and pulse rate, level of consciousness every 15 minutes for first hour, then every 30 minutes until patient referred, or alert and walking.
- If haloperidol used and painful muscle spasms, **acute dystonic reaction** likely, give biperiden 2.5mg IM. Repeat every 30 minutes, until spasms resolve, up to 3 doses in 24 hours.
- Once patient is calmer, reassess for underlying cause if not already done, and manage further ⮌74.

- **Refer the mentally ill aggressive patient same day to hospital[3]:** document history, and time and dose of medication given. If emergency admission needed without patient consent, fill in **MHCA 01** form. If restraints used, complete **MHCA 48** form.

[1]Buccal: use IV formulation of midazolam, use syringe to draw up correct dose, remove needle and give midazolam between the cheek and gum. [2]Psychosis likely if patient not aware s/he acting abnormally and has ≥ 1 of: Hallucinations (seeing/ hearing things); Delusions (unusual/ bizarre beliefs); Disorganised speech or behaviour. [3]If delay in transport: try to move patient to most calm/quiet area and enlist help of a family member to monitor patient.

ABNORMAL THOUGHTS OR BEHAVIOUR

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

Management:
- If just had a fit →15.
- If aggressive/disruptive →73.
- If new sudden asymmetric weakness or numbness of face/arm/leg, difficulty speaking or visual disturbance: consider **stroke** or **TIA** →118.
- If recent head injury →14.
- If suicidal thoughts or plans ⮌72.
- If difficulty breathing, respiratory rate > 30, oxygen saturation < 94% or oxygen saturation machine not available, give face mask oxygen.
- Check glucose: if < 3 or ≥ 11.1 ⮌13 or if diabetes and < 4 ⮌112.
- If thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine: give oral rehydration solution. If unable to drink or BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- 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 ⮌122.
- If HIV positive with recent positive cryptococcal antigen test, refer for urgent lumbar puncture (LP).
- Look for delirium, mania, psychosis, intoxication, withdrawal or poisoning and manage before referral:

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

Delirium likely
Give ceftriaxone 2g IV[1]/IM.

Abnormally happy, energetic, talkative, irritable or reckless

Mania likely

Lack of insight with ≥ 1 of:
- Hallucinations (seeing/hearing things)
- 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, do ECG and discuss with specialist or local poison helpline ⮌155.

Smells of alcohol, slurred speech, incoordination, unsteady gait

Alcohol intoxication likely
- Give thiamine 100mg IV/IM.
- Give sodium chloride 0.9% 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 orally.
- If alcohol withdrawal, also give thiamine 100mg IV/IM and oral rehydration solution.
- If ≥ 8 hours since last alcohol, start alcohol detoxification programme →124.

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

Poisoning likely
Discuss urgently with specialist or local poison helpline ⮌155.

Refer urgently *unless:*
- Patient with known schizophrenia who is otherwise well: give routine schizophrenia care ⮌128.
- Patient with diabetes and low glucose, not on glicazide/insulin: if abnormal thoughts/behaviour resolve with dextrose, no need to refer, give routine diabetes care ⮌112.
- Patient with known alcohol use who is otherwise well: if abnormal thoughts/behaviour resolve once sober, no need to refer ⮌124.

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** →130.
- If unsure of diagnosis, refer for further assessment.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.

LOW MOOD, STRESS OR ANXIETY

Give urgent attention to the patient with suicidal thoughts or behaviour ⮌72.

Assess the patient with low mood, stress or anxiety. If patient known with depression, rather give routine depression care →126.

Assess	Note
Anxiety	• 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 ⮌126. • If anxiety is induced by a particular situation/object (phobia) or is repeated sudden fear with physical symptoms and no obvious cause (panic), discuss/refer.
Depression	If not already done: in the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
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 ⮌77. • If patient is being abused ⮌77.
Stressors	• Help identify psychosocial stressors. Ask about family or relationship problems, infertility, financial difficulty, bereavement, chronic ill-health. If sexual problems ⮌50. • If patient has a life-limiting illness, also consider giving palliative care ⮌148. • If older person: ask about loneliness and if available, refer to nearest social club for older people in the area.
Women's health	• If recent delivery: give postnatal care ⮌143 and if available, refer to mother's support group. • If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ⮌147.
Medication	Review medication: prednisone, efavirenz, metoclopramide, theophylline and contraceptives can cause mood changes. Discuss with doctor. Consider alternative contraceptive ⮌136.

Health for All ⮌104

Advise the patient with low mood, stress or anxiety

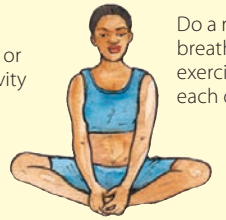
- Encourage patient to question negative thinking and be realistic if s/he often predicts the worst, generalises, exaggerates problem, inappropriately takes the blame, takes things personally.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If patient has difficulty sleeping, give advice ⮌76.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Find a creative or fun activity to do.



Do a relaxing breathing exercise each day.

Get active
Regular exercise might help.

Access support
Link patient with helpline or support group ⮌155.

- If stressors identified, discuss possible solutions. If needed, 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.
  - Identify worrying issues (e.g. child care, will and funeral arrangements) and who can give practical support with these before and after the patient dies.
- For tips on how to communicate effectively ⮌153.

Offer to review the patient in 1 month.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

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 persistent snoring ⮌30. If restless legs, refer to doctor for further assessment.
- If patient has a chronic condition, give routine care.
- If pulse ≥ 100, weight loss, palpitations, tremor, dislike of hot weather or thyroid enlargement, check TSH. If abnormal, refer to doctor.

Review medication:

- Over-the-counter decongestants, salbutamol, fluoxetine, efavirenz can cause sleep problems. Discuss with doctor.
- Reassure patient that difficulty sleeping from efavirenz is usually self-limiting and resolves within 6 weeks on ART. If severe or > 6 weeks, discuss with doctor.

Assess alcohol/drug use:

- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.

Screen for possible stressors and mental health problem:

- If stress or anxiety ⮌75.
- 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 ⮌77.
- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
- If abnormal thoughts or behaviour ⮌74.
- 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 ⮌130.

Ask about menopausal symptoms:

- If woman > 40 years ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes and sexual problems ⮌147.

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.
  - Encourage routine: get up at the same time each day (even if tired) and go to bed 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, 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 practitioner and patient can help.

Refer patient for further assessment if problems with daytime functioning, daytime sleepiness, irritability, anxiety or headaches that do not get better with 1 month of sensible sleep habits.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

TRAUMATISED/ABUSED PATIENT

Give urgent attention to the traumatised/abused patient with any of:
- Injuries needing attention ⮌14
- Suicidal thoughts or behaviour ⮌72
- Recent rape or sexual assault

Management of recent rape/sexual assault:
- Arrange same day doctor assessment, ideally at a designated facility for management of rape and sexual assault. Complete required forms and registers.
- If severe vaginal or anal bleeding, refer urgently.
- Prevent HIV and hepatitis ⮌79.
- Prevent STIs: give single dose each of ceftriaxone 250mg IM[1], azithromycin 1g orally and metronidazole[2] 2g orally. If severe penicillin allergy[3], omit ceftriaxone and increase azithromycin dose to 2g orally.
- Prevent pregnancy: do pregnancy test. If pregnant ⮌138. If not pregnant, not on reliable contraception and ≤ 5 days since rape, give emergency contraception:
  - Give single dose levonorgestrel 1.5mg[4] orally. If patient vomits < 2 hours after taking, repeat dose *or* insert a copper IUCD instead ⮌136.
- Also assess and support the patient 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 rape or sexual assault ⮌41.
Family planning	Every visit	Assess patient's contraceptive needs ⮌136. If pregnant ⮌138.
Mental health	Every visit	• If stress or anxiety ⮌75. • In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125. • 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.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[5]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Social	Every visit	If immediate risk of being harmed and in need of shelter, refer/discuss with social worker same day.
HIV	First visit	Test for HIV ⮌95.
Syphilis (if sexual assault)	First visit	If positive ⮌45.

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/helpline ⮌155.
- Refer to police Victim Empowerment office or family violence NGOs for assistance.
- Encourage patient to file a J88 form and to report case to police. Encourage patient to apply for protection order at local magistrate's court. Respect patient's wishes if s/he declines to do so.

If rape/sexual assault, review within 3 days ⮌79. Offer to review the traumatised/abused patient who has not been sexually assaulted in 1 month.

[1]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [2]Advise no alcohol until 24 hours after last dose of metronidazole. [3]History of angioedema, anaphylaxis or urticaria. [4]If patient > 80kg, BMI ≥ 30, or on antiretrovirals, rifampicin, phenytoin or carbamazepine, increase dose of levonorgestrel to 3mg or offer copper IUCD instead. [5]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

EXPOSED TO INFECTIOUS FLUID: POST-EXPOSURE PROPHYLAXIS (PEP)

Body fluids transmit infection through sexual contact (assault or consensual, burst condom), occupational exposure (sharps injury, splash to eye, mouth, nose or broken skin), sharing needles, contact with used condom and exposure to blood in sport or at accident scene. Human bites may transmit hepatitis but risk of HIV transmission is negligible.

Give urgent attention to the patient exposed to infectious fluid:

- Exposure to blood, blood-stained fluid/tissue, pleural/pericardial/peritoneal/amniotic/synovial/cerebrospinal fluid, vaginal secretions, semen or breast milk
- Human bite severe enough to cause bleeding

Was there sexual contact, sharps injury, splash to eye/open wound/mouth/nose?

Yes

STEP 1. Give patient 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.

STEP 2. Assess patient's need for HIV PEP:

Patient known HIV positive

Avoid giving HIV PEP, give instead routine HIV care ⮌96.

Patient HIV negative or unknown: give first dose of HIV PEP (as below), obtain consent and do HIV rapid test ⮌95.

Positive / Negative / One positive and one negative / Patient refuses HIV rapid test

Give HIV PEP only if ≤ 72 hours since exposure (ideally within 1 hour) for 28 days:

- Give TDF/FTC 300/200mg and ATVr 300/100mg once daily with food.
  - If ATVr not available or on rifampicin, give instead LPVr 400/100mg 12 hourly with food.
- If known kidney disease, avoid TDF/FTC, give instead AZT/3TC 300/150mg 12 hourly with ATVr daily.
- If on TB treatment, discuss with doctor or HIV hotline ⮌155.
- If source on 3rd line ART or confirmed resistance to LPVr/ATVr, discuss PEP with specialist or HIV hotline ⮌155.

No

- If human bite severe enough to cause bleeding, manage below.
- For all other exposures, reassure that HIV and hepatitis transmission is unlikely, avoid giving PEP.
- If unsure, discuss with HIV hotline ⮌155 or specialist.

If human bite severe enough to cause bleeding: prevent hepatitis B. Risk of HIV transmission negligible. No need for HIV PEP.

STEP 3. Take blood from patient:

- Send blood for HIV ELISA (unless patient known HIV positive). If giving TDF, also do creatinine (eGFR). If giving AZT, also do FBC + differential count.
- Also send baseline bloods for hepatitis:

Send patient's blood for HBsAb titre (unless occupational exposure with documented HBsAb titre ≥ 10).

STEP 4. Take blood from source, if possible:

If s/he agrees, send blood for HIV ELISA and HBsAg. If case of human bite, only do HBsAg. If occupational exposure: also do hepatitis C antibody. If sexual exposure, also do syphilis.

STEP 5. Give hepatitis B PEP if needed:

If patient has not previously received 3 doses of hepatitis B vaccine or unsure, give 1st dose of hepatitis B vaccine 1mL IM.

STEP 6. Continue to assess and manage the patient:

- If sexual assault ⮌77. If emergency contraception needed ⮌136.
- Refer patient to counsellor and review patient and blood results within 3 days →79.

ATVr – atazanavir/ritonavir; **AZT** – zidovudine; **DTG** – dolutegravir; **FTC** – emtricitabine; **LPVr** – lopinavir/ritonavir; **TDF** – tenofovir; **3TC** – lamivudine; **HBsAg** – Hepatitis B surface antigen; **HBsAbs** – Hepatitis B surface antibody

REVIEW THE PATIENT ON POST-EXPOSURE PROPHYLAXIS (PEP)

Review patient within 3 days, at 2 weeks, 6 weeks and 4 months.

- Check adherence and ask about side effects from HIV PEP ⮌102. Advise patient of side effects and to return promptly if they occur. Advise patient to use condoms for 4 months until results confirmed.
- If sexual assault ⮌77. If case of human bite: repeat only HBsAg (at 4 months) from table below, use HBsAbs results to continue to give only hepatitis B prophylaxis below.
- Check bloods according to table and review results as below:

Assess	When to assess	Note
HIV rapid test	If exposed refused at first visit: at 3 days	Encourage to test for HIV ⮌95. If still refuses, avoid giving further HIV PEP.
HIV ELISA	If negative: at 6 weeks, 4 months	If positive, stop HIV PEP and give routine HIV care ⮌96.
Hepatitis B surface antigen (HBsAg)	At 4 months	If positive ⮌105.
Hepatitis C antibody (if occupational exposure)	Do only if source hepatitis C antibody positive: first visit	If positive, refer. If negative, do hepatitis C PCR at 6 weeks.
Hepatitis C PCR (if occupational exposure)	If exposed hepatitis C antibody negative and source positive: at 6 weeks	If positive, refer.
Syphilis (if sexual exposure)	Do only if source syphilis positive/unknown: first visit, 4 months	If positive ⮌45.
Creatinine (eGFR)	If on TDF: at 2 weeks	If eGFR ≤ 50, stop TDF/3TC (or TDF/FTC), give instead AZT/3TC 300/150mg 12 hourly and check FBC differential count.
Full blood count	If on AZT: at 2 weeks	If Hb ≤ 8 or neutrophils ≤ 1.0, discuss with HIV hotline ⮌155 or specialist.
Source blood results (if done)	-	• If source HIV rapid or ELISA negative, discuss with specialist if exposed should continue HIV PEP. • If source HIV ELISA positive, give routine HIV care ⮌96. • If source HBsAg or hepatitis C antibody positive, refer. If syphilis positive ⮌45.

AZT – zidovudine; **FTC** – emtricitabine; **TDF** – tenofovir; **3TC** – lamivudine.

Continue to give hepatitis B prophylaxis according to vaccination status

Has exposed patient/health worker previously received 3 doses of hepatitis B vaccine?

Yes

Check exposed patient/health worker's HBsAb titre result.

HBsAb titre ≥ 10

- No need to give hepatitis B PEP.
- Reassure patient that s/he is protected from hepatitis B infection.

HBsAb titre < 10 or unknown

Check source HBsAg result:

Source HBsAg negative

- No need to give hepatitis B PEP.
- Reassure patient that s/he is protected from hepatitis B infection.

Source HBsAg positive or unknown

Give exposed patient/health worker hepatitis B immunoglobulin[1] 500IU IM *and*, if not already given, 1st dose of hepatitis B vaccine 1mL IM.

- **At 1 month:** give exposed patient/health worker 2nd dose of hepatitis B vaccine 1mL IM.
- **At 2 months:** give exposed patient/health worker 3rd dose of hepatitis B vaccine 1mL IM[2].

No or unsure

Check source HBsAg result:

Source HBsAg positive or unknown

Give exposed patient/health worker hepatitis B immunoglobulin[1] 500IU IM *and*, if not already given, 1st dose of hepatitis B vaccine 1mL IM.

- **At 1 month:** give exposed patient/health worker 2nd dose of hepatitis B vaccine 1mL IM.
- **At 2 months:** give exposed patient/health worker 3rd dose of hepatitis B vaccine 1mL IM[2].

Source HBsAg negative

If not already given, give exposed patient/health worker 1st dose of hepatitis B vaccine 1mL IM.

- **At 1 month:** give exposed patient/health worker 2nd dose of hepatitis B vaccine 1mL IM.
- **At 6 months:** give exposed patient/health worker 3rd dose of hepatitis B vaccine 1mL IM[2].

[1]If giving both hepatitis B vaccine and immunoglobulin, give at different sites. If immunoglobulin not available, refer to secondary care, ideally within 24-72 hours after exposure (within 7 days). [2]If health worker, repeat HBsAb titre 1-2 months after the last vaccine dose to ensure HBsAb ≥ 10.

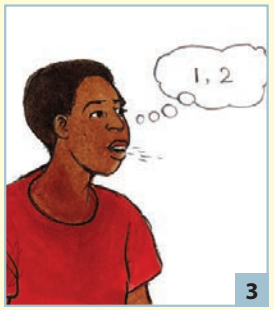
HOW TO COLLECT A GOOD SPUTUM SPECIMEN FOR TB TESTING

Aim to collect sputum in the early morning if possible. This improves the chance of an accurate result. However, avoid missing the opportunity to collect sputum anytime during a consultation.

- Explain that a good quality sputum specimen is important to make an accurate diagnosis of TB.
- Advise to avoid putting saliva or nasal secretions into specimen jar. Sputum is the secretion that comes from deep within the lungs and a forceful cough is needed to bring it up for collection.
- If directly observing sputum sample collection, health worker to use mask (N95 respirator) in well ventilated area. Stand behind patient and check air stream (fan, air conditioner) is coming from behind back to avoid exposure when patient coughs.
- Explain how to collect a good sputum specimen:

- Ensure collection area is well ventilated and private.
- Use a designated sputum collection area if available.

- Rinse mouth with water to remove food, mouth wash or medication.



- Breathe in and out deeply two times.
- Have an open specimen jar ready.
- Keep the jar sterile (clean), avoid touching inside it.

- On the third breath, give a strong cough.
- Cough 5-10mL (1-2 teaspoons) sputum into the jar.
- You may need several coughs to get at least 5mL.
- Avoid putting saliva/nasal secretions into jar.

- Replace lid and screw on tightly to prevent leaking.
- Give to health worker.

- Wash your hands after sputum collection.

Prepare specimen for transport to the laboratory:

- Check specimen is adequate: at least 5mL[1] (1 teaspoon) and is sputum and not saliva or nasal secretions.
- Ensure lid is closed tightly. Place barcode label horizontally on specimen jar (not vertically) so that it is clearly visible and can be scanned easily in laboratory.
- Complete request form.
- If room temperature > 25°C or transport delayed > 24 hours, store in refrigerator (2-8°C). Keep cool but do not freeze.
- Wash hands after handling specimen.
- Advise patient to return for results in 2 days.

[1]If less than 5mL (1 teaspoon) sputum, specimen will not be processed as may produce false-positive result.

TUBERCULOSIS (TB): DIAGNOSIS

Check for TB if: cough ≥ 2 weeks (any duration if HIV), unexplained weight loss > 1.5kg in a month, drenching night sweats or fever ≥ 2 weeks.

Give urgent attention to the patient with suspected TB and any of:

- Respiratory rate ≥ 30
- Breathless at rest or while talking
- Prominent use of breathing muscles
- Drowsy/confused
- Coughs up ≥ 1 tablespoon of fresh blood
- Neck stiffness
- Persistent vomiting
- New weakness of arm/leg

Manage and refer urgently:

- If breathing difficulty, give face mask oxygen and ceftriaxone 1g IV[1]/IM to treat for suspected severe pneumonia.
- If able, send 1 sputum for Xpert MTB/RIF.

Start the workup to diagnose TB in the patient not needing urgent attention

Test sputum
- Send 1 sputum for Xpert MTB/RIF: demonstrate how to give sputum sample ⮌80.
- If unable to produce sputum, manage below.
- Ask patient to return for results after 2 days.

Test blood
Test for HIV ⮌95.

Test urine, if needed
If HIV positive and CD4 ≤ 100, also do rapid urine LAM test:
- If LAM positive, **diagnose TB** and start TB treatment same day →83.
- If LAM negative, wait for sputum results.

Xpert MTB/RIF positive or trace (MTB detected)

Rifampicin resistant

Diagnose rifampicin resistant TB (RR-TB) Refer or start RR-TB treatment →88.

Rifampicin sensitive/unsuccessful

Has patient completed TB treatment in last 2 years?

No

Diagnose TB
- If TB in last 2 years or Xpert result rifampicin unsuccessful, send sputum for TB cultutre and LPA.
- Start TB treatment same day →83.

Yes
Are symptoms highly suggestive of TB (≥ 2 of: cough ≥ 2 weeks, unexplained weight loss > 1.5kg/month, drenching night sweats or fever ≥ 2 weeks)?

No
- Explain that result may be positive because of previous TB and more tests needed to confirm TB.
- Send 1 sputum for TB culture and LPA. Follow up results ⮌82.
- If advanced HIV (CD4 < 100 or stage 4) or unsure, discuss/refer same week.

Yes
Diagnose TB
- If TB in last 2 years or Xpert result rifampicin unsuccessful, send sputum for TB cultutre and LPA.
- Start TB treatment same day →83.

Xpert MTB/RIF negative (MTB not detected)

Manage symptoms as on symptom page. Manage further according to HIV status:

HIV negative
Review in 1 week:
- If TB symptoms resolve: no further follow-up needed. Advise to return if symptoms recur.
- If TB symptoms persist:

- Send 1 sputum for TB culture and LPA.
- Arrange chest x-ray and refer to doctor →82. If doctor not available, manage according to HIV status:

HIV negative
Wait for TB culture.

HIV positive
Are symptoms highly suggestive of TB (≥ 2 of: cough ≥ 2 weeks, unexplained weight loss > 1.5kg/month, drenching night sweats or fever ≥ 2 weeks)?

No: wait for TB culture result.

Yes
Diagnose TB and start TB treatment same day →83.

If unable to produce sputum or condition worsens, discuss/refer. Otherwise follow up TB culture →82.

HIV positive
If CD4 ≤ 100, do rapid urine LAM test:

LAM negative or not done

LAM positive

Diagnose TB
- Send 1 sputum for TB culture and LPA.
- Start TB treatment same day →83.

Unable to produce sputum

Arrange chest x-ray and refer to doctor →82. If doctor not available:

Manage symptoms as on symptom page. Manage further according to HIV status:

HIV negative
Review in 1 week:
- If TB symptoms resolve: no further follow-up needed. Advise to return if symptoms recur.
- If TB symptoms persist:

- Send 1 sputum for TB culture and LPA.
- Arrange chest x-ray and refer to doctor →82. If doctor not available, manage according to HIV status:

HIV negative
Wait for TB culture.

HIV positive
Are symptoms highly suggestive of TB (≥ 2 of: cough ≥ 2 weeks, unexplained weight loss > 1.5kg/month, drenching night sweats or fever ≥ 2 weeks)?

No: wait for TB culture result.

Yes
Diagnose TB and start TB treatment same day →83.

If unable to produce sputum or condition worsens, discuss/refer. Otherwise follow up TB culture →82.

HIV positive
If CD4 ≤ 100, do rapid urine LAM test:

LAM negative or not done

LAM positive

Diagnose TB
- Send 1 sputum for TB culture and LPA.
- Start TB treatment same day →83.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.

Review culture and LPA results when available:

Culture positive (MTB confirmed)

Sensitive to rifampicin and INH	Resistant to INH only	Resistant to rifampicin
Diagnose DS-TB Start DS-TB treatment →83.	**Diagnose INH mono-resistant TB** Start treatment →84.	**Diagnose RR-TB** Start or refer to start RR-TB treatment →88.

Culture pending

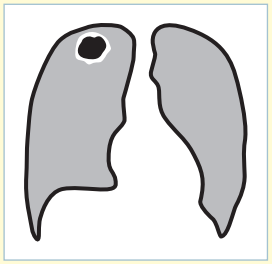
- Follow-up every 1-2 weeks until culture result confirmed.
- Advise to return if symptoms worsen.

Culture negative

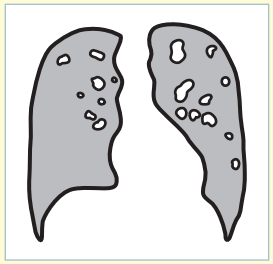
- If TB symptoms resolved, advise to return if symptoms recur.
- If TB symptoms persist, refer.

Doctor review

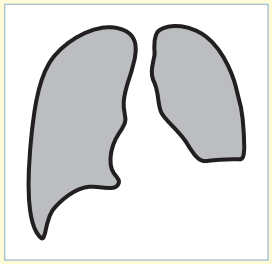
Doctor to review patient, check chest x-ray and if CD4 ≤ 100, do rapid urine LAM test:



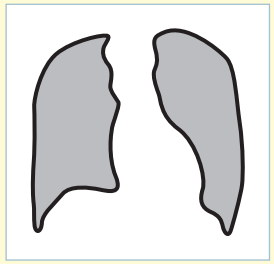
Upper lobe cavitation



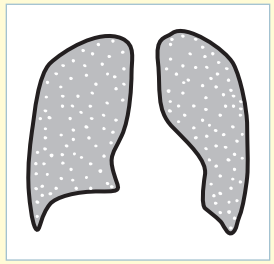
Any lung opacification can be TB in HIV positive patient



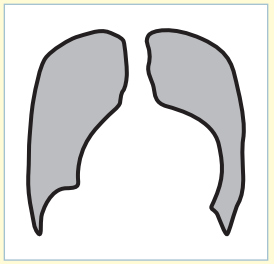
Pleural effusion If bilateral, refer.



Intrathoracic lymphadenopathy



Miliary TB



Pericardial effusion Confirm on ultrasound.

Chest x-ray similar to any of above

Diagnose TB on chest x-ray.

- Give routine DS-TB care and start treatment same day ↩83.
- If pleural effusion, aspirate fluid and send 2 samples:
  - If clear: request TB culture, LPA, ADA and cell count.
  - If pus: request Xpert MTB/RIF and TB MC&S. Refer patient same day.

Chest x-ray normal or different to above or unsure or unavailable

LAM positive

Diagnose TB
Start treatment day →83.

LAM negative or not done

- Look for other cause of cough ↩34, weight loss ↩19 or fever ↩20.
- Look for extrapulmonary TB:
  - If abdominal pain, swelling or diarrhoea, refer for abdominal ultrasound.
  - If headache, refer for CT scan/lumbar puncture.
  - If back pain, arrange spinal x-ray or refer.
  - If lymph node ≥ 2cm, aspirate lymph node for TB microscopy and cytology ↩21.
- Follow up TB culture and LPA results as above.

[1]If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give azithromycin 500mg daily for 3 days instead.

DRUG-SENSITIVE TB (DS-TB): ROUTINE CARE

Assess the patient with DS-TB		
Assess	**When to assess**	**Note**
Registration	At diagnosis	Ensure patient record completed and captured in electronic TB register (TB Module in TIER).
Symptoms	Every visit	• If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention →81. • Expect gradual improvement on TB treatment. If symptoms worsen or do not get better, refer to doctor.
Adherence	Every visit	Request patient brings all medication to each visit. Check adherence on the TB card. Manage the patient who interrupts TB treatment ⮌86.
Side effects	Every visit	Ask about side effects of treatment ⮌85.
Close contacts	At diagnosis	Advise that all household members visit the clinic for TB screening/prevention.
Family planning	Every visit	• Encourage patient to avoid pregnancy during treatment, assess patient's contraceptive needs ⮌136. If pregnant ⮌138. • Avoid oral contraceptive and subdermal implant[1] on TB treatment, use instead injectable or IUCD plus condoms. No need to change interval between injectable.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	At diagnosis; if poor adherence	In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Palliative care	If deteriorating	If not responding to treatment or severe shortness of breath at rest, also give palliative care ⮌148.
Weight (BMI)	Every visit	• Expect weight gain on treatment and adjust TB treatment dose ⮌85. If losing weight, refer to doctor same week. • BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support.
Chest x-ray	If needed	Do if poor response to treatment (ongoing symptoms, poor weight gain). Do same day if patient deteriorates or coughs ≥ 1 tablespoon of blood.
Glucose	At diagnosis	If known diabetes, assess glucose control more often and monitor for drug interactions: rifampicin decreases efficacy of glimepiride/glibenclamide ⮌112. If not known with diabetes, check glucose ⮌13.
HIV	If > 6 months since last test	Test for HIV ⮌95. If HIV positive, give routine HIV care and ART ⮌96. If on lopinavir/ritonavir, doctor to double dose gradually ⮌86.
Xpert MTB/RIF result	At diagnosis	Register patient as MTB detected, RIF sensitive/ RIF resistant; MTB not detected; Trace.
TB microscopy (smear)[3]	If Xpert positive: at diagnosis	Register as smear negative or smear positive depending on result.
	Week 7: only if smear positive PTB at diagnosis/registration	• Use week 7 smear result to decide if regimen should change ⮌85. • If week 7 smear positive, manage as per positive week 7 smear algorithm ⮌86.
	Week 23: only if smear positive PTB at diagnosis	Use week 23 smear result to decide treatment outcome ⮌87.
TB culture and LPA result	If sent during diagnostic workup	• If both TB culture and Xpert MTB/RIF negative at diagnosis, discuss with experienced TB doctor or specialist. • If MTB (Mycobacterium tuberculosis) on culture, check LPA result: - If sensitive to rifampicin and INH, continue treatment. - If resistant to INH only, diagnose **INH mono-resistant TB** and give routine care →84. - If resistant to rifampicin, diagnose **rifampicin-resistant TB** (**RR-TB**) and give routine care →87. • If culture contaminated, repeat. If culture shows NTM (Nontuberculous mycobacteria), continue treatment, repeat culture and refer to doctor.
Treatment outcome	At completion of TB treatment	Decide on treatment outcome ⮌87.
Advise and treat the patient with DS-TB →85.		

[1]If patient already has subdermal implant, advise additional non-hormonal method (copper IUCD or condoms) until 4 weeks after completing TB treatment. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.

INH MONO-RESISTANT TB: ROUTINE CARE

Assess the patient with INH mono-resistant TB

Assess	When to assess	Note
Registration	At diagnosis	Ensure patient is registered in the DS-TB register.
Symptoms	Every visit	• If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention →81. • Expect gradual improvement on TB treatment. If symptoms worsen or do not get better, refer to doctor.
Adherence	Every visit	Request patient brings all medication to each visit. Check adherence on the TB card. Manage the patient who interrupts TB treatment ↩86.
Side effects	Every visit	Ask about side effects of treatment ↩85.
Close contacts	At diagnosis	Advise that all household members visit the clinic for TB screening/prevention.
Family planning	Every visit	• Encourage patient to avoid pregnancy during treatment, assess patient's contraceptive needs ↩136. If pregnant ↩138. • Avoid oral contraceptive and subdermal implant[1] on TB treatment, use instead injectable or IUCD plus condoms. No need to change interval between injectable.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ↩125.
Alcohol/drug use	At diagnosis; if poor adherence	In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.
Palliative care	If deteriorating	If not responding to treatment or severe shortness of breath at rest, also give palliative care ↩148.
Weight (BMI)	Every visit	• Expect weight gain on treatment and adjust TB treatment dose ↩85. If losing weight, refer to doctor. • BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support.
Chest x-ray	If needed	Do if poor response to treatment (ongoing symptoms, poor weight gain). Do same day if patient deteriorates or coughs ≥ 1 tablespoon of blood.
Glucose	At diagnosis	If known diabetes, assess glucose control more often and monitor for drug interactions: rifampicin decreases efficacy of glimepiride/glibenclamide ↩112. If not known with diabetes, check glucose ↩13.
HIV	If > 6 months since last test	Test for HIV ↩95. If HIV positive, give routine HIV care and ART ↩96. If on lopinavir/ritonavir, doctor to double dose gradually ↩86.
TB microscopy (smear) and culture[3]	At diagnosis	Register as smear negative or smear positive depending on result.
	Monthly	• If still culture positive at 3 months, request LPA on that same positive specimen. • If still culture positive at 4 months, discuss with specialist or refer to drug-resistant TB unit. • If negative smear/culture becomes positive, request LPA on that same positive specimen.
LPA	• At diagnosis • If culture positive at 3 months • If negative smear/culture becomes positive	• If resistant to INH only: if still culture positive at 4 months, discuss with specialist or refer to drug-resistant TB unit. • If resistant to rifampicin, diagnose **rifampicin-resistant TB** (**RR-TB**) and give routine care →88.
Treatment outcome	At completion of TB treatment	Decide on treatment outcome ↩87.

Advise and treat the patient with INH mono-resistant TB →85.

[1]If patient already has subdermal implant, advise additional non-hormonal method (copper IUCD or condoms) until 4 weeks after completing TB treatment. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.

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Advise the patient with DS-TB or INH mono-resistant TB

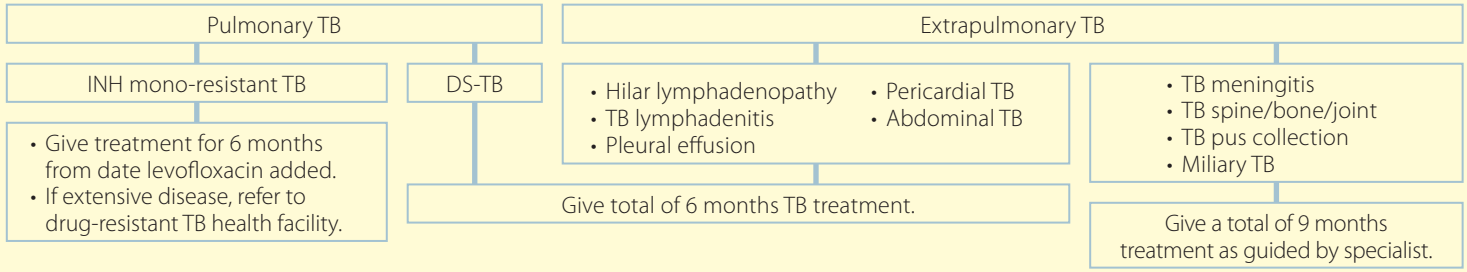
- Arrange TB counselling and refer for community or workplace adherence support.
- Educate about TB treatment side effects ↩86 and advise to return promptly should they occur.
- Educate about infection control: adequate ventilation/open windows, cough/sneeze into upper sleeve or elbow, not hands. Wash hands with soap regularly.
- If patient smear positive, advise to stay home from work for the first 2 weeks of treatment.
- Alert to the risks of smoking ↩123 and alcohol/drugs and support patient to change ↩154. If patient chooses to continue, advise safe alcohol use ↩124 and to continue taking TB medication daily.
- Give **enhanced adherence support** to the patient with poor adherence:
  - Educate on the importance of adherence and the risks of resistance.
  - Ask about alcohol/drug use ↩124, stress/anxiety/depression ↩75 and side effects ↩86.
  - Refer for support: adherence counsellor, support group, treatment partner, community health worker.

