adult primary care

SYMPTOM-BASED INTEGRATED APPROACH TO THE ADULT IN PRIMARY CARE

EMERGENCIES
SYMPTOMS
TB
HIV
COVID-19
ASTHMA/COPD
CARDIOVASCULAR DISEASE
DIABETES
MENTAL HEALTH CONDITIONS
EPILEPSY
MUSCULOSKELETAL DISORDERS
WOMEN'S HEALTH
PALLIATIVE CARE

2023

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

2030 NDP

PREFACE

ADULT PRIMARY CARE (APC) 2023

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 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.

An APC eBook for easy electronic viewing is available for download from the Knowledge Hub.

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:

1. Address the patient's general health
2. Symptoms
3. 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 by the Knowledge Translation Unit 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. For any queries contact The Knowledge Translation Unit, email ktu@uct.ac.za or visit 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.

What is new in ADULT PRIMARY CARE (APC) 2023.

APC 2023 aligns with the following National Department of Health policies and clinical protocols:

- Standard Treatment Guidelines and Essential Medicines List for South Africa. Primary Healthcare Level, 2020 Edition (v3).
- TB Screening and Testing Standard Operating Procedure, June 2022.
- National Guidelines on the Treatment of Latent TB Infection, February 2023.
- NDOH. National HIV Testing Services Policy, April 2023. *(Updated August 2023)*.
- NDOH: 2023 ART Clinical Guidelines for the Management of HIV in Adults, Pregnancy and Breastfeeding, Adolescents, Children, Infants and Neonates, June 2023.
- NDOH: Guideline for Vertical Transmission Prevention of Communicable Infections 2023, August 2023.
- National Clinical guidelines of Post-Exposure Prophylaxis in occupational and non-occupational exposures. NDOH. Approved 2019. Published 2020.
- 2021 Updated guidelines for the provision of Pre-Exposure Prophylaxis (PrEP) to persons at substantial risk of HIV infection. NDOH. October 2021.
- National guidelines for the management of Viral Hepatitis. NDOH. December 2019.
- Management of Rifampicin-Resistant Tuberculosis: A Clinical Reference Guide. November 2019
- Guidance document on the use of lateral flow lipoarabinomannan assay for the diagnosis of active tuberculosis in people living with HIV. NDOH. December 2020.
- Comprehensive STI Clinical Management Guidelines. NDOH. 2021-2025.
- Maternal, Perinatal, and Neonatal Health Policy. NDOH. 21 June 2021.
- National Contraception clinical guidelines. NDOH. 2019
- Clinical Guidelines for Breast Cancer Control and Management. NDOH. 2019.
- National User Guide on the Prevention and Treatment of Hypertension in Adults at PHC level. NDOH. 2021.
- National guidelines for the treatment of Malaria, South Africa, 2019
- COVID-19 Clinical Management Guidelines – version 5
- Guide to Antigen Testing for SARS-COV-2 in South Africa. NDOH. 2023.
- COVID-19 Disease: Infection Prevention and control Guidelines. Version 3. July 2021

What are the APC 2023 updates?

New pages and extensively revised sections include:

- The HIV section has been revised to include the transitioning of all patients to a dolutegravir-based ART regimen with updates to the clinic visit and blood test monitoring schedules. Pages that have been extensively revised include: Start or re-start ART, Switch ART, manage the unsuppressed VL pages.
- The TB section has been updated to include a new page "Assess and manage TB infection" which provides guidance on managing TB exposures in TB contacts and treating latent TB infection. Updated recommendations regarding increased active TB screening and testing have also been included.
- The contraception section has been revised to include a new pregnancy diagnosis page as well as recommendations around the newly available intrauterine device: LNG-IUD.
- COVID-19 content has been integrated into existing pages and new pages have been added: Screen all patients for COVID-19, COVID-19 diagnosis, Acute COVID-19, Ongoing COVID symptoms, Long COVID: routine care
- A new section has been added on preventing HIV with pre-exposure prophylaxis (PrEP).
- Other new pages in this update include: Chronic pain, Skin ulcer or non-healing wound: routine care, Support the patient taking chronic medication, Observation post vaccination.

- For more details, find a full '**Summary of Changes'** document on the Knowledge Hub.

Keep up to date with expected changes in clinical guidance

Clinical guidance and policies are continuously being updated as new evidence becomes available and clinicians are urged to be aware of expected changes in clinical practice.

Clinical guidance updates expected in 2023/2024 include:

- Clinical Management of RR-TB - 6-month BPaLL regimen
- Maternity Care Guidelines

Check regularly for new NDOH circulars, notices or memorandums indicating updates as per standard practice in government.

APC is revised and improved based on feedback from end-users. Send your feedback to ktu@uct.ac.za

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OTHER PAGES

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
CHW	community health worker
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
EDR.web	electronic drug-resistant TB register
EFV	efavirenz
eGFR	estimated glomerular filtration rate
EGK	electronic gate keeper
ELISA	enzyme-linked immunosorbent assay
EX-PUP	external pick-up point

F

FAC-PUP	facility pick-up point
FBC	full blood count
FT4	free thyroxine
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
IUD	intrauterine device
IV	intravenous

L

LAM	lipoarabinomannan (urine TB test)
LAP	lower abdominal pain
LLETZ	large loop excision of the transformation zone
LP	lumbar puncture
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
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

Respiratory rate	measured in breaths per minute
RPCs	repeat prescription collection strategies
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
TB NAAT	tuberculosis nucleic acid amplification test
TBSA	total body surface area
Td	tetanus and diphtheria vaccine
TDF	tenovofir
TEE	tenofvir + emtricitabine + efavirenz
TIA	transient ischaemic attack
TIER.net	Three Interlinked Electronic Registers
TLD	tenofvir + lamivudine + dolutegravir
TOP	termination of pregnancy
TPT	TB preventive treatment
TSH	thyroid stimulating hormone

U

UTI	urinary tract infection

V

VDS	vaginal discharge syndrome
VL	viral load
VTP	vertical transmission prevention

PRESCRIBE RATIONALLY

Scan QR code to download Medsafety App to report medication adverse events.

Assess the patient needing a prescription

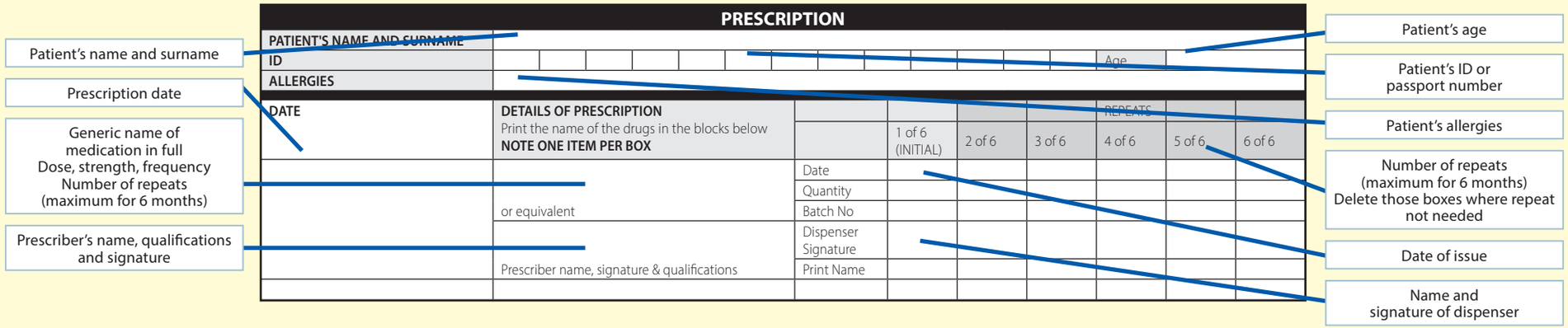
Assess	Note
Diagnosis	Confirm the patient's diagnosis, that the medication is necessary and that its benefits outweigh the risks.
Other conditions	If necessary adjust the dose (e.g. simvastatin, hydrochlorothiazide in liver disease; tenofovir in kidney disease) or change medication (e.g. avoid ibuprofen 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 ↩ 161.
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 medication reactions via: the MedSafety App (scan the QR code for download) or the reporting website https://primaryreporting.who-umc.org/ZA or using an Adverse reporting form[1]. Email this to adr@sahpra.org.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, 2020 edition: Therapeutic classes and members list can be accessed via: https://www.knowledgehub.org.za/elibrary/primary-health-care-phc-essential-medicines-list-eml-2020

SCREEN ALL PATIENTS FOR COVID-19 AND TB

- Health care workers need to wear a surgical or N95 mask. Patients need to wear cloth or surgical masks and keep 1-2m apart from each other. Ensure queues are distanced.
- Have 70% alcohol-based hand sanitiser or soap and water handwashing stations available for all patients entering facility.
- Ensure a separate patient pathway for patients suspected of having COVID-19. All waiting areas need to be well-ventilated (open doors and all windows) or outside.
- Ensure triage station has a supply of surgical masks to give to symptomatic patients and patient information leaflets for close contacts[1].

If patient known with COVID-19 and returning with worsening symptoms, fast track this patient:
Give surgical mask and send patient to separate area identified for emergency care of COVID-19 patients for urgent attention ↩ 40.

If patient is not known to be COVID-19 positive, screen for the following symptoms:
Ask each patient if s/he has had **new onset** of any of the following in the last 14 days:

- Shortness of breath or difficulty breathing
- Cough
- Sore throat
- Headache with blocked/runny nose or sneezing
- Loss of sense of smell or change in sense of taste
- Is/he is known with asthma or COPD with chronic symptoms: worsening of cough or breathing

Yes to any

Consider as patient with suspected COVID-19
- Give patient a surgical mask to wear.
- Does patient have shortness of breath or difficulty breathing?

Yes

Send patient to separate area identified for emergency care of COVID-19 patients for urgent attention →40.

No

- Ensure patients sit 1-2m apart.
- Advise on cough and hand hygiene, and if available, patient to have a rapid antigen test ↩ 40.
- If cough present, arrange to collect 1 sputum sample for TB NAAT to exclude TB ↩ 92.

No to all

- Send patient to attend normal waiting area.
- Ask patients to sit 1-2m apart if possible.

- If TB symptoms other than cough (unexplained weight loss > 1.5kg in a month, drenching night sweats or fever), arrange to collect 1 sputum sample for TB NAAT ↩ 92.
- If no TB symptoms, assess for TB preventive treatment (TPT) ↩ 89 if any of:
  - TB contact[2] (repeat course of TPT for each new TB contact)
  - HIV positive (if not had TPT before), including HIV positive pregnant patient
  - Silicosis

Manage symptoms as on symptom pages.

[1]Close COVID-19 contact is when a person has had face-to-face (within 1 metre) contact with someone with COVID-19, or has been in a closed environment (like room or vehicle) with someone with COVID-19 for at least 15 minutes. [2]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment.

INITIAL ASSESSMENT OF THE PATIENT

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/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 ≥ 180/110 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
- Oxygen saturation < 92% at rest
- Oxygen saturation drop to < 87% on exertion (walking 15-20m)

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 current cough (any duration), weight loss, night sweats or fever, exclude TB ↩ 92. Also assess need for TB preventive treatment (TPT) ↩ 89.
Family planning	Every visit	• Assess patient's contraceptive needs ↩ 154 and pregnancy plans. If pregnant, give antenatal care ↩ 161. • 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 ↩ 49 and sexual problems ↩ 58. • If risky sexual behaviour: new or multiple partner/s, uses condoms unreliably, has sex under influence of alcohol/drugs, give safe sex advice.
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 ↩ 143.
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 ↩ 142.
Smoking	Every visit	If patient smokes, encourage to stop ↩ 141.
Older person risk	If > 65 years: at every visit	• If patient has a change in function, check for symptoms suggesting a cause: fever ↩ 24, urinary symptoms ↩ 59, confusion ↩ 85. • 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 ↩ 148.
Weight (BMI)	Yearly	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If BMI > 25 ↩ 127. If BMI < 18.5, refer for nutritional support.
BP	First visit, then depending on result	Check BP: if ≥ 140/90 ↩ 132. If pregnant and BP ≥ 140/90 ↩ 159.
CVD risk	If ≥ 40 years or ≥ 2 risk factors	• Assess CVD risk ↩ 127 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).
Diabetes risk	At first visit if: • If ≥ 45 years or • If BMI ≥ 25 and ≥ 1 other risk factor	• If not known diabetic, check glucose ↩ 17. • 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 ↩ 110.
Cervical screen (if woman)	When needed	• HIV negative: do 3 cervical screens, each 10 years apart from age 30 ↩ 55. • HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly ↩ 55.
Breast check (if woman)	• First visit • On contraceptive or hormone therapy: yearly • If > 40 years: 6 monthly	• Check for lumps in breasts ↩ 43 and axillae ↩ 25. • If on hormone therapy, refer for mammogram at initiation if available.

Continue to manage the patient's general health →11.

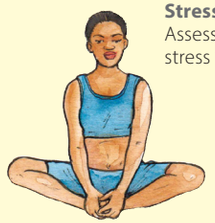
[1]Viral load < 50. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.

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).
- Help the patient to choose lifestyle changes to improve and maintain his/her general health. Support the patient to change ⮌ 177.

Smoking
Alert patient to the risks and encourage to stop ⮌ 141.

Stress
Assess and manage stress ⮌ 86.



Be sun safe
- Avoid sun exposure, especially between 10h00 and 15h00.
- Use sunscreen and protective clothing (e.g. hat) when outdoors.
- If albinism ⮌ 79.

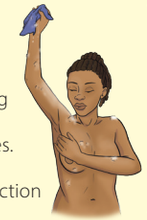
Have safe sex
- Have only 1 partnership at a time.
- If HIV negative, test for HIV between partners and consider male medical circumcision.
- Advise partner/s and children to test for HIV.
- Use condoms.

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

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 ⮌ 142.

Breast self-awareness
- Educate that breast cancer is common in women and treatable if found early. Although uncommon, men can still get breast cancer.
- Advise woman to be aware of changes in her breast that are not normal for her.
- Encourage patient to look and feel for changes:
  - Check in mirror, when washing, and when lying on back.
  - Check skin, under arms, each breast and nipples.
- Advise to seek care if: painless hard lump in breast/under arm, nipple discharge, nipple retraction (pulled in), skin changes (rash, dimpling).



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, 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
COVID-19	• All patients, especially if high risk. • If booster needed.	• Vaccinate against severe COVID-19. • High risk: elderly, diabetes, obesity (BMI[2] ≥ 30), hypertension or heart disease, HIV (if not on ARVs), TB, chronic kidney disease, chronic lung disease (like asthma, COPD), cancer.
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.

Observe patient for adverse events following vaccination →12.

[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).

OBSERVATION POST VACCINATION

- Observe patient for at least 15 minutes after vaccination. If patient known with severe allergies: observe for longer (30 minutes).
- Check for signs or symptoms that may indicate an adverse reaction:

Collapse →**13**.

Feeling faint/cardiovascular symptoms

- Light-headedness or dizziness
- Feeling warm or cold
- Sweating
- Palpitations
- Nausea
- Visual 'blurring' (darkening or white-out of vision)
- Reduced hearing ('whooshing' noise)
- Pallor reported by onlookers

- Ask patient to lean forward and his/her head between knees, or lie down flat, for several minutes until feeling better.
- Loosen tight clothing – undo buttons around neck, loosen tie/belt.
- Apply a cool cloth to his/her face or neck.
- Calmly reassure patient.

Do symptom/s improve quickly (minutes)?

Yes

Faintness likely
Observe until symptoms resolve.

No

Skin/mucosal symptoms

- Itchiness
- Skin rash (hives)
- Swelling of eyes, lips, tongue, face, or hands/feet)
- Nasal congestion

Respiratory symptoms

- Wheeze or cough
- Throat tightness
- Stridor
- Shortness of breath
- Hoarseness
- Oxygen sats < 92%
- Trouble swallowing
- Drooling

Gastrointestinal symptoms

- Nausea
- Vomiting
- Diarrhoea
- Cramps

Decide when to treat for anaphylaxis
Are signs or symptoms generalised: are 2 or more body systems involved?

Yes

No. Does patient have generalised urticaria (raised red rash/hives) involving the whole body?

Yes

No. Are signs or symptoms serious or life-threatening, even if only single body system (hypotension, respiratory distress, or significant swelling of the tongue or lips)?

Yes

Treat as anaphylaxis →20.

No

- If isolated rash (raised, red rash in patient who is otherwise well without other symptoms):
  - Monitor for at least 30 minutes to pick up any other symptoms:
    - If no other associated symptoms and patient remains well, **pseudoallergic self-limiting rash** likely: reassure patient and advise to take oral antihistamines.
    - Advise to seek urgent health care if any of the following develop: swelling of face, lips or tongue; difficulty breathing, abdominal pain, nausea or vomiting.
- If other symptoms: discuss with doctor/specialist urgently.
- If in doubt, treat as anaphylaxis ↩ **20**.

COLLAPSE FOLLOWING VACCINATION

Collapse

- Call for help.
- Lie patient on his/her back and raise legs.
- Check response: if unresponsive, check circulation, airway and breathing.
  - If no pulse/not breathing, start CPR ↩ 14.
  - If breathing and pulse present: assess timing of collapse and duration of loss of consciousness and check breathing, pulse and BP:

- Collapse occurred suddenly, at the time of injection (before, during or immediately after).
- Loss of consciousness usually lasts 20 seconds to 1 minute and is relieved by lying patient down and raising legs.
- BP: briefly low but rapidly normal again.
- Pulse may be slow.
- Breathing usually normal but may be rapid, deep (hyperventilation).
- No other signs or symptoms present.

Fainting episode likely

Management:

- If not already done, lie patient flat and raise legs.
- Loosen any tight clothing: undo buttons around the neck, loosen tie/or tight belt.
- Apply cool cloth to face/neck.
- Calmly reassure patient – explain what happened and assure them that they will be alright.
- Check for any other injuries they may have sustained falling.
- Stay with the patient until they are fully recovered. Patient should remain lying with legs up until feeling better.

Refer if:

- Head injury.
- Known with a heart condition or other serious illness.
- Patient has unusual symptoms, such as chest pain, shortness of breath, confusion, blurred vision, or difficulty talking.

Report:

- Report electronically using the Med Safety app or complete NDoH Case Reporting Form (CRF) for Adverse Events Following Immunisation (AEFI) and report to sub-district or district office and provincial EPI manager within 24 hours.
- Replace all medications/equipment used and seal emergency kit.

- Collapse occurred 5-10 minutes after the injection (could occur up to 1 hour after).
- Loss of consciousness is not brief and not relieved by lying patient down and raising legs.
- BP < 90/60 and remains low
- Pulse > 120
- Breathing: may have wheeze, stridor, cough
- Other signs and symptoms (like swelling or rash) present.

Treat as **anaphylaxis** →20.

THE EMERGENCY PATIENT

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.

Pulse felt

No pulse felt or unsure

Start CPR[1] →15.

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] →15.

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 pulse < 50 and unstable (BP < 90/60, decreased consciousness, chest pain or acute heart failure[2]): give atropine 0.5mg IV. Repeat every 3 minutes, up to a total of 3mg.
- 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 decreased consciousness or vomiting, place in left lateral lying (recovery) position.
- If injured →18, if fitting/just had fit →19, if decreased consciousness →16, if burns →21, if bite/sting →22, if fever →24, if rash →67, if anaphylaxis →20.
- If other symptom, manage as on symptom page.

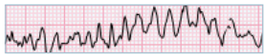
[1]If the patient has a life-limiting illness, consider whether or not to proceed. If CPR not needed in the palliative care patient, address the dying patient's needs →172. [2]Leg swelling, difficulty breathing which worsens on lying down/with effort.

CARDIOPULMONARY RESUSCITATION (CPR)

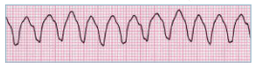
In the patient with no pulse, record the time and start chest compressions:

- 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:

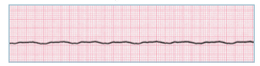
Ventricular fibrillation (VF)



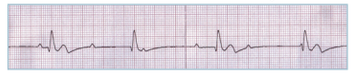
Pulseless ventricular tachycardia (pVT)



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

Asystole

Other rhythm → Feel for carotid pulse for up to 10 seconds.

- No pulse felt / Unsure → PEA
- Pulse felt → Stop CPR and check breathing →14.

- 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 10mL 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 ⮌ 17. If temperature ≤ 35°C ⮌ 16. If overdose/poisoning, discuss with specialist or local poison helpline ⮌ 178.
  - 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 ⮌ 14.
- 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 ⮌ 20.
- 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**. Avoid injecting > 1g IM at one injection site.
- 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 2mg IV immediately.
- Reassess every 5 minutes: if no response (still has excessive secretions, persistently low BP or pulse), give repeated doses of atropine every 5 minutes, doubling the dose each time: 4mg, 8mg, 16mg, 32mg. If some response, give the same or reduced dose. Continue until secretions controlled.
- Suction secretions often.
- Wear PPE - carefully 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 ⮌ 178.

- 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 ⮌ 14.

[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 →130.

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 →16.
- If fits ⮌ 19.
- 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.

Assess CVD risk ⮌ 127.

Glucose 6.1-11

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 →130.

Glucose ≥ 11.1

Check if patient needs urgent attention:
- Decreased consciousness →16
- Chest pain →37
- Fits ⮌ 19
- 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

≥ 7

Yes

Ketones present

Yes

- 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 ⮌ 14.
- 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 200mL of 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 open wound, give tetanus toxoid 0.5mL IM if none in past 5 years.
- 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 ⮌ 14.

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 ⮌ 88.
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years.

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 cefalexin[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 4-6 hourly (up to 4g in 24 hours) 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.
- If not healed completely after 3 months or heals by < 50% after 6 weeks on treatment →76.

Fracture

- Splint limb to immobilise joint above and below fracture.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 4-6 hourly (up to 4g in 24 hours) 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 cefalexin 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 ⮌ 18.
- 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 →159.
- 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 200mL 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. Avoid injecting > 1g IM at one injection site.
- 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 →17
- 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 →159.

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 →149.

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 →149.

No

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

Stroke or **TIA** likely →136.

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

Common faint likely →28.

If diagnosis uncertain, refer.

[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:

In the few hours before symptoms started, was patient exposed to any medication, food[1] or insect bite/sting which has caused anaphylaxis before?

- **Yes** → Treat for **anaphylaxis**.
- **No** → In the few hours before symptoms started, was patient exposed to any medication, food[1] or insect bite/sting?
  - **Yes** → Is there sudden onset of ≥ 2 of: 1) Generalised itch/rash or face/tongue swelling 2) Difficulty breathing 3) BP < 90/60 or dizziness/collapse 4) Abdominal pain or vomiting
    - **Yes** → Treat for **anaphylaxis**.
    - **No** → Anaphylaxis unlikely. Treat symptoms as on symptom pages. If unsure, discuss.
  - **No** → Is there sudden onset generalised itch/rash or face/tongue swelling *and* any of: difficulty breathing, BP < 90/60 or dizziness/collapse?
    - **No** → Anaphylaxis unlikely. Treat symptoms as on symptom pages. If unsure, discuss.
    - **Yes** → Treat for **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 ↩ 14.
- 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** ↩ 123. If known asthma, give routine asthma care ↩ 125. • If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely ↩ 69. • If itchy, red, raised wheals that appear suddenly and usually disappear within 24 hours, **urticaria** likely ↩ 69. • If recurrent sneezing or itchy/runny/blocked nose most days for > 4 weeks, **allergic rhinitis** likely ↩ 34. • If both eyes watery and itchy, **allergic conjunctivitis** likely ↩ 31.

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 ↩ 178 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.

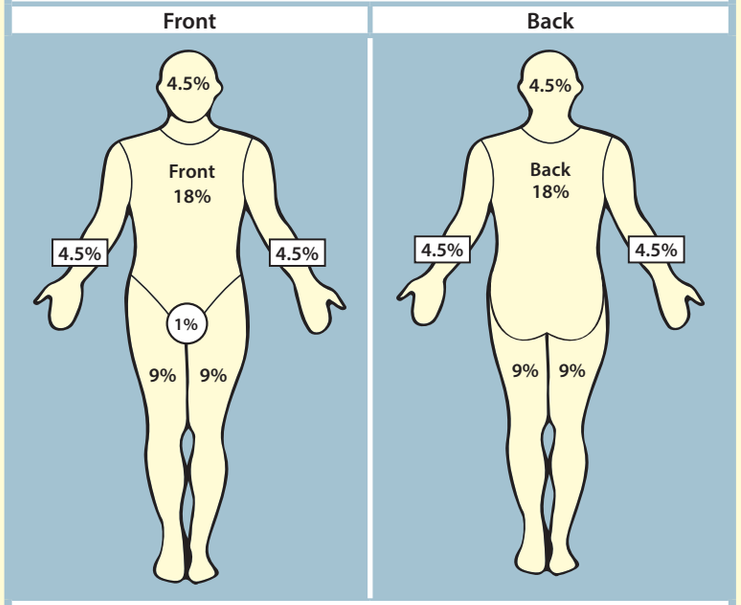
Give urgent attention to the patient with burn/s and any of:

- 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:
  - Insert a large-bore IV line. If % TBSA burnt > 40% or if transport to hospital likely to take more than 45 minutes, insert a second IV line.
  - 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 4-6 hourly (up to 4g in 24 hours).
- If pain severe, give morphine 3-10mg slow IV[1].
- If other injuries, manage ↩ 18.
- 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 4-6 hourly (up to 4g in 24 hours) 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 ↩ 88 and self-harm ↩ 83.
- 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) or venom in eyes
- If sudden generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain or vomiting, check for anaphylaxis ⮌ 20.
- 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

Manage and refer:

- If **snake bite or venom in eyes:**
  - Keep patient calm and still. Remove jewellery and immobilise bitten limb.
  - If venom in eyes: irrigate eye thoroughly for at least 20 minutes with water or sodium chloride 0.9%. If available, instil 1 drop tetracaine 1% eye drops before irrigating.
  - Clean bite with chlorhexidine 0.05% solution. Avoid applying tourniquet or sucking out venom.
  - Discuss pain management and need for antivenom with local poison helpline ⮌ 178.
- 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.

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 ⮌ 178.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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[3] 400mg 8 hourly for 5 days.
- If human bite, severe enough to cause bleeding, also assess need for hepatitis B post-exposure prophylaxis (PEP) ⮌ 108. 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 sting or bite/s

- Remove stinger. Clean wound with soap and water. Apply ice pack for pain/swelling.
- If severe pain, redness, swelling or itch:
  - Give chlorphenamine 4mg 6-8 hourly for up to 5 days.
  - Apply calamine lotion as needed.
  - Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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.

- If hypersensitivity response to insect bites - red raised bump/s that blister and heal with hyperpigmentation (darkened skin), **papular urticaria** likely: apply hydrocortisone 1% daily for 5 days.
- If long-term itch, give cetirizine 10mg once daily.
- Advise to reduce exposure to insects:
  - Treat pets, use bed nets, wash bedding, use insect repellents.
  - Clear away puddles of water around house.

If human/animal/spider bite or scorpion sting, 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. [3]Advise no alcohol until 24 hours after last dose of metronidazole.

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 ⮌ 92.
- At the same time, test for HIV and diabetes (see adjacent) and consider other causes below.

Test for HIV
Test for HIV ⮌ 110. If HIV positive, give routine care ⮌ 111.

Check for diabetes
Check glucose ⮌ 17.

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 →55.	Consider **breast cancer.** Examine breasts and axillae for lumps →43.	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 ⮌ 86.	No money for food	The patient has a life-limiting illness.	Sore mouth or difficulty swallowing
→45.	• 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 ⮌ 170.	**Oral/oesophageal candida** likely →35.

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

- Ask about other symptoms and manage as on symptom pages: if abdominal pain ⮌ 44, if diarrhoea ⮌ 46, if constipation ⮌ 48.
- If pulse ≥ 100, palpitations, tremor, dislike of hot weather or thyroid enlargement, check TSH. If abnormal, refer to doctor.
- Review medication: anticonvulsants, antidepressants, diabetes medications and levothyroxine can cause unintentional weight loss. Discuss with 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 ⮌ 143.
- 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 ⮌ 142.
- 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

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 ⮌ 19.
- Decreased consciousness ⮌ 16
- 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. Avoid injecting > 1g IM at one injection site.
- 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 ⮌ 17.
- Refer urgently.

Approach to the patient with a fever not needing urgent attention

- If on abacavir, check for abacavir hypersensitivity reaction (AHR) ⮌ 116.
- 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 4-6 hourly (up to 4g in 24 hours) as needed for 5 days.
- If severe headache or no better after 3 days, refer.

No

- Ask about other symptoms: assess and manage on symptom page.
- **Acute viral infection** likely (such as influenza or COVID-19) if any of: cough, sore throat, loss of taste or smell, nose symptoms, headache, body pain. If the current prevalence of COVID-19 is high, consider COVID-19 ⮌ 40.

If none of above:

- Check urine dipstick: if blood, leucocytes or nitrites →59.
- Exclude TB ⮌ 92.
- Test for HIV ⮌ 110.
- 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 →67.
- 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 ↩ 110 and syphilis. If HIV positive, give routine care ↩ 111. If syphilis positive ↩ 53.
- If cough, weight loss, night sweats or fever, exclude TB ↩ 92. 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 →43.

Groin
Is the groin lymph node hot and tender?

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

Has a cause been found?

No

Yes

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

Yes: treat for **bubo**:

- First assess and advise the patient ↩ 49.
- 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 TB NAAT, TB culture and DST.

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

WEAKNESS OR TIREDNESS

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

- New sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →136
- Chest pain →37
- Difficulty breathing or respiratory rate ≥ 30 →38
- Difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →137.
- Temperature ≥ 38°C now or in past few days →24
- Glucose < 3 (or < 4 if diabetes)
- Glucose ≥ 11.1
- Dehydration: thirst, dry mouth, poor skin turgor, drowsiness/confusion, BP < 90/60, pulse ≥ 100
- Hb < 6 →27
- 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 ↩ 17 or if diabetes and glucose < 4 ↩ 130.
- 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 ↩ **24**.
- If cough, weight loss, night sweats or fever, exclude TB ↩ **92**.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →135.
- If patient has difficulty sleeping ↩ **87**.
- If weight gain, low mood, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.

Check chronic conditions

- Test for HIV ↩ **110**. If HIV positive, give routine care ↩ **111**.
- Exclude pregnancy ↩ **157**.
- Exclude anaemia: check Hb. If < 12 (woman) or < 13 (man), **anaemia** likely ↩ **27**.
- Exclude diabetes: check glucose ↩ **17**.
- If ongoing symptoms following acute COVID-19, assess for Long COVID ↩ **42**.
- If patient has a life-limiting illness, also consider giving palliative care ↩ **170**.

Check medications

- If on abacavir or zidovudine, check for urgent side effects ↩ **116**.
- 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 ↩ **143**.
- 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 ↩ **142**.
- If none of the above, assess for stress and anxiety ↩ **86**.

Is there muscle weakness on examination[2]?

No

Ask about duration of tiredness:

< 1 month

- If any other symptoms managed above, reassure that tiredness should resolve with treatment.
- Advise to return if no better in 1 month.

≥ 1 month

- Check FBC, differential count, sodium, calcium, creatinine and ALT. If abnormal, discuss with doctor.
- If likely cause found, reassure that tiredness should resolve with treatment. If tiredness persists despite treatment, discuss/refer.
- If no cause found, review in 1 month. If tiredness persists and cause still not found, discuss/refer.

Yes

- If available, refer to doctor. Doctor to confirm weakness and:
  - Check potassium, sodium, calcium, phosphate, TSH.
  - Discuss/refer to specialist.
- If no doctor available, 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 unsure how to examine for muscle weakness, discuss with doctor.

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 →160.
  - 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 ↩ 110 and TB ↩ 92.
- Exclude pregnancy ↩ 157.
- 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 →24.
- 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 ↩ 57.
- Give ferrous sulphate compound BPC 170mg *or* ferrous fumarate 200mg 12 hourly with food. If not tolerated (abdominal pain, nausea, vomiting, constipation), give instead ferrous sulphate compound BPC 340mg or ferrous fumarate 400mg once weekly 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.
- If pateint is known with life-limiting illness, also consider giving palliative care ↩ 170.

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 ↩ 142.
- If chronic diarrhoea, refer.

No

Refer to investigate for vitamin B12 deficiency.

[1]Black stools may be caused by 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:

- Collapse following vaccination →13
- New sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →136
- Decreased consciousness →16
- Fit →19
- Chest pain →37
- Difficulty breathing →38
- Glucose < 3 (or < 4 if diabetes) ↩ 17
- 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** ↩ 20
- 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

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 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 ↩ 27.
- 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 ↩ 142.
- Check BP: if ≥ 140/90 ↩ 132. 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, amitriptyline, amlodipine, enalapril, furosemide, hydrochlorothiazide, isosorbide dinitrate can cause syncope. Discuss with doctor.
- If diarrhoea ↩ 46, if vomiting ↩ 45, if fever ↩ 24, 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?

Yes

Hyperventilation likely

- Reassure and encourage patient to breathe at a normal rate.
- Assess for stress and anxiety ↩ 86.

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 ↩ 130.

- If none of the above, look for and manage likely cause: if vision problems ↩ 31, joint problems ↩ 62, foot problems ↩ 66, leg problems ↩ 65, dementia ↩ 148.
- 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:

- New sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →136.
- BP < 90/60
- Pulse < 50 or irregular
- Glucose < 3 (or < 4 if diabetes) ↩ 17
- Chest pain →37
- Difficulty breathing, especially on lying flat with leg swelling →135
- Recent head injury
- Unable to stand without support
- New sudden severe dizziness with nausea/vomiting, abnormal eye movements or walk

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 dizziness not needing urgent attention:

- Ask about ear symptoms. If present ↩ **33**. 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 ↩ **142**.
- 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 ↩ **27**.
- Check BP: if ≥ 140/90 ↩ **132**. 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 ↩ **46**, if vomiting ↩ **45**, if fever ↩ **24**, 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 ↩ **86**.
- 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

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

- Decreased consciousness →16
- BP ≥ 180/110 and not pregnant →132
- Pregnant or 1 week postpartum, and BP ≥ 140/90 →159
- Sudden weakness/numbness of face/arm/leg or speech problem →136
- New vision problems or eye pain →31
- 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. Avoid injecting > 1g IM at one injection site.
- 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

Does patient have fever and body pain or recent common cold?

Yes

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 4-6 hourly (up to 4g in 24 hours) 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 ≥ 3 days, 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 ↩ 110.
- If tooth infection or swelling over sinus/around eye, refer same day.

No

- If in a malaria area in past 3 months, arrange same day malaria test[2]. If positive, **malaria** likely →24.
- If patient has a tick bite (small dark brown/black scab) or tick present, **tick bite fever** likely →24.
- If none of above, treat as **acute viral infection**:
  - Consider COVID-19 ↩ 40. Advise patient to isolate at home for 7 days from start of his/her symptoms.
  - Advise to wear mask indoors and social distance. While unwell, avoid contact with elderly/those with chronic diseases/groups, wash hands.
  - Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days. Explain antibiotics are not needed. Advise to rest and maintain hydration.
  - Advise to return if worsening symptoms: if cough/difficulty breathing →38, if face pain →32, if ear pain →33.

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 paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 ↩ 154.
- If ≥ 2 attacks/month, refer/discuss for medication to prevent migraines.

No

- Check BP. If ≥ 140/90 ↩ 132.
- 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 ↩ 86.
- Advise regular exercise.

Constant aching pain, tender neck muscles

Muscular neck pain likely →64.

Patient > 50 years, pain over temples

Giant cell arteritis likely

- Check CRP.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) for up to 5 days.
- Review next day: if CRP > 5, discuss with specialist same day.

Advise to use analgesia only 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 of decreased use.

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:

- New sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA →136.
- BP ≥ 180/110 and not pregnant →132.
- Pregnant or up to 1 week post-partum, and BP ≥ 140/90: treat as **severe pre-eclampsia** →159.
- Yellow eyes: **jaundice** likely →79.
- 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, then 250mg 6 hourly.
- If **orbital cellulitis** likely, give ceftriaxone 2g IV[1]/IM. Avoid injecting > 1g IM at one injection site.
- If **chemical burn**: irrigate eye for at least 20 minutes with sodium chloride 0.9% or water. If pain, instil 1 drop tetracaine 1% eye drops to affected eye. Apply chloramphenicol 1% ointment 6 hourly.
- If **penetrating** or **metallic foreign body**: avoid removing. Cover gently. Avoid lying flat. If deep corneal/scleral injury and delay in transfer, instil 1 drop atropine 1% and chloramphenicol 1% ointment.
- If pain, give paracetamol 1g 4 hourly.

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

Eyes discharging or watery. Is there a prominent itch?

Yes

- If both eyes involved or patient has eczema, hayfever or asthma, treat for likely **allergic conjunctivitis**:
  - Help to identify and advise to avoid triggers[2].
  - Give oxymetazoline 0.025% eye drops 1-2 drops in each eye 6 hourly up to 7 days and advise to apply cold compresses. If no better after 7 days: give instead anti-allergy eye drops (e.g. olopatidine 0.1% 1 drop 12 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 ↩ 34. If recurrent skin problem, exclude urticaria and eczema ↩ 67. If recurrent cough or wheeze, exclude asthma ↩ 112.
- If one eye involved and no eczema, hayfever or asthma, **localised cause** likely: wash eye with clean water and try to identify and remove cause. Give oxymetazoline 0.025% eye drops 1-2 drops 6 hourly for 3 days. If no better after 24 hours, advise to return: refer.

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.
- Infectious: only return to work once better/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.
- Return to work after 2 days of treatment and no pus.

- Avoid sharing towels/bedding. Wash hands often.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 (FB)

- Wash out eye with clean water or sodium chloride 0.9%.
- If FB not visible, use fluoroscein stain and ultraviolet light.
- Instil 1 drop tetracaine 1% eye drops[3] and gently remove FB with moist cotton bud.
- If under eyelid, pull top eyelid over bottom eyelid and release.
- Apply eye shield until tetracaine has worn off.
- 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 ↩ 17 and hypertension ↩ 132.
- Test for HIV ↩ 110.

[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. [3]Strictly avoid giving tetracaine eye drops to patient to take home as they can cause blindness if used too often.

FACE SYMPTOMS

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

- 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** →136.
- 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 ↩ 20.
- 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 likely facial cellulitis with if whole eyelid swollen, red and painful, **orbital cellulitis** likely: give ceftriaxone 2g IV[2]/IM. Avoid injecting > 1g IM at one injection site.
- 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 →67.
- If gum or tooth problem ↩ 36.
- 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.
- If needed, add tramadol 50mg 6 hourly.
- Refer.

Previous shingles on same side of face

Post-herpetic neuralgia likely

- Give amitriptyline[3] 25mg (or 10mg if ≥ 65 years) at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.
- f pain ≥ 4 weeks, assess and advise ↩ 61.
- If poor response, refer.

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

Sinusitis likely

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 ≥ 3 days, 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 ↩ 110.
- 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 airway obstruction, assess and manage airway ↩ 14 and manage for anaphylaxis ↩ 20.
- If no airway obstruction: if urticaria or itch present, give cetirizine 10mg or promethazine 25-50mg IM.
- If on enalapril: stop enalapril, never restart and educate patient to avoid it in future. Doctor to review medication.
- Help to identify and advise to avoid triggers[5].
- Monitor until swelling resolves.
- 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 4-6 hourly (up to 4g in 24 hours) 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

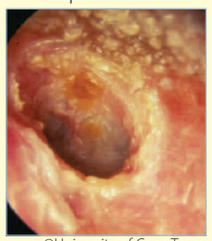
[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. [3]Avoid if on bedaquiline. [4]History of anaphylaxis, urticaria or angioedema. [5]Common 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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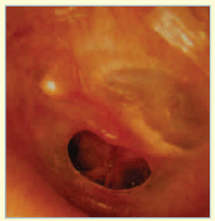
Otitis externa likely

- Clean ear.[1]
- After cleaning, instil acetic acid 2% in alcohol 4 drops in ear 6 hourly for 5 days.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days.
- If severe pain, firm red swelling or temperature ≥ 38°C, give flucloxacillin[2] 500mg *or* cefalexin 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] repeatedly.
- If poor response to treatment, test for HIV ↻ 110 and TB ↻ 92.
- 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

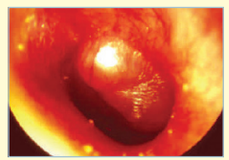
Symptoms for < 2 weeks

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 →36.
  - If painful swelling of one/both sides of face, **mumps** likely →32.
  - If pain in temporo-mandibular joint, check for joint problem →62.
- 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 4-6 hourly (up to 4g in 24 hours) 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 4-6 hourly (up to 4g in 24 hours) 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 nose symptoms, consider and treat for **allergic rhinitis** ↻ 34.
- If discharge, clean ear[1] and avoid getting ear wet.
- If recurrent episodes, test for HIV ↻ 110 and refer.
- If no response to treatment after 3 days, refer.
- Refer same day if: neck stiffness or painful swelling behind ear, **mastoiditis** likely

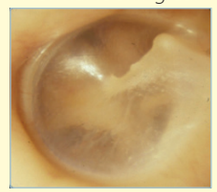
Difficulty hearing or tinnitus

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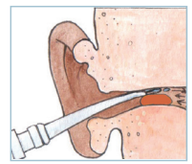
- Arrange hearing test.
- Look for cause: Ask about prolonged exposure to loud noise.
- Review medication: aspirin, NSAIDs and furosemide.
- Refer if :
  - Sudden onset
  - One-sided
  - Dizziness/vertigo
  - Patient taking amikacin

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 →18.

Refer urgently.

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

Blocked/runny nose
Ask about duration and associated symptoms:

Sore throat *or* fever

Acute viral infection likely
(like common cold, influenza or COVID-19)
- If temperature ≥ 38°C, chills or body pain, **influenza** or **COVID-19** more likely.
  - Assess for COVID-19 ↺ 40.
- Advise to wear mask indoors and social distance. While unwell, avoid contact with elderly/those with chronic diseases/groups, wash hands.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days.
- Explain antibiotics are not needed. Advise to rest and maintain hydration.
- Advise to return if worsening symptoms: if cough/difficulty breathing ↺ 38, if face pain ↺ 32, if ear pain ↺ 33.

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

Sinusitis likely
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 ≥ 3 days, 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 ↺ 110.
- 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 ↺ 31.
- If recurrent skin problem, exclude urticaria and eczema ↺ 67.
- If recurrent cough or wheeze, exclude asthma ↺ 123.
- 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.

Runny nose with persistent cough, and/or frequent throat clearing

Upper airway cough syndrome (**postnasal drip**) likely
- Check throat: secretions or cobblestone appearance may be seen at back of throat.
- Treat as for **allergic rhinitis** (see adjacent column).
- If no improvement after 2 weeks, refer/discuss.

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 ↺ 132.
- 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

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
- 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 ↻ 20.

Refer urgently.

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

- If on abacavir, check for abacavir hypersensitivity reaction (AHR) ↻ 116. If swelling of lips →32. If gum or tooth problem →36.
- Ask about dry mouth and swallowing problems. If food/liquid gets stuck with swallowing, refer.
- Wear a mask while examining the mouth and throat. Check for redness, white patches, blisters, ulcers or cracks:

Sore/red throat

- Consider for COVID-19 ↻ 40 if not already done.
- Examine the patient's throat. Does patient have either of:
  - Enlarged tonsils with pus/white patches on tonsils *or*
  - Enlarged tonsils *without* cough or runny nose

No to both

Viral pharyngitis likely
Explain that antibiotics are not necessary.

Yes to either

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 4-6 hourly (up to 4g in 24 hours) 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 ↻ 110 and diabetes ↻ 17.
- If patient has a life-limiting illness, also consider giving palliative care ↻ 170.

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

- Give fluconazole 200mg daily for 14 days.
- If HIV positive, start ART ↻ 111.
- If no better, refer.

Painful blisters on lips/mouth

Herpes simplex likely

- Test for HIV ↻ 110.
- 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

Red, cracked corners of mouth

Angular cheilitis/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 ↻ 78.
- 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 ↻ 27.
  - Test for HIV ↻ 110 and diabetes ↻ 17.
  - If still uncertain, refer.

Dry mouth

- If thirst, urinary frequency, weight loss, exclude diabetes ↻ 17.
- If runny or blocked nose ↻ 34.
- Look for and treat oral candida (see adjacent).
- 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 ↻ 170.

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

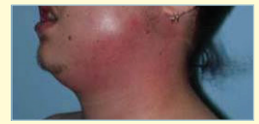
[1]Common allergens include medication, food or insect bite/sting within the past few hours. [2]Add 2.5mL (½ teaspoon) of table salt to 200mL lukewarm water. [3]For benzathine benzylpenicillin 1.2MU injection: dissolve benzathine benzylpenicillin 1.2MU in 3.2mL lidocaine 1% without epinephrine (adrenaline). [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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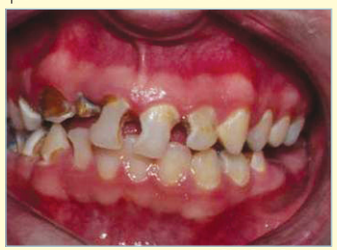
Approach to the patient with gum/teeth symptoms not needing urgent attention:

- 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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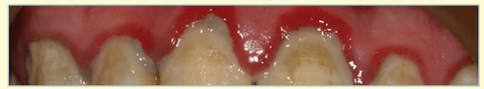
Dental caries likely

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

Gums red/bleeding or enlarged



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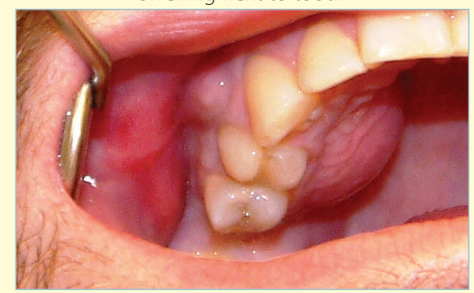
Gum problem likely

- 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 4-6 hourly (up to 4g in 24 hours) 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 4-6 hourly (up to 4g in 24 hours) 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 ↩ 11.
- 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 ↩ 141. If alcohol/drug use ↩ 142.

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

Do an ECG.

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

Ischaemic heart disease likely →137.

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 chest pain worse on breathing deeply, coughing sputum and temperature ≥ 38°C, give ceftriaxone 1g IV[1]/IM to cover for severe pneumonia.

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 →137.
- If cough, fever or pain on breathing deeply ⮌ 38.
- If ongoing chest pain after an acute COVID-19 infection →42.
- 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 ⮌ 141, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ⮌ 127.
- 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 →68.

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

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

- Wheeze/tight chest →39
- Difficulty breathing worse on lying flat and leg swelling: **heart failure** likely →135
- Confused or agitated
- BP < 90/60
- Breathless at rest or while talking
- Respiratory rate ≥ 30
- Pulse > 120
- Oxygen saturation < 92% at rest, or sats drop to < 87% on exertion (walking 15-20m)
- 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:

- If short of breath or oxygen saturation < 95%, give oxygen: 1-4L/min via nasal prongs or 6-10L/min via facemask (up to 10-15L/min via non-rebreather mask). Aim for oxygen saturation ≥ 90%.
- 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.
- If rapid deep breathing, check glucose: if ≥ 11.1 →17.
- Check temperature: if referral delay > 2 hours, temperature ≥ 38°C and respiratory rate ≥ 30, give ceftriaxone[1] 1g IV/IM to treat for possible severe **bacterial pneumonia**.

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

- Test for HIV ↩ 110. If on abacavir, check for abacavir hypersensitivity reaction (AHR) ↩ 116.
- Test for TB: send 1 sputum sample for TB NAAT ↩ 92.
- If patient smokes, encourage to stop ↩ 141.
- Manage further according to duration and recurrence of cough or difficulty breathing:

Patient has had cough < 2 weeks *and* it is not recurrent.

Is patient coughing sputum with any of: pulse rate ≥ 100, respiratory rate ≥ 20 or temperature ≥ 38°C?

No
Acute viral infection likely

- If recent cold and now tight/sore chest or coughing sputum, **acute bronchitis** likely.
- If fever, chills or body pain, **influenza** or **COVID-19** more likely. Assess for COVID-19 ↩ 40.
- Advise that antibiotics are not needed. If pain/fever: give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) for up to 5 days. Advise rest and hydration.
- Advise to return if symptoms worsen, a new fever develops or no better after 2 weeks.

Yes
Pneumonia likely

- Confirm on chest x-ray or with crackles/bronchial breathing on auscultation.
- 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.

- If pain/fever: give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) for up to 5 days. Advise rest and hydration.
- Review in 2 days: if no better, refer. Advise to return if worse.
- If > 50 years: repeat chest x-ray after treatment to ensure pneumonia resolved.

Patient has had cough/difficulty breathing ≥ 2 weeks *or* has recurrent episodes

- If itchy/blocked nose, or or frequent throat clearing, consider underlying nose problems ↩ 34.
- Also consider asthma and COPD ↩ 123 and other cause for cough or difficulty breathing:

HIV with CD4 < 200 and dry cough, shortness of breath.

Pneumocystis pneumonia (**PJP**) likely

- Doctor to confirm on chest x-ray.
- Give co-trimoxazole 320/1600mg, 6 hourly for 3 weeks. If < 56kg, reduce dose[3].
- Give HIV routine care ↩ 111.
- Refer same day if: x-ray atypical/unavailable or respiratory rate >24.