Treat the patient with drug-sensitive or INH mono-resistant TB

- **If drug-sensitive TB (DS-TB):**
  - Treat the patient (whether a new or retreatment case) 7 days a week for 6 months:
    - Give intensive phase rifampicin/isoniazid/pyrazinamide/ethambutol (RHZE) for 2 months. Prolong for 1 month if 7 week smear positive ↩86.
    - Then, if clinically improving (and 7 week smear negative if done), change to continuation phase rifampicin/isoniazid (RH) for a further 4 months.
    - If TB meningitis, TB bones/joints or miliary TB, extend treatment to 9 months (2 months RHZE/7 months RH) or as guided by a specialist.
  - Give pyridoxine 25mg daily. Stop on completion of TB treatment.

- **If INH mono-resistant TB:**
  - Give/continue rifampicin/isoniazid/pyrazinamide/ethambutol (RHZE) and add levofloxacin 7 days a week until TB treatment completed (see table).
  - If inhA mutation only, consider giving additional isoniazid (up to total of 10mg/kg/day). If unsure, present to NCAC[1].
  - Give pyridoxine 25mg daily until TB treatment completed.

- **Decide treatment duration:**



- **If HIV positive:** check if ART needs to be adjusted ↩86.

Dose according to weight and adjust as weight increases

	RHZE (150/75/400/275mg)
30-37kg	2 tablets
38-54kg	3 tablets
55-70kg	4 tablets
≥ 71kg	5 tablets

	RH
30-37kg	2 tablets (150/75mg)
38-54kg	3 tablets (150/75mg)
55-70kg	2 tablets (300/150mg)
≥ 71kg	2 tablets (300/150mg)

	Levofloxacin
< 33kg	15-20mg/kg
33-50kg	750mg
51-70kg	1000mg
≥71kg	1000mg

Review the patient monthly. Advise to return sooner if worsening or side effects develop.

[1]National Clinical Advisory Committee.

Treat the patient with TB[1] and HIV

- If already on TB treatment and starting ART: avoid dolutegravir and give instead efavirenz. Switch to dolutegravir-based regimen once TB treatment complete and viral load suppressed.
- If already on dolutegravir-based ART regimen: double dolutegravir (DTG) dose to 50mg 12 hourly[2]. Continue this dose until 2 weeks after TB treatment completed.
- Avoid atazanavir with rifampicin. If already on atazanavir, refer to next level of care.
- If on lopinavir/ritonavir, double lopinavir/ritonavir dose gradually:
  - After 1 week of TB treatment, increase lopinavir/ritonavir to 600/150mg (3 tablets) 12 hourly for 1 week.
  - Then increase lopinavir/ritonavir to 800/200mg (4 tablets) 12 hourly. Continue this dose until 2 weeks after TB treatment completed.
  - Monitor for liver problem (jaundice, abdominal pain, vomiting) and check ALT monthly. If symptomatic with ALT > 120, or asymptomatic with ALT ≥ 200, refer.
- Avoid starting nevirapine with DS-TB treatment. If already on nevirapine, discuss/refer to switch ART regimen ⮌101.

Look for and manage TB treatment side effects

Side effect	Likely cause	Management
Jaundice	Most TB medications	Stop all medications and refer to hospital same day.
Nausea, vomiting, abdominal pain	Most TB medications	• Check ALT and review result within 24 hours: - If ALT > 120, stop all medications and refer to hospital same day. - If ALT 50-120, assess for possible causes, consider interrupting treatment and repeat ALT within 1 week. If unsure, discussor refer. • If nausea/vomiting: advise to take treatment at night. If significant nausea/vomiting, give metoclopramide 10mg 30 minutes before TB medication.
Skin rash/itch	Most TB medications	Assess and manage ⮌58.
Seizures	Levofloxacin	Manage seizure ⮌15 and refer to hospital same day.
Psychosis	Levofloxacin	Manage psychosis ⮌74 and discuss/refer to hospital same day.
Change in vision	Ethambutol	Stop ethambutol and refer to eye specialist same day.
Joint pain	Pyrazinamide, levofloxacin	Give ibuprofen 400mg 8 hourly as needed with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
Orange urine	Rifampicin	Reassure this is normal while taking rifampicin.
Pain/numbness of feet	Isoniazid	**Peripheral neuropathy** likely ⮌57.

Manage the patient with DS-TB and a positive week 7 smear

- Look for explanation for result: if poor adherence, give enhanced adherence support ⮌85, alcohol/drug use ⮌124, stress ⮌75 or treatment side effects ⮌86.
- Send 1 sputum for LPA and continue intensive phase treatment for a month. Review LPA result in 1 week:

Sensitive to rifampicin and INH

- Continue intensive phase.
- Repeat TB microscopy (smear) at week 11:

Smear positive

Refer to hospital.

Smear negative

- Change to continuation phase at end of week 12.
- Continue treatment for a total of 6 months.

Resistant to INH only

Diagnose INH mono-resistant TB

- Start treatment same day →84.
- Register patient as INH mono-resistant TB.

Resistant to rifampicin

Diagnose RR-TB

- Stop DS-TB treatment:
  - If resistant to rifampicin only, give outcome of "rifampicin mono-resistant TB" in DS-TB register.
  - If resistant to rifampicin and INH, give outcome of "multidrug-resistant TB" in DS-TB register.
- Give routine RR-TB care and start treatment same day →88.
- Register in drug-resistant TB register.
- If RR-TB care not available, refer to drug-resistant TB unit.

[1]This includes drug-sensitive TB (DS-TB) and INH-monoresistant TB. [2]If on fixed dose combination, tenofovir/lamivudine/dolutegravir (TLD): continue this and add dolutegravir 50mg 12 hours after TLD dose.

Manage the patient who interrupts DS-TB treatment

- Look for explanation for treatment interruption and give enhanced adherence support ⮌85. If alcohol/drug use ⮌124, stress ⮌75 or treatment side effects ⮌86.
- Manage according to duration of interruption:

Interrupted for < 1 month

- Continue DS-TB treatment.
- Extend treatment phase by the number of weeks missed.

Interrupted for 1-2 months

Send 1 sputum for Xpert MTB/RIF. Continue DS-TB treatment and review result after 2 days:

- Xpert MTB/RIF negative → Continue DS-TB treatment. Extend treatment phase by the number of weeks missed.
- Xpert MTB/RIF positive
  - Rifampicin sensitive → Continue DS-TB treatment. Extend treatment phase by the number of weeks missed.
  - Rifampicin resistant. Stop DS-TB treatment.

Diagnose RR-TB

- Give routine care and start treatment same day →88.
- Register in drug-resistant TB register.
- If RR-TB care not available, refer to drug-resistant TB unit.

Interrupted for ≥ 2 months

- Do not restart DS-TB treatment.
- Discharge patient as **treatment default**.
- Send 1 sputum for Xpert MTB/RIF and review result after 2 days:
  - Rifampicin resistant → **Diagnose RR-TB**
    - Give routine care and start treatment same day →88.
    - Register in drug-resistant TB register.
    - If RR-TB care not available, refer to drug-resistant TB unit.
  - Rifampicin sensitive
    - Restart full course of DS-TB treatment →83.
    - Register as **re-treatment after loss to follow up**.

Once TB treatment complete, decide on treatment outcome

Drug sensitive TB (DS-TB)

Pulmonary TB

Was TB diagnosed on either Xpert MTB/RIF or culture?

- Yes
  - Smear positive at diagnosis
    - Smear negative at week 23
      - Smear negative at week 7 (or week 11) → Stop treatment and register as **cured**.
      - Smear positive at week 11 → Stop treatment and register as **treatment completed**
    - Smear positive at week 23
      - Stop treatment and register as **treatment failure**.
      - Send 1 sputum specimen for LPA. Decide on further treatment according to results:
        - Sensitive to rifampicin and INH → Re-start DS-TB treatment and register as **re-treatment after failure**.
        - Resistant to INH only → Diagnose INH mono-resistant TB →84.
        - Resistant to rifampicin → Diagnose RR-TB →88.
  - Smear negative at diagnosis → Is patient well and has s/he gained weight?
    - Yes → Stop treatment and register as **treatment completed**.
    - No → Refer for further investigations.
- No → TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB) → Is patient well and has s/he gained weight?
  - Yes → Stop treatment and register as **treatment completed**.
  - No → Refer for further investigations.

Extrapulmonary TB → Is patient well and has s/he gained weight?

- Yes → Stop treatment and register as **treatment completed**.
- No → Refer for further investigations.

INH mono-resistant TB

Pulmonary TB

- If two consecutive negative cultures 30 days apart, register as **cured**.
- If culture negative but does not meet criteria for cured, register as **treatment completed**.

RIFAMPICIN-RESISTANT TB (RR-TB): ROUTINE CARE

- RR-TB refers to TB that is resistant to rifampicin, with or without resistance to other TB medications. If patient has INH mono-resistant TB →84.
- **If RR-TB care not available, refer to closest drug-resistant TB unit.**

Note: manage the patient with RR-TB at a health facility that has reliable access to RR-TB medications and monitoring equipment available.

Assess the patient with RR-TB

Assess	When to assess	Note
Registration	Every visit	Enter patient's details at diagnosis. Update register with latest sputum results at every visit.
Symptoms	Every visit	• If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention →81. If persistent episodes of coughing blood, consider referral for surgical review. • Expect gradual improvement. If not improving, assess adherence, other chronic conditions and review LPA and DST results. • If still no improvement at 4 months, request 1st and 2nd line LPA and extended phenotypic DST and present to NCAC[1] to advise on rescue regimen.
Adherence	Every visit	Check patient is attending clinic daily for treatment (or on appointment day if receiving supply of medications).
Side effects	Every visit	• Ask about side effects of treatment ⮌94. Manage promptly as side effects are common cause of treatment interruption. • If intolerance to any medication, present to PCAC[2]/NCAC for medication substitution. Email or fax adverse drug reaction (ADR) form to npc@health.gov.za or 086 241 2473.
Close contacts	At diagnosis	• Ask if any close contacts[3] with RR-TB. If yes, check contact's LPA and DST results to help decide patient's RR-TB treatment regimen. • Advise that all household members visit the clinic for TB screening/prevention.
Family planning	Every visit	• Advise to avoid pregnancy during treatment, assess patient's contraceptive needs ⮌136. If on injectable contraceptive, no need to change interval between doses. • If pregnant ⮌138 and present to NCAC. Avoid delaying treatment, start while awaiting response.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	At diagnosis, 4 months	In the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Palliative care	If deteriorating	If patient breathless at rest, unable to walk unaided or failing treatment, also consider giving palliative care ⮌148.
Weight (BMI)	Every visit	Expect weight gain on treatment and adjust treatment doses. If losing weight on treatment, discuss with specialist/refer. If BMI[5] < 18.5, refer for nutritional support.
BP	At diagnosis	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114.

Check routine tests according to table and review results →89:

At diagnosis	At 2 weeks	At 4 weeks and then monthly	At 3 months	At 6 months	At 12 months	Other
• 1 sputum for DR-TB reflex DST testing (smear, culture, 1st and 2nd line LPA, phenotypic DST) • ECG, chest x-ray • Vision (Snellen chart) • Pregnancy test • HIV ⮌95, fingerprick glucose • FBC, differential count, ALT, creatinine, potassium, magnesium, TSH • **If HIV:** CD4, viral load	• **If on linezolid:** FBC, differential count	• **If pulmonary TB:** 1 sputum for TB microscopy and culture • **If on bedaquiline, clofazimine, moxifloxacin or delamanid:** ECG • **If on linezolid:** FBC, differential count, vision (Snellen chart) • **If on amikacin:** audiometry, creatinine, potassium, magnesium	• HIV ⮌95 • **If on ethionamide or PAS:** TSH	• Chest x-ray • **If HIV:** CD4, viral load	• HIV ⮌95 • **If HIV:** CD4, viral load	• **If on amikacin:** baseline audiometry (hearing test) • **Once bedaquiline stopped:** ECG 3 monthly • **If HIV:** viral load 6 monthly • **If on ethionamide or PAS:** TSH 3 monthly • **If unwell:** chest x-ray, ALT, Creat, K^+, Mg

Review results →89.

[1]National Clinical Advisory Committee. [2]Provinical Clinical Advisory Committee. [3]A patient has a close RR-TB contact if in the past year s/he has either lived with or had regular contact with someone who has RR-TB confirmed on Xpert MTB/RIF or culture. [4]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [5]BMI = weight (kg) ÷ height (m) ÷ height (m).

Assess	Note
TB microscopy (smear) and culture	If month 4 smear/culture positive or smear/culture becomes positive after being negative: assess adherence, review all previous sputum results and request 1st and 2nd line LPA and extended phenotypic DST on latest culture positive specimen. Present to NCAC as soon as possible to advise on rescue regimen. Consider referral for surgical assessment.
LPA and DST results (drug susceptibility)	• 1st and 2nd line LPA will be done when reflex DST testing is requested at diagnosis: - If LPA is sensitive to INH, INH phenotypic DST will be automatically tested by laboratory. - If LPA is sensitive to fluoroquinolones, fluoroquinolone phenotypic DST will be automatically tested by laboratory. - If LPA is resistant to fluoroquinolones or injectables or both inhA *and* katG mutations present, 2nd line phenotypic DST will be automatically tested by laboratory.
Chest x-ray	If chest x-ray worse despite treatment, discuss with specialist.
ECG	Calculate QTcF[1]: if QTcF < 450ms, continue treatment. If QTcF ≥ 450ms, check for medications that prolong QT interval[2] and discuss with experienced TB doctor or specialist same day.
Audiometry (hearing test)	If on amikacin and any changes to hearing, stop amikacin and discuss possible medication substitutions[3] with PCAC/NCAC.
Vision	If any change in visual acuity, stop linezolid and ethambutol and refer to eye specialist same day. Discuss possible medication substitutions[3] with PCAC/NCAC.
Pregnancy test	If pregnant ⮌138 and present to NCAC. Avoid delaying treatment, start while awaiting response.
Glucose	If known diabetes, assess glucose control more often ⮌112. If not known with diabetes, check glucose ⮌13.
HIV	If HIV positive, give routine care and start ART ⮌96.
FBC and differential count	If Hb < 8, neutrophils < 0.75 or platelets < 50, stop linezolid and discuss with PCAC/NCAC or refer for admission.
ALT	• If ALT ≥ 200 or jaundice, stop all medications and refer same day. • If ALT 50-199: - If symptoms (nausea/vomiting/abdominal pain) ⮌94. - If no symptoms: continue medications and monitor for symptoms. If ALT 120-199, also repeat ALT weekly until < 120.
Creatinine (eGFR)	If eGFR ≤ 50, avoid amikacin. If on amikacin, stop amikacin and discuss possible medication substitutions[3] with PCAC/NCAC.
Potassium	• If potassium ≤ 2.3, refer same day. • If potassium 2.4-3.5, do ECG: - If any arrhythmia on ECG or if patient has muscle weakness, refer same day. - If neither, give potassium chloride 2 tablets 12 hourly and repeat potassium within 1 week. Manage again according to result.
Magnesium	If magnesium < 0.7, give magnesium chloride 500-1000mg orally 12 hourly for 1 month. If < 0.4, refer for IV magnesium.
TSH (thyroid function)	If TSH raised, check FT4. If FT4 low, **hypothyroidism** likely: • Give levothyroxine 100mcg daily and repeat TSH and FT4 after 2 months, unless: - If ≥ 60 years: give instead levothyroxine 50mcg daily and repeat TSH and FT4 after 1 month. - If known ischaemic heart disease: give instead levothyroxine 25mcg daily and repeat TSH and FT4 after 1 month. • If repeat FT4 still low, increase levothyroxine by 25mcg every 4 weeks until FT4 within normal range. • Once RR-TB treatment completed, continue levothyroxine for 2-3 months, then wean while continuing to monitor TSH and FT4.
CD4	Interpret results ⮌97.
Viral load	• If VL < 50, continue ART. • If VL ≥ 50, discuss with experienced TB doctor or specialist.

Continue to advise and treat the patient with RR-TB →90.

[1]QTCF is QT interval corrected for heart rate: online calculator (Fridericia's formula) can be accessed via https://www.mdcalc.com/corrected-qt-interval-qtc *or* calculate manually: QTcF = QT/(60/heart rate)$^{0.33}$. [2]Medications that may prolong QT interval include: anti-arrhythmics (e.g amiodarone), psychotropics (e.g haloperidol), macrolide antibiotics (e.g erythromycin, azithromycin, clarithromycin), fluoroquinolone antibiotics (e.g ciprofloxacin, levofloxacin, moxifloxacin) and antifungal drugs (e.g fluconazole, ketoconazole). [3]Continue other medications while awaiting response from PCAC/NCAC.

Advise the patient with RR-TB

- Provide RR-TB counselling and arrange community health worker home visit. Refer to support group if available.
- Explain that duration of treatment will depend on previous treatment, site of disease and extent of drug resistance. Duration may need to extended depending on response to treatment.
- Educate on the importance of adherence and dangers of further resistance. Educate about treatment side effects ↩94, and advise to return promptly should they occur.
- Educate about infection control: cough hygiene, adequate ventilation/open windows, avoid close contact with children/those with HIV. Give surgical mask for use in poorly ventilated areas. Advise to avoid sharing a bedroom if possible.
- Advise that others living in the same household need to visit the clinic for TB screening/prevention.
- If pulmonary TB, advise to return to work only when culture conversion[1] occurs.
- Alert to the risks of smoking ↩123 and alcohol/drugs and support patient to change ↩154. If patient chooses to continue, advise safe alcohol use ↩124 and to continue taking TB medication daily.

Treat the patient with RR-TB

- Give pyridoxine 50mg daily until TB treatment completed.

If not on RR-TB treatment:

- Start treatment using steps 1-3 ↩91.
  - **Short** regimen is 9-11 months treatment (4-6 months intensive and 5 months continuation phase).
  - **Long** regimen is 18-20 months treatment (6-8 months intensive and 12 months continuation phase).
  - If unsure of initial regimen choice, discuss with PCAC/NCAC.

If on RR-TB treatment:

- Check outstanding LPA and DST results[2] and adjust regimen using step 2 ↩91.
- If patient has gained weight, check if medication doses need adjusting ↩93.
- Decide when to change intensive phase to continuation phase:
  - If on short regimen: decide at end of month 4 ↩92.
  - If on long regimen: decide at end of month 6 ↩92.

Review the patient with RR-TB

- Assess patient at diagnosis, 2 weeks, 4 weeks and then monthly. Review sooner if not improving or any problems.
- Once RR-TB treatment complete, follow up 6 monthly (or earlier if any symptoms recur) for 2 years: at each visit check symptoms, do chest x-ray and send sputum for TB microscopy and culture.

Decide when to stop RR-TB treatment

- If on short regimen: stop treatment 5 months after changing to continuation phase if patient well and cultures remain negative. If unwell or cultures become positive, present to NCAC.
- If on long regimen: stop treatment 12 months after changing to continuation phase if patient well and cultures remain negative. If unwell or cultures become positive, present to NCAC.

[1]Culture conversion: 2 consecutive negative culture results one month apart. [2]If sample contaminated/inadequate/leaked or LPA results inconclusive, send another sample to laboratory.

How to start/adjust RR-TB treatment

STEP 1: If any of the following, refer to hospital for admission

- Respiratory rate > 20
- Hb < 8
- BMI < 18
- Suspected TB meningitis or brain tuberculoma
- Unable to walk unaided
- Unstable social circumstances
- Difficulty with adherence
- Patient requests admission
- Infection control challenges at home

STEP 2: If starting treatment as outpatient or hospital admission not possible, decide which RR-TB regimen to give

Does patient have any of:

- Hb < 8
- Complicated EPTB[1]
- Previous RR-TB treatment for > 1 month
- Extensive bilateral cavitations on chest x-ray
- Both inhA *and* KatG mutations on LPA
- A close contact with both inhA and katG mutations
- A close contact with resistance to FLQ, injectables, BDQ, LZD or CFZ
- A close contact failing treatment

None of above

Start **short** regimen ↩93.

Review LPA and phenotypic DST results:

- If discordance[2] or heteroresistance[3]: continue same regimen and discuss with laboratory and PCAC/NCAC.
- Does patient have any of:
  - Resistance to FLQ, injectable, BDQ, LZD or CFZ
  - Both inhA and katG mutations on LPA

No

- Continue **short** regimen.
- If INH susceptible on both LPA *and* phenotypic DST, reduce high dose INH to normal dose INH ↩93.

Yes

- If resistance to FLQ, BDQ, LZD or CFZ: discuss individualised long regimen with PCAC/NCAC.
- Otherwise continue/change to basic **long** regimen ↩93.

One or more of above

Does patient have any of:

- CNS disease (TB meningitis or brain tuberculoma)
- Hb < 8
- A close contact with resistance to FLQ, BDQ, LZD or CFZ or failing treatment

No

Start basic **long** regimen ↩93.

Review LPA and phenotypic DST results:
If discordance[2] or heteroresistance[3]: continue same regimen and discuss with laboratory and PCAC/NCAC.

Yes

- Discuss individualised long regimen with PCAC/NCAC.
- Follow LPA and phenotypic DST results and discuss.

STEP 3: If on ART, adjust ART regimen

Check latest viral load result. If not done in past 3 months, repeat viral load.

Viral load < 50

- If on EFV, avoid giving with BDQ: switch EFV to DTG instead ↩104. If DTG not available, switch to LPVr instead ↩104.
- If on AZT, avoid giving with LZD: switch AZT to TDF or ABC instead ↩104.

Viral load 50 - 999
Discuss with experienced doctor or PCAC/NCAC.

Viral load ≥ 1000

- If on EFV, avoid giving with BDQ: switch EFV to LPVr instead ↩104.
- If on LPVr, continue.
- If on AZT, avoid giving with LZD: switch AZT to TDF or ABC instead ↩104.

ABC – abacavir; **AZT** – zidovudine; **BDQ** – bedaquiline; **CFZ** – clofazimine; **DTG** – dolutegravir; **EFV** – efavirenz; **FLQ** – fluoroquinolone; **LPVr** – lopinavir/ritonavir; **LZD** – linezolid; **TDF** – tenofovir

[1]TB meningitis or brain tuberculoma/TB spine/bone/joint or miliary, pericardial, abdominal or urogenital TB. [2]Discordance here refers to instance where Xpert result is rifampicin-resistant and LPA result is rifampicin-sensitive. [3]Heteroresistance here refers to both rifampicin-susceptible and rifampicin-resistant strains of TB in the same sputum sample.

Decide when to change intensive phase to continuation phase

• If patient on short regimen:

At end of month 4, assess clinical condition and check sputum results:

Month 4 smear negative

Clinically improving

Change to continuation phase for 5 months
- Select medications according to regimen and dose according to weight ⮌93.
- Ensure bedaquiline given for at least 6 months.
  - If slow clinical response, extensive bilateral cavitations on chest x-ray or fluoroquinolone sensitivity not confirmed, consider extending bedaquiline to 9 months: present to PCAC/NCAC.

Clinically not improving

- Assess adherence and ask about alcohol/drug use ⮌124, stress/anxiety/depression ⮌126 and side effects ⮌94.
- Optimise management of chronic conditions: if HIV ⮌96, if diabetes ⮌112, if hypertension ⮌115.
- Review all previous sputum results. Request 1st and 2nd line LPA and extended phenotypic DST on latest culture positive specimen.

- Present to PCAC.
- Extend intensive phase to 6 months and bedaquiline to 9 months.

Month 4 smear positive

• If patient on long regimen:

At end of month 6, assess clinical condition and check sputum results:

Month 4 culture negative

Are there any of:
- Slow clinical response[1]
- Extensive bilateral cavitations on chest x-ray
- Fluoroquinolone sensitivity not confirmed

No

Change to continuation phase for 12 months
Select medications according to regimen and dose according to weight ⮌93.

Yes

Consider extending intensive phase to 8 months and BDQ to 9 months: present to PCAC/NCAC.

Month 4 culture positive

- Assess adherence and ask about alcohol/drug use ⮌124, stress/anxiety/depression ⮌125 and side effects ⮌93.
- Optimise management of chronic conditions: if HIV ⮌95, if diabetes ⮌112, if hypertension ⮌114.

Consider possible treatment failure
Consider extending intensive phase to 8 months and BDQ to 9 months, or changing to rescue regimen: present to PCAC/NCAC.

[1]Slow clinical response: poor weight gain, ongoing TB symptoms, poor improvement on chest x-ray or delayed smear/culture conversion.

Select RR-TB medications according to chosen RR-TB regimen

Regimen	Intensive phase	Continuation phase
Short regimen	• Bedaquiline (at least 6 months) • Linezolid (2 months only) • Levofloxacin • Clofazimine • High dose isoniazid[1] • Pyrazinamide • Ethambutol	• Bedaquiline (for 6 months in total) • Levofloxacin • Clofazimine • Pyrazinamide • Ethambutol
Long regimen This long regimen is for uncomplicated cases as chosen in step 2 ⮌91. Avoid and discuss instead if any of: • Hb < 8 • CNS disease (TB meningitis or brain tuberculoma) • Resistance to FLQ, BDQ, LZD or CFZ • A close contact with resistance to FLQ, BDQ, LZD or CFZ or failing treatment	• Bedaquiline • Linezolid • Levofloxacin • Clofazimine • Terizidone	• Levofloxacin • Clofazimine • Terizidone

Note: manage the patient with RR-TB at a health facility that has reliable access to RR-TB medications and monitoring equipment available.

Dose RR-TB medications according to weight

Medication		Daily dose				Note
		30-35kg	36-45kg	46-70kg	> 70kg	
Bedaquiline (BDQ)		• 400mg daily for first 2 weeks • Then 200mg 3 days a week (Mon/Wed/Fri)				If previous cardiac ventricular arrhythmias, severe coronary artery disease, known or family history of prolonged QT syndrome, previous intolerance to bedaquiline, or on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.
Linezolid (LZD)		600mg	600mg	600mg	600mg	Avoid starting if Hb < 8, neutrophils < 0.75 or platelets < 50: discuss instead with PCAC/NCAC.
Levofloxacin (LFX)		750mg	750mg	1000mg	1000mg	
Clofazimine (CFZ)		100mg	100mg	100mg	100mg	If on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.
Isoniazid	High dose (hdINH)	450mg	450mg	600mg	600mg	If phenotypic DST confirms sensitivity to INH, reduce to normal dose INH.
	Normal dose (INH)	200mg	300mg	300mg	300mg	
Pyrazinamide (Z)		1000mg	1500mg	1500mg	2000mg	
Ethambutol (E)		800mg	800mg	1200mg	1200mg	
Terizidone (TRD)		500mg	750mg	750mg	750mg	If previous psychosis, avoid terizidone and present to PCAC/NCAC[2].
Delamanid (DLM)		100mg 12 hourly	100mg 12 hourly	100mg 12 hourly	100mg 12 hourly	
PAS		8g	8g	8g	8g	
Ethionamide (ETO)		500mg	500mg	750mg	750mg	
Moxifloxacin (MFX)		400mg	400mg	400mg	400mg	If on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.
Amikacin (Am)		625mg	750mg	750-1000mg	1000mg	Ensure audiometry (hearing test) done at baseline and then monthly.
Rifabutin		300mg	300mg	300mg	300mg	• Give for 6 months if heteroresistance confirmed by laboratory and approved by PCAC/NCAC. • If on lopinavir or atazanavir, reduce rifabutin dose to 150mg daily.

BDQ – bedaquiline; **CFZ** – clofazimine; **FLQ** – fluoroquinolone (e.g levofloxacin or moxifloxacin); **LZD** – linezolid;

[1]If phenotypic DST confirms sensitivity to INH, reduce to normal dose INH. [2]Start other medications while awaiting response from PCAC/NCAC.

Look for and manage RR-TB treatment side effects			
Side effect		**TB medication likely to cause side effect**	**Management : consult latest NDoH guideline or discuss with PCAC/NCAC.**
Chest pain, palpitations		Bedaquiline, clofazimine, delamanid, moxifloxacin	Do ECG and discuss with PCAC/NCAC same day.
Faintness		Bedaquiline, clofazimine, delamanid, moxifloxacin	Do ECG and discuss with PCAC/NCAC same day.
Dizziness		Bedaquiline, clofazimine, delamanid, moxifloxacin, amikacin	• Do ECG and discuss with PCAC/NCAC same day. • If on amikacin, stop amikacin and present to PCAC/NCAC for medication substitution[1].
Jaundice		Most RR-TB medications	Stop all medications and refer same day.
Nausea, vomiting, abdominal pain		Most RR-TB medications	• Check ALT and review result within 24 hours: - If ALT ≥ 100U/L, stop all medications and refer same day. - If ALT 50-99U/L, doctor to assess for possible causes, consider interrupting treatment and repeat ALT within 1 week. If unsure, discuss with specialist. • If nausea/vomiting: - Reassure usually improves after a few weeks. - Advise to eat a non-fatty meal before taking medication. - If no better, give metoclopramide 10mg 30 minutes before RR-TB medication. - If still no better and on ethionamide, give ethionamide in divided doses.
Skin rash/itch		Most RR-TB medication	Assess and manage ⮌58.
Seizures		Terizidone, levofloxacin, high dose INH	Manage seizure ⮌15 and refer same day.
Psychosis		Terizidone, high dose INH, levofloxacin, ethionamide	Manage psychosis ⮌74 and discuss/refer same day.
Change in vision	Change in visual acuity	Linezolid, ethambutol	• Stop linezolid and ethambutol and refer to eye specialist same day. • Discuss possible medication substitution[1] with PCAC/NCAC.
	Painful/red eyes, blurred vision, sensitive to light	Rifabutin	Stop rifabutin and refer to eye specialist same day.
Hearing loss/ringing in ears		Amikacin	Stop amikacin and discuss possible medication substitution[1] with PCAC/NCAC.
Diarrhoea		Ethionamide, PAS, delamanid, bedaquiline, linezolid	• Reassure usually improves and advise to increase fluid intake. • Give loperamide 4mg initially, then 2mg after each loose stool, maximum 12mg/day. • If severe and not resolving, discuss with PCAC/NCAC.
Joint pain		Pyrazinamide, levofloxacin, delamanid, bedaquiline	Give ibuprofen 400mg 8 hourly as needed with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
Pain/numbness of feet		Terizidone, high dose INH, linezolid	**Peripheral neuropathy** likely, discuss withPCAC/NCAC.
Headaches		Linezolid, delamanid, bedaquiline	• Give paracetamol 1g 6 hourly as needed for up to 5 days. • Also consider other cause of headache ⮌26.
Skin darkening		Clofazimine	Reassure will improve after treatment completed.

[1]Continue other medications while awaiting response from PCAC/NCAC.

HIV: DIAGNOSIS

- Encourage patient and his/her partner/s to test for HIV.
- If HIV self-screening test done, confirm results with routine tests below.

Obtain informed consent

- Educate patient about HIV and AIDS, methods of HIV transmission, risk factors, treatment and benefits of knowing one's HIV status.
- Explain test procedure and that it is completely voluntary. Children < 12 years need parental/guardian consent.

Test

Do first rapid HIV test on fingerprick blood.

Positive

Do a confirmatory[1] rapid HIV test on fingerprick blood.

Positive

Both tests positive

Patient has HIV.

- Give routine HIV care at this visit ↩96.
- Encourage HIV testing for partner/s and children. Use HIV index testing forms, if available.

Negative

Repeat both first and confirmatory[1] rapid HIV tests above.

One positive and one negative[2]

- Send blood for an HIV ELISA test.
- Advise patient to return for result within 7 days.

ELISA positive

Laboratory will do repeat ELISA test on the same specimen.

2nd ELISA positive

Patient has HIV.

- Give routine HIV care at this visit ↩96.
- Encourage HIV testing for partner/s and children. Use HIV index testing forms, if available.

2nd ELISA negative

ELISA results inconclusive

- HIV cannot be confirmed or excluded.
- Advise patient to repeat rapid HIV tests in 6 weeks.

ELISA negative

Both tests negative

HIV test result negative

Was patient at risk of HIV infection in past 6 weeks (new or multiple sexual partners and/or unprotected sex)?

Yes

Repeat HIV test after 6 weeks.

No

- Patient does not have HIV.
- Encourage patient to remain negative and advise when to re-test:
  - If sexually active: 6-12 monthly
  - If pregnant: at every antenatal visit. If breastfeeding, retest 3 monthly.
- Offer referral for male circumcision to diminish risk of HIV infection.

Negative

HIV test result negative

Was patient at risk of HIV infection in past 6 weeks (new or multiple sexual partners and/or unprotected sex)?

Yes

Repeat HIV test after 6 weeks.

No

- Patient does not have HIV.
- Encourage patient to remain negative and advise when to re-test:
  - If sexually active: 6-12 monthly
  - If pregnant: at every antenatal visit. If breastfeeding, retest 3 monthly.
- Offer referral for male circumcision to diminish risk of HIV infection.

Support

- Ensure patient understands test result and knows where and when to access further care.
- Encourage patient to follow safe sex practices. Demonstrate and give male/female condoms.

[1]Use a different rapid test for the confirmatory test. [2]If pregnant in labour, manage baby as high-risk until mother's status confirmed.

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 genital discharge/ulcer or partner has been treated for an STI in past 8 weeks, manage for STI ⮌41.
TB	Every visit	If cough, weight loss, night sweats or fever, exclude TB ⮌81. Avoid starting ART until TB excluded.
Adherence	Every visit	Check record of attendance and adherence to medication. If poor adherence/attendance, give enhanced adherence support.
Side effects	Every visit	• Ask about side effects from ART ⮌102, TB preventive therapy (TPT) ⮌98, co-trimoxazole preventive therapy (CPT) ⮌98 and fluconazole ⮌98. • If suspected adverse drug reaction, fill in adverse drug reaction form and submit to pharmacist or email or fax to npc@health.gov.za or (012) 395 9506.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Sexual health	Every visit	Ask about risky sexual behaviour (patient or partner has new or multiple partner/s or uses condoms unreliably) and sexual orientation. If sexual problems ⮌50.
Family planning	Every visit	• If woman of child bearing potential, ask about pregnancy: if missed period and not on contraception, do pregnancy test. • Assess patient's contraceptive needs. Advise reliable contraception (condoms *plus* IUCD, subdermal implant, injectable or sterilisation) ⮌136, especially if on DTG[2]. - If on efavirenz, avoid subdermal implant and oral contraceptive as less effective. Use instead IUCD or injectable *and* condoms. - If on nevirapine or lopinavir/ritonavir, avoid oral contraceptive as less effective. Use instead IUCD, subdermal implant or injectable *and* condoms. • If planning pregnancy: start folate 5mg daily and advise to defer pregnancy until virally suppressed. If on DTG, discuss risks and benefits of a switch to TEE[3] if VL suppressed.
PMTCT	If pregnant/breastfeeding	If not on ART, start ART same day. If pregnant, give antenatal care ⮌138.
Palliative care	If deteriorating	If failing 3rd line ART and deteriorating, also give palliative care ⮌148.
Weight	Every visit	• At diagnosis, measure height and weight to calculate BMI. BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support. • If weight loss ≥ 5% of body weight in 4 weeks ⮌19. If weight < 40kg and on efavirenz, adjust dose ⮌102. • If on dolutegravir, monitor for weight gain: encourage healthy lifestyle with regular exercise and healthy diet. If excessive weight gain, discuss.
CVD risk	At diagnosis	Assess CVD risk ⮌110. If CVD risk > 20% or known CVD[4], avoid lopinavir/ritonavir, doctor to give instead atazanavir/ritonavir and switch simvastatin to atorvastain 10mg daily.
Cervical screen	At diagnosis, then 3 yearly	⮌47.
Stage	Every visit to check if stage has worsened	• Check weight, mouth, skin, previous and current problems. If not on ART, use most advanced stage even if recovered. If on ART, use stage[5] done at this visit. • Use stage to decide when to start co-trimoxazole ⮌98.

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 within past year • Oral candida • Oral hairy leukoplakia • Unexplained weight loss ≥ 10% body weight or BMI < 18.5 • Unexplained diarrhoea > 1 month • Unexplained fever > 1 month • Severe bacterial infections (pneumonia, meningitis) • Unexplained anaemia < 8, neutropaenia < 0.5 or chronic thrombocytopaenia < 50	• Extrapulmonary TB within past year • 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

Continue to assess the patient with HIV →97.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]DTG (dolutegravir) is only for use once 2019 ART guidelines approved. [3]Tenofovir/emtricitabine/efavirenz (TDF/FTC/EFC). [4]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. [5]Once on ART, the aim is for patient to be clinical stage 1.

Check tests according to table and review results below:

At diagnosis	Starting/changing ART	3 months on regimen	6 months on regimen	1 year on regimen	6 monthly	Yearly	Also
• Urine: dipstick and pregnancy test[1] • Syphilis • HBsAg • Hb (if low, FBC + differential count) • CD4 • Cryptococcal antigen[2] if CD4 < 100	• **Starting TDF:** creatinine • **Changing from TDF:** HBsAg if not already done • **Starting AZT:** FBC + differential count • **Starting LPVr:** cholesterol, triglycerides • **On TB treatment:** ALT	• **TDF:** creatinine • **AZT:** FBC + differential count • **LPVr:** cholesterol, triglycerides • **Restarted ART:** viral load	• Viral Load • **TDF:** creatinine • **AZT:** FBC + differential count	• Viral load • CD4 • **TDF:** creatinine	• Not on ART: CD4 • On ART: CD4 only if previous CD4 < 200	• Viral load • **TDF:** creatinine	Check viral load more often if pregnant ⮌140, breastfeeding ⮌144 or RR-TB ⮌86.

TDF – tenofovir **HBsAg** – hepatitis B surface antigen **AZT** – zidovudine **FBC** – full blood count **LPVr** – lopinavir/ritonavir **RR-TB** – rifampcin-resistant TB

Urine dipstick	• If proteinuria, check creatinine (eGFR) if not already done. Interpret result below. • If glucose in urine: check random fingerprick glucose ⮌13.
Urine pregnancy test	• If pregnancy test positive, give antenatal care ⮌138 and if not on ART, start same day. • If pregnancy test negative, advise to use reliable contraception (IUCD, subdermal implant or sterilisation, *plus* condoms), especially if on dolutegravir.
Syphilis	If positive ⮌45.
Hepatitis B (HBsAg)	• If HBsAg positive: check ART regimen contains TDF and 3TC/FTC. If switching ART regimens, avoid stopping tenofovir. If eGFR ≤ 50 or on amikacin, discuss with experienced ART doctor or HIV hotline ⮌155. - Also screen for hepatitis C: send blood for anti-HCV (EIA-antibody) or do rapid test, if available, using blood or saliva. If positive, refer. - If pregnant, manage the baby ⮌105. • If HBsAg negative, give 3 doses of hepatitis B vaccine and check immune response ⮌105.
Hb (FBC + differential count)	• If Hb < 12 (woman) or < 13 (man), **anaemia** likely ⮌23. • If Hb ≤ 8 or neutrophils ≤ 1.0: avoid zidovudine. If already on zidovudine, doctor to switch medication ⮌101. If difficulty breathing, chest pain or dizziness, refer same day.
CD4	Use CD4 to guide prophylaxis treatment, see table ⮌98.
Cryptococcal antigen (CrAg)	• If CrAg positive and symptomatic (headache, confusion) or pregnant, refer urgently. • If CrAg positive and asymptomatic and not previously treated: delay ART for 2 weeks and start fluconazole ⮌98. If already on ART, discuss with doctor or HIV hotline ⮌155.
Creatinine (eGFR)	• If not pregnant, check eGFR result. If eGFR < 30, refer same day. - If baseline eGFR ≤ 50: if unwell, discuss with doctor. If well, avoid tenofovir and start/switch to abacavir instead. Calculate creatinine clearance (CrCl)[3] to adjust doses of other medications. Check for proteinuria and repeat eGFR (CrCl) after 1 month. If repeat eGFR (CrCl) ≤ 50, refer to doctor to check BP, glucose, urine dipstick, send urine for protein/creatinine ratio and arrange kidney ultrasound. - If on tenofovir and eGFR ≤ 50, doctor to switch medication ⮌101. • If pregnant and creatinine > 85, avoid tenofovir, use instead abacavir and refer to doctor to assess impaired kidney function.
ALT (and total bilirubin, if done)	• If ALT ≥ 200 or jaundice, stop all medications and discuss/refer same day. • If ALT 120 - 199 (or total bilirubin > 40): - If symptoms (nausea/vomiting/abdominal pain), stop all medications and discuss/refer same day. - If on TB treatment and no symptoms, continue medications and monitor for symptoms. Also repeat ALT weekly until < 120. • If ALT 50-120: - If symptoms (nausea/vomiting/abdominal pain), doctor to assess for possible causes[4], consider interrupting treatment/delaying ART and repeat ALT within 1 week. If unsure, discuss with specialist. - If on TB treatment and no symptoms, continue medications and monitor for symptoms.
Cholesterol, triglycerides	If CVD risk > 20% or known CVD[5], or total cholesterol /triglycerides raised, avoid lopinavir/ritonavir. Doctor to give atazanavir/ritonavir instead, repeat fasting cholesterol and triglycerides in 3 months, and if statin needed, avoid simvastatin and give instead atorvastatin 10mg daily. If fasting triglycerides ≥ 10 or random triglycerides ≥ 7.5, discuss/refer same day.
Viral load (VL)	• If restarted ART: if VL < 1000, consider switch to DTG ⮌101. If VL ≥ 1000, give enhanced adherence support and repeat VL in 3 months: if repeat VL < 1000, consider switch to DTG ⮌101; if repeat VL ≥ 1000, avoid switching to DTG, manage unsuppressed VL →104. • If VL < 50, consider switch to DTG ⮌101. Continue routine VL monitoring (see table above). • If VL ≥ 50, manage unsuppressed viral load ⮌104.

Advise and treat the patient with HIV →98.

[1]Only do if woman of child bearing potential has missed period and is not on contraception. [2]Laboratory will usually automatically do this if CD4 < 100. [3]Creatinine clearance = (140 - age) x weight (kg) ÷ serum creatinine (µmol/l). If woman x 0.85. [4]If not already done, check HBsAg, and consider alcohol or drug-induced liver injury. [5]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.

Advise the patient with HIV

- Encourage disclosure 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 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 stay well and to prevent resistance.
- Explain the benefits of starting ART early, regardless of CD4 or stage but especially if CD4 ≤ 200, stage 3 or 4, pregnant or breastfeeding.
  - If patient chooses not to start ART, identify barriers, link to counselling and review blood results and ART readiness in 1 week.
    - If remains unwilling to start, re-educate about importance of early treatment, refer to wellness programme, and advise to return immediately if s/he becomes unwell.
- Give **enhanced adherence support** to the patient with poor adherence/attendance or an unsuppressed viral load:
  - Educate on the importance of adherence and dangers of resistance.
  - If ART interrupted, ask why: alcohol/drug use ⮌124, stress ⮌75, side effects ⮌102?
  - Plan with patient how to take treatment. Consider adherence aids (pillboxes, diary, alarm reminders).
  - Refer for support: adherence counsellor, support group, treatment buddy, community care worker.

Treat the patient with HIV

- **If not on ART:** start ART within 7 days, same day if possible ⮌99. Give ART regardless of CD4 or stage, especially if CD4 ≤ 200, stage 3 or 4, pregnant or breastfeeding.
- **If ART interrupted or pregnant and previous PMTCT:** restart ART ⮌99. Give enhanced adherence support above.
- **If already on ART:** continue treatment. Change ART or adjust doses if:
  - Dolutegravir[2] available: continue current regimen until routine viral load (VL) due[1]: consider switch to DTG according to VL results ⮌101.
  - Virological failure, contraindication to current ART, abnormal blood result or intolerable side effect ⮌101.
  - Patient develops TB: if DS-TB or INH mono-resistant TB ⮌86. If RR-TB ⮌91.
- Give influenza vaccine 0.5mL IM yearly if CD4 > 100.
- Give prophylaxis (TB preventive therapy (TPT), co-trimoxazole preventive therapy (CPT) and fluconazole) as needed:

Medication	When to give/avoid	What to give	Side effects	When to stop
TB preventive therapy (TPT)	• Start TPT if not already had TPT *and* no current symptoms of TB. • If pregnant, only start if CD4 ≤ 100. If CD4 > 100, delay TPT until 6 weeks after delivery. • If on DS-TB treatment, only offer TPT once successfully completed treatment. • Avoid if TB symptoms, previous RR-TB, severe peripheral neuropathy, liver disease, alcohol misuse.	• Give isoniazid: - If < 50kg, give 200mg daily. - If ≥ 50kg, give 300mg daily. • Give pyridoxine 25mg daily.	• Peripheral neuropathy ⮌57. • Rash ⮌58. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌97.	Stop after 12 months of TPT.
Co-trimoxazole preventive therapy (CPT)	Start if: • CD4 ≤ 200 • Stage 2, 3 or 4	• If CrCl > 50, give co-trimoxazole 160/800mg daily. • If CrCl 10-50, give co-trimoxazole 120/600mg daily. • If CrCl < 10, give co-trimoxazole 80/400mg daily.	• Nausea/vomiting ⮌38. • Rash ⮌58. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌97.	Stop after at least 1 year once CD4 > 200, regardless of clinical stage.
Fluconazole	Start if cryptococcal antigen positive: • If symptomatic (headache, confusion) or pregnant, refer same day. • If asymptomatic, not pregnant and not previously treated, start fluconazole and delay ART for 2 weeks.	Give fluconazole 800mg daily for 2 weeks, then 400mg daily for 2 months, then 200mg daily to complete at least 1 year.	• Nausea/vomiting ⮌38. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌97.	Stop after at least 1 year and two CD4 > 200 at least 6 months apart *and* VL suppressed on ART.

Review the patient with HIV

- **If starting, restarting or changing ART:**
  - If pregnant/breastfeeding: review 1 week after starting ART, then monthly.
  - If not pregnant/breastfeeding: review monthly.
  - Advise to return before next appointment if deteriorates after starting ART: refer to doctor same day.
- **Once on ART:** review monthly until stable (viral load <50, normal ART blood results, is adherent and well), then 2 monthly. If > 1 year on ART and stable, refer for differentiated care[3].
- **If declines ART:** review patient 6 monthly.

[1]Avoid doing additional, unnecessary VL testing. [2]Only for use once 2019 ART guidelines approved. [3]Options for differentiated care include adherence clubs, spaced and fast lane appointments and Central Chronic Medicine Dispensing and Delivery (CCMDD).

Start or restart ART

STEP 1. Choose what ART regimen to start or restart

Patient starting ART

Help patient to decide whether to use dolutegravir[1] or not ⮌103.
S/he must understand risks/benefits.

Is patient known with kidney disease (eGFR ≤ 50[2])?

No

Patient chooses to use DTG.

Choose TDF/3TC/DTG[3].

Patient chooses to avoid DTG.

Known with active psychiatric illness or on bedaquiline?

- No: Choose TDF/FTC/EFV[4].
- Yes: Choose TDF/FTC + LPVr.

Yes

Patient chooses to use DTG.

Choose ABC/3TC + DTG.

Patient chooses to avoid DTG.

Known with active psychiatric illness or on bedaquiline?

- No: Choose ABC/3TV + EFV.
- Yes:
  - Choose ABC/3TC + LPVr.
  - If unsure, discuss with experienced ART doctor or HIV hotline ⮌155.

Patient re-starting ART after treatment interruption (or previous PMTCT)

Ask about: reason for stopping, side effects, previous medications, viral loads.

Is patient pregnant?

No

- If any of following, discuss with experienced ART doctor or HIV helpline ⮌155.
  - Previous side effects
  - Multiple previous ART interruptions
  - Last viral load VL ≥ 50
  - On RR-TB[5] treatment
  - Patient ill or CD4 < 50
- If none of above:

Choose same ART regimen as before.
Check VL at 3 months.

Yes

- Discuss risks/benefits of dolutegravir[1] ⮌102.
- Choose regimen according to last VL result:

No results or VL ≥ 50

Recommend AZT/3TC + DTG[6].
If Hb ≤ 8, discuss instead.

Previous VL < 50

Recommend TDF/3TC/DTG[3,6].
If known with kidney disease or creatinine > 85, use ABC instead of TDF.

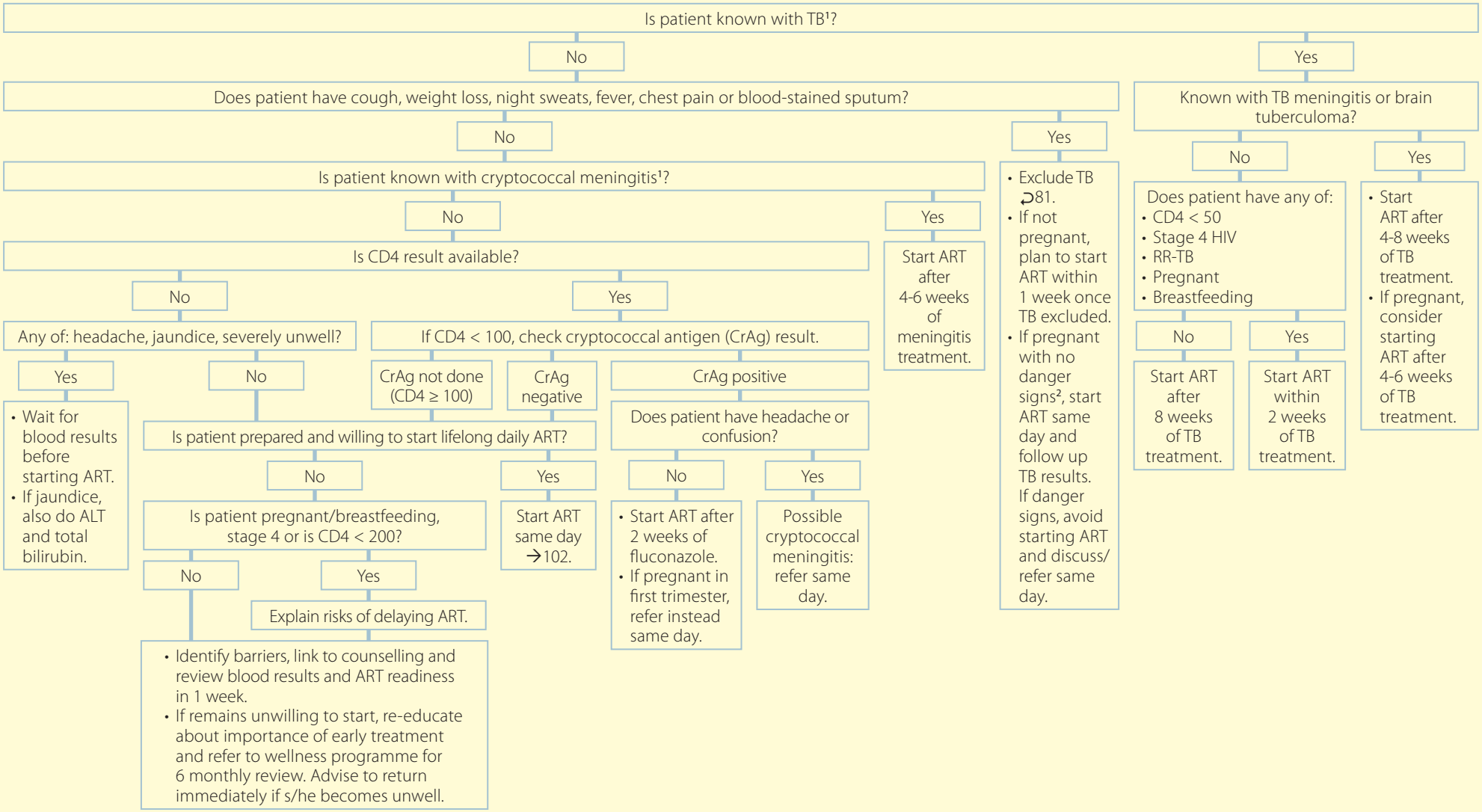
ABC – abacavir; **AZT** – zidovudine; **DTG** – dolutegravir; **EFV** – efavirenz; **FTC** – emtricitabine; **LPVr** – lopinavir/ritonavir; **TDF** – tenofovir; **3TC** – lamivudine.

STEP 2. Check other medications and change if needed: especially review contraceptives, DS-TB treatment, simvastatin and epilepsy treatment.
STEP 3. Take bloods according to chosen ART regimen ⮌97.
Continue to STEP 4. Decide timeframe to start or restart ART →100.

[1]Only for use once 2019 ART guidelines approved. [2]If pregnant, use instead creatinine > 85. [3]Also known as TLD. [4]Also known as TEE. [5]RR-TB: Rifampicin-Resistant TB. [6]Ensure mother understands risks and benefits of DTG for future pregnancies.

STEP 4. Decide timeframe to start or restart ART

Aim to start same day but first check if there is a reason to delay ART:



Continue to STEP 5 to start/restart ART →102.

[1]If patient has TB and cryptococcal meningitis, discuss with experienced ART clinician about when to start ART. [2]Difficulty breathing, respiratory rate ≥ 30, temperature ≥ 38°C, pulse > 100, BP < 90/60, coughing up blood, confusion or agitation, weight loss > 5% or unable to walk unaided.

Change ART

Help patient to decide whether to use dolutegravir or not ⮌103. S/he must understand risks/benefits.

STEP 1. Choose new ART regimen according to reason for change

Patient has virological failure.
(VL ≥ 1000 on two consecutive occasions or if on DTG or LPVr or ATVr, virological failure is VL ≥ 1000 on at least three occasions over the course of 2 years)

Check which ART patient is on:

Patient on EFV or NVP

Change to 2nd line ART.
Choose new regimen based on current ART:

Currently on TDF

Choose new ART regimen according to HBsAg result.

HBsAg positive

- Switch to TDF/3TC/DTG + AZT. If Hb ≤ 8 or on linezolid, discuss.
- If patient chooses to avoid DTG, use instead TDF/FTC + LPVr.

HBsAg negative

- Switch to AZT/3TC + DTG.
- If patient chooses to avoid DTG, use instead AZT/3TC + LPVr.
- If Hb ≤ 8 or on linezolid, discuss.

Currently on ABC

Switch to AZT/3TC + DTG.

Currently on AZT

Discuss with experienced ART doctor or HIV hotline ⮌155.

Patient on DTG or LPVr or ATVr

Discuss with experienced ART clinician/ HIV hotline ⮌155: discuss if resistance testing needed and determine new ART regimen accordingly.

Patient has contraindication to current ART, abnormal blood result or intolerable side effect.

- Check result of VL done in last 6 months[1]:
  - If VL < 50: change problematic medication same day. Switch to a medication from the same section (see table) ⮌102. If reason to avoid new medication, discuss with specialist.
  - If VL ≥ 50: discuss with experienced ART doctor or HIV hotline ⮌155.

Dolutegravir[2] available and patient, currently on EFV or NVP, chooses to use it.

Check result of VL done in last 6 months. If no VL in last 6 months: delay changing ART until routine annual VL is due. Avoid unnecessary VL tests.

VL < 50

- Change EFV or NVP to DTG ⮌102.
- Where possible, use single fixed dose combination (FDC) tablet: replace FTC with 3TC to give one tablet containing TDF/3TC/DTG.

VL 50-999

- Delay changing to DTG, continue current ART regimen.
- Look for causes of increased VL (e.g. recent illness, dosing/adherence issues, drug interactions) and give enhanced adherence support.
- Repeat VL in 3 months:

VL 50-999	VL ≥ 1000
Change EFV or NVP to DTG ⮌102. Where possible, use single fixed dose combination (FDC) tablet: replace FTC with 3TC to give one tablet containing TDF/3TC/DTG.	Avoid a single drug switch to DTG, continue current ART regimen and manage unsuppressed VL ⮌104.

VL ≥ 1000

Avoid a single drug switch to DTG, continue current ART regimen and manage unsuppressed VL ⮌104.

If unsure, discuss with experienced ART doctor or HIV hotline ⮌155.

ABC – abacavir; **ATVr** – atazanavir/ritonavir; **AZT** – zidovudine; **DTG** - dolutegravir; **EFV** - efavirenz; **FTC** – emtricitabine; **LPVr** - lopinavir/ritonavir; **TDF** – tenofovir; **3TC** – lamivudine.

STEP 2. Check other medications and change if needed: especially review contraceptives, DS-TB treatment, simvastatin and epilepsy treatment.
STEP 3. Take bloods according to chosen ART regimen ⮌97.
STEP 4. Decide timeframe to change ART: if contraindication, side effect or changing to 2nd line while pregnant/breastfeeding, switch same day and review blood results as soon as available. Otherwise, wait for results.
Continue to STEP 5. Change ART →102.

[1]If no VL done in last 6 months: do VL at this visit, switch medication same day and check viral load result as soon as available. If viral load ≥ 1000, refer/discuss. [2]Only for use once 2019 ART guidelines approved.

STEP 5. Start/change ART

Give 3 antiretrovirals (1 from each of the 3 sections in the table below) according to previously chosen ART regimen and blood results, if available. Where possible, use fixed dose combination (FDC) tablets.

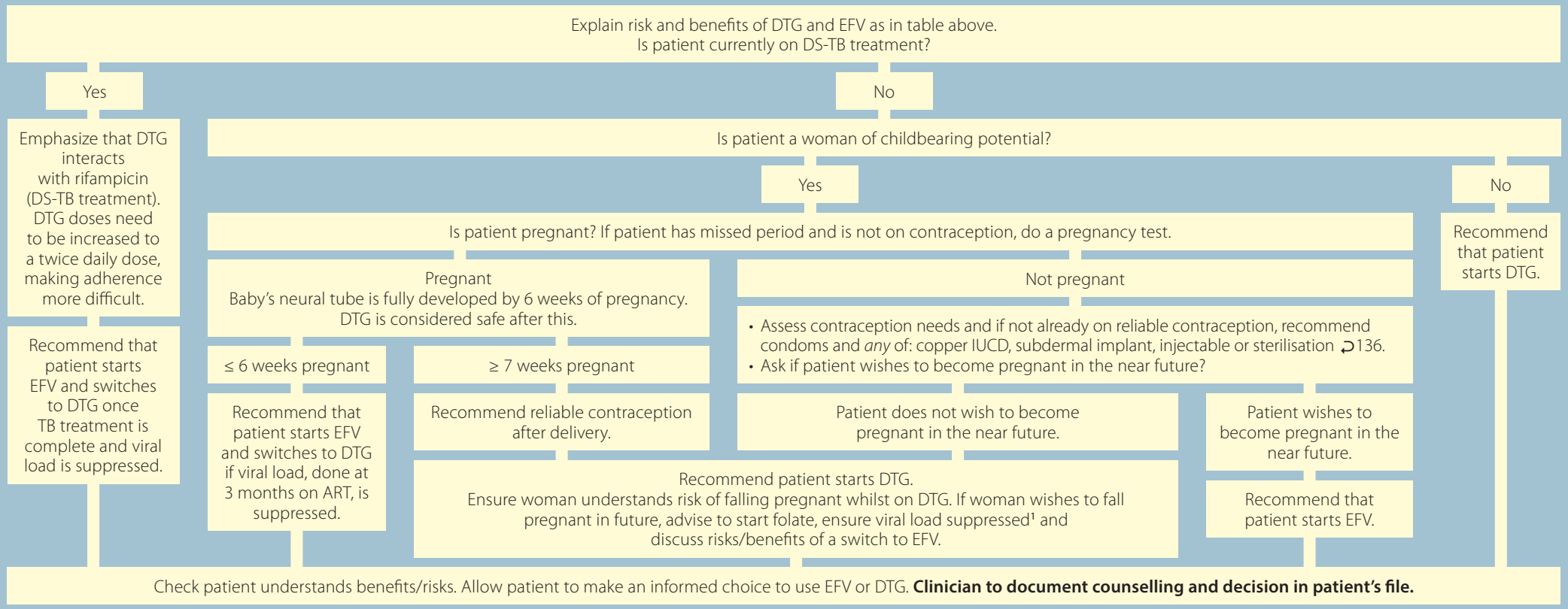
	Medication	Dose	When to avoid	Urgent side effects (stop antiretroviral and refer same day)	Short-term side effects that usually resolve. If persists ≥6 weeks, discuss/refer.	Long-term side effects
1	Tenofovir (TDF)[1]	• CrCl > 50: give 300mg daily • CrCl ≤ 50: avoid	• Kidney disease: eGFR < 60 or CrCl ≤ 50 • On amikacin • If pregnant: creatinine > 85	Kidney failure • If CrCl 30-50 and well, refer to doctor. • If CrCl 30-50 and unwell, refer same day. • If CrCl < 30, refer same day.	Nausea, vomiting	
	Abacavir (ABC)	• 300mg 12 hourly or 600mg daily • Give "alert card" found in packaging warning of Abacavir Hypersensitivity Reaction (AHR).	Previous AHR	AHR likely if ≥ 2 of: 1) Fever 2) Rash 3) Fatigue/body pain 4) Nausea, vomiting, diarrhoea or abdominal pain 5) Sore throat, cough or difficulty breathing.		
	Zidovudine (AZT)	• Use only if TDF and ABC not suitable. • CrCl ≥ 10: give 300mg 12 hourly. • CrCl < 10: give 300mg daily.	• Hb ≤ 8 (Hb ≤ 7, if pregnant) • Neutrophils ≤ 1.0 • On linezolid	• Lactic acidosis[2] • Anaemia (pallor) with respiratory rate ≥ 30, dizziness/faintness or chest pain	Headache, nausea, muscle pain, fatigue (if Hb ≤ 8 doctor to switch antiretroviral ⮌98).	Lipoatrophy (fat loss in face, limbs and buttocks): switch to tenofovir or abacavir.
2	Lamivudine (3TC)[1]	• CrCl > 50: give 150mg 12 hourly *or* 300mg daily. • CrCl 10-50: give 150mg daily. • CrCl < 10: give 50mg daily.		Uncommon	Uncommon	Uncommon
	Emtricitabine (FTC)[1]	200mg daily		Uncommon	Uncommon	Darkening of palms and soles
3	Dolutegravir (DTG)[1] *(Only for use once 2019 ART guidelines approved)*	• 50mg daily • If on carbamazepine/starting rifampicin: add extra DTG 50mg single dose at night.	• Planning pregnancy[3] • First 6 weeks of pregnancy • If BMI ≥ 30, consider instead EFV. • Already on rifampicin	Uncommon	• Headache, nausea, diarrhoea • Insomnia: advise to take treatment in the morning.	Weight gain: if BMI ≥ 30, consider switch to EFV.
	Efavirenz (EFV)[1]	• ≥ 40kg: give 600mg daily. • < 40kg: give 400mg daily.	• Active psychiatric illness • On bedaquiline	• Rash ⮌58. • Jaundice • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌97. • Psychosis	• Rash ⮌58. • Headache, dizziness, sleep problems • Low mood ⮌75.	Gynaecomastia (breast enlargement): switch to dolutegravir or lopinavir/ritonavir ⮌101.
	Nevirapine (NVP)	• NVP being discontinued, avoid starting. • 200mg daily for 2 weeks[4], then 200mg 12 hourly	• Avoid starting NVP, especially if CD4 > 250 (woman) or > 400 (man) • ALT ≥ 100 • On rifampicin	• Rash ⮌58. • Jaundice • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌97.	Rash ⮌58.	
	Lopinavir/ritonavir (LPVr)	• 400/100mg 12 hourly (with food) • If on rifampicin: double LPVr dose gradually ⮌86.	• Chronic diarrhoea • Cholesterol/triglycerides raised • CVD risk > 20%	• Jaundice • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌97.	Diarrhoea: if intolerable or > 6 weeks, switch to atazanavir/ritonavir ⮌101.	Dyslipidaemia: if total cholesterol > 6 or triglycerides > 5, switch to ATVr ⮌101.
	Atazanavir/ritonavir (ATVr)	300mg/100mg daily (with food)	On rifampicin	• Jaundice[5] • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌97.	Headache	

[1]Where possible use single fixed dose combination (FDC) tablet when giving TDF/3TC/DTG or TDF/FTC/EFV. [2]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 ≥ 2.0). [3]If planning pregnancy: start folate 5mg daily and advise to defer pregnancy until virally suppressed. If on DTG, discuss switch to TDF/3TC/EFV, also known as TEE, if VL suppressed. [4]If switching from EFV to NVP, no need for 2 week lead-in dose: start with 12 hourly dosing. [5]Atazanavir can cause jaundice without hepatitis. If well with no nausea/vomiting/abdominal pain, check ALT and review result within 24 hours. Discuss with specialist.

Decide with the patient when to use dolutegravir

Help patient to make an informed choice by explaining the risks and benefits of efavirenz and dolutegravir.

Dolutegravir (DTG)	Efavirenz (EFV)
• DTG is well tolerated. Side effects include weight gain and insomnia.	• EFV commonly has side effects like dizziness, sleep disturbances and low mood.
• DTG suppresses HIV viral load[1] faster than EFV.	• EFV suppresses viral load[1] but may take longer than DTG
• Safety in early pregnancy is not confirmed: possible increase in risk of neural tube defect (NTD)[2]. 3 in 1000 pregnancies (0.3%) will have an NTD. Baby's neural tube is fully developed by 6 completed weeks of pregnancy and DTG is considered safe after this.	• EFV is considered safer in early pregnancy: 1 in 1000 pregnancies (0.1%) will have an NTD[2].
• DTG does not interact with contraceptives.	• EFV may interact with subdermal and oral contraceptives and these should be avoided if on EFV.
• DTG interacts with DS-TB treatment (rifampicin) but can still be used if DTG doses are increased.	• EFV does not interact with DS-TB treatment and can be used without dose adjustments.
• DTG does not interact with RR-TB treatment (bedaquiline).	• EFV interacts with RR-TB treatment (bedaquiline) and needs to be switched to an alternative.
• It is more difficult to develop resistance[3] on DTG.	• If not taken correctly, it is easy to develop resistance[3] to EFV.



[1]A suppressed viral load means very low levels of HIV can be found in the blood. This stops HIV from damaging your immune system and keeps you healthy. It also means you are less infectious, and less likely to pass HIV on. [2]A neural tube defect (NTD) means baby's spine may not develop as it should, which causes a range of symptoms from minimal symptoms to weakness, loss of bladder control, or paralysis, depending on the abnormality [3]Resistance is when the HIV virus mutates or changes so that the medication, used to control HIV virus levels in the body, no longer works well.