Persistent snoring or poor sleep

Obstructive sleep apnoea likely

- If overweight ↩ 127.
- Refer if: enlarged tonsils, stops breathing/chokes/gasps while sleeping.

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** ↩ 23.
- If coughing sputum most days of 3 months for ≥ 2 years, **chronic bronchitis** likely. Discuss.

If diagnosis uncertain or poor response to treatment, refer. If patient has life-limiting illness, also consider giving palliative care ↩ 170.

[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.

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 ↩ 20.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →135.

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 →123.
- If known asthma/COPD, give routine care: if asthma →125, if COPD →126.

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

- If first episode of wheeze/tight chest, assess for asthma and COPD →123.
- If known asthma/COPD, give routine care: if asthma →125, if COPD →126.

Yes

Continue salbutamol every 2-4 hours as needed and refer.

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.

COVID-19 DIAGNOSIS

- Suspect COVID-19 in the patient with new onset of symptoms in the last 14 days, consistent with COVID-19: fever, cough, shortness of breath (new or worse than before), sore throat, loss of sense of smell, taste abnormalities, runny/blocked nose, fatigue, chest pain, body aches, headache, diarrhoea.
- COVID-19 is more likely if current prevalence is high and the patient has not yet received a COVID-19 vaccine.

Give urgent attention to the patient with suspected COVID-19 and any of:

- Short of breath at rest or while talking
- Respiratory rate ≥ 30
- Oxygen saturation < 92% at rest, or sats drop to < 87% on exertion (walking 15-20m)
- Pulse rate > 120
- BP < 90/60
- Confused, agitated or decreased consciousness
- Sudden breathlessness, more resonant/decreased breath sounds/pain on 1 side, deviated trachea, BP < 90/60: **tension pneumothorax** likely
- Coughing up fresh blood

Manage and refer urgently →38**.**

Approach to the patient with suspected COVID-19 not needing urgent attention

Check if COVID-19 test should be done.

Testing strategy changes according to burden of infection - decide who is eligible for a test according to current testing strategy at your facility (check latest circular):

Universal testing
Test patients with COVID-19 symptoms referred to hospital - usually only available between waves of COVID infection, when testing capacity is not limited.

Limited testing
Test if in clusters in group settings *or* at risk of severe COVID-19 - usually during a 'wave' of COVID -19 infections, when testing capacity is limited.

Is patient part of a cluster in group settings such as old age/care homes, hospitals, or prisons?

Yes

No

Is patient a health care worker or does patient have any of these risk factors for severe COVID-19?

- > 60 years old
- Diabetes
- Obesity (BMI[1] ≥ 30)
- Heart disease
- HIV (if not on ARVs)
- TB (current or previous)
- Chronic kidney disease
- Chronic lung disease (like asthma, COPD)
- Cancer

Yes

No

Test for COVID-19.

- If possible, collect 2 upper respiratory swabs, preferably nasopharyngeal swabs: one rapid antigen test swab for on-site testing and one swab to send to laboratory for PCR testing if rapid antigen test negative.
- If symptoms include cough, fever or fatigue, also test for TB: send 1 sputum sample for TB NAAT ⮌ 92.

Rapid antigen test positive

- Diagnose **acute COVID-19** ⮌ 41. No need to send PCR swab.
- Notify.

Rapid antigen test negative

- If currently high number of COVID-19 cases ('wave'): send confirmatory PCR swab.
- If currently low number of COVID-19 cases: consider patient COVID-19 negative.

Rapid antigen test unavailable/inconclusive
Send swab for PCR testing.

If PCR swab sent, advise to isolate and manage as presumptive COVID-19 until PCR swab result are back →41.

- Explain that capacity for COVID-19 testing is limited and based on his/her symptoms, it is likely that s/he has COVID-19 infection.
- If symptoms include cough, fever or fatigue, also test for TB: send 1 sputum sample for TB NAAT ⮌ 92.
- Manage empirically for likely **COVID-19** →41.

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

ACUTE COVID-19

Assess the patient with acute COVID-19 infection or likely infection (presumptive COVID-19)

Assess	Note
Symptoms	Manage symptoms as on symptom pages.
Chronic condition/s	• If patient has chronic condition, check that it is well controlled. Specifically ask if patient has diabetes. • If known diabetes and no HbA_{1c} result in past 3 months: take HbA_{1c} and creatinine today.
Best place for care	• If known diabetes and any of: ≥ 60 years, chronic kidney disease, random fingerprick glucose > 11 with ketones present in urine or patient known with very poor glucose control (HbA_{1c} > 10%) and another risk factor such as: BMI[1]> 30, hypertension, ischaemic heart disease, peripheral vascular disease, previous stroke/TIA, HIV, TB, cancer, chronic respiratory disease, discuss referral for early admission.
Diabetes screen	If not known with diabetes and any of: BMI[1] ≥ 30, hypertension, family history of diabetes (parent/sibling), symptoms suggestive of diabetes[2] or diabetes during pregnancy, check glucose ↩ 17.

Advise the patient with acute COVID-19 infection or likely infection (presumptive COVID-19)

- Advise patient to inform household members to use strict hygiene and prevention measures and monitor themselves for symptoms. Close contacts no longer need to quarantine or isolate, even if symptoms develop. Advise to use a mask and avoid indoor social gatherings as much as possible for at least 5 days.
- Advise the patient with known diabetes:
  - Explain that s/he is at risk of severe COVID-19. Advise to go to nearest emergency centre if s/he develops shortness of breath, weakness or high fevers/chills.
  - Advise to check glucose each morning upon waking and keep a record: if fasting glucose persistently ≥ 8, advise to return for review of insulin doses.
- Check patient understands to monitor symptoms at home (see red box below).
- Check patient understands how to safely isolate. Refer to community-based services for follow up if available.
- Provide medical certificate for sick leave for 7 days from date that symptoms started. This may need to be extended.
- Explain that patient may discontinue isolation 7 days after date that symptoms started. If symptoms have not resolved by 7 days, advise to continue isolating until 10 days completed.

Treat the patient with acute COVID-19 infection or likely infection (presumptive COVID-19)

For fever/pain, advise to take paracetamol 1g 4-6 hourly (up to 4g in 24 hours) orally as needed, rather than NSAIDS[4]. If using NSAIDS[4] for other condition/s, avoid discontinuing.

Review the patient with acute COVID-19 infection or likely infection (presumptive COVID-19)

Advise that there is no need to return to facility unless condition worsens. Advise to return for TB test if cough persists ≥ 2 weeks. Ensure correct contact details. Include a second phone number.

Advise to return urgently to health facility if:
Shortness of breath, difficulty breathing, persistent chest pain/pressure, new confusion or worsening drowsiness.

[1]BMI = weight (kg) ÷height (m) ÷height (m). [2]Weight loss, thirst (especially at night) or passing excessive amounts of urine often. [3]Non-steroidal anti-inflammatory drugs (like ibuprofen).

ONGOING COVID-19 SYMPTOMS

- Manage the patient with COVID-19 symptoms that have lasted for more than 4 weeks.
- Common ongoing symptoms include: tiredness, breathlessness, cough, smell/taste abnormalities, headache, dizziness, cognitive slowing ('brain fog'), joint/muscle pain and chest pain.
- Confirm that patient had COVID-19: either positive COVID-19 test or a typical history of COVID-19. If no positive test and uncertain about COVID-19 history, discuss with specialist.

Give urgent attention to the patient with ongoing COVID-19 symptoms and any of:

- Respiratory rate ≥ 25
- Oxygen saturation < 95%
- Temperature ≥ 38°C
- Pulse rate > 120
- BP < 90/60
- Headache with vomiting
- Severe or new chest pain ⮌ 37
- New sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →136
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely ⮌ 135
- Decreased consciousness or new onset confusion/agitation
- Coughing up fresh blood
- Swollen painful calf

Manage and refer urgently ⮌ 38.

Approach to the patient with ongoing COVID-19 symptoms not needing urgent attention:

- If known with a chronic condition, check control and give routine care.
- Test for TB if current cough, weight loss ≥ 1.5kg, drenching night sweats, fever or fatigue: send 1 sputum sample for TB NAAT ⮌ 92.
- If stress, anxiety or low mood, assess and manage further ⮌ 86.

Ask about duration of symptoms:

< 2 months

- Reassure that many people have ongoing COVID-19 symptoms, even in mild cases.
- Explain that symptoms usually resolve slowly with time.
- Advise to rest and pace activity.
- Treat pain with paracetamol 1g 4-6 hourly (up to 4g in 24 hours) or ibuprofen 400mg 8 hourly with food as needed for up to 5 days.
- Extend sick leave as needed.

- If symptoms persist, advise to return for review.
- Advise when to return urgently: see red box below.

≥ 2 months

First check for pregnancy, HIV, diabetes and anaemia:

Check for pregnancy
If woman of child bearing age, exclude pregnancy ⮌ 157.

Check for HIV
If HIV status is unknown or negative, test for HIV ⮌ 110.

Check for diabetes
Check fingerprick glucose and interpret ⮌ 17.

Check for anaemia
Check fingerprick Hb. If < 12 (woman) or < 13 (man), anaemia likely ⮌ 27.

If chest pain, joint pain, headache, dizziness, manage as on symptom pages.

If none of above or symptoms persist despite treatment, **Long COVID** likely, give routine care ⮌ 121.

Advise to return urgently if breathlessness worsens, new or worsening confusion or unable to wake patient, chest pain or pressure that won't go away, new sudden weakness or numbness in face, leg or arm.

BREAST SYMPTOMS

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

Breast lump/s

Any of: patient > 25 years, family history of breast cancer, irregular fixed lump, skin/nipple changes, nipple discharge or axillary lymph node?

Yes

Refer same week to a breast clinic/ Regional Breast Unit.

No

One breast

Re-examine breast on day 7 of menstrual cycle. If lump persists, refer to breast clinic/Regional Breast Unit within 21 days.

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 4-6 hourly (up to 4g in 24 hours) 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 ⮌ 154.
- Advise to return if symptoms change/worsen: refer to breast clinic/Regional Breast Unit within 60 days.

Breast pain

- Reassure that pain is unlikely due to breast cancer.
- If lump/s, see adjacent.
- Exclude pregnancy ⮌ 157.

Nipple discharge/retraction

- Refer to breast clinic/Regional Breast Unit 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 ⮌ 160.
- 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 to breast clinic/Regional Breast Unit.
- Check if this is obesity. If BMI[1] > 25 assess CVD risk ⮌ 127.
- Review medication: antipsychotics, antidepressants, efavirenz, nifedipine, amlodipine can cause breast enlargement. Discuss with doctor. If on efavirenz, doctor to consider switching medication ⮌ 117.

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 4-6 hourly (up to 4g in 24 hours) 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.

- 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.

- 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: explore circumstances at home to assess safety of formula feeding. If barriers to safe formula feeding, 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 ⮌ 111 and prevent transmission to baby ⮌ 168.

[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 →37
- Pregnant →159
- Recent delivery/miscarriage/termination of pregnancy →164
- Glucose ≥ 11.1 →17
- Unable to pass urine →59
- 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 ↩ 20.

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 →45.
- If on ART, check for urgent side effects ↩ 116.
- If urinary symptoms (burning/frequency/urgency) or leucocytes/nitrites/blood on dipstick →59.
- Is pain in the lower abdomen *and* is patient a woman?

Yes

- Exclude pregnancy ↩ 157. If pregnant, refer urgently same day.
- If crampy lower abdominal pain only during periods, **dysmenorrhoea** likely →56.
- Ask about abnormal vaginal discharge and do pelvic examination 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 ↩ 49.
- 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 ↩ 23.
- 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 →48. If diarrhoea →46.

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), stop smoking ↩ 141, 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 ↩ 142.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ↩ 127.
- 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

- Headache →30
- Chest pain →37
- If patient has watery diarrhoea (with or without vomiting) and has been in cholera outbreak area in past 5 days, **cholera** likely →47
- Neck stiffness, drowsy/confused or purple/red rash: **meningitis** likely

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

- 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 ↩ 20.

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. Avoid injecting > 1g IM at one injection site.
- 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 ↩ 17 or if diabetes and glucose < 4 ↩ 130.

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 ↩ 157. If pregnant, reassure that nausea/vomiting is common in first trimester. Encourage to eat smaller meals more frequently and drink fluids regularly.
- If associated dizziness ↩ 29.
- 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 ↩ 96, RR-TB medication ↩ 104 or ART ↩ 116.
- 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 ↩ 142.

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 ↩ 141, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.
- If waist circumference > 80cm (woman) or 94cm (man), assess CVD risk ↩ 127.
- 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 ↩ 86.
- If patient has a life limiting illness, consider giving palliative care ↩ 170.
- 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

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
- If patient has watery diarrhoea (with or without vomiting) and has been in cholera outbreak area in past 5 days, **cholera** likely →47.

Management:

- Give oral rehydration solution (ORS) and observe: encourage small frequent sips. Aim for at least 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.
- If patient has been in cholera outbreak area in past week, **cholera** likely. Give single dose ciprofloxacin 1g orally.

Approach to the patient with diarrhoea not needing urgent attention

- Confirm patient has diarrhoea: ≥ 3 loose stools/day.
- Ask about duration of diarrhoea:

Diarrhoea ≤ 2 weeks

Is there blood in the stool?

No

Has patient been in cholera outbreak area in past 5 days?

Yes

Cholera likely →47.

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.
- If fever with cough/sore throat, consider COVID-19 ↩ 40.
- Advise to return if: blood in stool, diarrhoea worsens or persists > 2 weeks, or patient becomes confused.

Yes

Dysentery likely

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

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 ↩ 110 and manage according to result:

HIV positive

- Give routine HIV care ↩ 111.
- LPVr 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[3] 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 →170.

[1]Rice water stool is cloudy watery diarrhoea with no blood/pus and no faecal odour (may have fishy odour). [2]If > 2 hour delay between specimen collection and laboratory processing, discuss with laboratory. [3]Advise no alcohol until 24 hours after last dose of metronidazole.

CHOLERA

- If patient has watery diarrhoea (with or without vomiting) and has been in cholera outbreak area in past 5 days, **cholera** likely.
- If possible, isolate patient. Health worker to wear gloves and apron while attending to patient. Disinfect surfaces contaminated with secretions with 70% alcohol or chlorine-based disinfectant.
- Check glucose: if glucose < 3 or > 11 ↩ 17.
- Record each episode of diarrhoea and vomiting and use this to calculate ongoing losses[1] when giving fluid replacement below. Decide on further management according to level of dehydration:

Any of: drowsy/decreased consciousness, confused, difficulty breathing, weak pulse?

Yes

Manage as severe dehydration and refer urgently:

- Insert 2 large bore IV lines, if possible.
- Ideally give Ringer's lactate IV fluid as first choice of fluid replacement. If unavailable, give instead sodium chloride 0.9% IV:
  - Give Ringer's lactate 30mL/kg IV over first 30 minutes, then Ringer's lactate 70mL/kg over next 2.5 hours, while awaiting transfer.
  - Also calculate further IV fluids according to ongoing losses[1] and increase rate of IV fluids to give new total volume of fluid over the 2.5 hours.
  - If transport delayed > 3 hours: continue 5mL/kg/hour IV, increasing rate as needed to keep up with ongoing losses[1].
  - If unable to insert IV lines and unable to drink, insert nasogastric tube (NGT), if able, for giving fluid volumes above. Avoid NGT if vomiting.
- Reassess patient every 15-30 minutes:
  - If no better or worse, discuss with referral centre.
  - If awake, able to drink *and* pulse < 100, continue IV fluids, but also manage as **some dehydration** (see above).

No

≥ 2 of: unable to drink (or drinking poorly), poor skin turgor, sunken eyes?

Yes

No

≥ 2 of: restless, thirsty, dry mouth, pulse ≥ 100?

Yes: **some dehydration** likely
Give oral rehydration solution (ORS) 75mL/kg (or at least 2-4L) over 4 hours.

No: dehydration unlikely
Give ORS, at least 2L (as much as patient wants) over 4 hours.

Take specimen (see below) and reassess hourly. Either of:

- Signs of dehydration: unable to drink (or drinking poorly), poor skin turgor, sunken eyes, weak pulse (or pulse ≥ 100), not passing urine, unable to walk unaided
- Ongoing diarrhoea or vomiting?

Yes

- Give single dose ciprofloxacin 1g orally, especially if pregnant, ≥ 60 years old or long-term health condition (e.g. HIV, diabetes).
- Send stool specimen or rectal swab for MCS *and* cholera. Ensure correct patient contact and address details appear on lab request form.
  - If laboratory processing delay > 2 hours: place specimen in Cary-Blair transport medium, if available. Place in fridge or cooler box with ice before transport. Avoid freezing.
- Notify as suspected cholera.

No: does patient have reliable transport to return if worse?

No

- Discuss/refer.
- Continue assessing and managing for dehydration hourly (see above).
- If some dehydration, pregnant, ≥ 60 years old or long-term health condition (e.g. HIV, diabetes), give antibiotic:

Yes

- Discharge patient into reliable carer's care.
- Advise to return if worse, unable to drink, bloody diarrhoea, fever or becomes drowsy.
- Advise to drink at least 250mL ORS[2] after each stool.
- Advise frequent handwashing with soap and water, before preparing food/after going to toilet. Use only safe/disinfected water for preparing food/drinks/ice.

[1]Calculate ongoing losses: add 10mL/kg of IV fluid/ORS to fluids calculated above for every episode of diarrhoea or vomiting, e.g. if a patient weighing 50kg had 2 episodes of diarrhoea and 1 episode of vomiting during assessment period, add 1500mL of IV/ORS fluid to IV/ORS fluid volumes above [(3 episodes of diarrhoea/vomiting) x (10mL x 50kg)]. [2]If possible, give at least 4 sachets of ORS at discharge. Also advise on home ORS solution: add 8 teaspoons of sugar and half a teaspoon of salt to 1L of boiled water. Advise to drink at least 250mL after each stool.

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 ↩ 157. If pregnant, advise that constipation is common during pregnancy 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 ↩ 170.
- 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, ask about genital symptoms and treat partner ↩ 49. If painless bleeding, passing mucus or unable to pass stools despite feeling the need to (tenesmus), treat for sexually transmitted **proctitis**: give single dose ceftriaxone 250mg IM[1] and azithromycin 1g orally. If severe penicillin allergy[2], omit ceftriaxone and increase azithromycin to 2g. If diarrhoea ↩ 46.
- 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 or perianal wart/s

Treat as for genital ulcer →49.

Red/raw skin

- Advise good hygiene.
- Look for contact cause. If diarrhoea ↩ 46.
- Wash with aqueous cream (UEA), 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.

[1]Dissolve ceftriaxone 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [2]History of anaphylaxis, urticaria or angioedema.

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. If anal symptoms (painless bleeding, passing mucus or difficulty passing stool) ↩ 48.
Sexual health	If risky sexual behaviour: new or multiple partner/s, uses condoms unreliably, has sex under influence of alcohol/drugs, give safe sex advice. Ask if patient has anal sex: if anal symptoms ↩ 48.
Abuse	Ask about sexual assault. If yes ↩ 88.
Family planning	Assess patient's contraceptive needs ↩ 154 and discuss infertility. Exclude pregnancy ↩ 157.
Examination	• Woman: examine abdomen for masses, look for discharge, ulcers, rash, lumps. Do pelvic examination 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 ↩ 110. If HIV positive, give routine care ↩ 111. If negative, consider need for PrEP ↩ 106.
Syphilis	• Check syphilis serology if: sexually assaulted, secondary/tertiary syphilis[1] suspected or atypical/fleshy/wet genital warts. If pregnant, test for syphilis at every visit ↩ 162. If syphilis positive ↩ 53. • Repeat RPR at 6 months in all treated with doxycycline/amoxicillin/probenecid.
Cervical screen	Do a cervical screen if needed ↩ 55. If abnormal vaginal discharge, delay routine cervical screen until treated ↩ 51. If discharge persists after treatment, 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 cure of STI: give partner notification slip with the patient's diagnosis code for each partner. Consider other notification methods like active tracing and treatment.

Treat the patient with genital symptoms

Discharge		Scrotal pain/swelling	Itch			Ulcers/sores	Lump/s		Warts
Woman →51	Man →50	→50	Discharge in woman →51	Glans penis →50	Pubic area →54	→52	Groin →25	Skin →54	

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 ↩ 53. 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 pulled back to normal position (reduced) with swollen and very painful glans: **paraphimosis** likely
- Prolonged erection > 4 hours: **priapism** likely

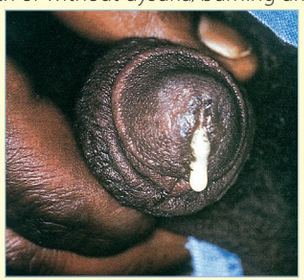
Management:

- 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 ⮌ 49.
- Check for urethral discharge: if no visible discharge, ask patient to milk the urethra. If no urethral discharge and urinary symptoms (burning/frequency/urgency) →59.

Urethral discharge (with or without dysuria/burning urine)



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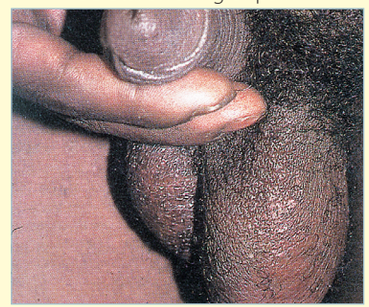
Treat for **male urethritis syndrome** (**MUS**):

- 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**)**:**

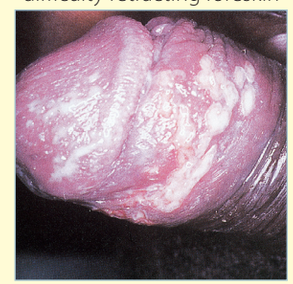
- Give single dose ceftriaxone 250mg IM[1] *and*
- Give azithromycin 1g now and another dose of azithromycin 1g in 1 week.
- If severe penicillin allergy[2], omit ceftriaxone and increase azithromycin to 2g.
- Give partner notification slip/s with code: SSW.
- For pain, give ibuprofen 400mg 8 hourly 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

Exclude **Testicular cancer**

Refer.

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



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If unable to retract foreskin, refer.

If able to, retract foreskin, wash with water, dry and examine:

- If ulcer ⮌ 52.
- If glans inflamed, treat for **balanitis/ balanoposthitis** (**BAL**):
  - Advise to retract and wash daily with water, avoid soap. Dry fully.
  - Give clotrimazole cream 12 hourly for 7 days.
  - Check urine dipstick for glucose. If glucose present, check for diabetes ⮌ 17.
  - 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 ↩ 49.

Approach to a woman with an abnormal vaginal discharge
Has patient been sexually active in the last 3 months?

Yes to either
Ask about lower abdominal pain and do pelvic examination 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 delivery/TOP/miscarriage
- 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 (as above)

Leucocytes or nitrites positive → →59.

No to both
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 pelvic examination 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
Treat for **cervicitis**:
- Give single dose ceftriaxone[1] 250mg IM[2] and azithromycin 1g.
- Give partner notification slip/s with code: VDS.

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

No
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.

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

No
Give metronidazole[3] 400mg 12 hourly for 7 days.

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.

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

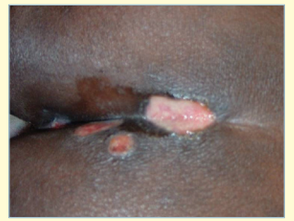
[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and increase azithromycin dose to 2g. [2]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine. [3]Advise no alcohol until 24 hours after last dose of metronidazole. [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 ⮌ 49. 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).
- Give aciclovir 400mg 8 hourly for 7 days if any of:
  - HIV positive or HIV unknown.
  - Pregnant (if patient ≥ 28 weeks pregnant, consider risk of neonatal herpes, refer).
  - Not sexually active in the last 3 months.
- If recurrent ulcers, refer for laboratory testing. If ≥ 4 episodes of laboratory-confirmed herpes simplex in 1 year, refer for ongoing suppressive therapy.



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 ⮌ 53.
- 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 ⮌ 53.
- Give partner notification slip/s with code: GUS.

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

No

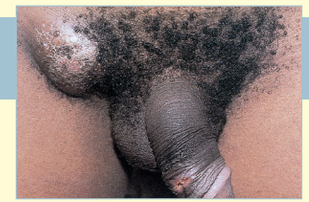
Review in 7 days

- 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 now and repeat azithromycin 1g weekly for another 2 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.