Manage the patient with an unsuppressed viral load (VL ≥ 50)

- **If patient is pregnant or breastfeeding and has an unsuppressed VL ⮌146.**
- Assess possible causes: check adherence and dosing and give enhanced adherence support ⮌98. Encourage disclosure. If alcohol/drug use ⮌124, if stress ⮌75.
- Check for medication interactions and discuss with HIV hotline ⮌155.
- Ask about and document recent infection/s or illness. Manage other symptoms as on symptoms pages.

Repeat VL in 3 months:

- VL < 50 → Continue routine VL monitoring →97.
- VL 50-999 → Repeat VL in 6 months.
  - VL < 50 → Continue routine VL monitoring →97.
  - VL 50-999 → Manage further according ART regimen.
    - Patient on EFV or NVP
      - VL ≥ 1000 on *two* consecutive occasions?
        - No → Repeat VL in 3 months.
          - VL < 1000
            - If VL < 50: monitor VL routinely →97.
            - If VL 50–999:
              - If on EFV or NVP, change to DTG ⮌102. Where possible, use single fixed dose combination (FDC) tablet: replace FTC with 3TC to give one tablet containing TDF/3TC/DTG.
              - If unsure, discuss with experienced ART doctor or HIV hotline ⮌155.
          - VL ≥ 1000 → **Virological failure** likely
            - Switch to 2nd line ART →101.
            - Do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therpay (CPT) ⮌98.
        - Yes → **Virological failure** likely
          - Switch to 2nd line ART →101.
          - Do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therpay (CPT) ⮌98.
    - Patient on DTG or LPVr or ATVr
      - Has patient been on this regimen for ≥ 2 years?
        - Yes
          - VL ≥ 1000 on at least *three* occasions over last 2 years → **Virological failure** likely
            - Discuss with experienced ART doctor/HIV hotline ⮌155: discuss if resistance testing needed and determine new ART regimen accordingly.
            - Also do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therpay (CPT) ⮌98.
          - VL ≥ 1000 on one or two occasions over last 2 years
            - Any of:
              - CD4 count has dropped
              - New opportunistic infection/s
              - Been on DS-TB treatment without ART/dose adjustments[1]
            - Yes → Discuss with experienced ART doctor/HIV hotline ⮌155: discuss if resistance testing needed and determine new ART regimen accordingly.
            - No → Continue enhanced adherence support and repeat VL in 6 months: discuss results with experienced ART doctor or HIV hotline ⮌155.
            - Also do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therpay (CPT) ⮌98.
        - No
          - Continue same ART with enhanced adherence support to complete at least 2 years on this regimen.
          - Continue to repeat VL 6 monthly.

[1]Rifampicin (part of DS-TB regimen) interacts with DTG, LPVr and ATVr. DTG and LPVr require increased doses ("boosting") during DS-TB treatment. Avoid ATVr and DS-TB treatment.

HEPATITIS B (HBV)

Test for hepatitis B only if jaundiced (yellow skin/eyes), ALT raised, HIV positive starting ART or as part of post/pre-exposure prophylaxis (PEP/PrEP) workup.

Note: implement hepatitis vaccine and tests only once circular confirms funding is available.

- Send blood for hepatitis B surface antigen (HBsAg).
- If patient has yellow skin or eyes, jaundice likely, assess and manage ⮌68.
- Also test for HIV ⮌95 and syphilis ⮌45.

HBsAg positive

Patient has hepatitis B infection

- Notify.
- Educate that infection requires no specific treatment at this stage. Advise patient to return if jaundice develops.
- Educate that hepatitis B spreads via blood and sexual fluids. Advise patient to:
  - Reliably use condoms. Advise partners to test.
  - Avoid sharing toothbrushes, razors or needles.
  - Cover scratches or cuts and clean up blood spills with bleach detergent.
- If HIV positive:
  - Ensure patient on ART containing tenofovir (TDF) and lamivudine (3TC) or emtricitabine (FTC). If not, discuss with experienced ART clinician or HIV hotline ⮌155.
  - Also screen for hepatitis C: send blood for anti-HCV (EIA-antibody) or do rapid test, if available, using blood or saliva. If positive, refer.
- If patient is pregnant, manage the baby as below.
- Explain that hepatitis B infection can resolve by itself or become a chronic infection. Check HBsAg after 6 months:

HBsAg positive

Patient has chronic hepatitis B infection

- Educate that chronic hepatitis B infection can lead to liver disease. Advise to avoid/reduce alcohol intake.
- Test for HIV:
  - If HIV positive:
    - Explain that certain medications used in ART will treat hepatitis as well. These will lower the hepatitis viral levels so that risk of liver disease is lowered.
    - Ensure patient on ART containing tenofovir (TDF) and lamivudine (3TC) or emtricitabine (FTC). If not, discuss with experienced ART clinician or HIV hotline ⮌155.
  - If HIV negative, refer for further tests and management of chronic hepatitis B infection.

HBsAg negative

Hepatitis B infection has resolved.
No further treatment needed.

If high risk lifestyle[1] advise to repeat HBsAg yearly.

HBsAg negative

Patient does not have Hepatitis B.
Is patient health worker[2], HIV positive, person who injects drugs (PWID), man who has sex with men (MSM) or sex worker?

No

If high risk lifestyle[1] advise to repeat HBsAg yearly.

Yes

Give 3 doses of hepatitis vaccine 1mL IM at 0, 1 month and 6 months.

Check immune response two months after last vaccine given. Send blood for HBsAbs:

HBsAbs ≥ 10

Patient is immune due to previous hepatitis B vaccination. No further vaccination needed.

HBsAbs < 10

- Offer re-vaccination: give 3 doses of hepatitis vaccine 1mL IM, one month apart.
- Repeat HBsAb two months after last vaccine given:

HBsAbs ≥ 10

Patient is immune due to previous hepatitis B vaccination. No further vaccination needed.

HBsAbs < 10

Repeat HBsAg test and discuss/refer.

Manage the baby born to mother with hepatitis B infection

- Prevent mother-to-child tranmission: baby will need hepatitis B immunoglobulin 0.5mL IM and hepatitis B vaccine 0.5mL IM within 12 hours of delivery.
- Continue hepatitis B immunisations for baby according to childhood immunisation schedule at 6, 10 and 14 weeks.
- Arrange follow up when baby is 9 months old: take blood from baby for HBsAg and hepatitis B surface antibodies (HBsABs).
  - If HBsAg positive: **baby has hepatitis B infection**, refer.
  - If HBsAg negative and HBsAbs positive (HBsAb titre ≥ 10): baby has immunity against hepatitis B. Reassure parents, no further testing needed.
  - If HBsAg negative and HBsAbs negative ((HBsAb titre <10): repeat hepatitis B vaccine 0.5mL IM at this visit and again in 1 month. Then repeat HBsAbs test 1 month later: if HBsAbs still negative, refer.

[1]New/multiple sexual partners, unprotected sex, exposure through skin like tattoo, piercing, sharing needles/other sharps. [2]This includes student health care workers, clinic support staff (cleaners) and laboratory staff.

ASTHMA AND COPD: DIAGNOSIS

Asthma and chronic obstructive pulmonary disease (COPD) both present with cough, wheeze, tight chest or difficulty breathing. Distinguish asthma and COPD:

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 smoking or worked in dusty environment
- Previous diagnosis of TB
- Previous doctor diagnosis of COPD

Give routine COPD care ⮌109.

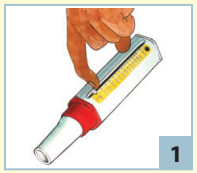
Asthma likely if several of:

- Onset before 20 years of age
- Associated hayfever, allergic conjunctivitis or eczema, other allergies
- Intermittent symptoms with normal breathing in between
- Symptoms worse at night, early morning, with cold or stress
- Patient or family have a history of asthma
- PEFR[1] response to inhaled beta-agonist (e.g. salbutamol) improves ≥ 20% (see below).

Give routine asthma care ⮌108.

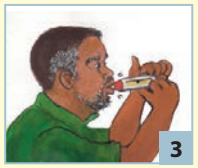
Doctor to confirm diagnosis. If doctor not available, treat as asthma →108 and refer to doctor within 1 month.

How to measure peak expiratory flow rate (PEFR)



Move marker to bottom of numbered scale.

- Stand up and take a full, deep breath.
- Hold breath and place mouthpiece between teeth.
- Form a seal with lips.



Breathe out as hard and as fast as possible (keeping fingers clear of scale).

- Read the result.
- Move marker back to bottom and repeat twice. Use the highest of the 3 readings.

How to assess response to inhaled beta-agonist

Calculate % PEFR response to inhaled beta-agonist to help diagnose asthma

- Measure 'initial PEFR'. Use the highest reading of 3 results.
- Give inhaled salbutamol 200mcg (2 puffs via a spacer) and wait for 15 minutes.
- Repeat PEFR - this is the 'repeat PEFR'
- Calculate % PEFR response = (repeat PEFR - initial PEFR) ÷ initial PEFR x 100
- If % PEFR response is ≥ 20%, **asthma** likely.

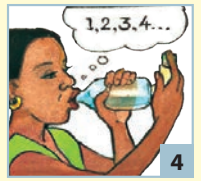
Using inhalers and spacers

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

Shake inhaler and spacer.

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

Press pump once to release one puff into spacer.



- Take 4 breaths keeping spacer in mouth.
- Repeat step 3 and 4 for each puff, waiting at least 30 seconds between puffs.
- Rinse mouth after using inhaled

[1]Peak expiratory flow rate

Calculate % of predicted PEFR

Calculate % of predicted PEFR to help provide routine asthma/COPD care
e.g. 60 year old man with asthma who is 188cm tall.

Step 1 Measure patient's PEFR ⮌106. Use the highest of 3 results - this is the 'observed PEFR'.
e.g. his PEFR readings are: 450; 420; 400. Use 450 as the 'observed PEFR'.

Step 2 Plot the patient on the adjacent PEFR graph using height, sex and age.

Step 3 If patient a man, look at group of lines next to 'Men'.
If patient a woman, look at group of lines next to 'Women'.
e.g. this patient is a man, look at group of lines next to 'Men'.

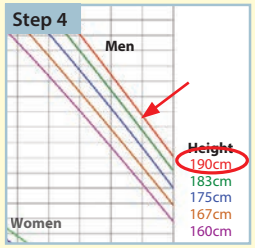
Step 4 Identify the patient's height and choose the coloured line closest to that height.
e.g. this patient's height is 188cm, choose the red line.

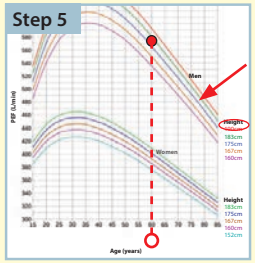
Step 5 Identify the patient's age on the bottom axis and draw a line up until it meets the coloured height line identified in step 4. *e.g. this patient is 60 years old*

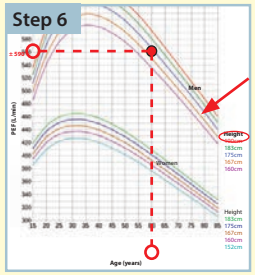
Step 6 From this point on the coloured line, draw a straight line left until you reach the left axis (labelled Predicted PEFR). The closest number is the 'predicted PEFR'.
e.g. this patient's 'predicted PEFR' is ± 590 L/min.

Step 7 Calculate % of predicted PEFR:
observed PEFR ÷ predicted PEFR x 100
e.g. 450 ÷ 590 x 100 = 76%.

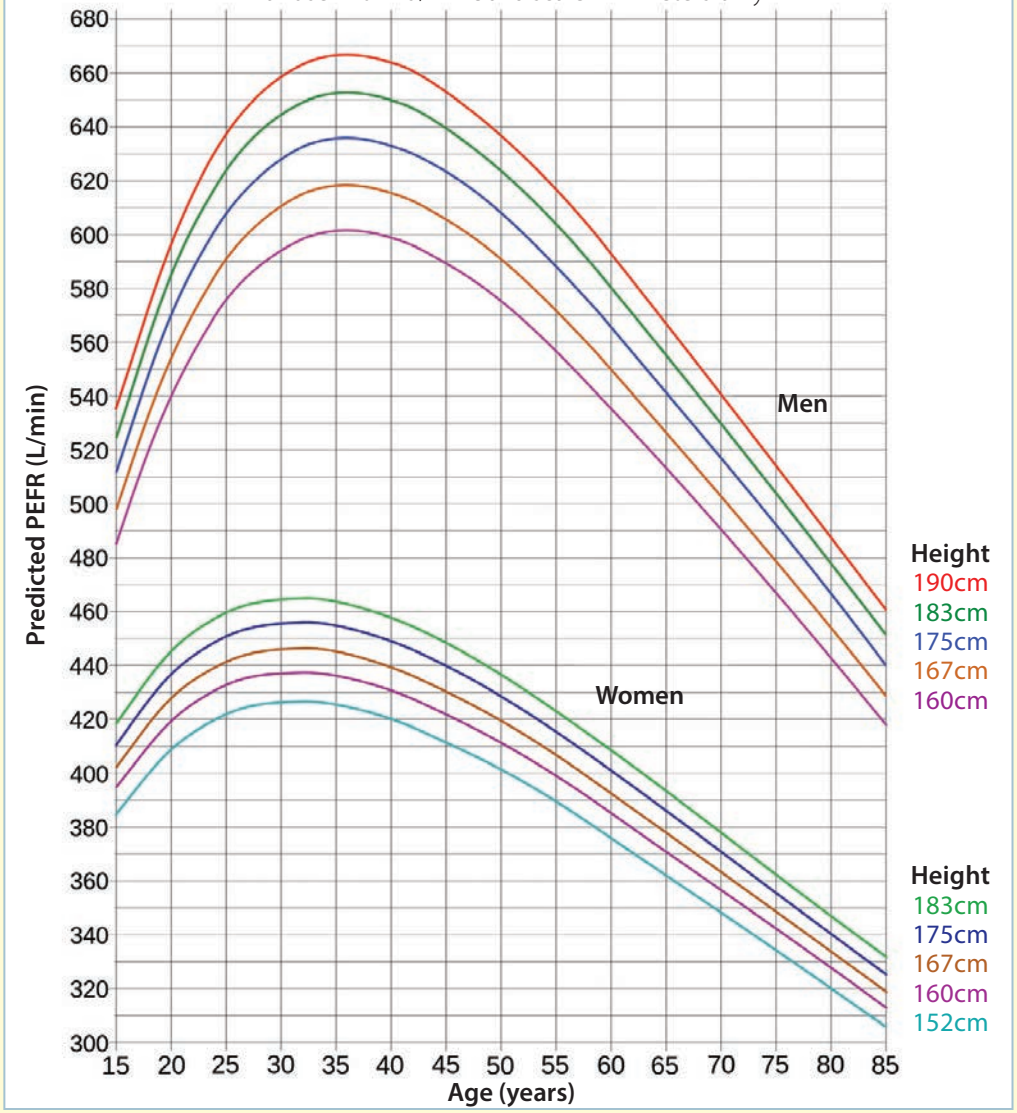
Step 8 Interpret result:
- If known asthma and PEFR is < 80% of predicted, asthma is not controlled.
- If known COPD and PEFR is 50-80% of predicted PEFR, COPD is moderate. If PEFR is < 50% of predicted PEFR, COPD is severe.
e.g. this patient whose PEFR is 76% of his predicted PEF has asthma that is not controlled.







Peak expiratory flow rate - normal values
For use with EU/EN13826 scale PEF meters only



Adapted by Clement Clarke for use with EN13826 / EU scale peak flow meters from Nunn AJ Gregg I, Br Med J 1989:298;1068-70

ASTHMA: ROUTINE CARE

Ensure that a doctor confirms the diagnosis of asthma within 1 month.

Assess the patient with asthma

Assess	When to assess	Note
Asthma symptoms	Every visit	• If wheeze, tight chest or difficulty breathing and no response to salbutamol inhaler, manage acute exacerbation ⮌35. • Any of the following indicate that the patient's asthma is **not controlled**: - Daytime cough, difficulty breathing or wheeze > 2 times a week - Night-time cough, wheeze, tight chest or difficulty breathing > once a month - Limitation of daily activities due to asthma symptoms • If none of above then asthma is **controlled.**
Other symptoms	Every visit	• Manage symptoms as on symptom pages. Ask about and manage allergic rhinitis ⮌30 and dyspepsia ⮌37. • If using inhaled corticosteroid and white patches on cheeks/gums/tongue/palate, **oral candida** likely ⮌31.
Adherence and inhaler technique	Every visit	Check adherence and that patient is using inhaler and spacer correctly ⮌106. If not adherent, refer for community health worker support.
Peak expiratory flow rate (PEFR)	At diagnosis, if symptoms worsening, if change to medication at last visit	Calculate % of predicted PEFR ⮌107. If < 80%, asthma is **not controlled**.

Health for All ⮌116

Advise the patient with asthma

- Advise to avoid triggers that may worsen asthma/hayfever (e.g. animals, cigarette smoke, dust, chemicals, pollen, grass), aspirin/NSAIDs (e.g. ibuprofen) and beta-blockers (e.g. atenolol).
- If patient smokes, encourage to stop ⮌123.
- Ensure the patient understands medication: beta-agonist inhaler (salbutamol) relieves symptoms but does not control asthma. Inhaled corticosteroid (budesonide or fluticasone) prevents but does not relieve symptoms and it is the mainstay of treatment.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of inhaled corticosteroid.

Treat the patient with asthma

- Give inhaled salbutamol 100-200mcg (1-2 puffs) 6-8 hourly, as needed. If exercise-related symptoms, advise patient to use salbutamol 200mcg (2 puffs) before exercise.
- Give influenza vaccine 0.5mL IM yearly.
- If acute exacerbation was managed at this visit:
  - Give prednisone 40mg daily for a total of 7 days.
  - Antibiotics are not routinely needed for acute exacerbations. Only give antibiotic if fever or thick yellow/green sputum: give amoxicillin[1] 500mg 8 hourly for 5 days.
  - If > 2 courses of oral prednisone given in past 6 months or exacerbation occurs on maximum treatment, also refer to doctor.
- Manage further according to asthma control:

Asthma not controlled or acute exacerbation

- Before stepping up treatment, ensure adherent and using inhaler and spacer correctly ⮌106 and check patient is avoiding smoking, allergens and certain medications[2].
- Give inhaled budesonide[3] 200mcg 12 hourly. If already on it, increase dose to 400mcg 12 hourly.
- If still not controlled, doctor to stop budesonide and give instead inhaled salmeterol/fluticasone[3] 50/250mcg, 1 puff 12 hourly. If still not controlled after 3 months, refer.

Asthma controlled

- Continue inhaled medication at same dose.
- If controlled and no acute exacerbations for ≥ 6 months, step down treatment:
  - If on salmeterol/fluticasone, stop this and give instead budesonide[3] 400mcg 12 hourly.
  - If on budesonide, decrease dose to 200mcg 12 hourly. If already on 200mcg, stop budesonide.
  - If symptoms worsen, step up to same medication and dose when patient was controlled.

If asthma controlled, review 3 monthly. If not controlled, review monthly. If acute exacerbation, review after 1 week.
Advise to return before next appointment if no better or symptoms worsen.

[1]If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily for 3 days. [2]NSAIDS (aspirin/ibuprofen), beta blockers. [3]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid budesonide and fluticasone, and discuss/refer instead.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): ROUTINE CARE

Ensure that a doctor confirms the diagnosis of COPD within 1 month and refer for spirometry if available. Refer the patient with newly diagnosed COPD for community health worker support.

Assess the patient with COPD

Assess	When to assess	Note
COPD symptoms	Every visit	• If patient has wheeze/tight chest and breathless at rest or while talking or respiratory rate ≥ 30, manage acute exacerbation ⮌35. • Assess disease severity: if patient can walk as fast as others of same age, COPD is **mild**. If not, COPD is **moderate** or **severe**. • Investigate for TB only if patient has other TB symptoms like weight loss, night sweats, blood-stained sputum ⮌81.
Other symptoms	Every visit	• Manage symptoms as on symptom pages. • If using inhaled corticosteroid and white patches on cheeks/gums/tongue/palate, **oral candida** likely ⮌31. • If swelling in both legs, refer to doctor to consider heart failure.
Adherence and inhaler technique	Every visit	Check adherence and that patient can use inhaler and spacer correctly ⮌106. If not adherent, refer for community health worker support.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Palliative care	Every visit	If severe COPD with breathlessness at rest, > 3 hospital admissions for COPD in 1 year, heart failure or long term oxygen therapy needed, also give palliative care ⮌148.
CVD risk	At diagnosis	The patient with COPD is at increased risk of cardiovascular disease. Assess CVD risk ⮌110.
Peak expiratory flow rate (PEFR)	• At diagnosis • If symptoms worsening • If change to medication at last visit	Calculate % of predicted PEFR ⮌107. • If 50-80%, COPD is **moderate**. • If < 50%, COPD is **severe**.

Health for All ⮌120

Advise the patient with COPD

- If patient smokes, encourage to stop ⮌123. 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 ⮌111.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of salmeterol/fluticasone.

Treat the patient with COPD

- Give influenza vaccine 0.5mL IM yearly.
- Give inhaled salbutamol 100-200mcg (1-2 puffs) 6-8 hourly, as needed.
- Before adjusting or starting treatment, ensure patient is adherent and knows how to use an inhaler and spacer correctly ⮌106.
- If patient has **moderate** or **severe** COPD and not controlled on salbutamol alone, decide instead which treatment to add:
  - If COPD diagnosis confirmed on spirometry and < 2 exacerbations in past year: add inhaled formoterol 12mcg, 1 puff 12 hourly.
  - If spirometry not done, ≥ 2 exacerbations in past year or no better with formoterol: add inhaled salmeterol/fluticasone[1] 50/250mcg, 1 puff 12 hourly (stop formoterol if on it).
- If acute exacerbation was managed at this visit:
  - If patient received prednisone, continue prednisone 40mg daily for a total of 7 days.
  - If sputum increased or colour changed to yellow/green, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy[2], give instead doxycycline 100mg 12 hourly for 5 days.

- If recent exacerbation, treatment adjustment, symptoms worse than usual or not coping as well as before, review monthly. Otherwise review 3-6 monthly.
- If no better with treatment after 3 months, discuss/refer.

[1]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid fluticasone and discuss/refer instead. [2]History of anaphylaxis, urticaria or angioedema.

CARDIOVASCULAR DISEASE (CVD) RISK: DIAGNOSIS

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

Step 1

Identify if the patient has established CVD:

- If patient has had previous heart attack, stroke or TIA or is known with angina (ischaemic heart disease) or peripheral vascular disease, manage as CVD →111.
- If current/recent chest pain, especially on exertion and relieved by rest, consider **ischaemic heart disease** ⮌119.
- If current/recent leg pain, especially on walking and relieved by rest, consider **peripheral vascular disease** ⮌121.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** ⮌118.

Step 2

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 early onset 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** while standing or breathing 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. If BP ≥ 140/90 and not known with hypertension ⮌114.
- Look for **diabetes**: if not known with diabetes, check glucose ⮌13.

Step 3

Calculate the patient's CVD risk if no established CVD:

- If recent total and HDL cholesterol done, calculate 10-year CVD risk using cholesterol-based calculator (below) or use the tool function found in the EML Clinical Guide app.

Cholesterol-based CVD risk calculator

- Calculate CVD risk score by adding the points in each of the tables below, using patient's age, sex, total cholesterol, HDL cholesterol, BP, smoking status and diabetes status:
  - If CVD risk score < 11 (man), or < 13 (woman), then CVD risk is < 10%.
  - If CVD risk score 11-14 (man), or 13-17 (woman), then CVD risk is 10-20%.
  - If CVD risk score ≥ 15 (man), or ≥ 18 (woman), then CVD risk is > 20%.

Age (years)	Man	Woman
35-39	2	2
40-44	5	4
45-49	6	5
50-54	8	7
55-59	10	8
60-64	11	9
65-69	12	10
70-74	14	11
75-79	15	12

Total cholesterol (mmol/L)	Man	Woman
< 4.1	0	0
4.1-5.19	1	1
5.2-6.19	2	3
6.2-7.2	3	4
> 7.2	4	5

HDL cholesterol (mmol/L)	Man	Woman
> 1.5	-2	-2
1.3-1.49	-1	-1
1.2-1.29	0	0
0.9-1.19	1	1
< 0.9	2	2

Systolic BP (mmHg)	Man		Woman	
	Not on BP treatment	On BP treatment	Not on BP treatment	On BP treatment
< 120	-2	0	-3	-1
120-129	0	2	0	2
130-139	1	3	1	3
140-149	2	4	2	5
150-159	2	4	4	6
≥ 160	3	5	5	7

	Man	Woman
Smoker	4	3
Diabetes	3	4

- If no recent total and HDL cholesterol done, calculate 10-year CVD risk using an online BMI-based calculator by following this link: www.bit.ly/34gkSIT or www.framinghamheartstudy.org/fhs-risk-functions/cardiovascular-disease-10-year-risk or scanning the code (see adjacent) using your phone's QR Code Reader:

Step 4

Explain to the patient what his/her risk of heart attack or stroke might be over next 10 years:

- If CVD risk is < 10%, there is less than 1 in 10 chance that in the next 10 years, that s/he may have a heart attack/stroke.
- If CVD risk is 10-20%, there is 1 in 10 to 1 in 5 chance that in the next 10 years, that s/he may have a heart attack/stroke.
- If CVD risk is > 20%, there is more than 1 in 5 chance that in the next 10 years, that s/he may have a heart attack/stroke.

Step 5

Use the patient's CVD risk to decide treatment and frequency of follow-up:

- If CVD risk factor or a CVD risk ≥ 10%, manage the CVD risk →111. If CVD risk < 10% and no CVD risk factors, reassess CVD risk after 5 years.

CARDIOVASCULAR DISEASE (CVD) RISK: ROUTINE CARE

Assess the patient with CVD risk

Assess	When to assess	Note
Symptoms	Every visit	Ask about chest pain ⮌33, difficulty breathing ⮌34, leg pain ⮌56 and symptoms of stroke/TIA ⮌118.
Modifiable CVD risk factors	Every visit	Ask about smoking, diet, alcohol/drug misuse, stress, exercise and activities of daily living. Manage as below.
BMI	At diagnosis, yearly or 3 monthly if trying to lose weight	BMI = weight (kg) ÷ height (m) ÷ height (m). Aim for < 25.
Waist circumference	At diagnosis, yearly or 3 monthly if trying to lose weight	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	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114.
CVD risk (if no known CVD[1])	At diagnosis, then depending on risk	If < 10% with CVD risk factors or 10-20%, reassess after 1 year. If > 20%, reassess after 6 months.
Diabetes risk	At diagnosis, then depending on result	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.
Random total cholesterol	If early onset[2] CVD in patient/family: at diagnosis	• If early onset[2] CVD in patient or family history of early onset[2] CVD or familial hyperlipidaemia, check cholesterol. • If cholesterol > 7.5, check TSH and refer to doctor.

Health for All ⮌92

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. Support the patient to change ⮌154.
- Invite patient to address 1 modifiable 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 brisk exercise at least 5 days/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.

Health for All ⮌27

Diet
- Eat a variety of foods in moderation. Reduce portion sizes.Increase fruit, vegetables, nuts and legumes.
- Choose whole grain bread/rice or potatoes rather than white bread/rice.
- Replace brick margarine/butter with vegetable oil or soft tub margarine. Remove skin and fat from meat.
- Reduce salty processed foods like gravies, stock cubes, packet soup. Avoid adding salt to food.
- Avoid/use less sugar.

Health for All ⮌19

Smoking
If patient smokes, encourage to stop ⮌123.

Health for All ⮌33

Weight
Aim for BMI < 25, and waist circumference < 80cm (woman) and < 94cm (man). Any weight reduction is beneficial, even if targets not met.

Health for All ⮌23

Screen for alcohol/drug misuse
- Limit alcohol intake to ≤ 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[3]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.

Health for All ⮌37 and 41

Stress
Assess and manage stress ⮌75.

Health for All ⮌100

- Identify support to maintain lifestyle change: health education officer or dietician/nutritionist, friend, partner or relative to attend clinic visits, a healthy lifestyle group, helpline ⮌155.
- 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 ⮌153.

Treat the client with CVD risk

- If known CVD[1]: give simvastatin[4] 40mg daily. If on amlodipine, give instead simvastatin[4] 10mg daily. Avoid if pregnant or liver disease.
- If no known CVD: if CVD risk > 20%, give simvastatin[4] 10mg daily. Avoid if pregnant or liver disease.

Review the patient with CVD risk ≤ 20% yearly. Review the patient with CVD risk >20% 6 monthly. If trying to lose weight, review 3 monthly.

[1]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. [2]CVD that develops in a woman < 55 years or in a man < 65 years. [3]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [4]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.

DIABETES: ROUTINE CARE

Give urgent attention to the patient with diabetes and any of:

- Chest pain →33.
- Fitting ⮌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
- Dehydration: dry mouth, poor skin turgor, BP < 90/60, pulse ≥ 100

Check random fingerprick glucose:

Glucose < 4 with/without symptoms

- If alert: give glucose[1] 5mL/kg orally. If unable to take orally, give instead glucose[1] or dextrose 10%[2] 5mL/kg via nasogastric tube.
- If decreased consciousness: give dextrose 10%[2] 5mL/kg IV. If known alcohol user, give thiamine 100mg IM/IV before dextrose.
- Recheck glucose after 15 minutes: if still < 4, give further 2mL/kg. For IV: once glucose ≥ 4, continue dextrose 5% 1L IV 6 hourly.
- Identify cause and educate about meals and doses ⮌113.
- If incomplete recovery or on glimepiride, glibenclamide or insulin, refer same day.

Glucose ≥ 11.1 with symptoms

- Give sodium chloride 0.9% 20mL/kg IV over the first hour, then 10mL/kg/hour thereafter. Stop if breathing worsens.
- If referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)[3].
- Refer urgently.

Glucose ≥ 11.1 without symptoms

Check urine for ketones.

- **Ketones present** → Give sodium chloride 0.9% 20mL/kg IV over the first hour, then 10mL/kg/hour thereafter. Stop if breathing worsens. If referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)[3]. Refer urgently.
- **No ketones** → Give routine diabetes care below.

Assess the patient with diabetes not needing urgent attention:

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Ask about chest pain ⮌33 and leg pain ⮌56.
Depression	At diagnosis and if control poor	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	At diagnosis and if control poor	In the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
BP	Every visit	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114.
BMI and waist circumference	• Weight: at every visit • BMI, waist circumference: at diagnosis	• BMI = weight (kg) ÷ height (m) ÷ height (m). • Aim for BMI ≤ 25 and waist circumference < 80cm (woman) or < 94cm (man).
Eyes	At diagnosis, yearly and if visual problems	Check visual acuity and fundoscopy. If visual problems, cataracts or retinopathy, refer.
Feet	At diagnosis, yearly and more often if problems	Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education ⮌57.
Family planning	Every visit	Assess patient's contraceptive needs ⮌136. If pregnant or planning pregnancy, refer for specialist care.
Glucose	If adjusting glucose-lowering medication	If fasting glucose > 8 or non-fasting glucose taken 2 hours after eating > 10, step up treatment ⮌113.
HbA_{1c} (glucose control over past 3 months)	• Yearly if HbA_{1c} ≤ 8% • 3 months after treatment change	• If HbA_{1c} ≤ 8%: diabetes **controlled**, continue same treatment for diabetes. • If HbA_{1c} > 8%: diabetes **uncontrolled**, if adherent, step up treatment ⮌113. If not adherent, give support and repeat HbA_{1c} after 3 months.
Urine dipstick	At diagnosis and yearly	• If protein, start enalapril if not already on it ⮌113. • If no protein and not on enalapril, send urine to lab for albumin/creatinine ratio. If ratio > 3, start enalapril ⮌113.
Creatinine (eGFR)	• At diagnosis, then yearly • If on enalapril: at baseline and 4 weeks[5]	• Give age and sex on form. If eGFR < 60, discuss with doctor. If eGFR < 30, refer. • If creatinine increases by > 20%, stop enalapril and refer to doctor.
Potassium	If on enalapril: at baseline, 4 weeks[5], then yearly	If potassium > 5.0, avoid/stop enalapril and refer to doctor.
Lipids	At diagnosis	Check fasting total cholesterol, triglycerides, HDL/LDL. Assess CVD risk ⮌110. If total cholesterol > 7.5 or triglycerides > 10, refer/discuss.

[1]Three teaspoons sugar (15g) in 1 cup (200mL) water. [2]If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water to make a dextrose 10% solution. [3]Avoid IV insulin as it may cause low potassium and heart dysrhythmia. Avoid using an insulin needle to give IM insulin. [4]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [5]If eGFR < 60, repeat instead at 2 weeks.

Advise the patient with diabetes

- Help the patient to manage his/her CVD risk ⮌111. Educate on foot care to prevent ulcers and amputation ⮌57.
- Discuss diet: avoid white/brown sugar and honey, use artificial sweetener instead. Cut down on starch (rice, noodles, bread, potato, sweet potato, butternut, mielies, pap, samp).
- Explain importance of adherence and to eat regular meals. If newly diagnosed or poor adherence or attendance, refer for community care worker support.
- Ensure patient can recognise and manage hypoglycaemia (shaking, sweating, palpitations, weakness, hunger):
  - Drink milk with sugar or eat a sweet. Always carry something sweet. If not in clinic and fits, confusion or coma, rub sugar inside mouth and call ambulance. Go to clinic if illness (like diarrhoea).
  - Identify and manage the cause: increased exercise, missed meals, inappropriate dosing of glucose-lowering medications, alcohol, infections.
- If on/starting insulin, educate on how to use it:
  - Discuss injection technique and sites (abdomen, thighs, arms), store insulin in fridge/cool dark place, meal frequency, recognising hypoglycaemia/hyperglycaemia, sharps disposal at clinic.
  - Advise that if unwell and vomiting/not eating as usual, to increase fluid intake, check glucose 3 times a day if possible and adjust insulin dose if necessary (avoid stopping insulin).