Yes

Treat for **GUS with VDS/MUS**

- Give single dose ceftriaxone 250mg IM[2] and azithromycin 1g orally *and* benzathine benzylpenicillin 2.4MU IM[1].
- 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 ⮌ 53.
- If patient or partner has vaginal discharge syndrome (VDS), also give single dose metronidazole[4] 2g orally. If patient has discharge that is itchy or curd-like or vulva inflamed (red, swollen or painful), also give single dose clotrimazole vaginal pessary 500mg inserted at night.
- 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 fingerprick syphilis test[1] done and positive:
  - If any of the following, start treatment same day with benzathine benzylpenicillin 2.4MU IM[2]: pregnant, partner treatment, genital ulcer present, signs of secondary syphilis[3] present.
  - Send blood for syphilis serology (RPR) to confirm result. On request form, write: "If RPR negative, do specific syphilis test on same specimen". Review in 1 week.

Manage according to results:

Lab-based specific syphilis test non-reactive

No treatment for syphilis needed.
- Continue routine screening for syphilis using rapid fingerprick tests.

Lab-based specific syphilis test reactive

RPR non-reactive

No current active syphilis infection.
- Reactive specific syphilis test indicates a *past infection*.
- If pregnant, continue routine screening for syphilis using RPR tests. Avoid using rapid tests. Make a note of this in her file and maternity care record.
- If sexual assault, repeat syphilis test at 4 months.

RPR reactive
Treat for **syphilis**: decide what treatment to give according to sex and pregnancy status:

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

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+.

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+.

Lab-based specific syphilis test not done (fingerprick syphilis test done)

Pregnant woman
Treat according to symptoms:

If genital ulcer or signs of secondary syphilis[3], treat for **early syphilis**:
- Give single dose benzathine benzylpenicillin 2.4MU IM[2] . If unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 14 days.

If no symptoms (no ulcer/s or signs of secondary syphilis[3]), treat for **late syphilis**:
- Give benzathine benzylpenicillin 2.4MU IM[2] weekly for 3 weeks. If unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 28 days.

- If severe penicillin allergy[4], refer to hospital to confirm diagnosis and for possible penicillin desensitisation.
- If weekly dose late by 2 weeks or more, restart 3 injections.
- Repeat RPR 3 months after completing to confirm treatment response. If new titre is ≤ 1:4 and unchanged or at least 4 times lower than before (e.g. was 1:32, now 1:8), no further treatment needed. If not, discuss/refer.
- Give partner notification slip/s with code: RPR+.
- Manage the baby born to mother with syphilis →167.
- If stillbirth, notify.

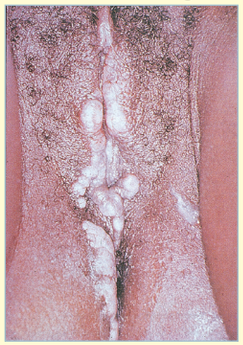
[1]A rapid syphilis test remains positive for life, even if syphilis infection has been treated. If patient had previous positive rapid syphilis test result, avoid repeating rapid syphilis test. Send blood for syphilis serology (RPR) instead. [2]For benzathine benzylpenicillin 2.4MU injection: dissolve 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 ⮌ 49.
- 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)



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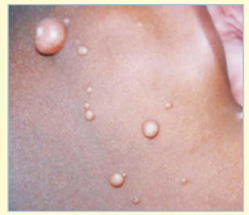
Genital warts likely

- If warts atypical/fleshy/wet, test for syphilis. If positive ⮌ 53.
- Arrange a cervical screen for patient/partner if needed ⮌ 55.
- Offer to arrange medical male circumcision for patient/partner.
- Reassure that most warts resolve spontaneously within 2 years.
- Refer to gynaecology, urology or sexual health services if:
  - Warts > 10mm
  - Numerous lesions
  - Warts inside vagina, involving cervix or urethra
  - Pregnant with large warts
  - Bleeding or infected warts

Papules with central dent



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Molluscum contagiosum likely

- Reassure that most papules resolve spontaneously within 9-12 months.
- 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

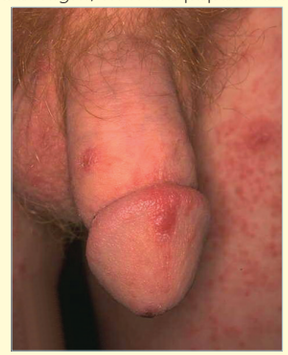
Intensely itchy bites
May see lice or nits (size of a pinhead) in pubic and peri-anal areas

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. Advise patient to avoid getting petroleum in eye.

Itch worse at night, with red papules and nodules



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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** ⮌ 78.

[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 according to symptoms

Patient has no symptoms.
- If HIV negative: do 3 screens in a lifetime, each 10 years apart from age 30.
- If HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly.

Patient has symptoms.
(Symptoms include: irregular or heavy vaginal bleeding, bleeding after sex or an abnormal vaginal discharge)
- Do cervical screen if symptoms are 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 ⮌ 51; if abnormal vaginal bleeding ⮌ 57. 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 ⮌ 154. If pregnant, do cervical screen safely up to 20 weeks gestation.
Examination	• Do pelvic examination to check for pain on moving cervix and pelvic masses. If pain on moving cervix, treat for **lower abdominal pain** (**LAP**) syndrome ⮌ 44. 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 ⮌ 110. If HIV positive, give routine HIV care ⮌ 111, and repeat cervical screening 3 yearly. If negative, consider need for PrEP ⮌ 106.
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 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 ⮌ 141.
- 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

→57.

No bleeding

Amenorrhoea likely

- If period never started before age 16 years, refer.
- If period has stopped:
  - Exclude pregnancy ↩ 157.
  - If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems. If yes ↩ 169.
  - Ask about contraception:

Is patient using IUD, 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 ↩ 49.
- 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 ↩ 154, 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 ↩ 86.
- If symptoms severe, consider oral contraceptive ethinylestradiol/levonorgestrel 30mcg/150mcg for 6 months ↩ 154.

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 ↩ 86.

ABNORMAL VAGINAL BLEEDING

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

- Pregnant →159
- Recent delivery/miscarriage/termination of pregnancy →164
- 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 pelvic examination to check for pelvic masses, a speculum examination to visualise cervix and a cervical screen if needed ↩ 55. If abnormal, refer.
- If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ↩ 169. 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** ↩ 27.
- Give COC[1]: ethinylestradiol/levonorgestrel 30mcg/150mcg for 3 months ↩ 154. 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 IUD insertion
  - If sexual abuse suspected
  - If history of foreign body inserted into vagina

If pain during periods ↩ 56.

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 ↩ 154. If pregnancy desired or COC contraindicated[2], discuss/refer.

Spotting between periods

- Assess for STI ↩ 49.
- Check Hb: if Hb < 12, treat for likely **anaemia** ↩ 27.
- 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 IUD or injectable ↩ 154.
- If bleeding persists > 3 months:
  - If on progesterone-only pill and bleeding troublesome, change method ↩ 154.
  - 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.

IUD:

- Reassure that spotting is common in first 3 months, is not harmful and usually resolves.
- Give ibuprofen[3] 400mg 8 hourly with food for 3 days.

Bleeding after sex

- Assess for STI ↩ 49.
- If assault or abuse ↩ 88.

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%, blood clots, previous stroke, ischaemic heart disease or diabetes complications (eye, nerve, kidney damage). [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 ↩ **86**.
- Ask about relationship problems, anxiety/fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If sexual assault or abuse ↩ **88**.
- 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 ↩ **143**.
- Discuss condom use. Ensure patient knows how to use condoms correctly.

No

- Assess CVD risk ↩ **127**.
- 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 ↩ **142**.
- If patient smokes, encourage to stop ↩ **141**.
- If low mood, stress or anxiety ↩ **86**.
- If no better once chronic condition/s stable and treatment optimised, refer.

Painful ejaculation

- If genital symptoms ↩ **49**.
- If urinary symptoms ↩ **59**.
- 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 ↩ **49**.
- If anal symptoms ↩ **48**.
- If urinary symptoms ↩ **59**.
- Ask about vaginal dryness:
  - If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping. If yes ↩ **169**.
  - 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 ↩ **49**.
- 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 ↩ **86**.
- If sexual assault or abuse ↩ **88**.

Loss of libido

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

- If stress or anxiety ↩ **86**.
- 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 ↩ **143**.
- 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 ↩ **142**.
- 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 ↩ **169**.
- If sexual assault or abuse ↩ **88**.
- Assess the patient's contraceptive needs ↩ **154**.
- 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: first collect urine for MCS and then 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 4-6 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 ⮌ 17.
  - If frequency, exclude pregnancy ⮌ 157.
  - If none of above, discuss/refer.
- If leucocytes or nitrites: is there a catheter, diabetes or urinary tract problem?

No

Simple UTI likely
Give single dose gentamicin 160mg IM. If kidney disease or pregnant (or gentamicin unavailable), give instead single dose fosfomycin 3g or nitrofurantoin 100mg 6 hourly for 5 days.

Yes

Complicated UTI likely

- Give ciprofloxacin 500mg 12 hourly for 7 days. If pregnant, give instead nitrofurantoin 100mg 6 hourly for 5 days or if unavailable, single dose fosfomycin 3g.
- If catheterised, change catheter.

- If complicated/recurrent UTI or no better, send urine MCS. Review after 2 days: if resistant/no better, discuss/refer.
- If blood in urine, treat. Then send urine MCS: if blood persists, refer.

Man

- Check for urethral discharge. If present, **MUS** likely →50.
- Any of: fever, perineal/body pain or prostate tender on rectal exam?

No
Are there leucocytes/nitrites on dipstick?

Yes

If no frequency/urgency, **MUS** likely →50.
Otherwise treat for:

No

- If glucose on dipstick, exclude diabetes ⮌ 17.
- If no glucose, discuss/refer.

Yes

Acute prostatitis likely

- If ≤ 35 years, give ceftriaxone[2] 250mg IM[3] and azithromycin 1g.
- If > 35 years, give ciprofloxacin 500mg 12 hourly for 14 days.
- Give ibuprofen[4] 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[5]

Send urine for microscopy. If at risk of bilharzia[6,7], 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 after treatment.

Flow problem

Leakage of urine

- If on furosemide, doctor to review.
- If vaginal atrophy ⮌ 169, if constipation ⮌ 48.
- Advise to reduce alcohol and caffeine, and do pelvic muscle exercises[8].
- 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 severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), omit ceftriaxone and increase azithromycin to 2g. [3]For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline). [4]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [5]If menstruating, repeat dipstick after period has finished. [6]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). [7]If microscopy not available and patient lives in endemic area, treat as schistosomiasis. [8]Repeated contraction and relaxation of pelvic floor muscles.

BODY/GENERAL PAIN

- 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 →63, arm/hand →64, leg →65, foot →66, neck →64.

Approach to the patient with body/general pain

- If on abacavir or zidovudine, check for urgent side effects ↩ 116.
- If unintentional weight loss of ≥ 5% of body weight in past 4 weeks ↩ 23.
- Are there any of: temperature ≥ 38°C, cough, blocked/runny nose, sore throat?

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

→62

No

- Test for HIV ↩ 110.
- If low mood, stress or anxiety ↩ 86.
- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, reduce simvastatin dose to 20mg at night. If no better, reduce dose further to 10mg or discuss with doctor/specialist.
- If patient has a life-limiting illness, also consider giving palliative care ↩ 170.
- Ask about duration of pain:

< 4 weeks

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days.
- Advise to return if no better after 2 weeks.

≥ 4 weeks

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days. Advise to only use analgesia when necessary and avoid long term regular use.
- Assess and advise on chronic pain ↩ 61.
- Check glucose ↩ 17.
- Check Hb: if < 12 (woman) or < 13 (man) ↩ 27.
- 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** →153.
  - If blood results abnormal, refer to doctor.

Yes

- If temperature ≥ 38°C →24.
- If cough →38.
- If blocked/runny nose →34.
- If sore throat →35.
- If abdominal pain ↩ 44.
- If nausea or vomiting ↩ 45.
- If diarrhoea ↩ 46.
- If burning urine ↩ 59.
- If none of these:

Is there *recent* onset body pain, headache, fever, or nausea/vomiting?

Yes

If neck stiffness, drowsy/confused or purple/red rash, **meningitis** likely →30.

Acute viral infection likely

- If fever, chills or body pain, **influenza** or **COVID-19** more likely. Consider COVID-19 ↩ 40.
- Advise on cough/sneeze hygiene and to wash hands regularly.
- For pain or fever, give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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 ↩ 38.
  - Ear pain ↩ 33.
  - Pain over cheeks, **sinusitis** likely ↩ 30.
  - Advise yearly influenza vaccine if HIV, heart or lung disease.

No

Discuss with doctor.

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

CHRONIC PAIN

Chronic pain is pain that lasts longer than 4 weeks. A doctor should confirm the underlying cause of the pain.

Assess the patient with chronic pain at every visit

Assess	Note
Site and duration of pain	Ask where the pain is and when the pain started. Does pain radiate anywhere?
Type of pain	• Does patient have **cancer** pain or **non-cancer** pain? • If non-cancer pain, decide if patient has tissue pain, nerve pain or central pain: - If arthritis, joint pain, lower back/neck pain or chronic lung problem, **tissue pain** likely. - If previous shingles, trigeminal neuralgia, peripheral neuropathy or diabetic neuropathy, **nerve pain** likely - If fibromyalgia or irritable bowel syndrome, **central pain** likely.
Severity of pain	• Does pain limit activity or affect sleep, activities of daily living, mood or social/work functioning? • Ask patient to grade pain on a scale from 0 - 10, with 0 being no pain and 10 being the worst pain: classify pain as **mild** (1-3), **moderate** (4-7) or **severe** (8-10).
Relieving and aggravating factors	What makes the pain better or worse? What has patient been using to help pain? Does pain medication help? Use this to help patient decide which pain strategies will help the most.
Mental health	Ask how patient is coping and what support and/or spiritual care is needed. If low mood, stress or anxiety ↩ 86.
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 ↩ 142.
Chronic conditions	Ensure patient is receiving appropriate care for all his/her other chronic conditions. Manage as on routine care page/s.
Palliative care	If patient has a life-limiting illness, also consider giving palliative care ↩ 170.
Examine area of pain	If skin problem ↩ 67. If joint problem ↩ 62. If back, neck, leg, foot, arm or hand problem, manage as on symptom page.

Advise the patient with chronic pain

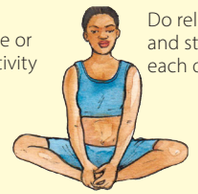
- Ask what patient thinks is causing pain and what impact it is having on his/her life and family. Address patient's and family's concerns about pain. For tips on communicating effectively ↩ 176.
- Educate that non-cancer chronic pain can be because pain signals in the brain stop working normally and get stuck in the 'on' position, even when the cause has resolved. It does not always mean a disease or cancer. Tests cannot always show the reason for the pain and often are not needed.
- Help the patient, along with his/her family, to choose strategies to get help and cope with chronic pain:

Get enough sleep
If patient has difficulty sleeping, give advice ↩ 87.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Find a creative or fun activity to do.



Do relaxing breathing and stretching exercises each day.

Get active
Aim for at least 30 minutes of moderate exercise most days. Start with 10 minutes/day and increase steadily.

Manage activities
Advise to stagger tasks and to avoid trying to fit too many activities into one day.

Access support
Link patient with helpline or support group ↩ 178.

Limit alcohol and avoid drugs
- Limit alcohol to ≤ 2 drinks/day and avoid alcohol on at least 2 days/week.
- Avoid drugs and unnecessary pain medication.

Treat the patient with chronic pain

- Manage pain together with patient and interdisciplinary team: refer if needed to physiotherapist, occupational therapist, spiritual counsellor/psychologist, social worker and community health worker.
- Together with the patient, set realistic pain management goals: to be as pain-free as possible (this might not be completely pain-free) so that s/he can do the things s/he wants and enjoys doing.
- Treat the patient's chronic pain on relevant symptom or routine care page. If appropriate, suggest patient tries movement exercise and heat/cold packs as these may help ease the pain.

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

JOINT SYMPTOMS

Give urgent attention to the patient with a joint symptom/s and:

- 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 →18.
- 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 →152.
- 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 →60.
- If back pain →63.
- If neck pain →64.
- If arm symptoms →64.
- If leg symptoms →65.
- If foot symptoms →66.

Yes
Has there been recent injury?

Yes

Sprain/strain likely

- Rest and elevate joint.
- Apply ice and a pressure bandage.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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).
- If available, arrange physiotherapy.
- 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 →151.

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 →49.

No
Any sudden onset of 1-3 warm, extremely painful, red, swollen joints (often big toe or knee)?

Yes
Acute gout likely →152.

No

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days and methyl salicylate ointment to rub on affected joint. 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 ↩ 110.
- 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, if available, and if pain in other joints, refer to physiotherapist, if available.
  - Assess and advise on chronic pain ↩ 61.

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, check urine dipstick:
  - If leucocytes/nitrites *with* fever with, 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
- Known cancer patient

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: first collect urine for MCS and then 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].
- If patient known to have cancer, refer same day.

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 4-6 hourly (up to 4g in 24 hours) 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
↩ 92 *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

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 ↩ 127.
- If low mood, stress or anxiety ↩ 86.
- Reassure patient that back pain is very common, and usually gets better on its own. Explain that pain does not always mean a disease or cancer, and tests cannot always show the reason for the pain and often are not needed.
- 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 4-6 hourly (up to 4g in 24 hours) 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 ≥ 4 weeks, assess and advise ↩ 61, and 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 ↩ 110.
- 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. Avoid injecting > 1g IM at one injection site.
- 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 4-6 hourly (up to 4g in 24 hours) for up to 5 days. If no response, 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 pain ≥ 4 weeks, assess and advise ↩ 61.
- If no response after 6 weeks, arm pain, weakness/numbness develops or pain worsens, do cervical spine x-rays and refer.

ARM OR HAND SYMPTOMS

- 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 →62.

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

- Arm pain with chest pain →37.
- If recent injury and severe pain/swelling or deformity, **fracture** likely →18.
- New sudden onset of weakness of arm with/without difficulty speaking or visual disturbance: consider stroke or TIA →136.

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 →38, chest pain →37, abdominal pain →44, pregnancy →157.

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
Splint wrist in neutral position at night.

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.

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 to doctor.

[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 →62.
- If the problem is only in the foot →66.

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

- Unable to bear weight following injury, **fracture** likely ⮌ 18.
- 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 20mg at night. If no better, reduce dose further to 10mg 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 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days.
- If no better, add ibuprofen[2] 400mg 8 hourly with food for up to 5 days.
- Advise to be as active as possible, continue normal activity and avoid resting in bed.
- If available, refer for physiotherapy.
- Explain that pain does not always mean a disease or cancer, and tests cannot always show the reason for the pain and often are not needed.
- 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 pain ≥ 4 weeks, assess and advise ⮌ 61 and refer to confirm diagnosis.

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

Peripheral vascular disease likely →139.

Yes

Both legs swollen

Is there difficulty breathing worse on lying flat?

Yes

Heart failure likely →135

No

- Exclude pregnancy ⮌ 157.
- Check for kidney disease on urine dipstick: if blood or protein, check BP ⮌ 132 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 4-6 hourly (up to 4g in 24 hours) 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, even if mild to moderate pain.
- 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

→67

No

Is there a groin lump/s?

Yes

→25

No

Refer same week.

[1]BMI = weight (kg) ÷ height (m) ÷ height (m). [2]Avoid if peptic ulcer, asthma, hypertension, heart failure, kidney disease.

FOOT SYMPTOMS

Check if problem is in the joint: ask patient to walk. Sit and stand up with arms folded. If unable to do all actions comfortably and problem seems to be specifically in the joint ↩ 62.

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

- Unable to bear weight following injury ↩ 18.
- 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 →70.

Generalised foot pain

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

Peripheral neuropathy likely

- Test for HIV ↩ 110 and syphilis. If HIV positive, give routine care ↩ 111. If syphilis positive ↩ 53.
- Exclude diabetes ↩ 17.
- 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 ↩ 142. If harmful alcohol use, give thiamine 100mg daily.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) when needed and amitriptyline[2] 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 25mg 8 hourly for 3 weeks, followed by 50mg daily. If pregnant, discuss/refer.
- If one-sided, weakness or severe numbness, refer same week.
- If patient known to have cancer, refer same day.
- If no better with treatment, discuss/refer.

Foot pain with muscle pain in legs or buttocks

Peripheral vascular disease likely →139.

Localised pain

Ensure that shoes fit properly.

Heel pain, worse on starting walking

Plantar fasciitis likely

- Advise to: decrease aggravating physical activity (like running). Apply ice. Avoid bare feet - wear shoes with good support or use shoe inserts. Stretch and exercise feet regularly: stretch calf muscle/s on waking and before sleep, roll foot/feet over colddrink bottle.
- If BMI[3] > 25, assess CVD risk ↩ 127.
- Give as needed: paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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, if available.

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

Bunion likely

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) for up to 5 days.
- 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 ↩ 70, ulcers ↩ 75.
- **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

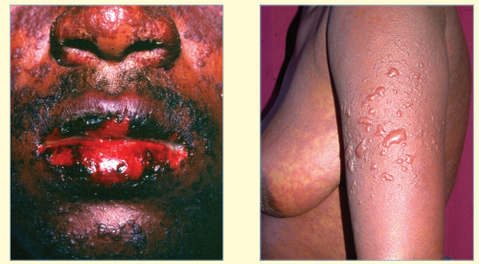
- Inspect and wash feet daily and carefully dry between the toes. Avoid soaking your feet.
- Moisten dry cracked feet daily with emulsifying ointment (UE). Avoid moisturising between toes.
- Tell your health worker at once if you have any cuts, blisters or sores on the feet.
- Avoid walking barefoot 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]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]Avoid if on bedaquiline. [3]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 ⮌ 20.
- 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. Avoid injecting > 1g IM at one injection site.
  - Prevent disease in close household contacts:
    - If pregnant or child contact < 6 years old, give ceftriaxone 250mg IM.
    - If child 6-12 years old, give ciprofloxacin 250mg as a single dose.
    - If ≥12 years, give ciprofloxacin 500mg as a single dose.
- If **serious drug reaction** likely: stop all medication. If peeling or raw skin, also manage as for burns before referral ⮌ 21.
- 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 → 68
- Itch
  - Rash
    - Generalised → 69
    - Localised → 70
  - No rash → 71
- Generalised, non-itchy rash → 72
- Lump/s
- Pimples/ blackheads → 74
- Ulcer/s or non-healing wound → 75
- Crusts
- Flaky skin → 78
- Changes in skin colour → 79
- Scalp symptoms → 80

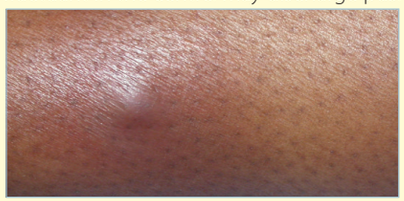
If rash is extensive, recurrent or difficult to treat, test for HIV ⮌ 110.

[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 ⮌ 67.

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

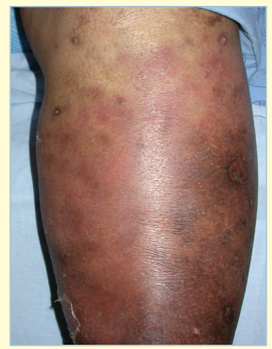


Boil/abscess likely

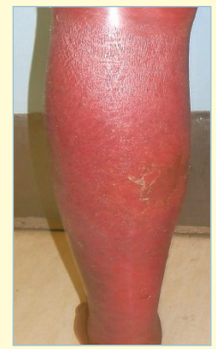
- If fluctuant, arrange incision and drainage.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days.
- If multiple lesions, lesion on face, extensive surrounding infection, temperature ≥ 38°C, HIV or diabetes, give antibiotic:
  - Give flucloxacillin 500mg 6 hourly *or* cefalexin 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 ⮌ 110 and diabetes ⮌ 17.
  - Wash once with chlorhexidine 0.05% solution from neck down.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Deep abscess difficult area to drain (hands, breast, perineum)
  - No response to treatment within 2 days

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

Poorly-defined borders



Clearly-defined raised borders

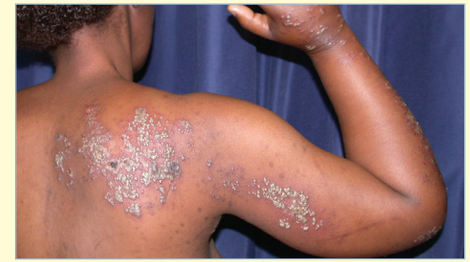


Cellulitis likely

Erysipelas likely

- Give flucloxacillin 500mg 6 hourly *or* cefalexin 500mg 6 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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)
  - No response to treatment within 2 days

Painful blisters in a band along one side



Herpes zoster (**shingles**) likely

- Test for HIV ⮌ 110.
- Advise to keep lesions clean and dry, and to avoid skin contact with others until crusts have formed.
- Give aciclovir 800mg 5 times a day (4 hourly missing the middle of the night dose) for days if:
  - ≤ 3 days since onset of rash *or*
  - At risk of severe infection (> 65 years, HIV, diabetes, severe heart/liver disease or alcohol abuse) and lesions not yet crusted.
- For pain:
  - Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed.
  - If needed, add tramadol 50mg 6 hourly. If poor response, doctor to increase dose to tramadol 100mg 6 hourly.
  - If pain persists after rash has healed, give amitriptyline[2] 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* cefalexin 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

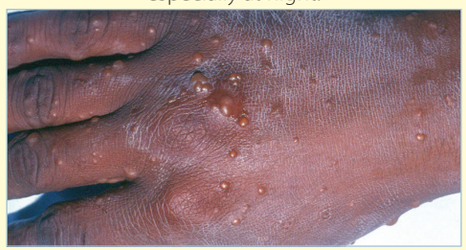
[1]History of angioedema, anaphylaxis or urticaria. [2]Avoid if on bedaquiline.

GENERALISED ITCHY RASH

Check if the patient needs urgent attention ⮌ 67.

If red itchy crops of bumps that may have blistered or healed with darkening of skin, may have scratch marks, **insects bites** likely →70.

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



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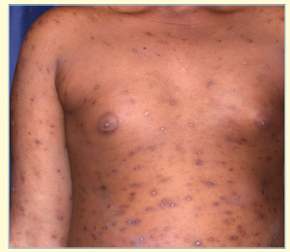
Scabies likely

- 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** ⮌ 78.

Hyperpigmented, itchy bumps on limbs, trunk or face



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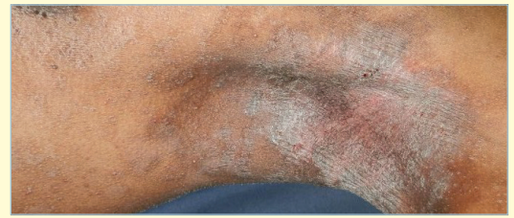
Papular pruritic eruption (**PPE**) likely

- Test for HIV ⮌ 110.
- 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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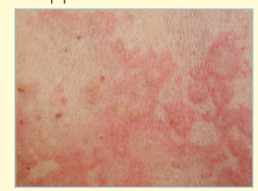
Eczema likely

- 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 ⮌ 86.
- If severe, start at Step 3.
- **Step 1**. Wash with aqueous cream (UEA) instead of soap. Moisturise skin with emulsifying ointment (UE) twice a day and immediately after bathing.
- **Step 2**. If no better after 7 days or more severe eczema: 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.
- **Step 3**. 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 cefalexin 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 or painful pustules.

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



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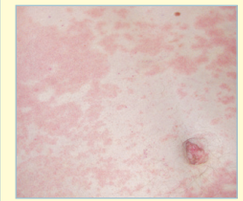
Urticaria likely

- Help to identify and advise to avoid triggers[2].
- Apply calamine lotion as needed.
- If recurrent eye problem, exclude allergic conjunctivitis ⮌ 31.
- If recurrent nose problem, exclude allergic rhinitis ⮌ 34.
- If recurrent cough or wheeze, exclude asthma ⮌ 123.
- For itch, give chlorphenamine 4mg 6-8 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 →73.

[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

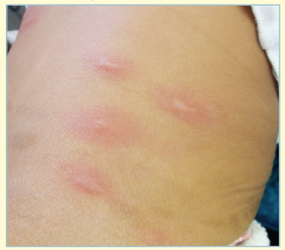
Check if the patient needs urgent attention ⮌ 67.

- If rash on scalp ⮌ 80.
- If very itchy, small red bumps and burrows in webspaces of fingers, axillae, waist or genitals, **scabies** likely →69.
- If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely →69.

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

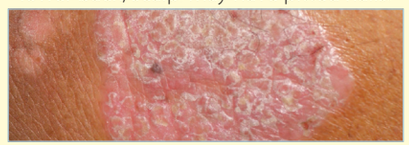
- Advise to reduce exposure to insects:
  - Treat pets, use bed nets, wash bedding, use insect repellents.
  - Clear away puddles of water around house.
- Advise to avoid scratching.
- Apply calamine lotion as needed.
- If severe itch, give chlorphenamine 4mg at night, or up to 6-8 hourly for up to 5 days.
- If blisters/heals with darkened skin, manage as likely **papular urticaria** ⮌ 22.
- If yellow crusts, **impetigo** likely ⮌ 78.

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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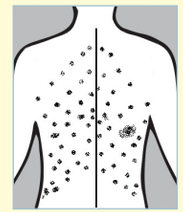
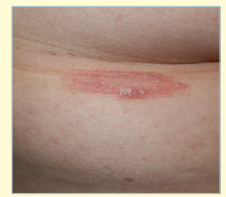
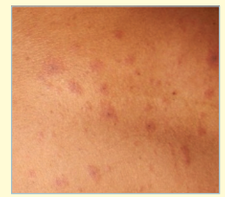
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment (UE) 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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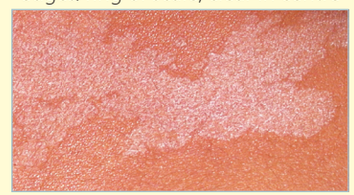
Pityriasis rosea likely

- Reassure that rash will resolve within 2 months.
- Apply aqueous cream (UEA) 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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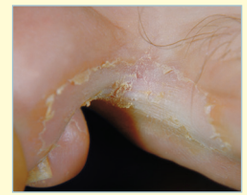
Tinea corporis (**ringworm**) likely

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 (at least 4 weeks for tinea pedis).
- If extensive or recurrent, test for HIV ⮌ 110 and diabetes ⮌ 17.
- If involves nails ⮌ 82.
- 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 ⮌ 67.

- Confirm there is no rash, especially scabies, lice or insect bites.
  - If generalised itchy rash →69.
  - If localised itchy rash →70.
- If itch around anus only →48.

Is the skin very dry?

Yes

Dry skin (**xeroderma /ichthyosis**) 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 →79.
- If itch persists > 2 weeks:
  - Test for anaemia ⮌ 27, HIV ⮌ 110 and diabetes ⮌ 17.
  - 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 (UEA) instead of soap. Avoid using aqueous cream as moisturiser (emollient).
  - Moisturise skin with emulsifying ointment (UE) 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 6-8 hourly for up to 5 days.
- If known with a life-limiting illness, consider giving palliative care ⮌ 170.
- If no better, discuss/refer.

If diagnosis uncertain, discuss/refer.

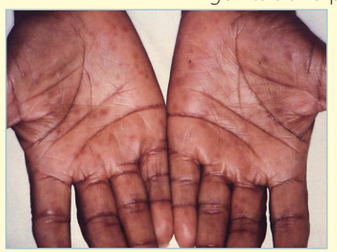
GENERALISED NON-ITCHY RASH

Check if the patient needs urgent attention ⮌ 67.

- 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 →24.
- Test for syphilis and HIV ⮌ 110.

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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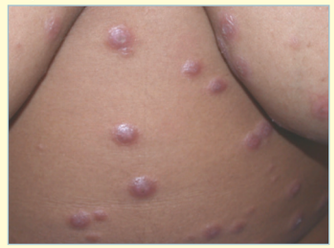

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Treat for early syphilis ⮌ 53.

HIV positive

Give routine HIV care
⮌ 111.

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 TB preventive treatment (TPT) in the past 3 months?

Yes

Consider drug rash →73.

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 or pain, give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) 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, TB preventive treatment (TPT) 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.

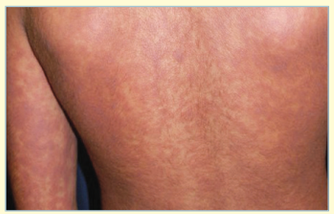
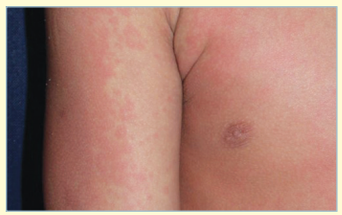
Give urgent attention to the patient with a drug rash and any markers of severity:

- 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 ↩ 21.
- 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 TPT?

Yes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- Refer to doctor if available.
- If on ART:
  - If on abacavir, check for abacavir hypersensitivity reaction (AHR) ↩ 116.
  - If on nevirapine, doctor to switch ART ↩ 117.
- 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.
- 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 →67.

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 →67.

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.
- If dark coloured round macules (flat spots) that occur anywhere on body following ingestion of a medication and often start as itchy patches with red edges, **fixed drug eruption** likely: apply hydrocortisone 1% to affected areas daily for 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.

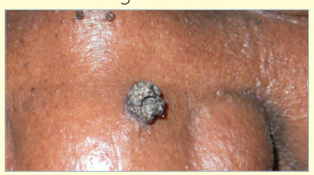
SKIN LUMP/S

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 →68.

Round, raised papules with rough surfaces



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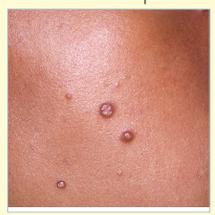
Warts likely

- 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 petroleum jelly to surrounding skin to protect it, then 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 or plantar wart in diabetic, refer.

Small, skin-coloured pearly bumps with central dimples



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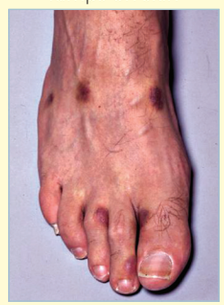
Molluscum contagiosum likely

- Test for HIV ↻ 110.
- 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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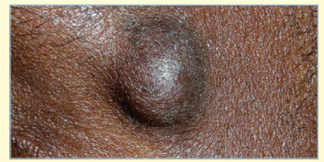
Kaposi's sarcoma likely

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

- Test for HIV ↻ 110.
- 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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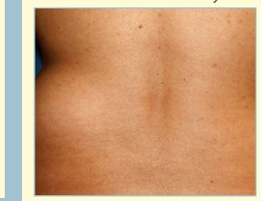
Epidermoid cyst likely
Usually found on face and trunk, uncommon on limbs.

- 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* cefalexin 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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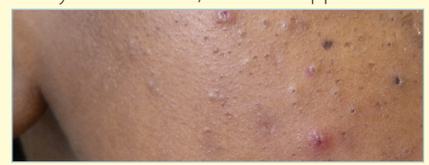
Lipoma likely
Usually found on trunk or upper limb.

- 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. Review after 6 weeks.
- 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 with meals, for 3 months.
- If woman needing contraception, advise combined oral contraceptive ↻ 154.
- Advise that response may take several weeks to months.
- If severe or no response after 6 months of treatment, 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. Avoid giving together with iron or antacids.

SKIN ULCER OR NON-HEALING WOUND: DIAGNOSIS

Give urgent attention to the patient with a skin ulcer or non-healing wound and any of:

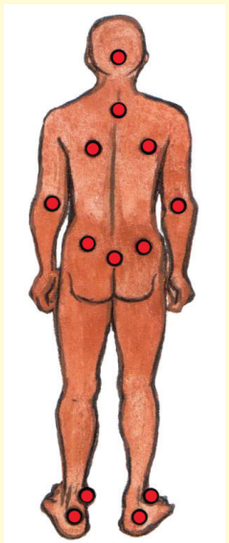
- Infection (surrounding skin red/warm/swollen) with any of: BP < 90/60, pulse > 100, temperature ≥ 38°C, confused, blisters, crepitus[1] or severe pain
- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely

Refer urgently.

Identify cause of skin ulcer or non-healing wound

- If genital ulcer →49.
- Is patient bedridden/in wheelchair and is ulcer in common pressure ulcer site (see below)?

Yes



Pressure ulcer likely

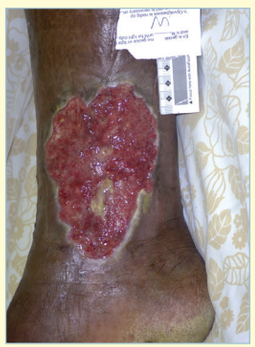
No

Is ulcer on the lower leg or foot?

Yes

Does patient have muscle pain in legs/buttocks on exercise or reduced/absent foot pulses?

Yes



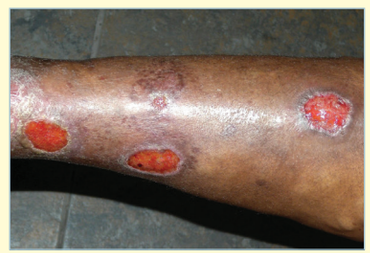
Source: Francois Coetzee

Arterial (ischaemic) ulcer likely

No

Is there darkening of skin around ulcer, varicose veins or chronic swelling of the leg?

Yes



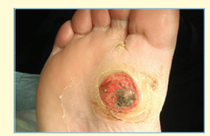
Source: University of Cape Town

Venous ulcer likely

No

Is patient known with diabetes?

Yes



Source: BMJ Best Practice

Diabetic ulcer likely

No

Is ulcer on the lower leg or foot?

No

- Ask about previous trauma, surgery, skin rash, burn, cancer or radiation therapy.
- Exclude diabetes: check glucose ↩ 17.
- Test for HIV ↩ 110.
- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, exclude TB ↩ 92.

- Give routine care for ulcer/wound →76.
- If pressure ulcer, also arrange for doctor review.
- If arterial, venous or diabetic ulcer, or cause uncertain, also refer patient to district hospital for further assessment.

[1]Crepitus is a crackling, popping or grating sound or feeling under the skin.

SKIN ULCER OR NON-HEALING WOUND: ROUTINE CARE

If arterial, venous or diabetic ulcer, or cause uncertain, ensure patient has been referred to district hospital for further assessment.

Assess the patient with a skin ulcer or non-healing wound

Assess	When to assess	Note
Pain	Every visit	• If pain ≥ 4 weeks, assess and advise ↩ 61. • If new or worsening wound pain, also check for wound infection as below. • If muscle pain in legs/buttocks on exercise that is relieved by rest, or reduced/absent foot pulses, **peripheral vascular disease** (**PVD**) likely: give routine care ↩ 139. If newly diagnosed with PVD, also refer same week.
Chronic conditions	As needed	Ensure patient is receiving routine care for all his/her chronic conditions. If diabetes ↩ 130, hypertension ↩ 133, peripheral vascular disease (PVD) ↩ 139, HIV ↩ 111.
Medications	Every visit	Review medication: NSAIDs (e.g. ibuprofen), prednisone and chemotherapy can cause delayed healing. Discuss with doctor.
Depression	Monthly	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 ↩ 143.
Alcohol/drug use	First 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 ↩ 142.
Palliative care	First visit	If patient has a life-limiting illness, also consider giving palliative care ↩ 170.
BMI[2] and nutrition	Monthly	• If BMI < 19.5: arrange nutritional support. If BMI < 18.5 or signs of nutritional deficiency[3], also refer to dietitian. • If BMI > 25: advise healthy diet and regular physical activity ↩ 11. If no improvement or if BMI > 30, also refer to dietitian.
CVD risk	First visit	If any CVD risk factors[4], assess CVD risk ↩ 127.
Wound and surrounding skin	Every visit	• Measure size and depth of wound and record in notes. - If > 10cm, circumferential (whole way round limb), visible fat/muscle/tendon/bone or increasing in size or depth, refer. • Assess colour of wound bed: is it pink (epithelialising), red (granulating), yellow (sloughy) or black (necrotic)? • Assess wound discharge: check colour, consistency, amount and smell. • If surrounding skin red/warm/swollen, or if diabetic ulcer and increasing discharge, pus or offensive smell, **infection** likely: - If BP < 90/60, pulse > 100, temperature ≥ 38°C, confused, blisters, crepitus[5] or severe pain, refer urgently. - If infection extensive or getting worse despite antibiotics, undermined wound edge, ulcer/wound extends to bone, poorly controlled diabetes or previous surgery with artificial implant (like pin, plate or joint replacement), refer same day.
Blood supply to leg	If ulcer/wound on leg: every visit	• If reduced or absent foot pulses, capillary refill time > 5 seconds, difference in temperature between feet, change in skin colour, loss of hair, shiny skin, numbness or weakness, **reduced blood supply** likely: - If new changes, discuss urgency of referral with specialist or referral hospital. - If known with reduced blood supply and already assessed at referral hospital, continue management plan given.
Mobility	Every visit	If problem with mobility, refer to physiotherapist or occupational therapist for rehabilitation support.
Glucose	First visit	If not known with diabetes, check glucose ↩ 17. If known diabetes, give routine care ↩ 130.
Hb	First visit	If Hb < 12 (woman) or < 13 (man), **anaemia** likely ↩ 27.
HIV	First visit	Test for HIV ↩ 110. If HIV positive, give routine care and ensure patient is on ART ↩ 111.
Wound swab	If infected and no better after 2-3 days of antibiotic	• Clean wound with sodium chloride 0.9% and leave for 5 minutes. Then, avoiding wound edges, move swab across wound bed in a zig-zag motion, while rotating swab between the fingers. If wound dry, moisten swab tip with sodium chloride 0.9% solution before taking swab. • Follow-up results to check infection has been treated appropriately.

[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]Signs of nutritional deficiency include red/cracked corners of mouth, brittle/ridged nails, dry hair that falls out easily, very dry skin, muscle wasting. [4]CVD risk factors include smoking, BMI > 25, waist circumference > 80cm (woman) or 94cm (man), hypertension, diabetes, cholesterol > 5.2, parent/sibling with early onset CVD (man < 55 years or woman < 65 years). [5]Crepitus is a crackling, popping or grating sound or feeling under the skin.

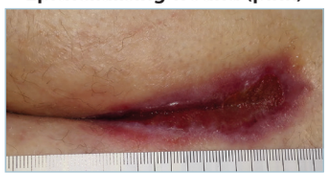
Advise the patient with a skin ulcer or non-healing wound

- Advise a healthy diet ↩ 11 and to be as active as possible. If patient smokes, advise that smoking delays healing and encourage to stop ↩ 141. Support patient to change ↩ 177.
- If **pressure ulcer**, advise to move (lift, avoid dragging) patient every 1-2 hours if unable to shift own weight.
- If **venous** or **diabetic ulcer**, advise to avoid prolonged standing and to elevate limb whenever possible.
- If **diabetes** or **PVD**, give foot care education ↩ 66.
- Encourage patient to adhere to chronic treatment and to aim towards achieving control of chronic conditions. If difficulty with adherence ↩ 173.
- Advise patient to keep dressing in place and not to tamper with wound/dressing. If patient instructed to change dressing, advise to wash hands with soap and water before doing so.
- Refer patient to community health worker. Also consider referral to social worker if available.

Treat the patient with a skin ulcer or non-healing wound

- If pain worse with dressing changes, give dose of patient's regular pain medication one hour before removing dressing.
- Gently remove dressing to avoid damaging healing tissue. If dressing sticks, wet with sodium chloride 0.9% solution and wait 5-10 minutes before gently re-attempting.
- Remove dead tissue from wound. If large areas of dead tissue or undermined wound edges, arrange for debridement. Avoid debridement if reduced blood supply or cancer wound.
- Gently clean/irrigate wound, remove any plaster debris and apply appropriate dressing, if available, according to type of wound bed:

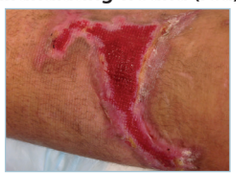
Epithelialising wound (pink)



Source: Anne Berzen

- Avoid cleaning wound bed: clean surrounding skin only with sodium chloride 0.9% solution or clean tap water.
- Apply paraffin or petroleum gauze, or other non-adherent dressing.
- If wound dry, apply hydrogel to wound before dressing.

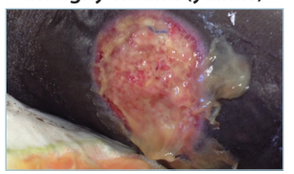
Granulating wound (red)



Source: Vanessa Lomas

- Irrigate wound and clean surrounding skin with sodium chloride 0.9% solution or clean tap water.
- Apply paraffin or petroleum gauze, or other non-adherent dressing.

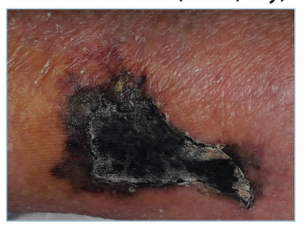
Sloughy wound (yellow)



Source: Vanessa Lomas

- Irrigate wound and clean surrounding skin with sodium chloride 0.9% solution or clean tap water. If slough remains, gently remove with moistened gauze.
- If excessive discharge, apply barrier film/paste to surrounding skin.
- Apply hydrocolloid, hydrofibre or foam dressing.

Necrotic wound (black, dry)

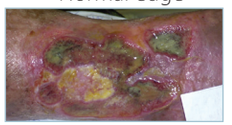


Source: Anne Berzen

- Apply hydrogel to wound, then apply paraffin or petroleum gauze, or other non-adherent dressing. Cover with film dressing if available.
- Doctor to assess need for debridement.

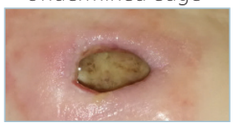
Infected wound

Normal edge



Source: Francois Coetzee

Undermined edge



Source: Anne Berzen

- Irrigate wound and clean surrounding skin with sodium chloride 0.9% solution or povidone iodine 10% solution (up to 2 weeks only). If slough remains, gently remove with moistened gauze.
- Apply thin layer of silver sulfadiazine or medicinal honey to wound, then apply absorbant dressing.
- If excessive discharge, apply instead silver hydrofibre or alginate dressing.

- If non-adherent dressing used, cover with cling bandage. Avoid compression if reduced blood supply to limb.
- If **venous ulcer**, apply compression bandage over dressing, starting at toes (not higher on foot) and ending below knee.
  - Avoid compression bandage if reduced blood supply to limb.
  - If numbness, pins and needles, or severe pain develop, advise patient to remove compression bandage and return immediately.
- If pain, give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed. If no response, give ibuprofen[1] 400mg 8 hourly with food as needed.
- If **infection** likely, give amoxicillin/clavulanic acid[2] 875/125mg 12 hourly for 7 days, or 10 days if diabetic ulcer. If no better after 2-3 days, take wound swab ↩ 76. If worsens despite antibiotic, refer same day.

Review the patient with a skin ulcer or non-healing wound

- If wound **infected**: change dressing daily. If silver hydrofibre dressing used, change dressing every 2-3 days instead.
- If wound **sloughy** or **necrotic**: change dressing around every 2 days, depending on amount of discharge.
- If wound **epithelializing** or **granulating**: change dressing weekly.

If cause uncertain, recurrent ulcers or no better after 1 month, refer.

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. [2]If penicillin allergy, discuss/refer.

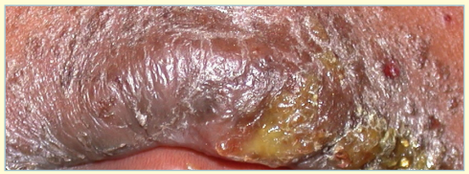
CRUSTS OR FLAKY SKIN

Check if the patient needs urgent attention ⮌ 67.

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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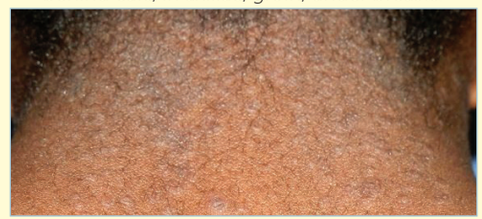
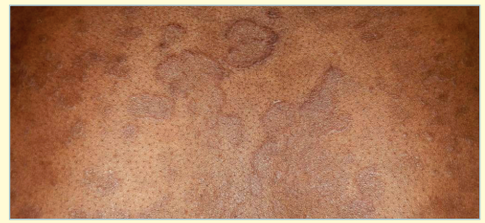
Impetigo likely

- 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* cefalexin 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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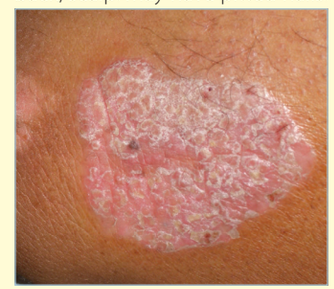
Seborrhoeic dermatitis likely

- If extensive, test for HIV ⮌ 110.
- If on scalp ⮌ 80.
- 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, neck and creases).
- 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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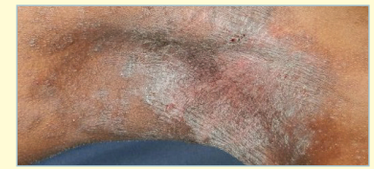
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment (UE) 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
Manage ⮌ 69.

[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 ⮌ 142 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 →120.
- If nausea/vomiting and unable to tolerate fluids, refer.

Hepatitis A IgM negative

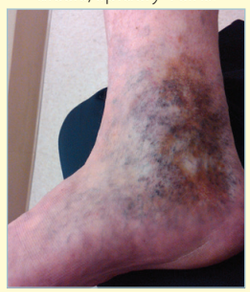
Check HBsAg results →120.