Treat the patient with diabetes

- If known with CVD[1]: give simvastatin[2] 40mg[3] and aspirin daily. Avoid simvastatin if pregnant and avoid aspirin if peptic ulcer, dyspepsia, kidney disease. Avoid both if liver disease.
- If not known with CVD[1] but CVD risk > 20%, eGFR < 60, known with diabetes > 10 years or age > 40 years, give simvastatin[2] 10mg daily. Avoid if pregnant or liver disease.
- If albuminuria/proteinuria, give enalapril[4] 5mg 12 hourly, regardless of BP. If proteinuria persists and systolic BP > 100, increase up to 10mg 12 hourly, if tolerated.
- Give glucose-lowering medication using stepwise approach as in table below. Ensure patient is adherent before increasing treatment. If not adherent, refer for community care worker support.

Step	Medication	Breakfast	Supper	Bed	Note
1	Metformin	500mg 500mg 850mg 1g	 500mg 850mg 1g		• Avoid if eGFR < 30, liver disease, uncontrolled heart failure, alcoholism. • Take with meals. If on dolutegravir or eGFR 30-60, halve dose, up to maximum of 500mg 12 hourly. • May cause self-limiting nausea, abdominal cramps or diarrhoea. Advise patient not to stop treatment. • Increase monthly if fasting glucose > 8 (or postprandial[5] glucose > 10) or HbA_{1c} > 8%, and patient is adherent. • If up to 2g needed daily, metformin may be given as 850mg 8 hourly *instead of* 1g twice daily. • If after 3 months on maximum dose HbA_{1c} > 8%, move to step 2.
2	Add glimepiride *or*	1mg 2mg 3mg 4mg			• Continue metformin. • Take glimepiride with breakfast. Take glibenclamide 30 minutes before breakfast. Avoid missing meals. • Avoid in pregnancy, severe kidney (eGFR < 60) and liver disease, co-trimoxazole allergy. Avoid glibenclamide if > 65 years. • Increase every 2 weeks if fasting glucose > 8 (or postprandial[5] glucose > 10) or HbA_{1c} > 8%, and patient is adherent. • If after 3 months on maximum dose HbA_{1c} > 8%, move to step 3.
	glibenclamide	2.5mg 5mg 5mg 5mg 7.5mg 10mg	 2.5mg 5mg 5mg 5mg		
3	Add basal insulin (intermediate or long acting)			Start at 10IU. If fasting glucose > 8, increase by 2-4units each week.	• Stop glimepiride/glibenclamide but continue metformin when starting insulin. • Educate about insulin as above and issue meter: patient to check fasting glucose on waking 3 times a week. • If > 20IU needed or if patient having episodes of hypoglycaemia, discuss/refer to doctor.
4	Substitute with biphasic insulin	0.2IU/kg 0.2IU/kg + 4IU 0.2IU/kg + 4IU 0.2IU/kg + 8IU 0.2IU/kg + 8IU 0.2IU/kg + 12IU	0.1IU/kg 0.1IU/kg 0.1IU/kg + 4IU 0.1IU/kg + 4IU 0.1IU/kg + 8IU 0.1IU/kg + 8IU etc		• Continue with metformin. Stop glimepiride/glibenclamide and basal insulin. • Start with 0.3units/kg/day. Patient to give two-thirds of total daily insulin dose 30 minutes before breakfast and one-third of total daily insulin dose 30 minutes before supper. • Patient to check fasting glucose on waking 3 times a week. If ≥ 8 and patient adherent, increase morning dose by 4 units. If still ≥ 8 after one week, increase evening dose by 4 units. • Educate about insulin as above. • If fasting glucose still ≥ 8 or HbA_{1c} > 8% after 3 months, discuss with specialist.

Review the patient with diabetes 6 monthly once stable.

[1]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. [2]If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily. [3]If on amlodipine, reduce simvastatin dose to 10mg daily. [4]Avoid in pregnancy, angioedema or renal artery stenosis. If not tolerating enalapril (e.g. persistent cough), refer to doctor to consider alternative. [5]Two hours after eating.

HYPERTENSION: DIAGNOSIS

Check blood pressure (BP)

- Seat patient with back against chair and arm supported at heart level for 3-5 minutes.
- Use a larger cuff if mid-upper arm circumference is > 33cm.
- Record systolic BP (SBP) and diastolic BP (DBP): SBP is the first appearance of sound. DBP is the disappearance of sound.
- Take two readings 1-2 minutes apart. If readings differ by > 5mmHg, take a third reading to confirm. If electronic BP device shows raised BP, confirm BP manually.
- If patient is pregnant, interpret reading →138.

Give urgent attention to the patient with BP ≥ 180/130 and any of:

- Visual disturbances
- Dizziness
- Confusion
- Headache
- Chest pain →33.
- Difficulty breathing worse on lying flat or with leg swelling →117.
- Sudden weakness on 1 or both sides, vision problems, dizziness, difficulty speaking or swallowing →118.

Management:

- Give single dose amlodipine 10mg orally. Avoid short-acting nifedipine as it may drop the BP too quickly, causing a stroke.
- If dizzy or faint after treatment, lie patient down. If BP < 160/100, raise legs.
- Refer urgently.

Approach to the patient not needing urgent attention

BP < 140/90

- Assess CVD risk ⮌110.
- Decide on frequency of follow-up:

- BP < 120/80 *and*
- CVD risk < 10% *and*
- No CVD risk factors[1]

Check BP after 5 years.

- BP 120/80 – 139/89 *or*
- CVD risk ≥ 10% *or*
- Any CVD risk factors[1]

Check BP after 1 year.

BP 140/90 – 179/109

- Repeat BP on 2 further occasions at least 2 days apart (within 2 weeks if systolic BP ≥ 160).
- **Avoid diagnosing hypertension on one reading alone.**

BP < 140/90

- Assess CVD risk ⮌110.
- Decide on frequency of follow-up:

BP 140/90 – 179/109

Diagnose hypertension
Give routine hypertension care ⮌115.

If < 30 years, refer to exclude secondary cause of hypertension.

BP ≥ 180/110

- Repeat BP after patient has rested for 1 hour.
- **Avoid diagnosing hypertension on one reading alone.**

BP confirmed ≥ 180/110

Check that patient does not need urgent attention above.

[1]CVD risk factors include age > 55 (man) or > 65 (woman), diabetes, waist circumference > 80cm (woman) or 94cm (man).

HYPERTENSION: ROUTINE CARE

Assess the patient with hypertension

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Ask about symptoms of heart failure ⮌117, ischaemic heart disease ⮌119 or stroke/TIA ⮌118.
Medication	• At diagnosis • If uncontrolled	• Review medication that may raise BP: NSAIDs (e.g. ibuprofen), combined oral contraceptive and antidepressants. If on antidepressant, discuss with doctor. • If already on hypertension medication, assess adherence and ask about side effects ⮌116.
Family planning	Every visit	Assess patient's contraceptive needs ⮌136. If pregnant or planning pregnancy, refer to doctor.
Alcohol/drug use	• At diagnosis • If uncontrolled	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
BP control	• Check 2 readings at every visit. • For correct method ⮌114.	• If BP < 140/90 (< 160/90 if ≥ 65 years), BP is **controlled**: continue current treatment and review 6 monthly. • If BP ≥ 140/90 (≥ 160/90 if ≥ 65 years), BP is **not controlled**: decide treatment below. - If ≥ 180/130: also check if needs urgent attention ⮌114. • If SBP consistently ≤ 110, consider decreasing dose or medications.
Weight, BMI, waist circumference	• Weight: at every visit • BMI, waist circumference: at diagnosis	• BMI = weight (kg) ÷ height (m) ÷ height (m). • Aim for BMI < 25 and waist circumference < 80cm (woman) or < 94cm (man).
CVD risk	At diagnosis, then depending on risk	Assess CVD risk ⮌110.
Urine dipstick	At diagnosis, then yearly	If 1+ proteinuria on dipstick, check creatinine and eGFR. If glucose on dipstick, screen for diabetes ⮌13.
Diabetes risk	Yearly and if glucose on urine dipstick	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.
Creatinine (eGFR)	• If 1+ proteinuria on dipstick: at diagnosis, yearly. • If CVD[2], uncontrolled hypertension ≥ 10 years, eGFR < 60: yearly	• If eGFR < 60, discuss with doctor. If eGFR < 30, refer. • If creatinine increases by > 20%, stop enalapril and refer to doctor.
Potassium	• If on enalapril or eGFR < 30: at diagnosis • If on spironolactone or eGFR < 30: 6 monthly	If potassium > 5.0, stop enalapril and spironolactone and refer to doctor.

Health for All ⮌82

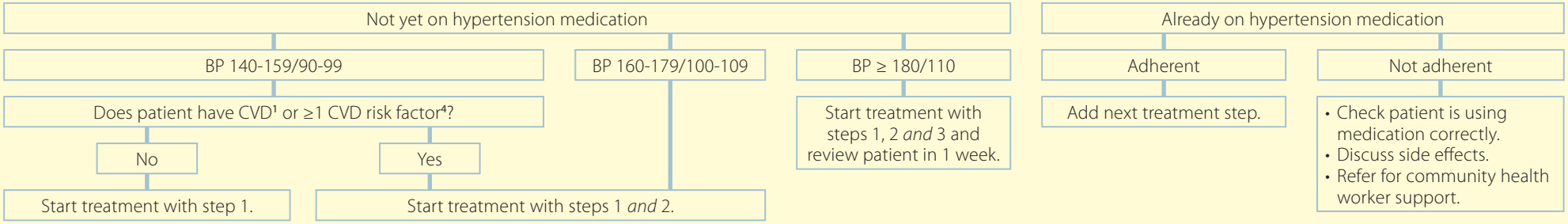
Advise the patient with hypertension

- Educate the patient that blood pressure changes slightly during the day and night: hypertension is when it stays high, above a certain level. S/he may not have any symptoms.
- Help patient to manage his/her CVD risk ⮌111.
- Emphasise salt restriction ≤ 1 teaspoon/day, regular physical exercise (150 minutes/week), weight reduction and smoking cessation. If patient smokes, encourage to stop ⮌123.
- Advise to avoid NSAIDs (e.g. ibuprofen) and combined oral contraceptive.
- Explain importance of adherence and that patient will need lifelong hypertension care to prevent stroke, heart disease, eye disease and kidney disease.
- If newly diagnosed, refer for community health worker support.
- Advise patient on hydrochlorothiazide with personal/family history of skin cancer to limit exposure to sunlight, use sunscreen, regularly check skin and report any new skin lesions.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.

Treat the patient with hypertension

- If known with CVD[1]: give simvastatin[2] 40mg[3] and aspirin daily. Avoid simvastatin if pregnant and avoid aspirin if peptic ulcer, dyspepsia, kidney disease. Avoid both if liver disease.
- If not known with CVD[1] but CVD risk > 20%, give simvastatin[2] 10mg daily. Avoid if pregnant or liver disease.
- If BP is **controlled**, continue current treatment step and review 6 monthly.
- If BP is **not controlled**, decide treatment for hypertension using algorithm and table below. If already on step 7, refer instead.



Step	Medication	Note
1	Address modifiable CVD risk factors.	Manage CVD risk ⮌111. If BP not controlled after 3 months, add step 2.
2	Add hydrochlorothiazide (HCTZ) 12.5mg daily.	• Avoid if pregnant, personal/family history of skin cancer, gout, severe liver disease or eGFR < 30. • If diabetes or heart failure, start enalapril first. If needed, add HCTZ as next step once on maximum dose of enalapril.
3	Add enalapril 10mg daily.	• Avoid if pregnant, eGFR < 30 or potassium ≥ 5.0. • Advise patient to stop enalapril immediately if swelling of tongue/lips/face develops, **angioedema** likely ⮌28.
4	Increase enalapril to 20mg daily.	
5	Add amlodipine 5mg daily.	Avoid if untreated heart failure. If on simvastatin, reduce simvastatin dose to 10mg daily.
6	Increase amlodipine to 10mg daily.	
7	Add spironolactone 25mg daily and increase HCTZ to 25mg daily.	Only use spironolactone if potassium can be monitored. Avoid spironolactone if pregnant or eGFR < 30.

- Review the patient monthly until BP controlled. Once controlled, review 6 monthly.
- If BP not controlled after 1 month on step 7, refer.

[1]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. [2]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily. [3]If on amlodipine, reduce simvastatin dose to 10mg daily. [4]CVD risk factors include age > 55 (man) or > 65 (woman), diabetes, smoker, waist circumference > 80cm (woman) or > 94cm (man).

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 the patient for specialist assessment.**

Give urgent attention to the patient with heart failure and any of:

• Chest pain →33. • Rapid worsening of symptoms • Respiratory rate ≥ 30 or difficulty breathing • BP < 90/60 • New wheeze

Manage and refer urgently:

- Sit patient up and if oxygen saturation < 94%, give face mask oxygen.
- If systolic BP > 90: give furosemide 40mg slowly IV. If no response after 30 minutes, give another 80mg IV. If good response, give 40mg IV over 2-4 hours.
- If systolic BP > 90: give sublingual isosorbide dinitrate 5mg even if there is no chest pain. Repeat once if pain relief needed. Repeat after 4 hours.
- If BP ≥ 180/130: give single dose enalapril 10mg orally.

Assess the patient with heart failure

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. If fainting/blackouts, refer same day.
Family planning	Every visit	Assess patient's contraceptive needs ⮌136. If pregnant or planning pregnancy, refer for specialist care.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Weight	Every visit	Assess changes in fluid balance by comparing with weight when patient least symptomatic.
BP and pulse	Every visit	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114. If new irregular pulse, refer same day.
Palliative care	At diagnosis, if deteriorating	If disabling shortness of breath at rest on maximum treatment or ≥ 5 admissions in the past 6 months, also give palliative care ⮌148.
Creatinine (eGFR) and potassium	At diagnosis, 6 monthly	• If starting/increasing dose of enalapril/spironolactone: also check at 2 weeks (if eGFR < 60) or 4 weeks (if eGFR ≥ 60). • If creatinine increases by > 20%, eGFR < 30 or potassium > 5.0, stop enalapril/spironolactone and discuss with specialist.
Other blood tests	At diagnosis	Check Hb, TSH and if not known diabetes, check glucose ⮌13. If abnormal, discuss with specialist. Test for HIV ⮌95.

Advise the patient with heart failure

- Advise to adhere to treatment even if asymptomatic. Advise regular exercise within limits of symptoms. Help the patient to manage his/her CVD risk ⮌111.
- Advise to restrict salt to < half a teaspoon/day and fluids to 1.5L/day (6 cups). If possible, advise to monitor weight daily. If s/he gains ≥ 2kg in 2 days, advise to return to clinic.

Treat the patient with heart failure

- Give influenza vaccine 0.5mL IM yearly.
- Aim to have patient on steps 1 and 2. Add step 3 if patient has ongoing symptoms on steps 1 and 2. If uncontrolled on steps 1-3, refer to specialist for digoxin.

Step	Medication	Dose	Note
1	Give hydrochlorothiazide	25-50mg daily	Use if mild heart failure and eGFR ≥ 60. Avoid in gout, liver disease. If diabetes, monitor glucose/HbA_{1c} closely.
	or furosemide	Start 40mg daily. If needed, increase every 2-3 days until symptoms improve, up to 250mg/day.	• Use if significant heart failure symptoms or eGFR < 60. Once improved, consider switch to hydrochlorothiazide if eGFR ≥ 60. • If > 80mg needed, give half dose 12 hourly. Maximum 250mg/day.
	and enalapril	Start 2.5mg 12 hourly. If needed, increase up to 10mg 12 hourly.	Avoid if pregnant, previous angioedema, aortic stenosis, hypertrophic obstructive cardiomyopathy, renal artery stenosis.
2	Add carvedilol	Start 3.125mg 12 hourly. If tolerated, double dose every 2 weeks until symptoms improve, up to 25mg 12 hourly.	• Start once on optimal dose of enalapril. Avoid atenolol in heart failure. • Avoid if severe fluid overload, BP < 90/60, asthma. Avoid or decrease dose if pulse < 60.
3	Add spironolactone	25mg daily	Monitor potassium and kidney function. Avoid if eGFR < 30 or potassium > 5. Stop potassium supplements.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

STROKE: ROUTINE CARE

Sudden onset of one or more of the following suggests a stroke (or a transient ischaemic attack (TIA) if symptoms lasted < 24 hours and resolved completely):

- 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

Give urgent attention to the patient with a new stroke/TIA:

- If oxygen saturation < 94% or respiratory rate ≥ 30, give face mask oxygen.
- Keep patient nil by mouth until swallowing is formally assessed.
- Check glucose: if < 3 (< 4 if diabetes) ⮌13.
- Avoid treating BP ≥ 140/90 as this may worsen stroke.
- Decide where to refer the patient depending on when symptoms started:
  - If patient can reach hospital within 3 hours of onset of symptoms, *refer urgently* for thrombolysis (to specialist stroke unit if available).
  - If patient cannot reach hospital within 3 hours of onset of symptoms, refer same day and give single dose aspirin 300mg (avoid if on long-term anticoagulant or headache/neck stiffness) if fully conscious and can swallow.

Assess the patient with stroke/TIA

Assess	When to assess	Note
Symptoms	Every visit	Ask about symptoms of another stroke/TIA. Also ask about chest pain ⮌33 or leg pain ⮌56.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Rehabilitation needs	Every visit	Refer to appropriate therapist: physiotherapy for mobility, physiotherapy/occupational therapy for self care, speech therapist for swallowing, coughing after eating, speaking and drooling.
Palliative care	Every visit	If any of: severely disabled, worsening problems with speech or swallowing, also give palliative care ⮌148.
BP	Every visit	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114. If new hypertension, start treatment only 48 hours after a stroke ⮌115.
Diabetes risk	At diagnosis and yearly	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.
Fasting cholesterol and triglycerides	At diagnosis if not already done	If cholesterol > 7.5 or triglycerides > 10, check TSH and refer to doctor.
HIV	At diagnosis if status unknown	Test for HIV ⮌95. If HIV, give routine care ⮌96.
ECG	At diagnosis if not already done	If abnormal, discuss/refer.

Advise the patient with stroke/TIA

Health for All ⮌61

- Educate the patient that stroke/TIA is a brain attack. Quick treatment of a minor stroke or TIA can reduce the risk of a major stroke.
- Help patient to manage cardiovascular disease risk ⮌111. Refer patient to available helpline/s ⮌155.
- If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment ⮌110.
- Avoid oral contraceptives containing oestrogen. Advise other method such as copper IUCD, injectable, progestogen-only pill ⮌136.

Treat the patient with stroke/TIA

- Give aspirin 150mg daily for life. Avoid if < 30 years, haemorrhagic stroke, previous peptic ulcer, dyspepsia or on anticoagulant. If prosthetic heart valve, valvular heart disease or atrial fibrillation, refer for warfarin instead.
- Give simvastatin[2] 40mg[3] daily for life, regardless of cholesterol if patient had an ischaemic stroke.

[1]If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution. [2]If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily. [3]If on amlodipine, reduce simvastatin dose to 10mg daily.

ISCHAEMIC HEART DISEASE (IHD): INITIAL ASSESSMENT

Is patient known with ischaemic heart disease (or angina[1])?

No

Is current or previous chest pain/discomfort any of:
- Feels like pressure, heaviness or tightness in centre or left side of chest
- Spreads to jaw, neck, arm/s
- May be associated with nausea, vomiting, pallor or sweating

No
Chest pain different to above

Assess for other causes of chest pain →33.

Yes
Is chest pain/discomfort:
- Brought on by exercise, effort or anxiety *and*
- Relieved by rest *and*
- Lasts < 10 minutes

Yes

Stable angina likely
- A doctor must confirm the diagnosis.
- Give routine ischaemic heart disease care →120.

No

Acute coronary syndrome (**heart attack** or **unstable angina**) likely

Do ECG[2] within first 10 minutes. While doing ECG, start management and discuss with doctor:
- If oxygen saturation < 94% or oxygen saturation machine not available, or respiratory rate ≥ 30, give face mask oxygen.
- Give single dose aspirin 150mg chewed.
- Establish IV access.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV. Avoid if crackles on auscultation. Repeat BP: if still < 90/60, discuss.
- If current chest pain and BP > 90/60 (if BP < 90/60, discuss):
  - Give isosorbide dinitrate sublingual 5mg every 5-10 minutes until pain relieved to a maximum of 15mg. Avoid if sildenafil or vardenafil within past 24 hours.
  - If pain severe, give morphine 5-10mg slow IV[3].
- Doctor to review ECG and assess for streptokinase as soon as possible:
  - Give streptokinase only if ECG shows ST elevation[4] or left bundle branch block *and* if ≤ 6 hours since onset of chest pain.
  - Avoid if gastrointestinal bleed in last 3 months, peptic ulcer, stroke/TIA in past 6 months or previous haemorrhagic stroke, active bleeding or known bleeding disorder, streptokinase given in past year or known allergy to it, or recent major trauma, surgery or head injury.
  - Give streptokinase 1.5 million IU diluted in 100mL sodium chloride 0.9% IV over 30-60 minutes.
  - Monitor BP: if < 90/60, slow rate of infusion (avoid stopping it) and give fluids as above.
- Refer urgently.

Yes

Is chest pain/discomfort any of:
- Occurs at rest or with minimal effort *or*
- Not relieved by rest or sublingual nitrates *or*
- Lasts ≥ 10 minutes *or*
- Worse/lasts longer than usual *or*
- Occurs more often than usual

Yes
Acute coronary syndrome (heart attack or unstable angina) likely

Do ECG[2] within first 10 minutes. While doing ECG, start management and discuss with doctor:
- If oxygen saturation < 94% or oxygen saturation machine not available, or respiratory rate ≥ 30, give face mask oxygen.
- Give single dose aspirin 150mg chewed.
- Establish IV access.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV. Avoid if crackles on auscultation. Repeat BP: if still < 90/60, discuss.
- If current chest pain and BP > 90/60 (if BP < 90/60, discuss):
  - Give isosorbide dinitrate sublingual 5mg every 5-10 minutes until pain relieved to a maximum of 15mg. Avoid if sildenafil or vardenafil within past 24 hours.
  - If pain severe, give morphine 5-10mg slow IV[3].
- Doctor to review ECG and assess for streptokinase as soon as possible:
  - Give streptokinase only if ECG shows ST elevation[4] or left bundle branch block *and* if ≤ 6 hours since onset of chest pain.
  - Avoid if gastrointestinal bleed in last 3 months, peptic ulcer, stroke/TIA in past 6 months or previous haemorrhagic stroke, active bleeding or known bleeding disorder, streptokinase given in past year or known allergy to it, or recent major trauma, surgery or head injury.
  - Give streptokinase 1.5 million IU diluted in 100mL sodium chloride 0.9% IV over 30-60 minutes.
  - Monitor BP: if < 90/60, slow rate of infusion (avoid stopping it) and give fluids as above.
- Refer urgently.

No
Patient has **stable angina**. Give routine ischaemic heart disease care →120.

[1]Chest pain caused by ischaemic heart disease. [2]ECG may show ST segment depression or elevation, but a normal ECG does not exclude diagnosis of unstable angina or heart attack. [3]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 5mL IV over 5 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60. [4]ST elevation > 1mm in two or more contiguous limb leads *or* ST elevation > 2mm in two or more contiguous chest leads.

ISCHAEMIC HEART DISEASE: ROUTINE CARE

Assess the patient with ischaemic heart disease

Assess	When to assess	Note
Symptoms	Every visit	• If recent episodes of chest pain/discomfort, assess ischaemic heart disease symptoms if not already done ⮌ 119. • Ask about leg pain ⮌56 and symptoms of stroke/TIA ⮌118.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
BP	Every visit	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114.
Diabetes risk	At diagnosis and yearly	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.

Advise the patient with ischaemic heart disease

- Help the patient to manage his/her CVD risk ⮌111.
- Patient can resume normal daily and sexual activity 1 month after heart attack if symptom free.
- Emphasize the importance of lifelong adherence to medication. Ensure patient knows how to use isosorbide dinitrate as below.
- Patient should avoid non-steroidal anti-inflammatories (like ibuprofen), as they may precipitate chest pain.
- If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment.

Health for All ⮌61

Treat the patient with ischaemic heart disease

- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- Give simvastatin[1] 40mg daily. If on amlodipine, give instead simvastatin[1] 10mg daily. Avoid if pregnant or liver disease.
- Give atenolol 50mg daily, even if no chest pain/discomfort. Avoid in asthma, COPD, heart failure, peripheral vascular disease.
- If patient has signs of heart failure (e.g. shortness of breath/swelling of legs) following a heart attack or unstable angina, give enalapril 2.5mg 12 hourly and increase slowly to 10mg 12 hourly. Avoid if pregnant, angioedema or renal artery stenosis.
- If patient has **stable angina**, treat using stepwise approach as in table below:
  - If chest pain/discomfort controlled, continue same medication and dose.
  - If still gets episodes of chest pain/discomfort, increase to maximum dose. If symptoms continue after this, add next step. Ensure patient is adherent before increasing medication.

Step	Medication	Dose	Maximum dose	Note
1	Isosorbide dinitrate with chest pain and before exertion *and* Atenolol	5mg sublingual with angina	3 doses of 5mg with each episode of chest pain	If chest pain on exertion, rest and take 1st dose. If chest pain persists, take a further 2 doses 5 minutes apart. If no better 5 minutes after 3rd dose, patient must seek medical attention urgently.
		50mg daily	100mg daily	Titrate to resting pulse rate of 60 beats/minute. Avoid if asthma, COPD, uncontrolled heart failure, peripheral vascular disease or if side effects (headache, cold hands/feet, impotence, tight chest, fatigue) are intolerable. Use amlodipine instead.
2	Add amlodipine	5mg in the morning	10mg daily	Avoid if heart failure, discuss with specialist. Reduce simvastatin dose to 10mg daily.
3	Add isosorbide mononitrate *or* isosorbide dinitrate	10mg at 8am and 2pm	30mg at 8am and 2pm	-
		20mg at 8am and 2pm	30mg at 8am and 2pm	-

- If atenolol and amlodipine contra-indicated/not tolerated or chest pain/discomfort persists on full treatment, refer to specialist.
- Review monthly until symptoms controlled. Then review 3-6 monthly.

[1]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.

PERIPHERAL VASCULAR DISEASE (PVD)

- 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 for specialist assessment.

Give urgent attention to the patient with peripheral vascular disease and any 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

Management:

- **Acute limb ischaemia** likely: refer urgently.
- **Critical limb ischaemia** likely: discuss same day urgency of referral with specialist.
- **Ruptured abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen the rupture) and 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 ⮌119 and symptoms of stroke/TIA ⮌118. • Document the walking distance before onset of claudication.
BP	Every visit	If known hypertension ⮌115. If not, check BP: if ≥ 140/90 ⮌114.
Legs and feet	Every visit	Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education ⮌57.
Abdomen	Every visit	If a pulsatile mass felt, refer for assessment for possible abdominal aortic aneurysm. Refer urgently if abdominal/back pain or BP < 90/60.
Diabetes risk	At diagnosis, then yearly	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.

Advise the patient with peripheral vascular disease

- Help the patient to manage his/her CVD risk ⮌111.
- Advise the patient to keep legs warm and below heart level (especially at night), and to avoid decongestant medications that may constrict blood vessels.
- If patient smokes, encourage to stop ⮌123.
- 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 < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment ⮌110.

Health for All ⮌61

Treat the patient with peripheral vascular disease

- Advise brisk exercise for 30 minutes at least 3 times a week (preferably daily). Advise patient to pause and rest whenever claudication develops.
- Give simvastatin[1] 40mg[2] daily regardless of cholesterol level. Avoid in pregnancy, liver disease.
- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.

- Refer to specialist at diagnosis (start medications 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 yearly.**

[1]If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily. [2]If on amlodipine, reduce simvastatin dose to 10mg daily.

THE MENTALLY ILL PATIENT NEEDING TREATMENT OR ADMISSION

Give urgent attention if a delay in referral may lead to the patient's mental illness causing any of:

- Death
- Irreversible health problem/s
- Patient inflicting serious harm to self or others
- Patient causing serious damage to or loss of property

Manage as an emergency and refer urgently with or without patient consent:

- If aggressive/disruptive ⮌73. If restraints used, complete **MHCA 48** form.
- If patient is not alert, fully conscious or physically stable, check for underlying causes ⮌74.
- Complete a **MHCA 01** form, **Emergency care**, **treatment** and **rehabilitation** or **admission without consent**, to admit for 24 hour assessment.
- If too dangerous for transfer in a staffed vehicle or likely to abscond, request police assistance. Police officer to complete **MHCA 22** form.

Approach to the mentally ill patient in need of hospital admission/treatment not needing emergency referral

Patient able to give informed consent[1].

Patient *does not refuse* treatment/admission.

Admit or treat as **Voluntary user.**

- Record clearly in patient notes and referral letter.
- If needing admission: escort[2] or staff member must accompany the patient to hospital.

Patient *refuses* treatment/admission.

Does patient require treatment/admission for a mental illness that may result in:
- Patient seriously harming self or others or
- Serious damage to his/her financial interests or reputation

No

Manage as an outpatient.

Yes: admit or treat as an **Involuntary user** under the Mental Health Care Act (MHCA).

- Escort[2] must complete **MHCA 04** form. If escort unavailable, unwilling or incapable, then a health care provider[3] can complete this form.
- MHCP[4] to assess patient and complete one **MHCA 05** form. Doctor to *separately* assess patient and complete a *second* **MHCA 05** form.
  - If MHCP[4]/doctor not available, record clearly in patient notes/referral letter. Refer with MHCA 04 form, to nearest staffed facility.

The two **MHCA 05** forms *agree* to admit or treat the patient under the Mental Health Care Act.

- Head of Health Establishment (HHE) to complete **MHCA 07** form.
- If admission (72 hour assessment) needed, send all forms with patient.
- If too dangerous for transfer in a staffed vehicle or likely to abscond, request police assistance. Police officer to complete **MHCA 22** form. If restraints used, also complete **MHCA 48** form.
- If outpatient treatment, send all forms to Mental Health Review Board.

Patient incapable of giving informed consent[1].

Patient *refuses* treatment/admission

Patient *does not refuse* treatment/admission

Admit or treat as an **Assisted user** under the Mental Health Care Act (MHCA).

The two **MHCA 05** forms *do not agree*: a third MHCP must complete a third **MHCA 05** form independently.

Third **MHCA 05** form *agrees* to treat or admit the patient under MHCA.

- Head of Health Establishment (HHE) to complete **MHCA 07** form.
- If admission (72 hour assessment) needed, send all forms with patient.
- If too dangerous for transfer in a staffed vehicle or likely to abscond, request police assistance. Police officer to complete **MHCA 22** form. If restraints used, also complete **MHCA 48** form.
- If outpatient treatment, send all forms to Mental Health Review Board.

Third **MHCA 05** form *does not* agree to treat or admit as Assisted or Involuntary user under the MHCA.

Manage as an outpatient.

The patient may present to primary care with **authorisation/order by a Court or Mental Health Review Board** to receive mental health care, treatment and rehabilitation on an outpatient basis: review patient and provide prescribed health intervention, regardless of patient consent. Record clearly in patient file. Report to Mental Health Review board as requested.

[1]Informed consent means that patient understands that s/he is ill, needs treatment and can communicate his/her choice to receive treatment. [2]Escort: if patient < 18 years old, this needs to be a parent or guardian; if patient ≥ 18 years old, escort can be spouse, next of kin, partner or associate. [3]This can be *any* health care provider but needs to have observed patient's behaviour and must *not* be one of the mental health care practitioners who complete either of the MHCA 05 forms. [4]Mental Health Care Practitioner.

TOBACCO SMOKING

Assess the patient who smokes tobacco currently or recently stopped

Assess	When to assess	Note
Symptoms	Every visit	• Ask about symptoms that might suggest cancer: cough/difficulty breathing ⮌34, urinary symptoms ⮌51 or weight loss ⮌19. • Ask about symptoms of CVD[1]: chest pain ⮌33, leg pain ⮌56, new sudden onset of any of: asymmetric weakness of face, arm or leg; numbness, difficulty speaking or visual disturbance ⮌118. • Manage other symptoms as on symptom pages.
Tobacco use	Every visit	• Ask about number of cigarettes per day and what activities patient does while smoking. • If recently stopped, praise patient and encourage to avoid re-starting: reinforce advice about risks, benefits, distraction techniques and support helpline/groups available ⮌155. • Ask about previous attempt at stopping: review what helped and why attempt failed, address reason for relapse before another quit attempt.
Stressors	Every visit	Help identify the domestic, social and work factors contributing to smoking tobacco. If low mood, stress or anxiety ⮌75.
COPD	At diagnosis	If difficulty breathing when walking fast/up a hill, consider COPD ⮌106. If known COPD ⮌109.
CVD risk	At diagnosis	Assess CVD risk ⮌110.

Advise the patient who smokes tobacco

- Ask if patient is willing to discuss tobacco smoking. For tips on how to communicate effectively ⮌153. Support the patient to make a change ⮌154.
- 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.
- Explain that nicotine is very addictive and stopping can cause withdrawal symptoms: increased appetite, mood changes, difficulty sleeping/concentrating, irritability, anxiety, restlessness. These should improve after 2-4 weeks.
- Advise that most smokers make several attempts to stop before they are successful.
- If patient is pregnant or breastfeeding, stress the importance of stopping for baby's health.
- Ask if patient is willing/ready to stop smoking tobacco and give the advice below:

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 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 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, use helpline ⮌155 or support group when ready to stop.