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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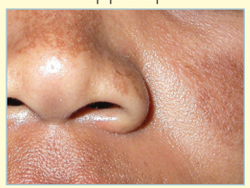
Venous stasis likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess CVD risk ⮌ 127.
- Give foot care advice →66.
- If ulcer →75.

Face

Flat, brown patches on cheeks, forehead and upper lip



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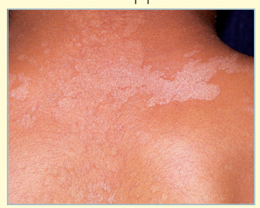
Melasma likely
- Hormones and sunlight will worsen melasma:
  - Advise to apply sunscreen daily and avoid sun exposure to face.
  - Avoid oral contraceptive, rather use a different method ⮌ 154.
- Advise patient:
  - If pregnant, may take up to 1 year after pregnancy to resolve.
  - Often difficult to treat and may never completely resolve.
- If not responding to above and intolerable, refer.

Trunk

Light patches

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



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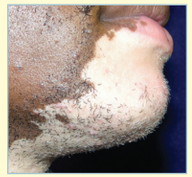
Tinea versicolor likely
- Advise to wear cool clothing in hot weather to reduce perspiration.
- Apply selenium sulphide 2.5% suspension. Lather on affected areas:
  - Apply daily for 3 days: leave on for 30 minutes then wash off *or*
  - Apply weekly for 3 weeks: leave on overnight then wash off.
- May take months for colour to return. Absence of scale indicates adequate treatment.
- Recurrence is common. Re-treatment may be needed.

Absence of colour

Is absence of colour patchy or generalised?

Patchy



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Vitiligo likely
- Refer to dermatologist.
- Advise to avoid excessive sun-exposure and 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, 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. Reapply 2 hourly if in the 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 ⮌ 116.

SCALP SYMPTOMS

- If hair loss with no rash/itch →81.
- 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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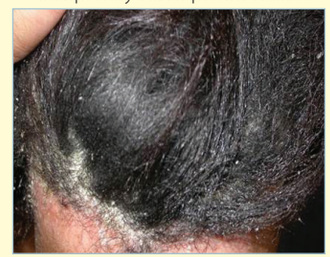
Seborrhoeic dermatitis likely

- If extensive, test for HIV ↻ 110.
- Apply selenium sulphide 2.5% suspension:
  - Lather on scalp.
  - Rinse off after 10 minutes.
  - Use weekly until better, then every second week.
- For skin: 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, neck and creases).
- If no response within 2 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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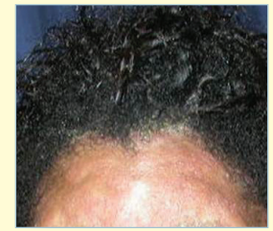
Psoriasis likely

- Refer to specialist to confirm diagnosis.
- While waiting for appointment:
  - Moisturise skin with emulsifying ointment (UE) 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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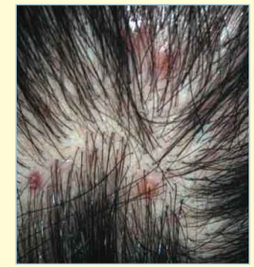
Contact dermatitis likely

- Identify and advise patient to avoid cause.
- Moisturise skin with emulsifying ointment (UE) 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* cefalexin 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* cefalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days
  - Test for HIV ↻ 110.

If diagnosis uncertain, discuss/refer.

[1]History of angioedema, anaphylaxis or urticaria.

HAIR LOSS

- If rash on scalp →**80**.
- Are hair follicle openings visible in area/s of hair loss?

Yes
Is hair loss patchy or generalised?

No

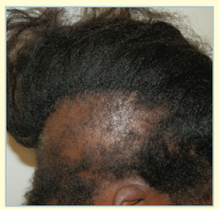
Scarring alopecia likely

Refer.

Patchy

- Test for syphilis. If positive ↩ **53**.
- 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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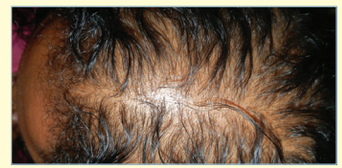
Alopecia areata likely
- Apply betamethasone 0.1% cream twice a day for 3 months.
- Check TSH. If abnormal, refer to doctor.
- Advise that hair may take up to 2 years to regrow.
- Refer if:
  - Extensive/multiple patches
  - No better with treatment
  - Recurrent

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) ↩ **27**.
- 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 ↩ **53**.
- Check TSH and ferritin. If abnormal, refer to doctor.
- Check Hb: if< 12 (woman) or < 13 (man) ↩ **27**.
- 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 12 months after cause treated/resolved.

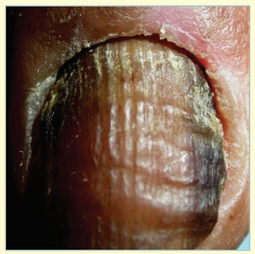
If causing patient distress, refer for counselling.

If diagnosis uncertain, discuss/refer.

NAIL SYMPTOMS

- If nails long and dirty and patient unkempt, screen for mental health problem and abuse/neglect ↩ 86.
- Manage according to type of nail problem:

Disfigured nail with swollen nail bed and loss of cuticle



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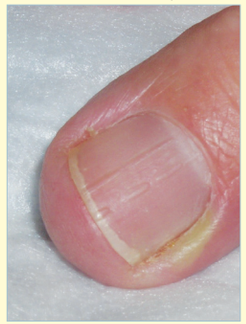
Chronic paronychia likely
Usually associated with excessive exposure to water and irritants like nail cosmetics, soaps and chemicals.

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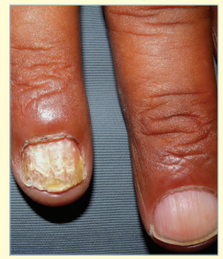
Acute paronychia likely
Often with history of trauma, such as nail biting, pushing the cuticle or cutting nails too short.

- Advise to avoid trauma to nail.
- If any pus, incise and drain.
- Give flucloxacillin 500mg 6 hourly *or* cefalexin 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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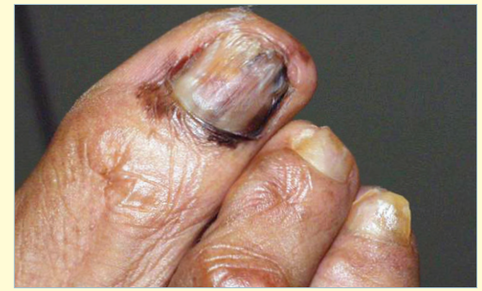
Fungal infection likely

- Test for HIV ↩ 110 and diabetes ↩ 17.
- 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 ↩ 70.
- 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 ⮌ 14.
- If oral overdose of harmful substance in past 1 hour and patient fully conscious, give activated charcoal 50g in 100mL water[1]. Avoid if paraffin, petrol, corrosive poisons (acids), iron, lithium or alcohol. If overdose of > 200mg/kg or 10g of paracetamol and delay in referral expected, give N-acetylcysteine 140mg/kg, then 70mg/kg 4 hourly.
- 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 ⮌ 178.

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**

No → **Low risk of self-harm or suicide**

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 ⮌ 84.
- Refer urgently: while awaiting transport, monitor closely. If patient refuses admission, consider involuntary admission ⮌ 140.

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 ⮌ 144, 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 ⮌ 143.
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 ⮌ 142.
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 ⮌ 148.
Stressors	Every visit	• If not known with a mental illness, assess for stress and anxiety ⮌ 86. • Help identify psychosocial stressors. Ask about trauma, sexual abuse/violence ⮌ 88, family or relationship problems, financial difficulty, bereavement, chronic ill-health.
Chronic condition	Every visit	• If chronic pain, assess and manage pain ⮌ 60 and underlying condition. Link patient with helpline or support group ⮌ 178. • If patient has a life-limiting illness, also consider giving palliative care ⮌ 170.

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 ⮌ 178.

- 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. Charcoal may be useful if these poisons are taken in overdose: carbamazepine, barbiturates, phenytoin, dapsone, quinine, theophylline, salicylates, mushroom poisoning, slow release preparations, digoxin, beta-blockers, NSAIDs. [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 drink 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 ↩ 140.
- Restrain and/or sedate only if absolutely needed: imminent harm to self/others, disruption of important treatment, damage to environment, verbal attempts to calm patient failed.
  - If possible, before sedation: assess and manage possible causes of abnormal thoughts or behaviour ↩ 85.
  - 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	Delirium	Alcohol intoxication	Psychosis[2]
Give midazolam 7.5-15mg IM.			Give haloperidol 5mg IM (2.5mg IM if > 65 years) *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 IM (2.5mg IM if > 65 years) *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 ↩ 85.

- **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 →19.
- If aggressive/disruptive →84.
- If new sudden asymmetric weakness or numbness of face/arm/leg, difficulty speaking or visual disturbance: consider **stroke** or **TIA** →136.
- If recent head injury →18.
- If suicidal thoughts or plans ↩ 83.
- 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 ↩ 17 or if diabetes and < 4 ↩ 130.
- 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 ↩ 140.
- 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	Abnormally happy, energetic, talkative, irritable or reckless	Lack of insight with ≥ 1 of: • Hallucinations (seeing/hearing things) • Delusions (unusual/bizarre beliefs) • Disorganised speech or behaviour	Dilated pupils, restlessness, paranoia, nausea, sweating or pulse ≥ 100, BP ≥ 140/90	Smells of alcohol, slurred speech, incoordination, unsteady gait	Known alcohol/drug user who has stopped/reduced intake with tremor, sweating, nausea, severe restlessness/agitation or hallucinations	Exposure via ingestion/inhalation/absorption of medication/unknown substance
Delirium likely Give ceftriaxone 2g IV[1]/IM. Avoid injecting > 1g IM at one injection site.	**Mania** likely	**Psychosis** likely	**Stimulant drug intoxication** likely If pulse irregular, chest pain or BP ≥ 140/90, do ECG and discuss with specialist or local poison helpline ↩ 178.	**Alcohol intoxication** likely • Give thiamine 100mg IV/IM. • Give sodium chloride 0.9% 1L 6 hourly. • Check for head injury.	**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 →142.	**Poisoning** likely Discuss urgently with specialist or local poison helpline ↩ 178.

Refer urgently *unless:*
- Patient with known schizophrenia who is otherwise well: give routine schizophrenia care ↩ 146.
- 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 ↩ 130.
- Patient with known alcohol use who is otherwise well: if abnormal thoughts/behaviour resolve once sober, no need to refer ↩ 142.

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** →148.
- 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 ⮌ 83.

Assess the patient with low mood, stress or anxiety. If patient known with depression, rather give routine depression care →144.

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 ⮌ 144. • 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. • If anxiety > 1 month linked to a bad experience, with ≥ 3 of: 1) nightmares or flashbacks 2) avoids situations/people 3) constantly on guard, or easily startled 4) feels numb or detached from others/ surroundings, **post-traumatic stress disorder** (**PSTD**) likely, 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 →143.
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 ⮌ 142.
Abuse	If patient is being abused ⮌ 88.
Stressors	• Help identify psychosocial stressors. Ask about family or relationship problems, infertility, financial difficulty, bereavement, chronic ill-health. If sexual problems ⮌ 58. • If patient has a life-limiting illness, also consider giving palliative care ⮌ 170. • 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 ⮌ 164 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 ⮌ 169.
Medication	Review medication: prednisone, efavirenz, metoclopramide, theophylline and contraceptives can cause mood changes. Discuss with doctor. Consider alternative contraceptive ⮌ 154.

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 ⮌ 87.

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 ⮌ 178.

Limit alcohol and avoid drugs

- Limit alcohol to ≤ 2 drinks/ day and avoid alcohol on at least 2 days/ week.
- Avoid drugs.

- 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 ⮌ 176.

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, consider **obstructive sleep apnoea** ↩ 38. 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 ↩ 142.

Screen for possible stressors and mental health problem:

- If stress or anxiety ↩ 86.
- 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 ↩ 88.
- 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 ↩ 143.
- If abnormal thoughts or behaviour ↩ 85.
- 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 ↩ 148.

Ask about menopausal symptoms:

- If woman > 40 years ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes and sexual problems ↩ 169.

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 ↩ 18 • Suicidal thoughts or behaviour ↩ 83 • 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 rape victim pregnant, refer.
- If severe vaginal or anal bleeding, abdominal pain, multiple injuries or history of the use of a foreign object, refer urgently.
- Prevent HIV and hepatitis ↩ 108.
- 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 ↩ 159. If not pregnant, not on reliable contraception and ≤ 5 days since rape, give emergency contraception:
  - Give single dose levonorgestrel 1.5mg orally.
    - If patient > 80kg, BMI[4] ≥ 30, or on efavirenz, rifampicin, phenytoin or carbamazepine, increase dose of levonorgestrel to 3mg or offer IUD instead.
    - Give metoclopramide 10mg 8 hourly as needed for nausea/vomiting. If patient vomits < 2 hours after taking levonorgestrel, repeat dose or offer IUD instead.
- Prevent tetanus: if open wound and not immunised in last 5 years, give tetanus toxoid 0.5mL IM within 48 hours of injury.
- 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 ↩ 49.
Family planning	Every visit	Offer to start longterm contraceptive ↩ 154. If sexual assault and normal menstruation has not occurred within 4 weeks, repeat pregnancy test. If pregnant ↩ 159.
Mental health	Every visit	• If stress or anxiety ↩ 86. • 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 ↩ 143. • 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 ↩ 142.
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 ↩ 110.
Syphilis (if sexual assault)	First visit	If positive ↩ 53.

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 ↩ 178.
- 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 ↩ 109. 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]BMI = weight (kg) ÷ height (m) ÷ height (m). [5]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

ASSESS AND MANAGE TB INFECTION

TB tests changing from 'Xpert Ultra' to 'TB NAAT'
(**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

'TB infection' is different from 'TB disease'. TB infection refers to TB bacteria that has entered the body but is not yet making the body sick – often called latent TB, which means hidden/inactive TB.

Assess the need for TB preventive treament (TPT)
Is patient a TB contact: has s/he shared an enclosed space at work, socially, or in a household, for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with lung TB ("index patient")?

Yes
Did patient share this space during the 3-month period before the index patient started their TB treatment?

Yes
- Check for active TB disease: send 1 sputum sample for TB NAAT, regardless of symptoms ↩ 92. Where needed, arrange CXR and do urine LAM test ↩ 92.
- Assess clinically: if TB symptoms[1], discuss/refer for investigation.

If no TB symptoms, clinically well and investigations negative[2], active TB disease unlikely. Give TPT. If patient has had previous TPT, repeat course with every new exposure.

Choose what TPT to give: start by checking drug sensitivity results of index patient[3]:

Resistance to rifampicin or INH

- If resistance to INH only, give 4R.
- If resistance to rifampicin, arrange chest x-ray and doctor review:
  - If chest x-ray normal, check index patient's INH resistance result:
    - If *no resistance* to INH on phenotypic DST: give 6H ↩ 90.
    - If resistance to INH (or unknown): check fluoroquinolone resistance and discuss with TB specialist/refer.
  - If chest x-ray abnormal: avoid giving TPT. Send 1 sputum sample for TB NAAT, TB microscopy, culture and DST. Refer to TB specialist same week.

Susceptible to rifampicin or INH (or unknown)

Choose TPT regimen according to age and HIV status:

Child < 25kg

If newborn exposed to TB, or newborn tests positive for HIV, assess and manage →167.

HIV exposed infant

- Infant on ART → Give 6H →90.
- Infant on PEP → Give 6H →90.
- Infant no longer on PEP → Give 3RH or 6H →90.

HIV unexposed infant → Give 3RH or 6H →90.

Adult, adolescent or child ≥ 25kg

HIV positive

- If patient on ART (even TLD) with VL < 50 in last 6 months: give 3HP →90.
- If any of the following, give instead 12H →90:
  - Pregnant
  - Newly diagnosed HIV and starting TLD
  - Already on ART with VL ≥ 50
  - 3HP unavailable.

HIV negative

- Give 3HP →90. If 3HP unavailable: give instead 3RH or 6H.
- If pregnant, give 3RH or 6H →90.

No

Any of:
- HIV positive
- Known with silicosis[4]
- Known immunocompromise or taking immunosuppressive medications[5]

One or more of above
- Check for active TB disease: send 1 sputum sample for TB NAAT, regardless of symptoms ↩ 92. Where needed, arrange CXR and do urine LAM test ↩ 92.
- Assess clinically: if TB symptoms[1], discuss/refer for investigation.

If no TB symptoms, clinically well and investigations negative[2], active TB disease unlikely. If patient has had TPT previously, no need to repeat TPT. If no previous TPT, give TPT.

No

None of above

TB preventive treatment (TPT) is *not* needed.

Continue routine care.

6H – 6 months isoniazid; **12H** – 12 months isoniazid; **3RH** – 3 months rifampicin and isoniazid; **3HP** – 3 months isoniazid and rifapentine; **4R** – 4 months rifampicin

[1]TB symptoms in adults may include: current cough, weight loss, drenching night sweats, fever or coughing up blood. TB symptoms in children may include: current cough, poor weight gain/failure to thrive, fever, lethargy or decreased playfulness, visible neck mass. [2]If investigations are not available, continue to give TPT if patient has no symptoms of TB. [3]If drug susceptibility results of index patient unknown, ask where index patient receives TB treatment and contact clinic for treatment details. [4]Sillicosis is a chronic lung disease caused by breathing in silica dust while working in mining or construction. [5]Cancer, those waiting/received blood/organ transplant or receiving chemotherapy, dialysis or corticosteroids, diabetes), those awaiting/received blood/organ transplant or receiving chemotherapy, dialysis or long term corticosteroids.

At TPT initiation, decide patient category

- If never had TPT before or took TPT < 4 weeks, document as **new**.
- If completed TPT before or took TPT ≥ 4 weeks and stopped (due to adverse event, developed TB or was lost to follow up), document as **previously treated**.

Treat the patient needing TPT according to chosen regimen and weight

- Give pyridoxine together with TPT.
- If severe peripheral neuropathy, active liver disease or known alcohol use disorder, defer TPT.

Rifapentine and isoniazid (3HP):

- 3HP is weekly rifapentine and isoniazid for 3 months.
- Give with or immediately after eating.
- Rifapentine decreases levels of protease inhibitors (lopinavir/atazanavir/ritonavir), nevirapine, and dolutegravir (when starting): use instead 12H.
- Rifapentine decreases levels of oral contraceptive and subdermal implant: use instead barrier method *and* injectable or IUD contraceptive.

Weight (kg)	Isoniazid (weekly)	Rifapentine (weekly)
	300mg tablets (weekly)	150mg tablets (weekly)
25 – 29.9	2 tablets	4 tablets
≥ 30	3 tablets	6 tablets

Isoniazid (6H and 12H):

- 6H is daily isoniazid for 6 months.
- 12H is daily isoniazid for 12 months.

Weight (kg)	Isoniazid (Daily)	
	100mg tablet (daily)	300mg tablet (daily)
2 – 3.4	¼ tablet	-
3.5 – 4.9	½ tablet	-
5 – 7.4	¾ tablet	-
7.5 – 9.9	1 tablet	-
10 – 14.9	1 ½ tablet	-
15 – 19.9	2 tablets	-
≥ 20	3 tablets	1 tablet

Rifampicin and isoniazid (3RH):

- 3RH is daily dosing rifampicin and isoniazid for 3 months.
- Rifampicin interacts with ART[2]: adjust doses or TPT regimen.

Weight (kg)	RH (Daily)			
	300/150	150/75	75/50 (use mL if tablet dispersed in water)	
2-2.9	-	-	½ tablet	5mL
3-3.9	-	-	¾ tablet	7.5mL
4-5.9	-	-	1 tablet	10mL
6-7.9	-	-	1 ½ tablet	15mL
8-11.9	-	-	2 tablets	20mL
12-15.9	-	-	3 tablets	30mL
16-24.9	-	-	4 tablets	40mL
25 – 37.9	-	2 tablets	-	-
38 – 54.9	-	3 tablets	-	-
≥ 55	2 tablets		-	-

Rifampicin (4R):

- 4R is daily dosing rifampicin for 4 months.
- Rifampicin interacts with ART[2]: adjust doses or TPT regimen.

< 10 years	15mg/kg daily
≥ 10 years	10mg/kg daily

Pyridoxine

- Give pyridoxine whenever using isoniazid to prevent peripheral neuropathy.

< 5 years	12.5mg daily
≥ 5 years	25mg daily

- Review monthly while on TPT: check for TB symptoms and side effects. Adjust dose according to weight, if needed. If peripheral neuropathy develops while on TPT ↩ 66. Advise to avoid alcohol/smoking.
- Explain possible side effects to patient: low appetite, nausea, abdominal discomfort, fatigue/weakness, dark urine, pale stools.
- If sudden new vomiting, upper abdominal pain, jaundice, hives, wheeze, difficulty breathing, BP < 90/60 or dizziness/collapse, stop TPT, refer and report ADR[2].
- If TB symptoms develop: send 1 sputum sample for TB NAAT ↩ 92.
- If patient interrupts TPT:
  - Explore reasons for treatment interruption, address individual concerns. Educate on the importance of adherence and provide adherence support ↩ 173.
  - Screen clinically for TB symptoms:
    - If symptoms of TB are present, check for TB ↩ 92.
    - If no symptoms TB, continue treatment including missed doses.
  - If individual interrupts for the second time, avoid restarting treatment.

Once TPT complete, decide on treatment outcome

- If completes full duration of TPT, document as **treatment completed**.
- If on 3HP, 3RH or 4R: if interrupts treatment for ≥ 4 weeks, document as **lost to follow-up**.
- If on 6H or 12H: if interrupts treatment for 3 consecutive months, document as **lost to follow-up**.
- If stops TPT due to serious adverse event or developed TB, document as **treatment stopped**.
- If died during TPT, document as **died**.

[1]Rifampicin decreases levels of protease inhibitors (lopinavir/atazanavir/ritonavir), efavirenz and nevirapine: use instead 12H. If on dolutegravir: offer 12H or increase dolutegravir dose to 50mg 12 hourly. Continue until 2 weeks after TPT completed. Discuss if unsure. [2]Email or fax adverse drug reaction (ADR) form to adr@sahpra.org.za or (012) 842 7609/10.

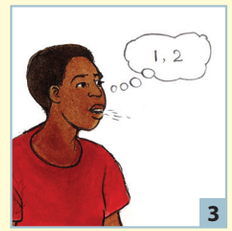
HOW TO COLLECT A GOOD SPUTUM SPECIMEN FOR TB TESTING

Aim to collect sputum in the early morning. 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 observing sputum collection, health worker to use mask (N95/FFP2) in well ventilated area. Stand behind patient and check air stream (fan, air conditioner) is coming from behind back to avoid exposure.
- 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.

If patient unable to produce sputum, use nebuliser to induce sputum

- Health worker to wear a N95/FFP2 respirator mask in a well ventilated area. Explain process to patient: follow same steps as above only use nebuliser to help produce sputum.
- Add 5mL 3% saline to nebuliser and nebulise at 8L/min for 10 minutes or until sputum coughed up. While nebuliser runnng, ask patient breathe in and out deeply 2-3 times, followed by a strong cough to try and bring up sputum from deep within the chest. If able to generate sputum, ask patient to remove mask and cough it into the specimen jar, then continue with nebulisation. Repeat until at least 5mL sputum collected.
- If no sputum coughed up by 10 minutes, repeat nebulisation once.

Prepare specimens for transport to the laboratory:

- Check specimens are adequate: if patient unable to produce 5mL (1 teaspoon) but quality of sputum is still good, still send specimens to laboratory. If quality of specimen is inadequate, see below.
- Ensure lid is closed tightly and correctly, and that the specimen jar is correctly labelled as above. Wash hands after handling specimens.
- If room temperature is > 25°C or transport delayed for > 24 hours, store in refrigerator (2-8°C). Keep cool but do not freeze.
- Complete request form and advise patient to return for results in 2 days. If patient HIV-positive, indicate this on request form.

If specimen inadequate:

- If specimen is inadequate and of poor quality after repeated attempts, discard used jar in medical waste bin and give patient new labelled specimen jar. Instruct on how to collect sputum at home:
  - Collect sputum specimen early in the morning after waking up, before eating or taking any medications. Collect sputum specimen outside home. Follow the same steps tried above.
  - Once collected, protect sputum specimen sample from heat and light. Keep at room temperature and bring to the clinic as soon as possible.
- If specimen from home is adequate, prepare for transport to laboratory (above). If still not adequate, refer to hospital for further investigation or to a doctor for chest x-ray and review.