If patient is ready to stop in the next month

- Help patient plan: set date to stop within 2 weeks, seek support from family and friends, support group or helpline ⮌155, avoid/manage situations associated with smoking and remove cigarettes, matches, and ashtrays. Help manage cravings using a stepwise approach, starting with step 1. If urge does not subside, move on to next step.
  - Step 1: delay as long as you can.
  - Step 2: take a deep breath and blow out slowly (repeat 10 times).
  - Step 3: drink water as an alternative to tobacco smoking.
  - Step 4: distract yourself with reading a book, going for a walk, listening to music, watching TV or other hobby.
- Offer referral for counselling especially if failed previous attempt at stopping, previous depression or alcohol misuse.

Review patient within the first week of stopping tobacco smoking and then as needed.

[1]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.

ALCOHOL AND/OR DRUG USE

Unhealthy alcohol use refers to a pattern of use that puts the patient at risk of dependence and physical, mental and social harm. *Any* drug use is unhealthy. If patient smokes, encourage to stop ⮌123.

Assess the patient with unhealthy alcohol use or *any* drug use

Assess	Note
Symptoms	• If recently reduced/stopped use and restless, agitated, difficulty sleeping, confused, anxious, hallucinating, sweating, tremors, headache or nausea/vomiting, treat for likely **withdrawal** ⮌74. • If aggressive/violent or disruptive behaviour ⮌73. • If patient has suicidal thoughts or plans ⮌72.
Harmful use	• Assess quantity and frequency of alcohol use: if drinking > 14 drinks[1]/week or ≥ 4 drinks[1]/session, explain that this increases risks of harm and dependence. • Look for harm: physical harm (like injuries, liver disease, stomach ulcer), mental harm (like depression), social harm (relationship, legal or financial) or risky behaviour.
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 domestic, social and work factors contributing to alcohol/drug use. Ask about reasons for his/her substance use. If patient is being abused ⮌77.
Mental health	• In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125. • If stress or anxiety ⮌75.

Health for All ⮌37 and 41

Advise the patient with unhealthy alcohol use or any drug use

- 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, a support group or a helpline ⮌155. Refer patient to social worker, psychologist or counsellor.
- Discuss risks/harms that using alcohol/drugs may cause. Allow patient to decide for him/herself to stop or cut down. Support the patient to make a change ⮌154.

Unhealthy alcohol use without dependence
- If pregnant, harmful drinking, previous dependence problem 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 to at least cut down to low-risk alcohol use: ≤ 2 drinks[1]/day and avoid alcohol on at least 2 days of the week.

Any drug use without dependence
- Advise to stop using illegal or misusing prescription drugs completely.
- 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 alcohol/drugs stopped suddenly, withdrawal effects can be harmful. Detoxification (below) will safely wean the body from alcohol or drug/s.

If alcohol/drug dependence, doctor to treat the patient with the help of the carer

- Arrange inpatient detoxification if previous withdrawal delirium/fits or failed detoxification, pregnant, chronic medical or mental illness, homeless/no social support, dependent on opioid or > 1 drug.
- Doctor can do outpatient detoxification if none of the above. Ensure patient has a close relative/friend to act as supervisor during programme.

Substance	**Detoxification programme** - Write out programme for patient and chosen supervisor
Alcohol	• Give thiamine 300mg daily for 14 days. • Give diazepam 10mg with withdrawal symptoms then 5mg 6 hourly for 3 days. Then 5mg 12 hourly for 2 days. Then 5mg daily for 2 days. Then stop. If withdrawal symptoms persist despite this, refer/discuss.
Cannabis/Tik/ Cocaine/Mandrax	• Medication is not always needed. • Treat anxiety or sleep problems with diazepam 5mg daily or 12 hourly, tapering over 5-7 days. Monitor for depression and psychosis.
Benzodiazepines	• Avoid suddenly stopping benzodiazepines. Withdrawal may take months. • Replace benzodiazepine patient is taking with diazepam. If taking lorazepam 0.5mg-1mg, replace with diazepam 5mg. For other benzodiazepines, refer to SAMF, MIC hotline or substance helpline ⮌155. • Decrease diazepam every 2 weeks by 2-2.5mg. If symptoms occur, continue or increase dose for 2 more weeks. Once at 20% of initial dose, decrease by 0.5-2mg every week.

Review the patient on a detoxification programme daily until stable. Advise to return immediately if any problems. Stop programme if patient resumes alcohol/drug use.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

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
- Loss of interest or pleasure in activities that are usually pleasurable

No → Continue to assess and manage the patient with low mood, stress or anxiety →75.

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 pleasurable
- Fatigue or loss of energy
- Disturbed sleep or sleeping too much
- Change in appetite or weight
- Feeling guilty or worthless
- Reduced concentration or indecisiveness
- Visible agitation or restlessness or talking or moving more slowly than usual
- Ideas or acts of self-harm or suicide

No

Yes: does the patient have difficulty carrying out ordinary work, domestic or social activities?

No

Yes

Check for anaemia
If pallor, check Hb. If < 12 (woman) or < 13 (man), **anaemia** likely ↩23.

Check for thyroid disease
If weight gain, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.

Screen for substance misuse
In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.

Check for medication side effects
Review medication: prednisone, efavirenz, metoclopramide, theophylline and contraceptives can cause depression. Discuss with specialist.

Any of above → Discuss with doctor or specialist.

None of above: does the patient have any psychotic symptoms[2]?

Yes → Refer same day.

No

Check if known bipolar disorder or mania symptoms (now or in the past): are there 3 or more of the following, that have lasted ≥ 1 week and interfered with ordinary work, domestic or social activities?
- Elevated mood and/or irritability
- Decreased need for 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

No: has there been a major loss or bereavement within last 6 months?

Yes → **Bipolar disorder** likely. Discuss/refer.

Yes: does patient have ideas of suicide or self-harm, feelings of worthlessness or is s/he talking or moving unusually slowly?

No: has patient had depression in the past?

Yes → **Depression** likely →126.

No: symptoms likely due to loss/bereavement. Provide support ↩75. If persists ≥ 6 months, discuss/refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [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 generalised 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, discuss/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 this. If patient has suicidal thoughts or plans, assess and manage risk before continuing ⮌72. Discuss with specialist before starting antidepressant.
Mania	Every visit	If abnormally happy, energetic, talkative, irritable or reckless, discuss/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 disorder** likely. • If anxiety is induced by a particular situation/object, **phobia** likely, refer/discuss. • If repeated sudden fear with physical symptoms and no obvious cause, **panic disorder** likely, refer/discuss. • If previous bad experience causing nightmares, flashbacks, avoidance of people/situations, jumpiness or a feeling of detachment, **post-traumatic stress disorder** likely ⮌77.
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** ⮌130.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Side effects	Every visit	Ask about side effects of antidepressant medication ⮌127.
Stressors	Every visit	Help identify domestic, social and work factors contributing to depression or anxiety. If patient is being abused ⮌77. If recently bereaved ⮌75.
Family planning	Every visit	• Assess patient's contraceptive needs ⮌136 • If patient pregnant or breastfeeding, doctor to discuss risks: the risk to baby from untreated depression may outweigh any risk from antidepressants. If possible, avoid antidepressants in first trimester of pregnancy. Ensure counselling/support and follow-up 2 weekly until stable. If possible, discuss with specialist.
Chronic conditions	Every visit	Ensure that other chronic conditions are adequately treated. If on oral steroids, efavirenz or atenolol, discuss with specialist.

Health for All | Depression ⮌96 | Anxiety ⮌100

Advise the patient with depression and/or generalised anxiety

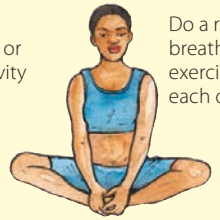
- Explain that depression is a very common illness that can happen to anybody. It does not mean that a person is lazy or weak. A person with depression cannot control his/her symptoms.
- Explain that thoughts of self-harm and suicide are common. Advise patient that if s/he has these thoughts, s/he should 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 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 to avoid stopping treatment abruptly as patient may have withdrawal symptoms. If stopping, treatment needs to be tapered.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If difficulty sleeping ⮌76.

Spend time with supportive friends or family.

Encourage patient to take time to relax:

Find a creative or fun activity to do.



Do a relaxing breathing exercise each day.

Get active
Regular exercise might help.

Access support
Link patient with helpline or support group ⮌155.

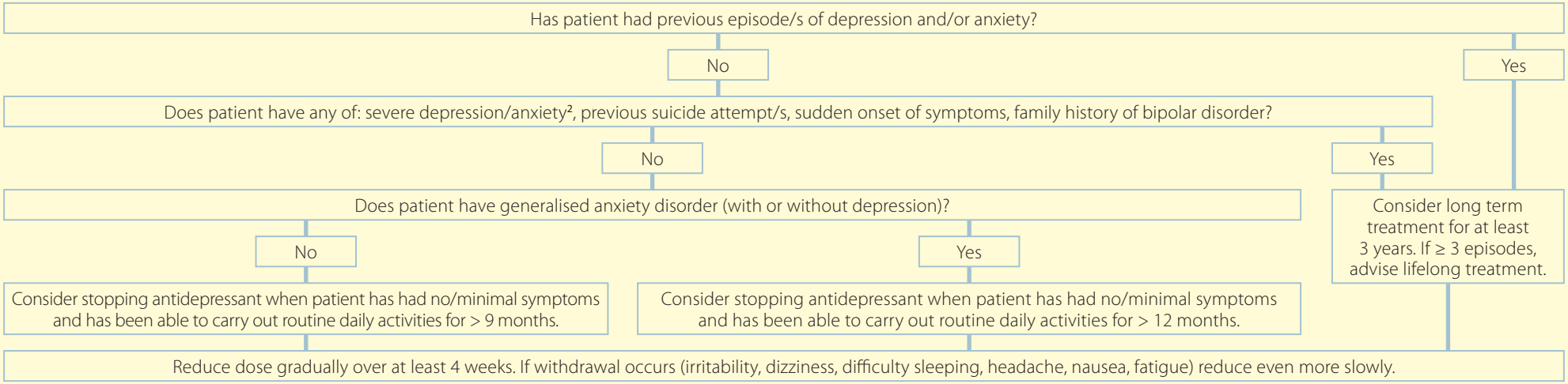
[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Treat the patient with depression and/or generalised anxiety

- Refer patient for counselling (ideally cognitive behavioural therapy or interpersonal therapy if available) and to social worker and/or helpline/support group ↩155.
  - If occupational therapist (OT) available, refer for mood, self-esteem, motivation, coping skills and constructive use of leisure time.
- Discuss benefits of antidepressants for depression and generalised anxiety disorder. Respect the patient's decision if s/he declines antidepressants.
- If generalised anxiety disorder or severe anxiety[1] on starting antidepressant, consider diazepam 2.5-5mg daily as needed, for up to 10 days. Avoid if patient is known to use substances.
- Start fluoxetine. If fluoxetine poorly tolerated, give instead citalopram. If difficulty sleeping and sedating antidepressant desired *and* no suicidal thoughts, start instead amitriptyline.

Medication	Dose	Note	Side effects
Fluoxetine	Start 20mg on *alternate days* for 2 weeks, then increase to 20mg *daily* in the morning. If patient has increased anxiety, delay increase in dose for another 2 weeks.	• Explain that anxiety may increase initially and to return if severe. • Discuss with specialist if patient has epilepsy, liver or kidney disease. • Monitor glucose more often in diabetes. • Advise family to monitor and return if condition worsens (suicidal thoughts/ unusual changes in behaviour). • If patient unable to tolerate fluoxetine, stop fluoxetine and start citalopram 10mg next day.	Changes in appetite and weight, headache, restlessness, difficulty sleeping, nausea, diarrhoea, sexual problems.
Citalopram	Start 10mg daily for 1 week, then increase to 20mg daily.	Avoid if heart failure, arrhythmias, kidney failure.	Drowsiness, difficulty sleeping, headache, dry mouth, nausea, sweating, changes in appetite and weight.
Amitriptyline	Start 25mg at night. Increase by 25mg every 5 days. Review at 2 weeks: if good response, continue at this dose (75mg). If partial or no response, continue to increase by 25mg every 5 days as needed, up to 150mg/day.	Use if fluoxetine and citalopram contraindicated or poorly tolerated. Avoid if on bedaquiline, suicidal thoughts (can be fatal in overdose), heart disease, urinary retention, glaucoma, epilepsy and elderly patients.	Dry mouth, constipation, difficulty urinating, blurred vision, sedation

Decide duration of antidepressant



- Review 2 weekly, even if not on antidepressants, until symptoms get better, then monthly. Once stable, review 3-6 monthly.
- If no better after 8 weeks either on antidepressant or not, refer.

[1]Patient has felt nervous, anxious or panicky or been unable to stop worrying or thinking too much. [2]Patient has multiple depressive/anxiety symptoms, occurring nearly every day, that severely impairs daily functioning.

SCHIZOPHRENIA

- **Ensure a specialist confirms the diagnosis of schizophrenia.**
- Consider schizophrenia in the patient who (if no mental health or alcohol/drug disorder) has for at least 6 months had difficulty carrying out ordinary work, domestic or social activities *and* for at least 1 month has had ≥ 2 of the following symptoms of psychosis:
  - Delusions: unusual/bizarre beliefs not shared by society; beliefs that thoughts are being inserted or broadcast.
  - 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 schizophrenia

Assess	When to assess	Note
Symptoms	Every visit	• Assess symptoms of psychosis above. If symptoms of psychosis and: - Aggressive/violent ⮌73. - Varying levels of consciousness over hours/days and/or temperature ≥ 38°C, **delirium** likely ⮌74. - Patient has defaulted treatment: restart intramuscular treatment ⮌129 and explore reasons for poor adherence (like side effects, substance misuse). - Good adherence to optimal doses of treatment, discuss/refer. • Manage other symptoms as on symptom pages.
Self-harm	Every visit	If patient has suicidal thoughts or plans ⮌72. 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 ⮌77.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Family planning	Every visit	Assess patient's contraceptive needs ⮌136. If patient is pregnant, planning pregnancy or breastfeeding, refer to specialist.
Medication	Every visit	• Ask about treatment side effects ⮌129. • Ask about adherence. If non-adherent, restart medication at same dose, explore reasons for stopping treatment and refer for community health worker support. • Discuss with specialist if patient is on medication that might cause acute psychosis, like prednisone, efavirenz, moxifloxacin and terizidone.
Weight (BMI)	Every visit	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If gaining weight, refer to dietician if available and discuss with specialist about possible alternative schizophrenia treatment.
Glucose	At diagnosis, then yearly	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.
Random total cholesterol	At diagnosis, then 2 yearly	• Assess and manage CVD risk ⮌110. • If cholesterol increasing, discuss with specialist about possible alternative schizophrenia treatment.
HIV	At diagnosis or if status unknown	Test for HIV ⮌95. If HIV positive, avoid efavirenz, discuss treatment with specialist.
Syphilis	At diagnosis	If positive, treat ⮌45 and refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Advise the patient with schizophrenia and the patient's carer

- Educate carer/family and patient: the patient often lacks insight into the illness and may be hostile towards carers. S/he may have difficulty functioning, especially in high stress environments.
- 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 alcohol/drug use and encourage regular sleep routine. Emphasise importance of treatment adherence.
- Advise the patient to continue social/educational/occupational activities if possible. Refer to social worker to help find educational or employment opportunities.
- Consider housing/assisted living support and try to avoid long-term hospitalisation.
- Refer patient and carer to support group and cognitive behavioural therapy if available. Arrange support for carer and refer for therapy if available. Refer to community health worker.

Treat the patient with schizophrenia

- Give medication as in 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 (for health care workers with advanced psychiatric training). If possible, stabilise patient on oral antipsychotic agent before changing to IM depot preparation. Once stable on long-term depot, reduce oral formulation.
- If unsure or more than typical effective dose needed, discuss with specialist.

Medication	Starting dose	Maintenance dose	Note
Haloperidol	Start 1mg orally daily. If poor response, increase gradually to 5mg daily. If > 65 years start 0.5mg 12 hourly and increase more gradually.	Usually 5mg daily.	Minimal anticholinergic side effects[1]. Monitor for extrapyramidal side effects (EPSE)[2]: if present, switch to risperidone.
Risperidone	Start 2mg orally daily. If poor response after 4 weeks, increase to 4mg daily.	Usually 2-4mg daily.	• Use in patients with extrapyramidal side effects (EPSE)[2]. • Use short term for breakthrough episodes. Discuss, if possible.
Flupenthixol decanoate	Start single dose 20mg IM. If poor response, give further 20mg IM after 1-2 weeks. If > 65 years: avoid use of IM antipsychotics, discuss with specialist.	Usually 10–40mg IM every 4 weeks.	• Full response can take 2 months. • Fewer anticholinergic side effects[1] than chlorpromazine. • Monitor for extrapyramidal side effects (EPSE): if any EPSE develop, start orphenadrine 50mg 12 hourly and refer for specialist review.
Zuclopenthixol decanoate	Start single dose 100mg IM. If poor response, give further 200mg IM after 1-2 weeks. If > 65 years, avoid use of IM antipsychotics, discuss with specialist.	Usually 200-400mg IM every 4 weeks.	
Chlorpromazine	Start 25mg orally 12 hourly. If poor response increase at 25mg intervals.	Usually 75-300mg daily but 800mg may be needed. Once symptoms controlled, give as once daily bedtime dose.	• One of the most sedating antipsychotics. Avoid starting unless no other option. • Continue chlorpromazine only if patient stable on it and coping with any side effects.

Look for and manage schizophrenia treatment side effects

Urinary retention	Stop treatment, insert urinary catheter and refer same day.
Blurred vision	Stop treatment and refer same day.
Painful muscle spasms: **acute dystonic reaction** likely	Usually within 2 days of starting medication. Give biperiden 2.5mg IM. If needed, repeat after 30 minutes, up to 3 doses in 24 hours. Refer same day. If biperiden unavailable, give instead promethazine 50mg IM.
Abnormal involuntary movements	Stop treatment and discuss/refer same day. Doctor to consider switch to risperidone (above).
Muscle restlessness	
Slow movements, tremor or rigidity	Discuss switch to risperidone (above) and arrange specialist review. Give orphenadrine 50mg 8 hourly whilst awaiting review.
Breast enlargement, nipple discharge, 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 to stand up slowly.
Dry mouth/eyes	Usually self-limiting.
Constipation	Usually self-limiting. Advise high fibre diet and adequate fluid intake.

Once stable, review 3 monthly. Advise to return immediately if symptoms of psychosis. If restarting treatment after default, review after 2 weeks, sooner if symptoms worsen.

[1]Anticholinergic side effects include: urinary retention, blurred vision, dry mouth/eyes, constipation. [2]Extrapyramidal side effects (EPSE) include: acute dystonic reaction (acute painful muscle spasm), abnormal involuntary movements, muscle restlessness, slow movements, tremor or rigidity.

DEMENTIA

- **Ensure a doctor confirms the diagnosis of dementia.**
- Consider dementia in the patient who for at least 6 months has the following, 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 shop 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.

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 discuss/refer. • If suicidal thoughts or plans ⮌72. • If sudden deterioration in behaviour ⮌74. • If hallucinations (seeing or hearing things), delusions (unusual/bizarre beliefs), agitation or wandering, discuss/refer to mental health practitioner. • Manage other symptoms as on symptom pages.
Side effects	If on treatment	If abnormal movements or muscle restlessness, stop treatment and discuss/refer same day. If painful muscle spasms, manage below.
Vision/hearing problems	Every visit	Refer to optometry/audiology services for testing and proper devices.
Nutritional status	Every visit	Ask about food and fluid intake. If BMI < 18.5 arrange nutritional support. BMI = weight (kg) ÷ height (m) ÷ height (m).
Palliative care	Every visit	If any of: bed-bound, unable to walk and dress alone, incontinence, unable to talk meaningfully or do activities of daily living, also give palliative care ⮌148.
BP	At diagnosis	If known hypertension ⮌115. If not, check BP: if BP ≥ 140/90 ⮌114.
CVD risk	At diagnosis,then depending on risk	Assess CVD risk ⮌110.
HIV	At diagnosis or if status unknown	Test for HIV ⮌95. If HIV positive, give routine care ⮌96. If new HIV diagnosis with dementia, discuss with specialist.
Syphilis	At diagnosis	If positive, treat ⮌45 and refer.
Thyroid function	At diagnosis	Check TSH. If abnormal, refer.
Glucose	At diagnosis	If known diabetes ⮌112. If not known with diabetes, check glucose ⮌13.

Health for All ⮌112

Advise the patient with dementia and his/her carer

- Discuss what can be done to support the patient, carer/s and family. Identify local resources, social worker, counsellor, NGO ⮌155. Refer to occupational therapy if available.
- Discuss with carer if respite or institutional care is needed. 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

- If HIV positive, ensure patient on ART ⮌96, as HIV-associated dementia often responds well to ART.
- If aggression, wandering, night-time disturbance or psychotic symptoms or anxiety, discuss/refer. Avoid benzodiazepines (lorazepam, diazepam, midazolam) if > 65 years.

Review the patient with dementia every 6 months.

EPILEPSY: ROUTINE CARE

- If fitting now →15. If not known with epilepsy and has had a recent fit →15 to assess further.
- A doctor must confirm the diagnosis of epilepsy and start long term anticonvulsant medication.

Assess the patient with epilepsy

Assess	When to assess	Note
Symptoms	Every visit	Ask about fit frequency and review fit diary. Manage other symptoms as on symptom pages.
Adherence	Every visit	Ask if takes treatment every day. If not, explore reasons, support adherence and refer to community health worker.
Side effects	Every visit	Ask about side effects of treatment ⮌132. If side effects intolerable, switch anticonvulsant.
Other medication	Every visit	If patient on any other medication (especially TB treatment, ART or contraceptive), consider possible interactions: check SAMF or discuss with MIC hotline ⮌155.
Family planning	Every visit	• Assess patient's contraceptive needs ⮌136. • If pregnant or planning pregnancy: discuss/refer to specialist. Give routine antenatal care ⮌138 and give folic acid 5mg daily. - Avoid sodium valproate in pregnancy as may cause birth abnormalities. Explain this risk[2] to patient. If on sodium valproate, avoid stopping suddenly as fits may recur, continue sodium valproate and advise reliable contraception[3]. If pregnant, refer to high risk antenatal clinic within 2 weeks.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.

Advise the patient with epilepsy

Health for All ⮌124

- If newly diagnosed, refer to community health worker and Epilepsy South Africa for support ⮌155. Help to get a MedicAlert® bracelet ⮌155.
- Advise to keep a fit diary to record frequency and duration of fits, triggers and changes in medication. Educate about the need for adherence and to continue treatment even if no fits.
- Help identify and avoid triggers like lack of sleep, alcohol/drug use, dehydration, flashing lights and video games.
- Help reduce chance of injury: advise to avoid dangers like heights, fires, swimming alone, walking/cycling on busy roads, operating machinery. Advise to avoid driving until fit free for 1 year.
- Advise patient there are many medications that may interact with anticonvulsants (see table ⮌132) and to discuss with doctor before starting any new medication.

Treat the patient with epilepsy

- **If not on treatment:**
  - Choose an anticonvulsant based on if patient is a man or woman, child-bearing potential and other medication ⮌132.
  - Start a single anticonvulsant at low dose and increase until fits stop or side effects intolerable.
- **If already on treatment:**
  - If woman of child-bearing potential on sodium valproate, discuss risks[2] and explain the need to switch anticonvulsant.
  - If no further fits, continue same dose.
  - If still having fits:
    - If poor adherence: support adherence, continue same dose and review patient in 2 weeks.
    - If medication interactions: adjust medications as needed and review patient in 2 weeks.
    - If none of above: increase anticonvulsant dose ⮌132. If already on maximum dose for 4 weeks, switch anticonvulsant once ⮌132. If already on second anticonvulsant, avoid switching and refer instead.
- **If switching medication:** add new anticonvulsant and increase as needed. Continue old anticonvulsant for first 2 weeks, then slowly reduce dose over 6-8 weeks, until old anticonvulsant stopped.

Continue to treat the patient with epilepsy →132.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]If woman on sodium valproate becomes pregnant, risks to baby include problems with development of spine, brain and other learning problems. [3]Reliable contraception includes copper intrauterine contraceptive device (IUCD), subdermal implant, injectable or sterilisation.

Medication	Dose	Notes	Side effects
Lamotrigine	• **Starting dose:** 25mg daily for 2 weeks, then 50mg daily for 2 weeks. Then increase by 50mg every 2 weeks until controlled (usually 50mg 12 hourly). • **Usual maintenance dose:** 50-100mg 12 hourly (or 100-200mg daily) • **Maximum dose:** 250mg 12 hourly **If switching from sodium valproate:** • Continue sodium valproate while starting lamotrigine. • Start lamotrigine on alternate days and increase more slowly. • Once on full dose of lamotrigine, slowly reduce sodium valproate dose over 4-6 weeks until stopped.	• Preferred anticonvulsant if on ART. • No significant interactions with dolutegravir. • If on lopinavir/ritonavir: doctor to double the dose of lamotrigine. • May also interact with paracetamol, rifampicin, other anticonvulsants, oral contraceptive: check SAMF or discuss with MIC ⮌155. • If known liver or kidney disease, discuss with specialist. • If lamotrigine not suitable or not tolerated, refer.	• **Urgent:** rash ⮌64 • **Self-limiting:** nausea, vomiting, blurred or double vision, dizziness, drowsiness, insomnia, fatigue
Carbamazepine	• **Starting dose:** 100mg 12 hourly for 1 week, then 200mg 12 hourly for 1 week. If needed, increase every week by 100-200mg/day. • **Usual maintenance dose:** 300-600mg 12 hourly • **Maximum dose:** 600mg 12 hourly	• Avoid if on/needing ART. • May interact with dolutegravir, isoniazid, rifampicin, warfarin, fluoxetine, amitriptyline, theophylline, other anticonvulsants, oral/subdermal contraceptive: check SAMF or discuss with MIC hotline ⮌155.	• **Urgent:** rash ⮌64 • **Self-limiting:** drowsiness, dry mouth, dizziness, nausea
Phenytoin	• **Starting dose:** 200mg at night (this is equivalent to 4.5–5mg/kg lean body mass daily). If needed, increase up to 300mg daily (or 150mg 12 hourly). • **Maximum dose:** 300mg daily	• Avoid if a woman or on/needing ART. • May interact with isoniazid, rifampicin, warfarin, fluoxetine, fluconazole, theophylline, folate, other anticonvulsants, oral/subdermal contraceptive: check SAMF or discuss with MIC hotline ⮌155. • If on > 300mg daily, monitor drug levels regularly.	• **Urgent:** - Rash ⮌64 - If unsteady on feet, blurred/double vision or slurring, doctor to check phenytoin level for toxicity. If doctor not available, refer same day. • **Self-limiting:** drowsiness • **Other:** large gums; facial hair/course features in women: switch medication.

Review the patient with epilepsy

- If no further fits, review 6 monthly.
- If still fitting, doctor to review monthly until fits stop.
- Refer if any of:
  - Newly diagnosed for CT scan
  - Seizures other than generalised tonic-clonic seizures (e.g. absence and focal seizures)
  - Fits increasing in frequency or changing in type
  - No fits for ≥ 2 years, for possible treatment withdrawal
  - Patient has switched anticonvulsant once and is adherent but still fitting after 4 weeks on maximum dose of second anticonvulsant.

CHRONIC ARTHRITIS

- If patient has discrete episodes of joint pain and swelling that completely resolve in between, consider gout →134.
- The patient with chronic arthritis has had continuous joint pain for at least 6 weeks. Distinguish mechanical osteoarthritis from inflammatory rheumatoid arthritis as follows:

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 for specialist assessment.

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 ⮌76.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
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 ⮌110.
HIV	At diagnosis	Test for HIV ⮌95.

Advise the patient with chronic arthritis

Health for All ⮌128

- If BMI > 25 advise to reduce weight to decrease stress on weight-bearing joints like knees and feet. Help patient to manage his/her CVD risk ⮌111.
- Encourage the patient to be as active as possible, but to rest with acute flare-ups.
- If patient smokes, encourage to stop ⮌123.
- Refer patient and carer for education about chronic arthritis, to available support group and helpline ⮌155.
- 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

- If rheumatoid arthritis or difficulty with activities of daily living, refer to physiotherapist or occupational therapist.
- Give paracetamol 1g 6 hourly as needed. If this effective, reduce paracetamol dose to 500mg 6-8 hourly as needed. Give methyl salicylate ointment to apply to affected areas.
- If no response to paracetamol and inflammation present in the patient with osteoarthritis, give ibuprofen[1] 400mg 8 hourly with food as needed for 7 days. If > 65 years, previous peptic ulcer, on aspirin warfarin or prednisone, also give lansoprazole 30mg daily for 7 days.
- Rheumatoid arthritis must be treated early with disease modifying anti-rheumatic drugs to control symptoms, preserve function, and minimise further damage.
- If **inflammatory arthritis** likely and awaiting specialist confirmation: give ibuprofen[1,2] 400mg 8 hourly with food for up to 3 months.
- If known with **rheumatoid arthritis** and symptoms much worse (acute flare): refer. While waiting for appointment, give ibuprofen[2] 400mg 8 hourly with food for up to 2 weeks. If asthma, hypertension, heart failure, kidney disease or on warfarin, give instead prednisone 7.5mg daily for up to 2 weeks.

Review monthly until symptoms controlled, then 3-6 monthly. If poor response to treatment, refer to specialist.

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease or on warfarin, discuss instead. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen. [2]If > 65 years, previous peptic ulcer, on aspirin or prednisone, also give lansoprazole 30mg daily to take while on ibuprofen.

GOUT

- 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.

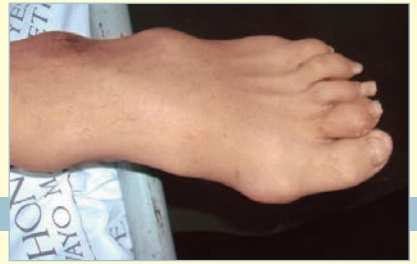
Assess the patient with gout

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as per symptom pages.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌124.
Medication	Every visit	Hydrochlorothiazide, furosemide, ethambutol, pyrazinamide and aspirin may induce a gout attack. Discuss with doctor. Avoid stopping aspirin given for CVD risk.
Joints	Every visit	• Recognise the acute gout attack: Sudden onset of 1-3 hot, extremely painful, swollen joints with red, shiny overlying skin (often big toe, knee or ankle). • 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 ⮌110. • If BMI[2] < 18.5 or patient < 40 years, refer within 1 month to exclude possible cancer cause for gout.
Creatinine (eGFR)	At diagnosis, then 6 monthly	If eGFR < 60, refer.
Urate	• At diagnosis • On allopurinol	• Wait at least 2 weeks after an acute gout attack before checking urate level. If urate > 0.5, start allopurinol (see below). • If starting/on allopurinol: repeat urate monthly and increase allopurinol dose if needed until urate < 0.35, then repeat urate yearly.

Advise the patient with gout

- Help the patient to manage his/her CVD risk ⮌111.
- Give dietary advice:
  - Reduce alcohol (especially beer), sweetened fizzy drinks, seafood, offal 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 avoid medication above that may induce an acute gout attack. Discuss with doctor before starting any new medication.

Health for All ⮌129



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Treat the patient with gout

Treat the patient with an acute gout attack

- Give ibuprofen[3] 400mg with food 8 hourly until pain and swelling are better.
- If peptic ulcer, asthma, hypertension, heart failure or kidney disease, avoid ibuprofen and give instead prednisone 40mg daily for 5 days.
- If patient is already using allopurinol, avoid stopping it during the acute attack.

Treat the patient with chronic gout

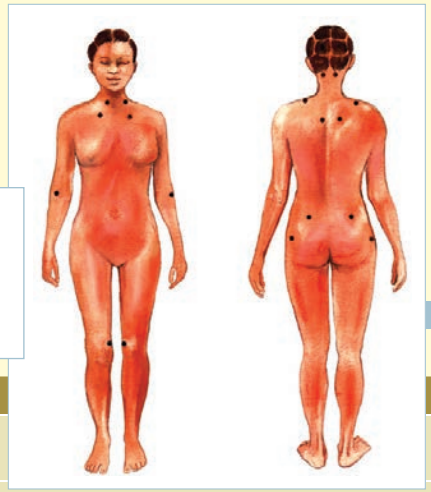
- Patient needs allopurinol if any of: ≥ 2 attacks per year, chronic tophaceous gout (picture), kidney stones, kidney disease, serum urate > 0.5.
- Wait at least 3 weeks after an acute gout attack before starting allopurinol.
- Start allopurinol 100mg daily. Use lowest dose to keep urate < 0.35: if needed, increase monthly by 100mg daily, up to 400mg daily. Usual maintenance dose 300mg daily.

If no response to treatment or unsure about diagnosis, doctor to discuss/refer patient to specialist.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]BMI = weight (kg) ÷ height (m) ÷ height (m). [3]If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.

FIBROMYALGIA

- 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 ⮌19.
  - 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 →53.
  - Check CRP, Hb, TSH and test for HIV ⮌95.
- **A doctor must make or confirm the diagnosis of fibromyalgia.** If joint problem, HIV positive, blood results abnormal or uncertain, consider another diagnosis and refer.



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. • Do not dismiss all symptoms as fibromyalgia: exclude treatable and serious illness. If unsure, refer.
Sleep	Every visit	If patient has difficulty sleeping ⮌76.
Stressors	Every visit	Help identify psychosocial stressors that may exacerbate symptoms. If stress or anxiety ⮌75.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Chronic arthritis	Every visit	If patient also has chronic arthritis, give routine care ⮌133.

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 ⮌76.
  - Refer to available support group and helpline ⮌155.
  - If no better with a combination of education, exercise and medication, refer for cognitive behavioural therapy if available.

Treat the patient with fibromyalgia

- If no better with education and exercise, give amitriptyline[1] 10mg at bedtime. Increase by 5mg every 2 weeks until improvement (maximum dose 75mg).
- If still symptomatic after 3 months on maximum dose, refer.

A supportive relationship with the same health practitioner can contain frequent visits for multiple problems. Review patient 6 monthly once stable.

[1]Avoid if on bedaquiline.

CONTRACEPTION

Give emergency contraception if patient had unprotected sex in past 5 days and does not want pregnancy:

- Give as soon as possible single dose levonorgestrel 1.5mg orally or if patient chooses, insert copper intrauterine contraceptive device (IUCD) instead.
  - If patient > 80kg, BMI[1] ≥ 30, or on antiretrovirals, rifampicin, phenytoin or carbamazepine, increase dose of levonorgestrel to 3mg *or* offer copper IUCD instead.
  - If patient vomits < 2 hours after taking levonorgestrel, repeat dose or offer copper IUCD instead.
  - Offer to start longterm contraceptive at same visit (if IUCD not chosen).
- Advise patient to return for pregnancy test if next period is more than 1 week late.
- Consider need for HIV and hepatitis B post-exposure prophylaxis ↩78.

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 ↩41. If sexual problems ↩50. • If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ↩147. If menopausal, decide how long to continue contraceptive ↩147. • 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 ↩137.
Side effects	Every visit	If already on contraceptive, ask about side effects of method ↩137.
Sexual health	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 ↩124.
Other medication	Every visit	If on ART, TB or epilepsy treatment, check method is suitable ↩137. If not suitable, choose/change to copper IUCD or injectable.
Vaginal bleeding	Every visit	If abnormal vaginal bleeding: if already on contraceptive, see method to manage ↩137. If not yet on contraceptive ↩49.
Weight (BMI[1])	Every visit	If BMI > 25, assess CVD risk ↩110.
BP	First visit; every visit if on pill or injectable	• Check BP: if ≥ 140/90 ↩114. • If 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[2]	Check for lumps in breasts ↩36 and axillae ↩21.
Pregnancy	Every visit	• Before starting contraception, exclude pregnancy: 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. If pregnant →138. • If pregnancy suspected (nausea/breast tenderness or if using IUCD/combined oral contraceptive and missed period), do pregnancy test. If pregnant, stop method and →138.
HIV	Every visit	Test for HIV ↩95.
Cervical screen	When needed	If HIV negative: do 3 routine screens in a lifetime from age 30, with a 10-year interval between each screen ↩47; if HIV positive: do screen every 3 years from time of HIV diagnosis ↩47.

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 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 vomits within 2 hours, or severe diarrhoea within 12 hours of taking pill, repeat dose as soon as possible. If persistent vomiting/diarrhoea > 24 hours, advise to use condoms or abstain during illness and for 7 days after 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 termination of pregnancy ↩139 to prevent unwanted pregnancy.

Health for All ↩51

[1]BMI = weight (kg) ÷ height (m) ÷ height (m). [2]If patient > 40 years old: check breasts 6 monthly.

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
Copper intrauterine contraceptive device (**IUCD**) • eg. Cu T380A (5 year device)	• Effective for 5 years depending on the device used. • Fertility returns on removal. • Avoid if current STI, unexplained vaginal bleeding, abnormal cervix/uterus. • Can be inserted within 48 hours of delivery[1].	• Insert any time during cycle. • Trained staff to insert/remove. • Give ibuprofen[2] 400mg 8 hourly with food as needed for up to 3 days for pain after insertion.	• Heavy or painful periods: reassure usually resolves within 3-6 months. To assess and manage ⮌49. If excessive bleeding or pain after insertion, refer. • Irritation of partner's penis during sex: cut IUCD strings shorter.
Subdermal implant • eg. Etonogestrel 68mg (one rod: 3 years) • eg. Levonorgestrel 2x 75mg (two rods: 5 years)	• Effective for 3-5 years depending on the device used. • Fertility returns on removal. • May be inserted postpartum at any stage. • Avoid if unexplained vaginal bleeding, previous breast cancer, liver disease. • Use with caution if on other medication[3].	• Plastic rod just under skin of upper arm. • Trained staff to insert/remove. • If inserted after day 7 of cycle, use condoms/ abstain for 7 days. • Give ibuprofen[2] 400mg 8 hourly with food as needed for up to 3 days.	• Amenorrhoea: reassure this is common. • Abnormal bleeding: common. To assess and manage ⮌49. • 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 this should resolve. If persists , assess for low mood, stress or anxiety ⮌75 or consider switch to non-hormonal method like copper IUCD.
Progestogen injection • eg. Medroxyprogesterone (DMPA) IM 150mg 12 weekly • eg. Norethisterone enanthate (NET-EN) IM 200mg 8 weekly	• Fertility can be delayed 9 months or more after last injection. • Avoid if unexplained vaginal bleeding, previous breast cancer, ischaemic heart disease, previous stroke, liver disease or diabetes complications. • Can be used postpartum (avoid for first 48 hours).	• If started after day 7 of cycle, use condoms/ abstain for 7 days. • No need to adjust dosing interval for ART, TB or epilepsy treatment.	
Progestogen-only pill (**POP**): 1 tablet daily • eg. Levonorgestrel 30mcg	• Must be motivated to take pill reliably every day. • Fertility returns once pill is stopped. • Avoid both if previous breast cancer, liver disease or on rifampicin, phenytoin or carbemazepine. • Use both with caution if on efavirenz, nevirapine, lopinavir/ritonavir as contraceptive may be less effective. advise to use condoms as well and consider alternative method (copper IUCD or or injectable). May decrease lamotrogine levels. • Also avoid COC if smoker ≥ 35 years, migraines and ≥ 35 years or visual disturbances, postpartum[4], BP ≥ 140/90, hypertension, CVD risk > 10%, current or previous deep vein thrombosis/pulmonary embolus, previous stroke, ischaemic heart disease or diabetes 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/ abstain for 2 days.	
Combined oral contraceptive (**COC**): 1 tablet daily • Monophasic: eg. ethinyl-estradiol/levonorgestrel 30mcg/150mcg • Triphasic: eg. ethinylestradiol/ levonorgestrel (varying doses)		• Must be taken every day at the same time. • If started after day 5 of cycle, use condoms/ abstain for 7 days. • If vomits within 2 hours, or severe diarrhoea within 12 hours of taking pill, repeat dose. • If > 24 hours diarrhoea/vomiting, use condoms or abstain (continue for 7 days once resolved).	• Abnormal bleeding: common. To assess and manage ⮌49. • Breast tenderness, nausea: reassure usually resolves within 3 months. • Headaches: if migraines and ≥ 35 years or visual disturbances, change to non-hormonal method. • Moodiness: reassure this should resolve. If persists ⮌75 or consider switch to non-hormonal method like copper IUCD.
Sterilisation • Tubal ligation/vasectomy	• Permanent contraception • Surgical procedure	• Refer for assessment. • Written informed consent is needed.	Wound pain, swelling or bleeding: refer.

Manage the patient who has missed an injection or pill

Late injection

- If ≤ 2 weeks late: give the injection.
- If > 2 weeks late:
  - Exclude pregnancy. If pregnant →138.
  - If not pregnant[5], give injection and use condoms/ abstain for 7 days. If unprotected sex in past 5 days, offer emergency contraception ⮌136.

Missed progestogen-only pill (> 3 hours late)

- Take pill as soon as remembered, continue pack.
- If unprotected sex in past 5 days, also offer emergency contraception ⮌136.

Missed combined oral contraceptive (> 24 hours late)

- If 1 active pill missed: take 1 pill immediately and take next pill at usual time.
- If ≥ 2 active pills missed during:
  - First 7 active pills: offer emergency contraception ⮌136, and restart active pills 12 hours later.
  - Middle 7 active pills: take the most recent missed pill immediately (discard others). Continue remaining pills as usual. No emergency contraception required.
  - Last 7 active pills: finish active pills of current pack. Omit inactive pills. Immediately start active pills of next pack.

Review the patient on oral contraceptive after 3 months, then 6 monthly. Review the patient with subdermal or IUCD 6 weeks after insertion, then as needed.

[1]Avoid if chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [3]The subdermal implant may be less effective on efavirenz, rifampicin, phenytoin and carbamazepine. If patient chooses to use implant, advise to use condoms as well and consider alternative method (copper IUCD or injectable). [4]Avoid COC for 6 weeks after delivery and for 6 months if breastfeeding. [5]If unable to exclude pregnancy, give progestogen-only pill and condoms for 2 weeks, then give injection if pregnancy test negative.

THE PREGNANT PATIENT

Give urgent attention to the pregnant patient with any of:

- Fitting or just had a fit
- 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 severe back or abdominal pain
- Difficulty breathing
- Swollen painful calf
- Vaginal bleeding
- Decreased/no fetal movements ↩141.
- Painful contractions < 37 weeks: **preterm labour** likely
- Sudden gush of clear or pale fluid from vagina with no contractions: **prelabour rupture of membranes** (**PROM**) likely

Management:

- If difficulty breathing, give face mask oxygen and refer urgently.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. Refer urgently.
- If temperature ≥ 38°C and difficulty breathing/back pain/abdominal pain, give ceftriaxone 1g IV[1]/IM unless PROM (see below). Refer urgently.

Fitting or just had a fit

- 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 sodium chloride 0.9% IV over 20 minutes and 5g IM in each buttock. Repeat 5g IM 4 hourly in alternate buttocks.
- Insert catheter and record urine output every hour.
- Stop magnesium if urine output < 100mL in 4 hours or respiratory rate < 16[2] or knee reflexes disappear.
- If fit persists or recurs, give further magnesium sulphate 2g IV over 10 minutes. If no response, discuss.

Severe pre-eclampsia

- If BP ≥ 160/110 and patient alert: give nifedipine 10mg to swallow, not chew. Repeat BP after 30 minutes: if still ≥ 160/110, give second dose of nifedipine 10mg.
- Refer urgently.

Severe hypertension

- If BP ≥ 160/110 and patient alert: give nifedipine 10mg to swallow, not chew. Repeat BP after 30 minutes: if still ≥ 160/110, give second dose of nifedipine 10mg.
- Refer urgently.

Vaginal bleeding

Early pregnancy < 22 weeks[3]

Cervical os open/dilated or products of conception in cervical os/vagina?

No

Threatened or **complete miscarriage** likely

Refer to exclude ectopic pregnancy and confirm diagnosis.

Yes

Incomplete or **inevitable miscarriage** likely

- Remove products of conception digitally if possible.
- If bleeding heavy (pad soaked in < 5 minutes):
  - Give IV fluids as above.
  - Give oxytocin 20units IV diluted in 1L sodium chloride 0.9% at 125mL/hour.
- If pain, give paracetamol 1g 6 hourly.

If temperature > 38°C or foul-smelling products of conception, give ceftriaxone 1g IV[1]/IM and metronidazole 400mg orally.

Late pregnancy ≥ 22 weeks[3]

- Avoid digital vaginal examination.
- Give IV fluids as above.

- If rhesus negative, give anti-D immunoglobulin 100mcg IM.
- Refer urgently.

Preterm labour

- **If < 26 weeks:** refer to hospital.
- **If 26-33+ weeks:**
  - Give 2 doses of betamethasone 12mg IM 12 hours apart. Record time given in referral letter so second dose can be given at hospital.
  - Give sodium chloride 0.9% 200mL IV, then nifedipine 20mg orally. If still contractions after 30 minutes, give another 10mg. Then give 10mg 4 hourly until transferred.
  - Refer urgently.
- **If ≥ 34 weeks:** allow labour to continue at MOU.

Prelabour rupture of membranes (PROM)

- Confirm amniotic fluid with sterile speculum: litmus turns blue.
- Avoid digital vaginal examination.
- If chorioamnionitis[4]: give ampicillin[5] 1g IV and metronidazole 400mg orally. Refer urgently.
- If no chorioamnionitis[4]:
  - If ≥ 37 weeks: if not in active labour 12 hours after PROM, give ampicillin[5] 1g IV and metronidazole 400mg orally. Refer urgently.
  - If < 37 weeks: give amoxicillin[5] 500mg and metronidazole 400mg both 8 hourly.
    - If 26- 33+ weeks, also give 2 doses betamethasone 12mg IM 12 hours apart. Record time given in referral letter so second dose can be given at hospital.
    - Refer urgently.

[1]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [2]If respiratory rate < 16, give calcium gluconate 10% 10mL IV slowly over 2 minutes. [3]If gestation not known, manage as late pregnancy if uterus palpable above umbilicus. [4]Temperature ≥ 38°C, painful abdomen or foul-smelling amniotic fluid. [5]If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily.

Approach to the newly diagnosed pregnant patient not needing urgent attention

Does the patient want the pregnancy?

No or patient unsure

- Discuss the options around continuing with pregnancy, choosing adoption or termination of pregnancy (TOP). If the patient chooses adoption, refer to social worker.
- Discuss future contraceptive needs ⮌136.
- Determine gestational age by dates and on examination. If unable to determine gestational age, refer for ultrasound.

Patient requests a TOP.

Gestation < 20 weeks

- Check the following (avoid delaying TOP referral):
  - Screen for STI: if vaginal discharge, rash, itch, lumps, ulcers ⮌41.
  - Do a cervical screen if needed ⮌47.
  - Test for HIV ⮌95.
- Arrange booking as soon as possible (within 2 weeks) at designated facility according to gestation:

Gestation is ≤ 12 weeks and 0 days

Book an on-demand TOP:
- If < 9 weeks, refer to nearest facility offering medical TOP.
- If 9 - 12 weeks, refer to facility offering 1st trimester TOP.

Gestation is ≥ 12 weeks and 1 day

Book assessment for TOP as soon as possible (before 20 weeks) at facility offering 2nd trimester TOP

Arrange appointment for patient to return after TOP for counselling and contraception.

Gestation ≥ 20 weeks

- TOP is not an option.
- Discuss possibility of adoption.

Patient decides to continue with pregnancy.

Yes

Decide if patient eligible for basic antenatal care:

Ask about previous pregnancies. Has patient had any of:
- Stillborn or newborn that died within first 28 days of life
- ≥ 3 consecutive miscarriages
- Birth weight of previous baby < 2500g or > 4500g
- Hospital admission for gestational hypertension or pre-eclampsia
- Surgery to uterus or cervix (caesarean section, fibroid removal, cone biopsy, cervical stitch for cervical incompetence)

No

Yes

Ask about current pregnancy. Does patient have any of:
- Diagnosed/suspected multiple pregnancy
- Age ≤ 16 or ≥ 37 years
- Rhesus negative with antibodies
- Vaginal bleeding
- Pelvic mass
- Diastolic BP ≥ 90 at booking

No

Yes

Ask about general medical problems. Does patient have any of:
- Diabetes
- Heart disease
- Kidney disease
- Asthma
- Epilepsy
- TB
- Alcohol/drug use disorder
- Hypertension[1]

No

Yes

Patient is eligible for basic antenatal care.
- Continue with routine first antenatal visit ⮌140.
- If ≥ 5 pregnancies or previous postpartum haemorrhage, arrange hospital delivery.

Patient is *not* eligible for basic antenatal care. Refer for further assessment.

[1]If known hypertension: stop ACE-inhibitors (like enalapril), give instead methyldopa 250mg 8 hourly and refer.

ROUTINE ANTENATAL CARE: THE BOOKING/FIRST VISIT

Assess the pregnant patient at the booking/first visit, ideally before 14 weeks. If already booked, give routine antenatal care at follow-up visits →141.

Assess	Note
Symptoms	Manage symptoms as per symptom page. Check if patient needs urgent attention ⮌138.
Estimated delivery date	Use first day of last period and SFH[1] to determine estimated delivery date (EDD). If unsure of dates and SFH < 24cm, refer for ultrasound to confirm EDD.
TB	• If cough, weight loss, night sweats or fever, check for TB ⮌81. If patient has TB, refer to next level of antenatal care clinic. • If HIV positive, send 1 sputum for Xpert MTB/RIF, even if no TB symptoms.
Mental health	• In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any ⮌125. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ⮌72.
Alcohol/drug use	Any alcohol/drug use is risky for baby. In the past year, has patient: 1) drunk ≥ 4 drinks[2]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, discuss/refer.
MUAC[3] and BMI[4]	• If MUAC < 23cm or BMI < 18.5 (or BMI < 23 if HIV positive): exclude TB and HIV and refer for nutritional support. Arrange advanced midwife/doctor review. • If MUAC ≥ 33cm or BMI ≥ 32, check diabetes risk below.
Abdomen	• Measure and plot SFH[1]: if < 28 weeks and measurement > 90th centile or multiple pregnancy likely, refer. If SFH < 24 cm at booking, refer for ultrasound (ideally at 18-20 weeks) if facilities available. • If mass other than uterus in abdomen or pelvis, refer for assessment. • If ≥ 34 weeks: palpate presenting part. If breech or transverse lie suspected, reassess at ≥ 38 weeks. If still suspected, refer.
Vaginal discharge	If abnormal discharge, treat for STI ⮌41. If discharge is runny and no contractions, suspect **prelabour rupture of membranes** ⮌138.
BP	• If BP ≥ 160/110, manage and refer urgently →138. • If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP. If repeat BP ≥ 150/100, refer same day. If repeat BP < 150/100, check urine dipstick for protein: - If ≥ 1+ proteinuria, refer same day. If headache, blurred vision or abdominal pain, treat for **severe pre-eclampsia** ⮌138. - If no proteinuria, educate about warning signs (persistent headache, blurred vision or abdominal pain), advise to rest/reduce workload and review in 1 week. If BP at review ≥ 140/90, arrange same day doctor/advanced midwife review: treat for **gestational hypertension** ⮌142 and review weekly. Refer urgently if proteinuria or symptoms develop. Refer all at 38 weeks for hospital delivery.
Urine dipstick: test clean, midstream urine	• If leucocytes and nitrites in urine treat for likely **complicated urinary tract infection** ⮌51. • If ≥ 2+ proteinuria (confirmed on 2 dipsticks), discuss/refer. If trace/1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above. • If glucose in urine, check diabetes risk.
Diabetes risk	• Screen for diabetes only if risk factor[5]. • Give unfasted patient oral glucose 75g in 250mL water upon arrival at clinic. Check glucose after 1 hour: if ≥ 7.8, arrange further fasting test at next level of care clinic.
Haemoglobin (Hb)	Give iron according to Hb ⮌142. Refer if: • If Hb < 6, or Hb 6-7.9 *with* symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day. • If Hb 6-7.9 without symptoms: refer to next level of care clinic. • If Hb < 10 at ≥ 36 weeks: refer to next level of care clinic and arrange delivery at hospital.
Rapid rhesus (Rh)	If rhesus negative, send Coombs test to check for antibodies: if Coombs positive, refer. If Coombs negative, give anti-D immunoglobulin 100mcg IM after delivery/miscarriage preferably within 72 hours[6].
Syphilis	If positive ⮌45.
HIV	• If HIV negative or status unknown, test for HIV ⮌95. • If HIV positive give routine HIV care ⮌96. If not on ART, start ART same day ⮌99. If on ART, continue. If currently ≤ 6 weeks pregnant and on dolutegravir, discuss with specialist.
Viral load (VL) if HIV positive	• If on ART for ≥ 3 months: do VL at this visit, regardless of previous tests. Follow up result at next visit ⮌142. • If on ART for < 3 months: do VL at 3 months on ART.
Cervical screen	If < 20 weeks: if HIV negative, do cervical screen if ≥ 30 years and no screen in past 10 years ⮌47; if HIV positive, do cervical screen every 3 years from time of HIV diagnosis ⮌47.

Continue to advise and treat the pregnant patient →142.

[1]Symphysis-fundal height. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Mid Upper Arm Circumference. [4]Body Mass Index (BMI) = weight (kg) ÷ height (m) ÷ height (m). [5]Glucose in urine, BMI ≥ 32, age ≥ 40 years, previous diabetes in pregnancy, family history of diabetes, previous unexplained stillbirth, previous baby ≥ 4000g, polyhydramnios, SFH large for gestational age, Indian ethnicity. [6]May be given up to 7 days.

ROUTINE ANTENATAL CARE: FOLLOW-UP VISITS

Assess the pregnant patient at booking/first visit ⮌140 and 7 follow-up visits around 20, 26, 30, 34, 36, 38, 40 weeks. Review at 41 weeks if undelivered.

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as per symptom page. Check if patient needs urgent attention ⮌138.
Gestation[1]	Every visit	If ≥ 40 weeks, advanced midwife/doctor to review: if sure of dates, to go to hospital at exactly 41 weeks for induction (give referral letter). If unsure of dates, refer.
TB	Every visit	• Check for TB symptoms at every visit: if cough, weight loss/poor weight gain or fever, exclude TB ⮌81. If patient has TB, refer to next level of antenatal care clinic. • If HIV positive, check Xpert MTB/RIF result sent at first visit (if not done, do at this visit, even if no symptoms): - If Xpert MTB/RIF positive, start TB treatment and refer to next level of care antenatal clinic. - If Xpert MTB/RIF negative and: • TB symptoms: if CD4 ≤ 100, do a urine LAM[2]. If LAM positive, start TB treatment and refer. If CD4 > 100 or LAM negative, refer/discuss. • No TB symptoms: start ART if not already done. If CD4 ≤ 100, also start TPT ⮌98. If CD4 > 100, defer TPT until 6 weeks after delivery.
Mental health	Every visit	• In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any ⮌125. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ⮌72.
Alcohol/drug use	Every visit	In past year, has patient: 1) drunk ≥ 4 drinks[3]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, discuss/refer.
Fetal movements	Every visit from 20 weeks	If reduced or absent fetal movements, listen for fetal heartbeat: • If fetal heart beat not heard, refer. • If fetal heart beat heard, arrange for cardiotocograph (CTG). Refer if not available at facility. Ideally, advanced midwife to perform and interpret CTG: if CTG reassuring, give fetal kick chart and review in 1 week. If CTG shows signs of fetal distress, refer urgently for delivery.
Abdomen	Every visit	• Measure and plot SFH[4] and refer if: 2 successive (or 3 separate) measurements < 10th centile, no growth for 6 weeks, 1 measurement > 90th centile if < 28 weeks, 2 successive measurements > 90th centile if ≥ 28 weeks or multiple pregnancy likely. • If mass other than uterus in abdomen or pelvis, refer for assessment. • If ≥ 34 weeks: palpate presenting part. If breech or transverse lie suspected, reassess at ≥ 38 weeks. If still suspected, refer.
Vaginal discharge	Every visit	If abnormal discharge, treat for STI ⮌41. If discharge is runny and no contractions, suspect **prelabour rupture of membranes** ⮌138.
BP	Every visit	• If BP ≥ 160/110, manage and refer urgently →138. • If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP. If repeat BP ≥ 150/100, refer same day. If repeat BP < 150/100, check urine dipstick for protein: - If ≥ 1+ proteinuria, refer same day. If headache, blurred vision or abdominal pain, treat for **severe pre-eclampsia** ⮌138. - If no proteinuria, educate about warning signs (persistent headache, blurred vision, abdominal pain), advise to rest/reduce workload and review in 1 week. If BP at review ≥ 140/90, arrange same day doctor/advanced midwife review: treat for **gestational hypertension** ⮌142 and review weekly. Refer urgently if proteinuria or symptoms develop. Refer all at 38 weeks for hospital delivery.
Urine dipstick: test clean, midstream urine	Every visit	• If leucocytes and nitrites in urine treat for likely **complicated urinary tract infection** ⮌51. • If ≥ 2+ proteinuria (confirmed on 2 dipsticks), discuss/refer. If trace/1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above. • If glucose in urine, check diabetes risk.
Diabetes risk	If risk factor[5]: 26 weeks	Give unfasted patient oral glucose 75g in 250mL water upon arrival at clinic. Check glucose after 1 hour: if ≥ 7.8, arrange further fasting test at high risk clinic.
Haemoglobin (Hb)	• Around 30 weeks and 36 weeks • If patient pale • If Hb < 10: 1 month after treatment started	Give iron according to Hb ⮌142. Refer if: • If Hb < 6, or Hb 6-7.9 *with* symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day. • If Hb 6-7.9 without symptoms: refer to next level of care clinic. • If Hb 8-9.9 and Hb is not improving after 1 month of treatment: refer to next level of care clinic. • If Hb < 10 at ≥ 36 weeks: refer to next level of care clinic and arrange delivery at hospital.
Syphilis	Around 30 weeks	If positive ⮌45. Follow positive results up: check mother has received all 3 treatment doses ⮌45.

Continue to assess the antenatal patient →142.

[1]Use obstetric wheel to determine gestation, based on estimated date of delivery (EDD). [2]Urine LAM (lipoarabinomannan): urine test used to detect active TB in patients with low CD4s. [3]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [4]Symphysis-fundal height. [5]Glucose in urine, BMI ≥ 32, age ≥ 40 years, previous diabetes in pregnancy, family history of diabetes, previous unexplained stillbirth, previous baby ≥ 4000g, polyhydramnios, SFH large for gestational age, Indian ethnicity.

Assess	When to assess	Note
If Rh negative: anti-D antibodies	At 26, 34 and 38 weeks	Only if Rh negative, repeat Coombs test at 26, 34 and 38 weeks to check for antibodies: if Coombs positive, refer. If Coombs negative, give anti-D immunoglobulin 100mcg IM after delivery/miscarriage preferably within 72 hours, up to 7 days later.
HIV	• Every visit • At delivery	• If HIV negative or status unknown, test for HIV ⮌95. If patient refuses, offer at each visit, even in early labour. • If HIV positive, give routine HIV care and start ART same day ⮌96.
Viral load (VL) if HIV positive	• 3 months on ART • At delivery	• If VL < 50, continue ART and repeat VL at delivery. If still on EFV or NVP, and no longer in the first 6 weeks of pregnancy, consider switch to dolutegravir ⮌101. • If ≥ 50, manage unsuppressed viral load ⮌146.

Advise the pregnant patient

Health for All ⮌55

- Encourage patient to register on MomConnect (dial *134*550#) to receive messages to support her and her baby during pregnancy, childbirth and baby's first year.
- Alert patient to the risks of smoking and drinking alcohol and urge to stop. Support patient to change ⮌154 and refer patient to available helpline ⮌155
- Discuss safe sex. Advise patient to use condoms throughout pregnancy and have only 1 partnership at a time.
- Complete Maternity Case Record and give to patient, remind patient to bring it to every visit and when in labour.
- Educate about signs of early labour and pregnancy emergency: persistent headache, blurred vision, abdominal pain (not discomfort), drainage of liquor, vaginal bleeding, reduced fetal movements.
- From 30 weeks, ensure patient knows where she is going to give birth and check if transport arrangements have been made should she go into labour.
- Discuss contraception choice for after delivery ⮌136.
- Regardless of HIV status, encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, infant prophylaxis.
- If mother chooses to exclusively formula feed, check if affordable, feasible, acceptable, safe and sustainable. Check correct mixing. Discourage mixed feeding.
- From 6 months, introduce food while continuing with feeding choice. Encourage breastfeeding until 2 years for all, ensuring that HIV positive mother is adherent on ART and virally suppressed.

Treat the pregnant patient

- Give folic acid 5mg daily up to 13 weeks gestation. If on anticonvulsants, family history or previous baby with neural tube defect, continue folic acid throughout pregnancy.
- Give iron[2] according to Hb:
  - If Hb ≥ 10 give ferrous sulphate compound BPC 170mg daily or ferrous fumarate 200mg daily throughout pregnancy. If daily iron not tolerated[3], give instead ferrous sulphate compound BPC 340mg once weekly with food or ferrous fumarate 400mg once weekly with food throughout pregnancy.
  - If Hb < 10 give ferrous sulphate compound BPC 170mg 12 hourly with food or ferrous fumarate 200mg 12 hourly with food. Continue for 3 months once Hb ≥ 10, then once daily throughout pregnancy.
- Give calcium carbonate[4] 500mg 12 hourly to reduce the risk of pre-eclampsia.
- Prevent tetanus: if first pregnancy, give tetanus toxoid (TT) 0.5mL IM into arm. If < 5 previous tetanus vaccinations[5] in lifetime documented, catch up vaccinations.
- If **gestational hypertension**: start methyldopa 250mg 8 hourly and titrate up to 750mg 8 hourly if needed.
  - Review weekly, check for new symptoms, BP, urine, weight, SFH and fetal heart/movements ⮌141. Refer at 38 weeks for delivery at hospital.
- If HIV positive: start or continue ART and check if prophylaxis (e.g. co-trimoxazole preventive therapy or TB preventive therapy) needed ⮌98.
- If in malaria area, discuss need and choice of malaria prophylaxis with specialist.

Review the pregnant patient at 20, 26, 30, 34, 36, 38, 40 weeks. If undelivered, also review at 41 weeks.

Treat the HIV positive patient in labour

- If on ART, continue ART throughout delivery. Check viral load, regardless of when last done, and review results at 3-6 day postnatal visit.
- If newly diagnosed HIV positive, or known HIV positive and not on ART, give together:
  - NVP 200mg as a single dose and
  - single dose TDF/3TC/DTG 300/300/50mg. This is also known as TLD and is available as a fixed combination tablet.
- Give ideally during early labour, and urgently if delivery is imminent.
- Start mother on ART next day ⮌99. Discuss ART risks/benefits, advise reliable contraception and recommend she start DTG-based regimen (TLD): help mother to make an informed decision ⮌103.
- Decide HIV transmission risk of HIV-exposed baby and treat according to risk ⮌145.

AZT – zidovudine; **DTG** - dolutegravir; **FTC** – emtricitabine; **NVP** - nevirapine; **TDF** – tenofovir; **3TC** – lamivudine, **TLD** - TDF/3TC/DTG or tenofovir/lamivudine/dolutegravir

Give routine postnatal care to mother and baby →143.

[1]If not on ART, re-start same day. No need to wait for results. [2]If possible, avoid taking iron within 4 hours of taking calcium or methlydopa and within 2 hours of milk and tea. If on dolutegravir and taking at same time as iron, take with food. [3]Abdominal pain, nausea, vomiting, constipation. [4]If on dolutegravir and taking at same time as calcium, take with food. [5]Tetanus vaccinations include DTP, DTP-Hib, DTaP-IPV/Hib, TD or TT.

ROUTINE POSTNATAL CARE

Give urgent attention to the postnatal patient (within 6 weeks of delivery) with any of:

- Heavy bleeding (soaks pad in < 5 minutes): **postpartum haemorrhage** likely
- Fitting or just had a fit up to 1 week postpartum: treat as **eclampsia** →138.
- Unwell and temperature ≥ 38˚C
- Perineal tear extending to anus or rectum
- BP < 90/60
- Pulse ≥ 100
- Hb < 6
- Pallor with respiratory rate ≥ 30, dizzy, faint or chest pain

Manage and refer urgently:

- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **postpartum haemorrhage** likely: call for help, this is a life-threatening condition and requires immediate referral. Manage urgently:
  - Massage uterus, remove clots from vagina and empty bladder (with catheter if needed).
  - Whilst setting up IV, give oxytocin 10units IM if not already given after baby delivered. Give oxytocin 20units in 1L sodium chloride 0.9% at 250mL/hour IV in a 2nd IV line.
  - Ensure placenta is delivered. If controlled cord traction fails, try manual delivery.
  - If uterus still soft after this:
    - Give ergometrine 0.5mg IM *or* oxytocin/ergometrine 5units/0.5mg (1mL) IM and continuously massage uterus. Avoid if eclampsia, pre-eclampsia, known hypertension or heart disease unless bleeding is life-threatening.
    - Only if oxytocin *and* oxytocin/ergometrine unavailable, give misoprostol 600mcg rectally or sublingually.
  - Repair any bleeding tears.
  - If still bleeding heavily, insert balloon catheter[1] into uterus, inflate with 400-500mL of saline, clamp catheter and pack vagina with swabs to prevent expulsion.
  - Apply bimanual compression[2] during transfer.
- If unwell and temperature ≥ 38°C: give ceftriaxone 1g IV[3]/IM. If painful abdomen or foul-smelling vaginal discharge, also give metronidazole 400mg orally.

Assess the mother and her baby 6 hours, 6 days, and 6 weeks after delivery.

Assess	When to assess	Note
Symptoms	Every visit	Manage mother's symptoms as on symptom page. Manage baby's symptoms with IMCI guide.
Mental health	Every visit	• In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any ↩125. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ↩72.
Alcohol/drug use	Every visit	In the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩124.
Family planning	Every visit	Assess patient's contraceptive needs ↩136. Ideally, insert copper IUCD within 48 hours of delivery if no contraindications[5] *or*, insert subdermal implant at any stage, *or* start injectable contraceptive after 48 hours *or* offer tubal ligation if appropriate. Avoid combined oral contraceptive pill for 6 weeks after delivery and for 6 months if breastfeeding.
Infant feeding	Every visit	• If breastfeeding: check for breast problems ↩36. Check that baby latches well and is not mixed feeding during the first 6 months. • 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 IMCI guide. Ensure baby received immunisations at birth and ensure baby is immunised at 6 week visit.
Psychosocial risk	Every visit	Help access support especially if at risk of mental health problem: patient not interacting with baby, difficult life event in last year, unhappy about pregnancy, absent/unsupportive partner, violence at home, abused as a child, no social/family support, previous depression/anxiety, < 20 years, no money for food, patient is a refugee or has HIV.
Abdomen and perineum	Every visit	• If painful abdomen or foul-smelling vaginal discharge, refer/discuss same day. • If perineal or abdominal wound: check healing. Advise salt baths twice daily in warm water for perineal wounds. If red/warm/painful/swollen/foul-smell/oozing pus, discuss/refer.
BP	Every visit	Check BP. If BP ≥ 140/90, recheck after 1 hour rest. If BP still ≥ 140/90 ↩114, unless ≤ 1 week postpartum: discuss same day.
BMI	Every visit	Mother's BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, arrange nutritional support.