TUBERCULOSIS (TB): DIAGNOSIS

TB tests changing from 'Xpert Ultra' to 'TB NAAT' (**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

- Check for TB if any TB symptoms: current cough, weight loss, drenching night sweats, fever or coughing up blood.
- Also routinely check for TB, even if no TB symptoms, if:
  - Patient completed TB treatment in last 2 years: check for TB yearly, for 2 years after completing TB treatment.
  - Patient HIV positive: at HIV diagnosis, then yearly (when viral load checked) and if pregnant at first antenatal visit.
  - Excluding TB disease during TB preventive treatment (TPT) work up.
  - Abnormal TB screening chest x-ray, even if no known TB exposure.

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 sample for TB NAAT. If HIV positive with CD4 ≤ 200 *or* WHO clinical stage 3 or 4, also do a rapid urine LF-LAM test.

Start the workup to diagnose TB in the patient not needing urgent attention

Test sputum

- Send 1 sputum sample for TB NAAT: demonstrate how to give sputum sample ↩ 91.
- If unable to produce sputum: induce sputum ↩ 91. If unsuccessful, arrange chest x-ray ↩ 93.
- Ask patient to return for results in 2 days. Manage according to results: if TB NAAT positive (or trace), manage below. If TB NAAT negative → 93.

Test blood

Test for HIV ↩ 110.

Test urine

- If HIV positive and CD4 ≤ 200 or WHO stage 3 or 4 disease, also do rapid urine LAM test (only if TB symptoms):
  - If LAM positive, **diagnose TB** and start DS-TB treatment same day ↩ 94 and follow up TB NAAT result (see below).
  - If LAM negative, ask patient to return for TB NAAT results in 2 days.

TB NAAT positive or trace (MTB detected)

Patient has had TB in last 2 years.

Trace result

- Send sputum for TB culture and DST.
- If *no* TB symptoms: wait for results →93.
- If TB symptoms: start DS-TB treatment ↩ 94 and follow up results →93.

Rifampicin unsuccessful

- Send sputum for smear, TB culture and DST.
- Defer TB treatment.
- Follow up culture and DST result →93.

Rifampicin susceptible

Send sputum for smear:

- **If smear positive:** start DS-TB treatment →94.
- **If smear negative:** do chest x-ray, where available, and assess clinically ↩ 93. If chest x-ray suggestive of TB or TB symptoms and signs present:

Start DS-TB treatment same day →94.

Rifampicin resistance detected

Did patient have RR-TB previously?

Yes. Send sputum for smear.

- Smear negative: Do chest x-ray, where available, and assess clinically ↩ 93. If chest x-ray suggestive of TB or TB symptoms and signs present:
- Smear positive

No

Diagnose RR-TB

- Send a 2nd sputum sample for DR-TB reflex testing.
- Refer or start RR-TB treatment →99.

Patient has *not* had TB in last 2 years.

Rifampicin resistance detected

Rifampicin susceptible

Diagnose DS-TB

- Send sputum for smear.
- Start DS-TB treatment same day →94.

Rifampicin unsuccessful

- Send sputum for smear, culture and DST and follow up and DST results ↩ 93.
- Start DS-TB treatment →94.

Trace result

Do chest x-ray, where available, and assess clinically →93.

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

TB NAAT negative (MTB not detected)

- If no TB symptoms and testing for TB using TB NAAT negative, consider TB unlikely. Continue to assess need for TPT ↩ 89.
- If TB symptoms, manage symptom/s as on symptom page, especially if cough ↩ 38, if weight loss ↩ 23, if fever ↩ 24. Continue to assess and manage 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. Assess need for TPT ↩ 89.
  - If TB symptoms persist: send sputum for TB culture and DST and arrange chest x-ray, assess clinically and review as below. If chest x-ray unavailable, refer and follow up culture and DST results.

HIV positive

At this visit, also:

- Send sputum for TB culture and DST.
- Arrange chest x-ray, assess clinically and review as below.

Doctor to review the chest x-ray, where available, and clinically assess the patient:

Compare with previous chest x-rays, if available. Especially look for: upper lobe cavitation, any lung opacification in HIV positive patient, pleural effusion/s, hilar lymphadenopathy, miliary TB, pericardial effusion.

Chest x-ray abnormal

Pleural or pericardial effusion

- If bilateral pleural effusions or pericardial effusion, refer.
- If pleural effusion, aspirate fluid and send 2 samples:
  - If clear: request TB culture, DST, ADA and cell count.
  - If pus: request TB NAAT, microscopy, TB culture and DST. Refer same day.

No effusion

- If unsure, discuss/refer.
- If history of mining or working in construction, consider silicosis.

Chest x-ray normal

Assess clinically: does patient have persistent symptoms or signs suggestive of TB?

Yes

If not yet done, send sputum sample for TB culture and DST if able to produce sputum and assess clinically, looking for other causes.

- If previous TB in the last 2 years with positive TB NAAT →91.
- If *no* previous TB in the last 2 years, start DS-TB treatment ↩ 93 if:
  - TB NAAT trace.
  - TB NAAT negative in HIV positive patient.
  - Chest x-ray suggestive of TB in a patient with persistent TB symptoms and signs.
- Consider extrapulmonary TB:
  - If abdominal pain, swelling, hepatosplenomegaly, or diarrhoea, refer for abdominal ultrasound.
  - If severe headache/s, 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 ↩ 25.

No

TB disease unlikely

- Continue routine care.
- Assess eligibility for TPT ↩ 89.
- If done, follow up TB culture and DST results below.
- Advise to return if symptoms develop.

Follow-up culture and DST results every 1-2 weeks until available and review:

Culture positive (MTB confirmed)

No resistance to rifampicin and INH detected
Diagnose DS-TB: start treatment →94.

Resistance to INH only detected
Diagnose INH mono-resistant TB: start treatment →95.

Resistance to rifampicin detected
Diagnose RR-TB: start or refer to start RR-TB treatment →99.

Culture negative

TB unlikely

- If TB symptoms resolved, continue routine care. Advise to return if symptoms recur.
- If TB symptoms persist, refer.

DRUG-SENSITIVE TB (DS-TB): ROUTINE CARE

TB tests changing from 'Xpert Ultra' to 'TB NAAT' (**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

Assess the patient with DS-TB

Assess	When to assess	Note
Registration	At diagnosis	Ensure patient record completed and captured on TIER.net.
TB contacts	At diagnosis	Advise that all TB contacts[1] visit the clinic for TB screening and testing or ensure CHW does a home visit for TB screening and testing.
Alcohol/drug use	At diagnosis	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 ⮌ 142.
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 →92. • 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. If poor adherence, manage the patient who interrupts TB treatment ⮌ 98.
Side effects	Every visit	Ask about side effects of treatment ⮌ 97.
Family planning	Every visit	• Encourage patient to avoid pregnancy during treatment, assess patient's contraceptive needs ⮌ 154. If pregnant ⮌ 159. • Avoid oral contraceptive and subdermal implant[2] on TB treatment, use instead injectable or IUD *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 ⮌ 143.
Palliative care	If advanced TB disease	If patient is in bed or chair for 50% or more of the day *or* dependent on others for most care, also give palliative care ⮌ 170.
Weight and BMI	Every visit	• Expect weight gain on treatment and adjust TB treatment dose ⮌ 96. If losing weight, refer to doctor/hospital same week. • BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support.
Glucose	At diagnosis	• If known diabetes, assess glucose control more often ⮌ 130. • If not known with diabetes, check glucose ⮌ 17.
HIV	At diagnosis and every visit	If > 3 months since last HIV test, test for HIV ⮌ 110. If HIV positive, give routine HIV care and start ART ⮌ 111. If on ART, adjust medication/dosing ⮌ 97.
TB NAAT result	At diagnosis	Register patient as MTB detected, RIF sensitive/ RIF resistant; MTB not detected; Trace. If LAM was used to diagnose TB, review TB NAAT result ⮌ 92.
TB microscopy (smear)[4]	At diagnosis	If TB NAAT positive at diagnosis, send sputum for smear microscopy. Record smear microscopy result in the patient's file. Register as smear negative or smear positive.
	Week 7	• Do only if smear positive pulmonary TB at diagnosis/registration: - If week 7 smear positive: send 1 sputum for DST, prolong intensive phase for 1 month and manage further as per positive week 7 smear algorithm ⮌ 97. - If week 7 smear negative and clinically improving: change to continuation phase for further 4 months.
	Week 23	• Do only if smear positive pulmonary TB at diagnosis. • Use week 23 smear result to decide treatment outcome ⮌ 98.
TB culture and DST result	• If sent during diagnostic workup • At 8 weeks: if still smear positive • If HIV positive and TB NAAT negative • At 24 weeks: if still smear positive	• If both TB culture and TB NAAT negative at diagnosis, refer to hospital for further investigation or discuss with experienced TB doctor or specialist. • If MTB (Mycobacterium tuberculosis) on culture, check DST result: - If susceptible to rifampicin and INH, continue treatment. - If resistant to INH only, diagnose **INH mono-resistant TB** and give routine care →95. - If resistant to rifampicin, diagnose **rifampicin-resistant TB** (**RR-TB**) and give routine care →98. • If culture contaminated, repeat. If culture shows NTM (Nontuberculous mycobacteria), continue treatment and refer to doctor.
Treatment outcome	At completion of TB treatment	Decide on treatment outcome ⮌ 98.

Advise, counsel and treat the patient with DS-TB →96.

[1]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [2]If patient already has subdermal implant, advise additional non-hormonal method (copper IUD or condoms) until 4 weeks after completing TB treatment. [3]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [4]Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.

INH MONO-RESISTANT TB: ROUTINE CARE

TB tests changing from 'Xpert Ultra' to 'TB NAAT' (**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

Assess the patient with INH mono-resistant TB

Assess	When to assess	Note
Registration	At diagnosis	Ensure patient record completed and captured on TIER.net.
TB contacts	At diagnosis	Advise that all TB contacts[1] visit the clinic for TB screening and testing or ensure CHW does a home visit for TB screening and testing.
Alcohol/drug use	At diagnosis	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 ↩ 142.
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 →92. • 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.
Side effects	Every visit	Ask about side effects of treatment ↩ 97.
Family planning	Every visit	• Encourage patient to avoid pregnancy during treatment, assess patient's contraceptive needs ↩ 154. If pregnant ↩ 159. • Avoid oral contraceptive and subdermal implant[2] on TB treatment, use instead injectable or IUD *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 ↩ 143.
Palliative care	If advanced TB disease	If patient is in bed or chair for 50% or more of the day *or* dependent on others for most care, also give palliative care ↩ 170.
Weight and BMI	Every visit	• Expect weight gain on treatment and adjust TB treatment dose ↩ 96. If losing weight, refer to doctor. • BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support.
Glucose	At diagnosis	• If known diabetes, assess glucose control more often ↩ 130. • If not known with diabetes, check glucose ↩ 17.
HIV	At diagnosis and every visit	If > 3 months since last HIV test, test for HIV ↩ 110. If HIV positive, give routine HIV care and ART ↩ 111. If on ART, adjust medication/dosing ↩ 97.
TB microscopy (smear) and culture[4]	At diagnosis	Register as smear negative or smear positive depending on result.
	Monthly	• If still culture positive at 3 months, request DST 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 DST on that same positive specimen.
DST	• 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 →99.
TB NAAT	If needed	If INH resistance detected > 28 days after start of DS-TB treatment, send 1 further sputum sample for TB NAAT to confirm that there is no resistance to rifampicin.
Treatment outcome	At completion of TB treatment	Decide on treatment outcome ↩ 98.

Advise and treat the patient with INH mono-resistant TB →96.

[1]Close TB contact: any person who shared an enclosed space (social/work/congregate/household setting) with an adolescent or adult with pulmonary TB (index patient) for > 15 minutes in 24 hours during the 3 months before index patient started TB treatment. [2]If patient already has subdermal implant, advise additional non-hormonal method (copper IUD or condoms) until 4 weeks after completing TB treatment. [3]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [4]Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.

Advise the patient with DS-TB or INH mono-resistant TB

Health for All ↺ 78

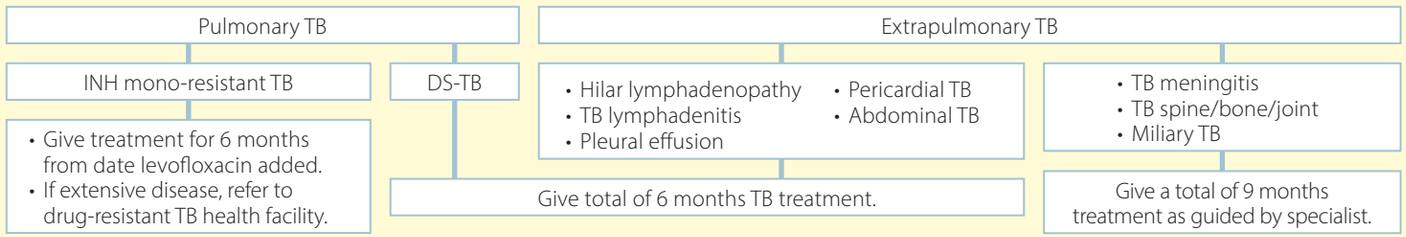
- Provide TB counselling and refer for community or workplace adherence support.
- Educate about TB treatment side effects ↺ 97 and advise to return promptly should they occur.
- Educate about infection control: adequate ventilation/open windows (if area is not well ventilated, to wear a face mask), cough/sneeze into upper sleeve or elbow. 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 ↺ 141 and alcohol/drugs and support patient to change ↺ 177. If patient chooses to continue, advise safe alcohol use ↺ 142 and to continue taking TB medication daily.
- Give **enhanced adherence support** to the patient with poor adherence ↺ 173:
  - Educate on the importance of adherence and the risks of resistance.
  - Ask about alcohol/drug use ↺ 142, stress/anxiety/depression ↺ 86 and side effects ↺ 97.
  - 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 ↺ 97.
    - 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.
  - If patient pregnant, misuses alcohol, or has diabetes, epilepsy or BMI < 18.5: also give pyridoxine 25mg daily. Stop on completion of TB treatment.

- **If INH mono-resistant TB:**
  - Give daily 7 days a week: rifampicin 10mg/kg + pyrazinamide 25mg/kg + ethambutol 15mg/kg + levofloxacin 750-100mg, until TB treatment completed. To ensure adherence, give fixed dose combination tablets RHZE even though isoniazid (H) may not be active and add levofloxacin (see table).
  - If inhA mutation only, consider giving high-dose isoniazid (up to total of 10mg/kg/day in total). If unsure, present to NCAC[1].
  - Give pyridoxine 50mg daily until TB treatment completed.

- **Decide treatment duration:**



- **If HIV positive:** if on ART, adjust medication/dosing ↺ 97. If not on ART ↺ 114.
- Check that patient is up to date with his/her COVID-19 vaccination.

Dose according to weight and adjust as weight increases

	RHZE (150/75/400/275mg)
25-37kg	2 tablets
38-54kg	3 tablets
55-70kg	4 tablets
≥ 71kg	5 tablets

	RH
25-37kg	2 tablets (150/75mg)
38-54kg	3 tablets (150/75mg)
≥ 55kg	2 tablets (300/150mg)

	Levofloxacin
< 33kg	15-20mg/kg
33-50kg	750mg
≥ 51kg	1000mg

Review the patient with drug-sensitive or INH mono-resistant TB

- If stable, review monthly during intensive phase, then arrange for treatment collection through RPCs[2]. Avoid treatment collection through RPCs if patient has TB and HIV.
- Review again at week 23.
- Advise to return sooner if worsening or side effects develop.
- Assess patient for TB preventive treatment (TPT) ↺ 89 and check for TB yearly for 2 years after completing TB treatment ↺ 92.

[1]National Clinical Advisory Committee. [2]RPCs - repeat prescription collection strategies make it easier and quicker for patient to collect their chronic medications and include 'facility pick-up points' (FAC-PUPs), 'external pick-up points' (EX-PUPs) and clubs. Medications are pre-dispensed by Central Dispensing Unit (CDU) or Central Chronic Medicine Dispensing and Delivery (CCMDD).

Treat the patient with TB[1] and HIV

- If already on dolutegravir-based ART regimen and starting TB treatment: increase dolutegravir (DTG) dose to 50mg 12 hourly[2]. Continue this dose until 2 weeks after TB treatment completed.
- If already on TB treatment and starting ART (patient has never been on ART): consider TEE (TDF + FTC + EFV). Switch to DTG-based regimen 2 weeks after TB treatment complete.
- Avoid atazanavir with rifampicin. If already on atazanavir, discuss with HIV expert, infectious disease specialist or HIV hotline ↩ 178.
- If on lopinavir/ritonavir, increase 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.
  - Aim to switch to a dolutegravir-based regimen 2 weeks after TB treatment completed.

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, discuss or 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 ↩ 67.
Seizures	Levofloxacin, isoniazid	Manage seizure ↩ 19 and refer to hospital same day.
Psychosis	Levofloxacin, isoniazid	Manage psychosis ↩ 85 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 ↩ 66.

Manage the patient with DS-TB and a positive week 7 smear

- Look for explanation for result: if poor adherence, give enhanced adherence support ↩ 173, alcohol/drug use ↩ 142, stress ↩ 86 or treatment side effects (see above).
- Send 1 sputum for culture and DST and continue intensive phase treatment for a month.
- Follow up culture and DST result every 1-2 weeks until available and review:

Sensitive to rifampicin and INH

- Change to continuation phase ↩ 96 and monitor clinically.
- Repeat TB microscopy (smear) at week 11:

Smear positive

- Assess clinically:
  - If patient improving, change to continuation phase and continue treatment for a total of 6 months.
  - If patient deteriorating, refer.

Smear negative

- Continue treatment and monitor clinically.
- Continue treatment for a total of 6 months.

Resistant to INH only

Diagnose INH mono-resistant TB

- Start treatment same day →95.
- 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 resistant TB" in patient folder.
  - If resistant to rifampicin and INH, give outcome of "multidrug-resistant TB" in patient folder.
- Give routine RR-TB care and start treatment same day →99.
- Register in drug-resistant TB register.
- If RR-TB care not available, refer to drug-resistant TB initiation facility.

[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 ↩ 96. If alcohol/drug use ↩ 142, stress ↩ 86 or treatment side effects ↩ 97.
- Manage according to duration of interruption:

TB tests changing from 'Xpert Ultra' to 'TB NAAT' (**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

Interrupted for < 1 month

- Continue DS-TB treatment.
- Extend treatment phase by the number of missed doses.

Interrupted for 1-2 months

Send 1 sputum sample for TB NAAT. Continue DS-TB treatment and review result after 2 days:

- **TB NAAT negative**
  - Continue DS-TB treatment.
  - Extend treatment phase by the number of missed doses.
- **TB NAAT positive**
  - **Rifampicin sensitive**
    - Continue DS-TB treatment.
    - Extend treatment phase by the number of missed doses.
  - **Rifampicin resistant**
    Stop DS-TB treatment.

    Diagnose RR-TB
    - Give routine care RR-TB care and start treatment same day →99.
    - Register in drug-resistant TB register.
    - If RR-TB care not available, refer to drug-resistant TB initiation facility

Interrupted for ≥ 2 months

- Do not restart DS-TB treatment.
- Register patient as **loss to follow up.**
- Send 1 sputum sample for TB NAAT and review result after 2 days:

- **Rifampicin resistant**

  Diagnose RR-TB
  - Give routine care RR-TB care and start treatment same day →99.
  - Register in drug-resistant TB register.
  - If RR-TB care not available, refer to drug-resistant TB initiation facility
- **Rifampicin sensitive**
  - Restart full course of DS-TB treatment →94.
  - 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 TB NAAT 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 culture and DST. 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 →95.
      - **Resistant to rifampicin**
        Diagnose RR-TB →99.

  Smear negative (or culture positive) at diagnosis

  Is patient well and has s/he gained weight?

  - **Yes**
    Stop treatment and register as **treatment completed**.
  - **No**
    Stop treatment. Register as **treatment failure** and refer for further investigation.
- **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**
    Stop treatment. Register as **treatment failure** and refer for further investigation.

Extrapulmonary TB

Is patient well and has s/he gained weight?

- **Yes**
  Stop treatment and register as **treatment completed**.
- **No**
  Stop treatment. Register as **treatment failure** and refer for further investigation.

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 →95.
- **If RR-TB care not available, refer to closest drug-resistant TB unit.**

- **If newly diagnosed with RR-TB or pre-XDR TB:** if pretomanid available, consult the updated 'Clinical Management of RR-TB, September 2023' guideline to start patient on new short 6-mth BPaLL (or BPaL if pre-XDR) regimen.
- **Note:** 1st and 2nd LPA tests are being replaced with Xpert MTB/XDR assays for rapid detection of resistance to isoniazid, fluoroquinolones, amikacin and ethionamide.

Assess the patient with RR-TB

Assess	When to assess	Note
Registration	Every visit	Enter patient's details at diagnosis. Update register (EDR.web) 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 →92. If persistent episodes of coughing blood, consider referral for surgical review. • Expect gradual improvement. If not improving, assess adherence ↩ 173 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 ↩ 105. 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 adr@sahpra.org.za or (012) 842 7609/10.
TB contacts	At diagnosis	• Ask if patient is a TB contact[3] of index patient with RR-TB. If yes, check contact's LPA and DST results to help decide patient's RR-TB treatment regimen. • Advise that all TB contacts[3] visit the clinic for TB screening/prevention.
Family planning	Every visit	• Advise to avoid pregnancy during treatment, assess patient's contraceptive needs ↩ 154. If on injectable contraceptive, no need to change interval between doses. • If pregnant ↩ 159 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 ↩ 143.
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 ↩ 142.
Palliative care	If deteriorating	If patient breathless at rest, unable to walk unaided or failing treatment, also consider giving palliative care ↩ 170.
Weight (BMI[5])	Every visit	Expect weight gain on treatment and adjust treatment doses. If losing weight on treatment, discuss with specialist/refer. If BMI < 18.5, refer for nutritional support.
BP	At diagnosis	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132.

Check routine tests according to table and review results →100:

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 ↩ 110 • 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 ↩ 110 • **If on ethionamide or PAS:** TSH	• Chest x-ray • **If HIV:** CD4, viral load	• HIV ↩ 110 • **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 →100.

[1]National Clinical Advisory Committee: NCAC@witshealth.co.za. [2]Provinical Clinical Advisory Committee. [3]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [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).

Review test results and manage accordingly:	
Assess	**Note**
TB microscopy (smear) and culture	If month 4 smear/culture positive or smear/culture becomes positive after being negative: assess adherence ⮌ **173**, review all previous sputum results and request 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 ≥ 450ms: • If symptoms (chest pain, palpitations, dizziness or faintness), discuss with specialist or refer to hospital same day. • If no symptoms: - If QTcF < 470ms: continue treatment and routine ECG monitoring. - If QTcF 470-499ms: repeat ECG at rest same day to confirm. Check potassium, magnesium and TSH and treat if abnormal. Check for medications that prolong QT interval[2] and discuss with experienced TB doctor or specialist. Repeat ECG weekly until < 470ms. - If QTcF ≥ 500ms: repeat ECG at rest same day to confirm. Check potassium, magnesium and TSH and treat if abnormal. Stop all medications that prolong QT interval[2] including RR-TB medications (moxifloxacin, delamanid, clofazimine, bedaquiline). 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 ⮌ **159** and present to NCAC. Avoid delaying treatment, start while awaiting response.
Glucose	If known diabetes, assess glucose control more often ⮌ **130**. If not known with diabetes, check glucose ⮌ **17**.
HIV	If HIV positive, give routine care ⮌ **111**. If on ART, check if ART regimen needs adjusting ⮌ **101**. If *not* on ART, start or re-restart ⮌ **101**.
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) ⮌ **105**. - 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 ≤ 2.5, refer same day. • If potassium 2.6-3.5, do ECG: - If any arrhythmia on ECG or if patient has muscle weakness or vomiting, 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 < 0.6, 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.
Continue to review results →101.	

[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.

CD4	Use CD4 to guide co-trimoxazole preventive therapy (CPT), see table ↩113.
Viral load	• If VL < 50, continue ART. • If VL ≥ 50, assess adherence to ART ↩ **173** and discuss with experienced TB doctor or specialist.

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 be extended depending on response to treatment.
- Educate on the importance of adherence ↩ **173** and dangers of further resistance. Educate about treatment side effects ↩ **105**, 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 TB contacts[1] need to visit the clinic for TB screening/prevention.
- If pulmonary TB, advise to return to work only when culture conversion[2] occurs.
- Alert to the risks of smoking ↩ **141** and alcohol/drugs and support patient to change ↩ **177**. If patient chooses to continue, advise safe alcohol use ↩ **142** and to continue taking TB medication daily.

Treat the patient with RR-TB

- Give pyridoxine 50mg daily until TB treatment completed.
- Ensure COVID-19 vaccination is up to date.