Continue to assess the postnatal patient and baby →144.

[1]If balloon catheter unavailable, make condom catheter: slip open condom over large Foley's catheter and tie with string at the base. [2]Bimanual compression: insert clenched fist into vagina, with back of hand posteriorly. Place other hand on abdomen behind uterus and squeeze uterus firmly between two hands. [3]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [4]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [5]Avoid IUCD if: chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage.

Assess	When to assess	Note
HIV test in mother	• If not done • If breastfeeding: at 10 weeks, 6 months, then 3 monthly • If not breastfeeding: 6-12 monthly	• Test for HIV ⮌95. • If HIV positive, give routine HIV care and start ART same day ⮌98. Test baby for HIV same day and if breastfeeding, give infant prophylaxis to prevent mother-to-child transmission ⮌145.
Viral load (VL) if HIV positive	• At delivery • 6 months after delivery • If breastfeeding: 6 monthly	• Follow up results of VL done at delivery at the 3-6 days postnatal visit. If VL not done at delivery, do at this visit. • If VL < 50, continue ART and give routine HIV care ⮌96. • If VL 50-999, manage unsuppressed viral load ⮌146. • If VL ≥ 1000: if breastfeeding, manage mother's unsuppressed VL ⮌146 and if needed, switch infant to high risk infant prophylaxis ⮌145. If formula feeding, manage unsuppressed VL ⮌104 and continue current infant prophylaxis. • If on 2nd or 3rd line ART and VL ≥ 1000: discuss with with experienced ART doctor or HIV hotline ⮌155.
HIV test in baby	• HIV-exposed: birth, 10 weeks, 6 months, 18 months, 6 weeks after breastfeeding stopped • HIV-unexposed: 18 months • At any time if baby unwell	• If mother diagnosed with HIV while breastfeeding or baby unwell, do HIV test same day. • < 18 months: use HIV PCR as initial test. If positive, start ART and confirm result with second HIV PCR (or HIV viral load). • 18-24 months: use rapid HIV test as initial test. If positive, confirm with HIV PCR test before starting ART. • ≥ 24 months: as for adult testing ⮌95.
Haemoglobin	6 weeks	Give iron according to Hb (see below). If Hb < 10: repeat monthly until Hb reaches 10. If no improvement 1 month after starting treatment, discuss/refer.
Syphilis	If not done	If mother positive, treat mother and baby ⮌45.
Cervical screen	From 6 weeks	• HIV negative: do 3 routine cervical screens in a lifetime from age 30, with a 10-year interval between each screen ⮌47. • HIV positive: do cervical screen every 3 years from time of HIV diagnosis ⮌47.
Rhesus (Rh)	If rhesus negative: 6 hour and 6 day visit	If baby rhesus positive/unknown, give mother single dose anti-D immunoglobulin 100mcg IM, preferably within 72 hours, up to 7 days after delivery.

Health for All ⮌59

Advise the mother

- Encourage mother to become active soon after delivery, rest frequently and eat well. Advise mother to keep perineum clean and to change pads 4-6 hourly.
- Advise to return urgently if heavy bleeding, foul-smelling vaginal discharge, red/oozing wound, fever, dizziness, severe headache or abdominal pain, blurred vision, calf pain or baby unwell.
- Refer to an infant feeding support group. Give feeding advice:
  - Regardless of HIV status, encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, infant prophylaxis according to risk profile. From 6 months, introduce food while continuing with feeding choice.
  - Advise the working mother to consider expressing breastmilk for baby while away.
  - 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.
  - If mother HIV positive, continue to breastfeed until 2 years while ensuring viral suppression, and until at least 2 years if baby diagnosed HIV positive. Check mother knows how to give infant prophylaxis.
  - If mother HIV negative: continue to breastfeed until at least 2 years. Explain importance of regular (3 monthly) HIV testing while breastfeeding.
- Discuss family planning and importance of spacing children. Advise to use reliable contraception and condoms as soon after delivery as possible.
- Explain that the first 1000 days of a child's life are vital to his/her development: encourage mother and father to respond when baby cries and to hold, talk/sing and make eye contact with baby to help with bonding and development. If mother finds this difficult, encourage her to return more frequently and refer to support group, if available.

Treat the mother

- Give iron[1] according to Hb:
  - If Hb ≥ 10, give ferrous sulphate compound BPC 170mg daily or ferrous fumarate 200mg daily for 6 weeks after delivery. If daily iron not tolerated[2], give instead ferrous sulphate compound BPC 340mg once weekly with food or ferrous fumarate 400mg once weekly with food for 6 weeks.
  - If Hb < 10, give ferrous sulphate compound BPC 170mg 12 hourly with food or ferrous fumarate 200mg 12 hourly with food. Continue for 3 months after Hb reaches 10.
- If pain after delivery: give paracetamol 1g 6 hourly and ibuprofen[3] 400mg 8 hourly with food for up to 5 days.
- If HIV positive mother not on ART, start ART same day ⮌98, especially if breastfeeding.

Treat the HIV-exposed baby →145. Routinely review mother and baby 6 hours, 6 days, and 6 weeks after delivery.

[1]If possible, avoid taking iron within 4 hours of taking methlydopa and within 2 hours of milk and tea. If on dolutegravir and taking at same time as iron, take with food [2]Abdominal pain, nausea, vomiting, constipation. [3]Avoid ibuprofen if pre-eclampsia, peptic ulcer, asthma, hypertension, heart failure, kidney disease.

PREVENT MOTHER-TO-CHILD TRANSMISSION (PMTCT) OF HIV AND HEPATITIS

Approach to the HIV-exposed baby (mother is known with HIV[1])

- Do HIV positive mother's viral load at delivery and HIV PCR test on her baby as soon after birth as possible (within 48 hours). Place barcodes on discharge form and RtHB.
- If abandoned baby, do rapid HIV test *and* HIV PCR test on baby. If < 72 hours since delivery, also manage as high risk formula feeding baby below.
- Encourage exclusive breastfeeding for first 6 months. If carer wants to formula feed, ensure it will be affordable, feasible, acceptable, safe and sustainable. Refer to an infant feeding support group.
- If mother tested hepatitis B positive during pregnancy, give baby hepatitis B immunoglobulin 0.5mL IM[2] and hepatitis B vaccine 0.5mL IM[2] within 12 hours of delivery. Manage further ⮌105.
- Start HIV infant prophylaxis as soon as possible, ideally within 1 hour of birth. If baby vomits, repeat dose once. Treat according to risk:

Mother known HIV positive at delivery

Mother on ART at delivery.
Classify baby's risk profile: initially use mother's VL done in last 12 weeks, then when delivery VL[3] results available, re-classify if needed:

Viral load < 1000

Low risk

Give nevirapine daily for 6 weeks (see table).

Viral load ≥ 1000

- Manage raised VL result ⮌146.
- If mother on 2nd or 3rd line ART discuss with HIV hotline ⮌155.

Viral load not done in last 12 weeks

High risk

Formula feeding

Give zidovudine 12 hourly for 6 weeks (see table) *and* give nevirapine daily for 6 weeks (see table).

Breastfeeding

Give zidovudine 12 hourly for 6 weeks (see table) *and* give nevirapine daily for at least 12 weeks (see table). Stop only once mother's viral load <1000 or 1 week after stopping breastfeeding.

Mother not on ART at delivery

Start mother on ART same day ⮌98.

Mother diagnosed HIV positive during labour or while breastfeeding

If not done, do HIV test on baby same day.

Breastfeeding mother with new VL result ≥ 1000

Advise to return for baby's HIV PCR and mother's VL result in 3-6 days:

- If HIV PCR positive, send 2nd HIV PCR or viral load. Stop infant prophylaxis and start ART. Advise to breastfeed for 2 years. If formula feeding, consider feasibility of re-establishing breastfeeding.
- If HIV PCR negative, retest: at 10 weeks, 6 months, 18 months, 6 weeks after final breastfeed, or any time if baby unwell. If mother on ART, advise to breastfeed for 2 years.
- Start co-trimoxazole (see table) at 6 weeks. Decide when to stop: if formula feeding, stop if HIV PCR negative at 10 weeks. If breastfeeding, stop if HIV negative 6 weeks after final breastfeed.
- Check result of mother's viral load done at delivery[3]: if VL >50 ⮌146. If needed re-classify infant as high/low risk and adjust prophylaxis accordingly.

Nevirapine syrup (10mg/mL)

Age	Current Weight	Once daily dose
Birth to 6 weeks	2-2.49kg[4]	1mL daily (10mg)
	≥ 2.5kg	1.5mL daily (15mg)
6 weeks to 6 months		2mL daily (20mg)
6 to 9 months		3mL daily (30mg)
9 months until 1 week after all breastfeeding has stopped		4mL daily (40mg)

Zidovudine syrup (10mg/mL)

Age	Current Weight	12 hourly dose
Birth to 6 weeks	2-2.49kg[4]	1mL 12 hourly (10mg)
	≥ 2.5kg	1.5mL 12 hourly (15mg)
≥ 6 weeks (according to ART Drug Dosing Chart for Children)	< 3kg	4mg/kg or 0.4mL/kg 12 hourly
	3-5.9kg	6mL 12 hourly (60mg)
	6-7.9kg	9mL 12 hourly (90mg)
	8-13.9kg	12mL 12 hourly (120mg)

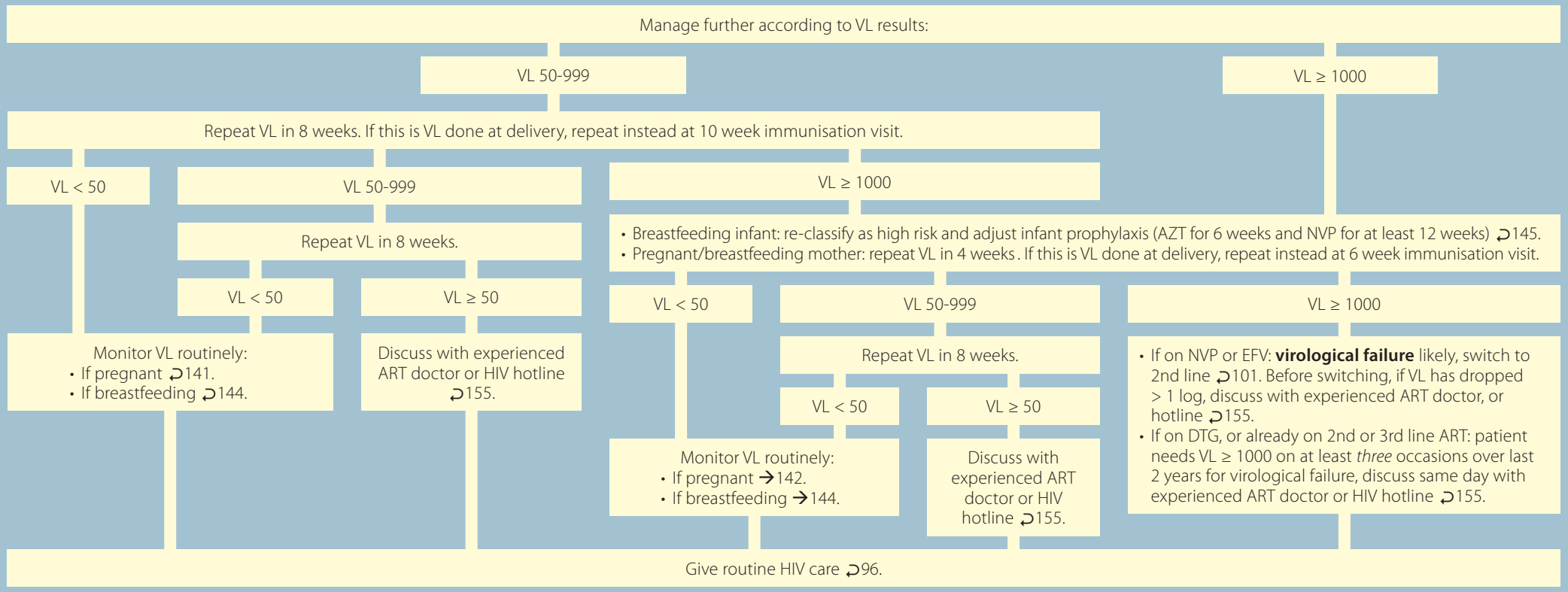
Co-trimoxazole syrup (40/200mg/5mL)

Weight	Dose
< 5kg	2.5mL daily
5-14kg	5mL daily

[1]If mother has one positive and one negative rapid HIV test results, manage baby as high risk until until mother's status confirmed. [2]Give hepatitis B vaccine and immunoglobulin at different sites. [3]If no viral load done at delivery, do viral load at this visit and review results within 1 week. [4]If < 35 weeks gestation or < 2kg, discuss with specialist/manage in hospital.

Manage the pregnant/breastfeeding patient with an unsuppressed viral load (VL ≥ 50)

- Assess possible causes: check adherence and dosing and give enhanced adherence support ⮌98. Encourage disclosure. If alcohol/drug use ⮌124, if stress ⮌75.
- Check for interactions with other medications. If unsure, discuss with HIV hotline ⮌155.
- Ask about and document recent infection/s or illness. Manage other symptoms as on symptoms pages.



MENOPAUSE

- Exclude pregnancy before diagnosing menopause. If pregnant →138.
- Menopause is no menstruation for at least 12 months in a row. Most women have menopausal symptoms and irregular periods leading up to menopause.
- If menopausal and < 40 years, discuss with specialist.

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 ⮌76 and sexual problems ⮌50. • If night sweats, ask about other TB symptoms : if cough, weight loss or fever, exclude TB ⮌81. • Manage other symptoms as on symptom pages.
Vaginal bleeding	Every viasit	If bleeding between periods, after sex or after being period-free for 1 year, refer within 2 weeks.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌125.
Osteoporosis risk	At diagnosis	Refer for possible treatment if high osteoporosis risk: < 60 years with loss of > 3cm in height or fractures of hip/wrist/spine, previous non-traumatic fractures, oral steroid treatment for > 3 months, onset of menopause < 45 years, BMI < 18.5, heavy alcohol user, heavy smoker.
Family planning	At diagnosis	• If < 50 years, give contraception for 2 years after last period. • If ≥ 50 years, change to progestogen-only or non-hormonal contraceptive until 1 year after last period ⮌136.
BP	3 monthly on HT[1]	If known hypertension ⮌115. If not, check BP: if ≥140/90 ⮌114.
CVD risk	At diagnosis	Assess CVD risk ⮌110.
Breast check	At diagnosis, 6 monthly	If lump/s found in breasts or axillae, refer same week to breast clinic. If available, arrange mammogram at HT[1] initiation.
Cervical screen	When needed	If HIV negative: do 3 routine screens in a lifetime from age 30, with a 10-year interval between each screen ⮌47; if HIV positive: do screen every 3 years from time of HIV diagnosis ⮌47.
Thyroid	At diagnosis	If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.

Advise the menopausal patient

Health for All ⮌62

- To cope with the flushes, advise patient to dress in layers and to decrease alcohol, avoid spicy foods, hot drinks and warm environments.
- If patient is having mood changes or not coping as well as in the past, refer to counsellor, support group or helpline ⮌155.
- Educate that long term use of hormone therapy (HT) can increase risk of breast cancer, deep vein thrombosis (DVT) and cardiovascular disease. It can be used to treat menopausal symptoms for up to 5 years.

Treat the menopausal patient

- If menopausal symptoms interfere with daily function, treat with hormone therapy (HT) if no contraindications[2]. If dose range given, start with lowest dose and increase until symptoms improve.
  - If patient has had uterus removed (hysterectomy): give only estradiol 1-2mg daily *or* conjugated estrogens 0.3mg-1.25mg daily.
  - If patient still has a uterus (no hysterectomy), choose HT according to menstruation pattern:

If ≥ 1 year since last period, give:

- Conjugated estrogens 0.3-0.625mg *and* medroxyprogesterone 2.5-5mg daily *or*
- Estradiol/norethisterone 1mg/0.5mg daily *or*
- Estradiol/norethisterone 2mg/1mg daily.

If still menstruating/recently stopped, give:

- Estradiol/cyproterone 1 tablet daily *or*
- Estradiol 1-2mg daily for 21 days *with* medroxyprogesterone 5-10mg daily from day 12-21, followed by no therapy from day 22-28 *or*
- Conjugated estrogens 0.3-0.625mg daily for 21 days *with* medroxyprogesterone 5-10mg daily from day 12-21, followed by no therapy from day 22-28.

- Treat vaginal dryness and pain with sex with lubricants (avoid petroleum jelly with condoms). If no better with HT or if HT contraindicated, refer.
- Review 6 monthly once on HT. Decrease/stop if symptoms are controlled. If ≥ 5 years of HT or patient ≥ 60 years, stop treatment. If still symptomatic, refer to specialist.

[1]Hormone therapy. [2]Avoid if ≥ 60 years, abnormal vaginal bleeding, cancer of uterus or breast, previous deep vein thrombosis or pulmonary embolism, recent heart attack, liver disease , porphyria (rare hereditary disorder).

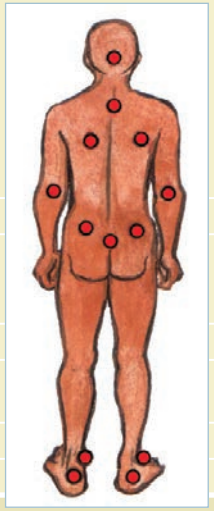
ROUTINE PALLIATIVE CARE

A patient can be given curative and palliative care at the same time. A doctor should confirm the patient needs palliative care:

- Patient is in bed or chair for 50% or more of the day *or* dependent on others for most care *or* has had 2 or more unplanned hospital admissions in past 6 months *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 or liver failure, cancer, HIV, TB, dementia or other progressive neurological disease.

Assess the patient needing palliative care

Assess	Note
Symptoms	Manage symptoms as on symptom pages. If constipation, diarrhoea, nausea/vomiting, abdominal cramps, itchiness, acute anxiety or cough/difficulty breathing, also palliate symptoms ⮌149.
Pain	• Does pain limit activity or disturb sleep? Is medication helping? Grading the pain 1-10 may help the patient decide if s/he needs to start or increase pain medication. 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: if burning or electric like sensations, **nerve pain** likely. If deep, dull ache, **bone pain** likely. • 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, discuss.
Sleep	If patient has difficulty sleeping ⮌76.
Mental health	• Ask if patient has persistent feelings of hopelessness or worthlessness? If yes ⮌125. • If patient has suicidal thoughts or plans ⮌72. • If low mood, stress or anxiety ⮌75.
Side effects	Manage side effects on symptom pages. Nausea, confusion and sleepiness on morphine usually resolve after a few days. Prevent and treat constipation ⮌149.
Chronic care	• Assess how much patient and family understand 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. Consider which medication could be discontinued.
Carer/dependents	Ask how the carer is coping and what support s/he needs now and in the future. If needed, refer patient's dependents and family members to social worker.
Dying	If known with terminal disease and deteriorating with ≥ 2 of: bed bound, decreased consciousness, only able to sip fluid, unable to take tablets, address patient's needs ⮌150.
Mouth	Check oral hygiene and look for dry mouth, ulcers and thrush ⮌31. If gum or tooth problem ⮌32. If difficulty swallowing, discuss/refer.
Pressure sores	If patient is bedridden or in a wheel chair, check common areas for damaged skin (change of colour) and pressure sores (see picture). If patient has pressure ulcer/sore ⮌66.



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.
- Emphasise the importance of taking pain medication regularly (not as needed) and if using tramadol/morphine to use a laxative daily to prevent constipation.
- Refer patient and carer to available community health worker, physiotherapist, support group ⮌155, counsellor, spiritual counsellor. Deal with bereavement issues ⮌75.
- If unable to self-care:
  - Prevent mouth disease: brush teeth and tongue regularly using toothpaste or dilute bicarbonate of soda. Rinse mouth with ½ teaspoon of salt in 1 cup of water after eating and at night.
  - If bedridden:
    - Prevent pressure sores: 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: at least twice a day, gently bend and straighten joints as far as they go. Avoid causing pain. Massage muscles.
- The patient's appetite will get less 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.
- Discuss the plan for caring for the patient. Advise whom to contact when pain or other symptoms get severe. Discuss advance-care plans and preferences. Document decisions.
- 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.

Treat the patient needing palliative care

- Treat pain with medication in conjunction with interdisciplinary team.
- Aim to have patient pain free at rest, able to sleep and as alert as possible. If the patient has any pain, start pain medication. If severe pain, discuss with doctor.

Does patient have mild, moderate or severe pain?
If unsure, start at lower step and increase pain medication if needed.

Mild pain	Moderate pain	Severe pain
Start pain medication at step 1	Start pain medication at step 2.	Start pain medication at step 3.

- Also check if patient needs adjuvant therapy:
  - If likely **nerve pain**: use paracetamol in step 1 *and* add amitriptyline. If likely **bone pain**: give ibuprofen in step 1.

If pain persists/increases, increase dose to maximum and then move to next step. If pain decreases, step down.

Step	Pain medication	Start dose	Maximum dose	Note
Step 1 Start one of:	Paracetamol	1g 4-6 hourly	4g daily	If starting, give paracetamol 1g in clinic and reassess pain after 4 hours. If no better, add ibuprofen for 2 days.
	Ibuprofen	400mg 8 hourly	1.2g daily	Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.
Step 2 Add to step 1:	Tramadol	50mg 4-6 hourly	400mg daily	• Manage side effects below. • Use with caution if patient on amitriptyline as may cause over-sedation.
Step 3 Stop tramadol, continue paracetamol/ ibuprofen and add:	Morphine (oral tablets or solution) *or*	5-10mg 4 hourly If ≥ 65 years: start 2.5-5mg	No maximum-titrate against pain. If respiratory rate < 12, skip 1 dose, then halve usual doses.	• If no diarrhoea, give sennosides A and B 13.5mg at night or lactulose 10-20mL daily to prevent constipation. If constipated, manage below. • Manage other side effects below. • If pain increases before next morphine dose due (breakthrough pain), give extra dose: give same dose as regular 4-hourly dose. - Continue to give regular morphine at scheduled times. - Increase morphine doses next day. Calculate new dose: add up total amount of extra morphine given in last 24 hours. Divide this amount by 6 and add this to each regular 4 hourly dose[1].
	Morphine (if dose stable, use oral long-acting)	10-20mg 8-12 hourly[2]		
Add adjuvant therapy to any step	Amitriptyline	25mg at night	75mg at night	• Use at night. Advise it may cause dizziness, drowsiness and to avoid driving and using heavy machinery. • Avoid amitriptyline if patient on bedaquiline, refer/discuss if pain uncontrolled on above medication.

- If constipation, diarrhoea, nausea/vomiting, abdominal cramps, itchiness, acute anxiety or cough/difficulty breathing, also palliate symptoms:

Constipation	Diarrhoea	Nausea/vomiting	Abdominal cramps	Itchiness	Acute anxiety	Cough or difficulty breathing
• Check for impaction (solid bulk of stool in rectum): - If impacted, gently remove stool from rectum using lubrication. - If not, give sennosides A and B 13.5mg at night and/or lactulose 10-20mL orally daily. If needed, increase sennosides A and B to 27mg at night and/or increase lactulose to 12 hourly.	Give loperamide 4mg initially, then 2mg after each loose stool up to 6 hourly, up to 12mg daily. Avoid if overflow diarrhoea or side effect of antibiotics.	• Give metoclopramide 10mg 8 hourly as needed. • Allow patient to choose what to eat. Encourage frequent small meals/sips of fluids like water, tea or ginger drinks.	Give hyoscine butylbromide 10mg 6 hourly as needed for up to 3 days.	Give chlorphenamine 4mg 6-8 hourly as needed.	Give diazepam 2-5mg 12 hourly as needed for up to 14 days.	• If thick sputum, give steam inhalations. If more than 30mL/day, try deep breathing with postural drainage. Refer to physio if available. • If excess thin sputum or persistent dry cough, discuss with palliative care specialist.

Review 2 days after starting or changing medication. If pain/symptoms persist despite treatment or side effects intolerable, discuss/refer.

[1]Example: patient on morphine 10mg 4 hourly has 3 episodes of breakthrough pain: 10mg x 3 = 30mg (total extra morphine); 30mg ÷ 6 = 5mg. Add 5mg to each 10mg regular dose. Increase morphine to 15mg 4 hourly. [2]If patient already on morphine: add up total dose used over 24 hours, divide by 2 to get 12 hourly dose. Only use 8 hourly if pain regularly recurring before next 12 hourly dose.

ADDRESS THE DYING PATIENT'S NEEDS

The patient with a life-limiting illness is dying if s/he is deteriorating and ≥ 2 of: bed bound, decreased consciousness, only able to sip fluid or unable to take tablets. Doctor to confirm.

Assess the dying patient's needs every 4 hours

Assess	Note
Symptoms	Manage symptoms below.
Agitation	If agitated, exclude pain, urinary retention, constipation or dehydration. Consider changing position. Discuss need for sedation with senior family member.
Excessive secretions	If noisy breathing, try changing position.
Current care	• Assess current medication and discontinue non-essential medications. • Assess patient's ongoing need for tests in discussion with patient/carer and health care team. • Consider switching medication route if unable to swallow orally to subcutaneous.
Intake	Check with family what patient's fluids/food intake needs are and whether fluids/food is needed or necessary.
Psychological well-being	Ask how patient and carer are coping and what support and/or spiritual care is needed.
Mouth	Check oral hygiene. Ensure patient's mouth is moist and clean. Consider using glycerine to keep mouth moist.
Personal hygiene	Check skin care, clean eyes and change of clothing according to patient's needs.

Advise the dying patient and carer

- Ensure patient and/or carer is aware that patient is dying.
- Educate carer/family that food/fluids are for comfort only, will not prolong life and a reduced need for food/fluids is part of the normal dying process.
- Advise that investigations and curative treatments like antibiotics may no longer be indicated and will be kept to a minimum according to patient's care plan.
- Discuss with patient and carer: preferred place of death (home, hospice or hospital), how family are to be informed of impending death, what to do in the event of death.
- Discuss patient's wishes, feelings, faith, beliefs and values. Discuss patient's needs now, at death and after death. Listen and respond to patient/carer's worries/fears.
- Ensure patient and/or carer/family receive full explanation and express understanding of current plan of care. Identify and document any concerns about current plan of care.

Treat the dying patient

- If pain, nausea/vomiting, diarrhoea, constipation, abdominal cramps, itchiness ↩149.
- If difficulty breathing, give morphine solution 2.5-5mg as needed. Increase slowly as needed.
- If urinary retention, insert urethral catheter.
- If agitated, and pain, urinary retention, constipation, dehydration excluded, give diazepam 5mg (or 2.5mg if liver failure). If no response, repeat dose. If aggressive/violent ↩73.

- Doctor to review every 3 days or sooner if carer/family concerned about current plan of care or patient's conscious level, functional ability, oral intake or mobility improves.
- If carer/family unable to cope at home or difficulty breathing relieved by oxygen, refer to hospital/hospice if available.
- If unsure, discuss with palliative care specialist.

Diagnose death if:

No carotid pulse in neck for 2 minutes *and* no heart sounds for 2 minutes *and* no breath sounds or chest movement for 2 minutes *and* pupils are fixed, dilated and do not respond to light.

PROTECT YOURSELF FROM OCCUPATIONAL INFECTION

Give urgent attention to the health worker with a sharps injury or splash to eye, mouth, nose or broken skin with exposure to any of:

- Blood
- Blood-stained fluid/tissue
- Wound secretions
- 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.
- Assess need for HIV and hepatitis B post-exposure prophylaxis ⮌78.

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 after contact with patients or body fluid.
- Dispose of sharps in the correctly in sharps bins.

Wear protective gear:

- Wear gloves when handling blood, body fluids, secretions or non-intact skin.
- Wear face mask if in contact with respiratory virus suspects (N95 respirator if TB suspect).
- Wear face mask with a visor or glasses if at risk of splashes.

Get vaccinated:

- Get vaccinated against hepatitis B.

Know your HIV status:

- Test for HIV ⮌95. 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 TB suspects.

Manage sharps safely:

- Ensure sharps bins are easily accessible and regularly replaced.

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 TB suspects promptly:

- The patient with cough ≥ 2 weeks is a TB suspect.
- Separate TB suspect 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 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.

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.

Arrange urgent assessment for to the health worker with occupational stress and any of:

- Alcohol or drug intoxication at work
- Aggressive or violent behaviour at work
- Inapproproate behaviour at work
- Suicidal thoughts or behaviour

Adopt measures to reduce your risk of occupational stress

Protect yourself

Look after your health:

- Get enough sleep.
- Exercise, eat sensibly, minimise alcohol and avoid smoking.
- Address your general health and get screened for chronic conditions.

Look after your chronic condition if you have one:

- Adhere to your treatment and your appointments.
- Avoid diagnosing and treating 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), or access helpline ↩155.
- Take time to do a relaxing breathing exercise each day.
- Find a fun or creative activity to do.
- Spend time with supportive family or friends.

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 ↩153.
- 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/colleague: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any substance misuse likely.
- Smells of alcohol

Change in mood

- Indifferent, tense, irritable or angry
- In the past month, have you/colleague: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either depression likely.

Recent distressing event

- Diagnosis of chronic condition
- Bereavement
- Needlestick injury
- Traumatic event

Poor attendance at work

- Frequent absenteeism
- Frequent lateness
- Often takes sick leave

Marked decline in work performance

- Reduced concentration
- Fatigue

The health worker with any of the above may have substance misuse, stress, depression/anxiety or burnout and would benefit from referral for assessment and follow-up.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

COMMUNICATING 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 personal 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/not at all 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. 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, community care worker, helpline ↩155).
- 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.

HELPLINE NUMBERS

Helpline	Services provided	Contact number/s
General counselling		
Lifeline National Counselling Line	Counselling for any life crisis and referral to relevant services	0861 322 322 (24 hour helpline)
Childline SA (ages 0 - 16 years)	For children and young adolescents who are in crises, abuse or at risk of abuse and violence	0800 055 555 (24 hour helpline)
National Council Against Smoking	Support for a patient to quit smoking.	011 720 3145 (08:00-17:00 Monday to Friday)
Abuse		
Stop Gender Violence	Support for children, women and men experiencing domestic violence	0800 150 150 (24 hour helpline)
Rape Crisis	Counselling and court support for rape survivors > 13 years	021 447 9762 (24 hour helpline)
Chronic condition		
Arthritis Foundation	Education and monthly support groups for patient with arthritis and/or fibromyalgia	0861 30 30 30 (24 hour helpline)
Epilepsy South Africa	Education, counselling and support groups for patient with epilepsy and his/her family	0860 37 45 37 (08:00-16:30 Monday to Thursday; 08:00-14:00 Friday)
Diabetes South Africa	Education, dietary plans, support groups and workshops for patient with diabetes	086 111 3913 (08:30-16:00 Monday to Thursday; 08:30-14:00 Friday)
Heart & Stroke Foundation	Education and support groups for patient with stroke, any heart condition or CVD risk.	021 422 1586 (08:00-16:00 Monday to Friday)
National AIDS helpline	Counselling and information for patient who has HIV or thinking of testing	0800 012 322 (24 hour helpline)
People living with cancer	Cancer related queries. Link to further resources for patient/family with cancer	0800 033 337 (9am-5pm, toll free)
Mental health		
Suicide crisis line	For any suicide related support	0800 567 567 (8am-8pm) or sms 31393 and a counsellor will call back.
Mental health helpline	Counselling and support for patient with mental illness or substance misuse	0800 12 13 14 (24 hour helpline)
Alzheimer's South Africa	Information, training and support groups for carers	0860 102 681 (08:00-16:00 Monday to Thursday; 08:00-15:00 Friday)
Alcoholics Anonymous	Counselling, education and support groups for patient with alcohol misuse	0861 435 722 (24 hour helpline)
Health worker		
Poisons Information Helpline	Advice on the management of exposure to or ingestion of poisonous substances	0861 555 777 (24 hour national helpline)
National HIV & TB Health Care Worker Hotline	For HIV and TB related clinical queries	0800 212 506 (08:30-16:30 Monday to Friday)
Right to Care Adult HIV Helpline	For adult HIV related clinical queries	082 957 6698 (adult helpline) 0823526642 (paediatric helpline)
Medicines Information Centre (MIC)	Advice on medicine related query like drug interactions, side effects, dosage, treatment failure	021 406 6829 (08:30-16:30 Monday to Friday)
Nutrition Information Centre (NICUS)	For all nutrition related queries for health workers and the public.	021 933 1408 (08:30-16:30 Monday to Friday)
Rabies hotline	For any rabies related queries	082 883 9920 (24 hour)
Administration		
Legal Aid	Information and guidance on any legal matter. They will return messages left after hours.	0800 110 110 (07:00-19:00 Monday to Friday)
Women's Legal Centre	Provides free legal advice to women who do not have access to legal services.	021 424 5660 | info@wlce.co.za | www.wlce.co.za
MedicAlert	Assistance with application for Medic Alert disc or bracelet	086 111 2979 (09:00-16:00 Monday to Friday)