If not on RR-TB treatment:

- Start treatment using steps 1-3 ↩ **102**.
  - **Shorter** regimen is 9-11 months treatment (4-6 months intensive and 5 months continuation phase).
  - **Longer** 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[3] and adjust regimen using step 2 ↩ **102**.
- If patient has gained weight, check if medication doses need adjusting ↩ **104**.
- Decide when to change intensive phase to continuation phase:
  - If on shorter regimen: decide at end of month 4 ↩ **103**.
  - If on longer regimen: decide at end of month 6 ↩ **103**.

Treat the patient with RR-TB and HIV

Avoid EFV while on bedaquiline and AZT while on linezolid. Choose ART regimens according to the following scenarios:

Already on ART

If already on ART when RR-TB treatment started, check if ART regimen needs changing according to latest viral load results ↩ **112**.

Starting ART

- If starting ART after RR-TB treatment has been started, decide when to start ART ↩ **115**.
- Then choose most appropriate ART regimen: ideally choose TLD (TDF + 3TC + DTG). If eGFR < 50, choose instead ABC + 3TC + DTG.

Re-starting ART after ART interruption

Provide adherence support ↩ **173**.
Choose most appropriate ART regimen to re-start ↩ **114**.

ABC – abacavir; **TDF** – tenofovir; **3TC** – lamivudine; **TLD** – tenofovir + lamivudine + dolutegravir

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 shorter 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 longer 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.
- Record treatment outcome ↩ **103**.

[1] A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [2]Culture conversion: 2 consecutive negative culture results one month apart. [3]If sample contaminated/inadequate/leaked or LPA results inconclusive, send another sample to laboratory.

How to start/adjust RR-TB treatment

ABC – abacavir; **AZT** – zidovudine; **BDQ** – bedaquiline; **CFZ** – clofazimine; **DTG** – dolutegravir; **EFV** – efavirenz; **FLQ** – fluoroquinolone; **FTC** - emtricitabine; **LPVr** – lopinavir/ritonavir; **LZD** – linezolid; **TDF** – tenofovir; **3TC** - lamivudine

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]
- Extensive bilateral cavitations on chest x-ray
- Previous RR-TB treatment for > 1 month
- Both inhA *and* KatG mutations on LPA
- Patient is a TB contact[2] of index patient with both inhA and katG mutations
- Patient is a TB contact[2] of index patient with resistance to FLQ, injectables, BDQ, LZD or CFZ
- Patient is a TB contact[2] of index patient failing treatment

None of above

Start **shorter** regimen ↪ 104.

Review LPA and phenotypic DST results:

- If discordance[3] or heteroresistance[4]: continue same regimen and discuss with laboratory and PCAC/NCAC.
- Does patient have both inhA and katG mutations on LPA, *or* resistance to FLQ, BDQ, LZD or CFZ?

No

- Continue same regimen.
- If on shorter regimen and INH susceptible on both LPA and phenotypic DST, reduce high dose INH to normal dose INH ↪ 104.

Yes

- If resistance to FLQ, BDQ, LZD or CFZ: discuss **individualised longer** regimen with PCAC/NCAC.
- Otherwise continue/change to **basic longer** regimen ↪ 104.

One or more of above

Does patient have any of:

- Hb < 8
- QTcF ≥ 450ms
- Patient is a TB contact[2] of index patient failing treatment
- CNS disease (TB meningitis or brain tuberculoma)
- Patient is a TB contact[2] of index patient with resistance to FLQ, BDQ, LZD or CFZ

No

Start **basic longer** regimen ↪ 104.

Yes

- Discuss **individualised longer** regimen with PCAC/NCAC.
- Follow up LPA and phenotypic DST results and discuss.

STEP 3: If on ART, adjust ART regimen

- Avoid giving EFV and BDQ or, AZT and LZD, together because of overlapping toxicities.
- Check if patient eligible to switch same day to TDF + 3TC + DTG (TLD) ↪ 117.

[1]TB meningitis or brain tuberculoma/TB spine/bone/joint or miliary, pericardial, abdominal or urogenital TB. [2]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [3]Discordance here refers to instance where TB NAAT result is rifampicin-resistant and DST result is rifampicin-sensitive. [4]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 shorter 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 ↻ **104**.
- 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

Month 4 smear positive

- Assess adherence ↻ **173** and side effects ↻ **105**.
- Optimise management of chronic conditions: if HIV ↻ **111**, if diabetes ↻ **130**, if hypertension ↻ **133**.
- 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.

- **If patient on longer 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 ↻ **104**.

Yes

Consider extending intensive phase to 8 months and BDQ to 9 months: present to PCAC/NCAC.

Month 4 culture positive

- Assess adherence ↻ **173** and side effects ↻ **105**.
- Optimise management of chronic conditions: if HIV ↻ **111**, if diabetes ↻ **130**, if hypertension ↻ **133**.

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.

Decide on treatment outcome

Record treatment outcome based on culture conversion, number of consecutive negative cultures, duration of minimum treatment and clinical status.

Cure
- TB culture converted
- ≥ 3 consecutive[2] negative cultures in continuation phase
- If shorter course: ≥ 9 months of treatment
- If longer course: ≥ 18 months of treatment
- Not clinically worsening

Treatment completed (success)
- TB culture converted
- < 3 consecutive[2] negative cultures in continuation phase
- If shorter course: ≥ 9 months of treatment
- If longer course: ≥ 18 months of treatment
- Not clinically worsening

Treatment failure
- Failure of month 4 TB culture to convert by month 6
- ≥ 2 cultures positive in continuation phase and clinically worsening
- Treatment stopped on clinical grounds or by instruction from PCAC
- ≥ 2 new drugs added to regimen due to poor clinical response

- **Other outcomes include**: 'Loss to follow up' (treatment interruption for ≥ 2 months), 'Moved', 'Transferred out', 'Died', 'Still on treatment', 'Not evaluated'.

[1]Slow clinical response: poor weight gain, ongoing TB symptoms, poor improvement on chest x-ray or delayed smear/culture conversion. [2]Cultures need to have been done in a row, at least 30 days apart.

Select RR-TB medications according to chosen RR-TB regimen

Regimen	Intensive phase	Continuation phase
Shorter 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
Longer regimen This longer regimen is for uncomplicated cases as chosen in step 2 ⮌ **102**. Avoid and discuss instead if any of: • Hb < 8 • CNS disease (TB meningitis or brain tuberculoma) • Resistance to FLQ, BDQ, LZD or CFZ • Patient is a TB contact[2] of index patient 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[3].
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) (15-20mg/kg)		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]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [3]Start other medications while awaiting response from PCAC/NCAC.

Look for and manage RR-TB treatment side effects

Report adverse events via the MedSafety App, the reporting website, or complete adverse reporting form and email to adr@sahpra.org.za or fax to (021) 448 6181 or (012) 842 7609/10.

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 ≥ 100, stop all medications and refer same day. - If ALT 50-99, doctor to assess for possible causes, consider interrupting treatment and repeat ALT within 1 week. If unsure, discuss with specialist. • If nausea/vomiting: - Reassure that this usually improves after a few weeks. - Advise to eat a non-fatty meal before taking medication. - If no better, give metoclopramide 10mg to take 30 minutes before taking 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 ↩ 67.
Seizures		Terizidone, levofloxacin, high dose INH	Manage seizure ↩ 19 and refer same day.
Psychosis		Terizidone, high dose INH, levofloxacin, ethionamide	Manage psychosis ↩ 85 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 that this usually improves and advise to increase fluid intake. • Assess further ↩ 46. Give loperamide 4mg initially, then 2mg after each loose stool, up to 12mg/day. • If severe and not resolving, discuss with PCAC/NCAC. Consider taking blood for Na, K^+ and creatinine.
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). • If available, refer for physiotherapy. • If no improvement, discuss possible withdrawal of pyrazinamide with PCAC/NCAC.
Pain/numbness of feet		Terizidone, high dose INH, linezolid	**Peripheral neuropathy** likely, discuss with PCAC/NCAC.
Headaches		Linezolid, delamanid, bedaquiline	• Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed for up to 5 days. • Also consider other cause of headache ↩ 30.
Skin darkening		Clofazimine	Reassure that this will improve after treatment completed.
Low mood or anxiety		Terizidone, high dose isoniazid	Assess low mood or anxiety ↩ 86. If antidepressant started, avoid amitriptyline (prolongs QT interval).
Dry skin		Clofazimine	• Wash with aqueous cream (UEA) instead of soap. Avoid using aqueous cream as moisturiser (emollient). • Moisturise skin with emulsifying ointment (UE) twice a day.

[1]Continue other medications while awaiting response from PCAC/NCAC.

HIV: PRE-EXPOSURE PROPHYLAXIS (PrEP)

If a HIV negative patient is at high risk of HIV infection or requests PrEP, use daily Pre-Exposure Prophylaxis (PrEP) to prevent patient from getting HIV. Continue to give condoms and lubricants as well.

Assess need for PrEP: is patient requesting PrEP?

Yes

No: assess risk of HIV infection. Ask patient if s/he is having sex:

- Without a condom
- With more than one partner
- With an HIV-positive partner (especially if partner not on ART/not virally suppressed)
- With a partner whose HIV status is unknown
- While under the influence of alcohol and drugs
- With a partner who is more than 5 years older than him/her

Yes to one or more

No to all

Has patient been recently or frequently diagnosed with STI/s?

Yes

Consider as high risk for HIV infection

No: consider as **low risk for HIV infection** - no need to give PrEP.

- Discuss safe sex: use condoms reliably, only 1 partner, partner testing for HIV. Offer referral for male circumcision.
- If sexually active, advise to re-test for HIV 6-12 monthly. Educate about availability of post-exposure prophylaxis.
- Encourage prompt treatment of STI for patient and partner.

Continue to advise and assess eligibility

Advise and assess eligibility of the patient needing or requesting HIV PrEP

- Explain that HIV PrEP is two medications in one tablet and needs to be taken every day to be effective. It helps to prevent HIV-negative people from getting HIV.
- Advise that HIV PrEP should be used together with other prevention methods (condoms, lubricants, male circumcision and contraception).
- Explain that regular HIV testing is needed: HIV test will be before starting PrEP, after 1 month and then 3 monthly.
- If pregnant or breastfeeding, explain that benefits of taking PrEP outweigh risk of any possible harm to mother or baby.

Is patient willing and ready to start HIV PrEP, to adhere to medication and to return for follow-up visits and 3-monthly HIV tests?

Yes

Test for HIV ↻ 110 (if not already done at this visit). Manage according to result:

HIV negative

Was patient at risk of HIV infection in the past 6 weeks (new or multiple sexual partner/s, or unprotected sex)?

No

- If < 30kg or on medications that affect the kidneys (e.g. amikacin, gentamicin), discuss with doctor or HIV hotline ↻ 178.
- If history of kidney disease, do creatinine before starting PrEP: if abnormal, avoid starting PrEP.
- Take blood for creatinine and hepatitis B surface antigen and continue to assess for HIV PrEP ↻ 107.
  - Results do not have to be available to start patient on PrEP. Ensure correct contact details.

Yes

Does patient have any of: unwell, poor appetite, body pain, headache, sore throat, enlarged tender lymph nodes, rash, fever, sweating?

No

Acute HIV infection unlikely

Yes

Acute HIV infection possible

- Manage as on symptom pages.
- Repeat HIV test after 4 weeks.
- Delay giving HIV PrEP until confirmed HIV negative at 4 weeks.

HIV positive

- Avoid giving HIV PrEP.
- Explain the benefits of starting ART.
- Give routine HIV care ↻ 111.

No

- Encourage patient to follow safe sex practices.
- Advise patient and partner to test regularly for HIV (at least 6 monthly).
- Advise patient to return once willing and ready to start HIV PrEP.

HIV PRE-EXPOSURE PROPHYLAXIS (PrEP): ROUTINE CARE

Assess the patient starting HIV PrEP at baseline, within 28 days and then 3 monthly.

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. If cough or fever ≥ 2 weeks, unexplained weight loss or night sweats, exclude TB ↩ 92.
STI symptoms	Every visit	Screen for STI: if discharge, rash, itch, lump/s, ulcer/s ↩ 49.
Adherence	Every visit	Ask about pill taking pattern and missed doses. If difficulty with adherence ↩ 173. If needed, align visits with baby's routine care or EPI visit.
Side effects	Every visit	Ask about side effects of medication (see below). Reassure these usually resolve within a few weeks.
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 ↩ 142.
Sexual health	Every visit	If risky sexual behaviour: new or multiple partner/s, uses condoms unreliably, has sex under influence of alcohol/drugs, give safe sex advice.
Family planning	Every visit	• Exclude pregnancy ↩ 157. Assess patient's contraceptive needs ↩ 154. There are no interactions between PrEP and hormonal contraception. • Align contraception visit with PrEP visit, if possible.
HIV test	Baseline[2], at 1 month, then every 3 months	• If positive, stop HIV PrEP and give routine HIV care ↩ 111. If negative, continue HIV PrEP.
HBsAg	Baseline	• If positive, continue PrEP, take blood for ALT and refer doctor to monitor liver function: if ALT > 2 times upper limit of normal, refer. • If negative, continue PrEP, consider giving hepatitis B vaccine ↩ 120.
Creatinine (eGFR)	• If ≥ 30 years: baseline • If diabetes/hypertension: baseline, then yearly • If pregnant: baseline, at 3 and 6 months.	• If not pregnant: if eGFR < 30, refer same day. If eGFR < 50, repeat creatinine (eGFR) on a separate day: if repeat eGFR is ≥ 50, continue PrEP. - If repeat eGFR still < 50, stop PrEP and discuss with doctor/HIV hotline ↩ 178. • If pregnant: if creatinine > 85, repeat creatinine on a separate day: if repeat creatinine is ≤ 85, continue PrEP. - If repeat creatinine still > 85, stop PrEP and discuss with doctor/HIV hotline ↩ 178.
Syphilis	At baseline	Rapid tests are preferable, as results are immediately available. If positive ↩ 53.

Advise the patient on/starting HIV PrEP

- If starting, advise that daily HIV PrEP is only effective after taking it for at least 7 days. Emphasize importance of condom use until PrEP effective.
- Advise that HIV PrEP can be started and stopped according to risk. Discuss with nurse/doctor before stopping. Advise patient that HIV PrEP is not treatment for HIV and to avoid sharing medication.
- Emphasize that HIV PrEP does not prevent pregnancy or other STIs. Advise to avoid unprotected sex. Encourage reliable use of condoms and supply male and female condoms and lubricants. Offer referral for male circumcision. Explain the need for regular HIV testing and advise partner/s to test for HIV. Help patient to plan and set goals for behavior changes that may reduce his/her risk.
- Support adherence: advise that s/he needs to take the PrEP medication every day for it to be effective in preventing HIV infection.
  - Suggest patient uses a weekly pillbox and/or reminders like cell phone alarms or calendar checklist
  - If missed pill, advise to take it as soon as s/he remembers within 24 hours and not take more than 1 pill in one day.
  - Encourage patient to identify friends/family who can support adherence. Refer patient to local/online support group or adherence club, if available.

Treat the patient on/starting HIV PrEP

- If starting, give medication for 1 month. If already on HIV PrEP, give medication for 3 months. Complete PrEP Clinical Form at each visit.

Medication	Dose	Side effects
Tenofovir/emtricitabine (TDF/FTC)	300/200mg once daily	Nausea, headache, tiredness, diarrhoea, depression, abnormal dreams, vomiting, rash, problems sleeping, changes in appetite.

Review after 1 month, sooner if side effects develop. Then 3 monthly: for HIV test and prescription of medications.

Decide when to stop HIV PrEP

If patient is no longer at high risk of HIV and wishes to stop PrEP, plan with patient to stop PrEP at least 7 days after last potential HIV exposure. If HBsAg-positive, avoid stopping PrEP and refer instead.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]If starting PrEP is delayed, repeat HIV test on same day that PrEP is started ↩ 110.

HIV: 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. Tears, saliva (non-bloodstained), sweat, urine and stool are considered non-infectious fluids.

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**
- **No**

Yes

STEP 1. Give exposed 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 need for HIV PEP and give immediately if ≤ 72 hours since exposure:

- **Patient known HIV positive** → Avoid giving HIV PEP, give instead routine HIV care ⮌ 111.
- **Patient HIV negative or unknown: give first dose of HIV PEP (as below), obtain consent and do HIV rapid test ⮌ 110.**
  - 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 300mg + 3TC 300mg + DTG 50mg once daily for 28 days as a fixed combination tablet (TLD). If kidney disease, give instead AZT 300mg + 3TC 150mg 12 hourly *plus* DTG 50mg once daily.
- Check for medication interactions and adjust doses if needed ⮌ 118, especially TB and epilepsy treatment, contraceptives and other common medications like: calcium, iron, zinc, antacids, metformin.
- If source is failing 2nd line ART, discuss PEP with HIV hotline ⮌ 178.

No

- If human bite severe enough to cause bleeding, prevent hepatitis B only. Risk of HIV transmission negligible and there is no need for HIV PEP.
- For all other exposures, reassure that HIV and hepatitis transmission is unlikely, avoid giving PEP.
- If unsure, discuss with HIV hotline ⮌ 178 or specialist.

STEP 3. Take blood from exposed patient: if giving TDF, do creatinine (eGFR). If giving AZT, do FBC + differential count.

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

STEP 4. Take blood from source, if possible and source consents:

- Do rapid HIV test ⮌ 110 and send blood for HBsAg and hepatitis C antibody. If case of human bite, only do HBsAg. If sexual exposure, also do syphilis.
- If source HIV rapid negative, no need to continue PEP unless signs of acute HIV infection (history of flu-like symptoms - fever, sore throat, headache). If unsure, discuss PEP with HIV hotline ⮌ 178.

STEP 5. Give hepatitis B PEP if needed:

If exposed patient has not previously had 3 doses of hepatitis B vaccine or unsure, give 1st dose of hepatitis B vaccine 1mL IM. If sharps injury, give within 7 days. If sexual exposure, within 14 days.

STEP 6. Continue to assess and manage the patient:

If sexual assault ⮌ 88. If emergency contraception needed ⮌ 154. Review patient and blood results within 3 days →109.

AZT – zidovudine; **DTG** – dolutegravir; **FTC** – emtricitabine; **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 4 weeks and 4 months.

- Check adherence and ask about side effects from HIV PEP ↩ 116. 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 ↩ 88. 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	Repeat HIV rapid test at 4 weeks and 4 months	• Encourage to test for HIV ↩ 110. - If HIV negative, assess the need for PrEP ↩ 106. - If HIV positive, give routine HIV care ↩ 111.
Hepatitis B surface antigen (HBsAg)	At 4 months	If positive ↩ 120.
Hepatitis C antibody	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 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 ↩ 53.
Creatinine (eGFR) result	Check baseline results at 3-day follow up	If eGFR ≤ 50, stop TDF + 3TC (or TDF + FTC), give instead AZT 300mg + 3TC 150mg 12 hourly and check FBC and differential count.
Full blood count	If on AZT: repeat at 2 weeks	If Hb ≤ 8 or neutrophils ≤ 1.0, discuss with HIV hotline ↩ 178 or specialist.
Source blood results (if done)	-	If source HBsAg or hepatitis C antibody positive, refer source patient. If syphilis positive ↩ 53.

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**
      - **Source HBsAg positive or unknown**
        Give exposed patient/health worker hepatitis B immunoglobulin[1] 500IU IM.
    - • Give 3 doses of hepatitis B vaccine 1mL IM: if not already given, give 1st dose **now** and then dose 2 at **1 month**.
      - If source HBsAg positive or unknown: give dose 3 at **2 months**.
      - If source HBsAg negative: give dose 3 at **6 months**.
- **No or unsure**
  Check source HBsAg result:
  - **Source HBsAg positive or unknown**
    Give exposed patient/health worker hepatitis B immunoglobulin[1] 500IU IM.
  - **Source HBsAg negative**
  - • Give 3 doses of hepatitis B vaccine 1mL IM: if not already given, give 1st dose **now** and then dose 2 at **1 month**.
    - If source HBsAg positive or unknown: give dose 3 at **2 months**.
    - If source HBsAg negative: give dose 3 at **6 months**.

[1]If giving both hepatitis B vaccine and immunoglobulin, give at different sites. If immunoglobulin not available, refer to secondary care within 7 days but ideally within 24-72 hours after exposure. [2]If health worker, repeat HBsAb titre 1-2 months after the last vaccine dose to ensure HBsAb ≥ 10.

HIV: DIAGNOSIS

- Encourage patient and his/her partner/s and children to test for HIV.
- If HIV self-screening test done, confirm results with routine tests below.

Obtain informed consent

- Educate about HIV, methods of HIV transmission, risk factors, treatment and benefits of knowing one's HIV status.
- Explain test procedure and that it is completely voluntary.
- Obtain consent (children < 12 years need parental, guardian or caregiver consent). If consent is granted, test using the 'three-test kit HIV test' approach:

Do first HIV rapid screening test on fingerprick blood.

Screening test reactive
Using a different rapid test, do confirmatory HIV test 1 on fingerprick blood.

Screening test non-reactive

Confirmatory test 1 reactive
Do confirmatory HIV test 2 on fingerprick blood.

Confirmatory test 1 non-reactive
Immediately repeat the screening rapid HIV test only:

Confirmatory HIV test 2 reactive

Confirmatory HIV test 2 non-reactive

Second screening test reactive

Second screening test non-reactive

Discrepant results. Report as HIV inconclusive[1].
Send blood for an HIV ELISA test and advise patient to return for result within 7 days.

ELISA Reactive

ELISA results inconclusive

ELISA non-reactive

Report HIV test result as positive. Patient has HIV.

- Give routine HIV care at this visit ↩ 111.
- Encourage HIV testing for partner/s and children.
- Use HIV index testing forms, if available.

- HIV cannot be confirmed or excluded at this time.
- Advise patient to repeat rapid HIV tests in 6 weeks.

Report HIV test result as negative. Patient does not have HIV.
Has patient been at risk of HIV infection in past 6 weeks (had new/multiple partners or unprotected sex with partner who has HIV/is HIV unknown)?

Yes

- Explain that s/he may still be in window period[2]. Advise to repeat HIV test after 6 weeks.
- Consider need for PrEP ↩ 106.

No

- Encourage patient to remain negative and advise when to re-test:
  - If sexually active: 6-12 monthly
  - If pregnant: at every antenatal visit.
  - If on PrEP or breastfeeding, retest 3 monthly.

Offer referral for male circumcision to decrease 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]If pregnant in labour, manage baby as high-risk until mother's status confirmed. [2]The window period is the time between HIV infection and the point when a test can accurately pick up HIV in the blood.

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 ↩ 49.
TB	Every visit	Test for TB (send 1 sputum sample for TB NAAT): at HIV diagnosis, yearly with VL tests, and if any TB symptoms develop (cough, weight loss, night sweats or fever) ↩ 92.
Adherence	Every visit	Check record of patient's adherence to treatment and facility visits. If difficulty with adherence, give adherence support ↩ 173.
Side effects	Every visit	• Ask about side effects from ART ↩ 116, TB preventive treament (TPT) ↩ 89, co-trimoxazole preventive therapy (CPT) and fluconazole ↩ 113. Manage promptly. Discuss if unsure. • If suspected adverse drug reaction, report via the MedSafety app or fill form and submit to pharmacist, or email to adr@sahpra.org.za.
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 ↩ 143.
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 ↩ 142.
Sexual health	Every visit	If risky sexual behaviour: new or multiple partner/s, uses condoms unreliably, has sex under influence of alcohol/drugs, give safe sex advice.
Family planning	Every visit	• If woman of child bearing potential, sexually active and not on reliable contraception, exclude pregnancy ↩ 157. • Assess patient's contraceptive needs. Advise reliable contraception (condoms *plus* IUD, subdermal implant, injectable or sterilisation) ↩ 154. • Reassure that there are no interactions with DTG. If on other ART regimen, assess eligibility to switch to DTG ↩ 117 or adjust contraception ↩ 118. • If planning pregnancy: start folate 5mg daily and advise to defer pregnancy until viral load < 50. Check for syphilis ↩ 53.
Vertical transmission prevention (VTP)	Pregnant/ breastfeeding	• If not on ART, start ART same day. If pregnant, also give antenatal care ↩ 159. • If breastfeeding, check that HIV-exposed infant has received correct PEP and PCR results ↩ 168.
Palliative care	If deteriorating	If failing 3rd line ART and deteriorating, also give palliative care ↩ 170.
Weight	Every visit	• At diagnosis, measure height and weight to calculate BMI. BMI = weight (kg) ÷ height (m) ÷ height (m): - If BMI < 18.5, refer for nutritional support. If BMI ≥ 25, assess CVD risk below. • If weight loss ≥ 5% of body weight in 4 weeks ↩ 23.
Chronic conditions and CVD risk	At diagnosis	• If known hypertension, check control ↩ 133. If not known with hypertension, check BP: if ≥ 140/90 ↩ 132. • If known diabetes, check glucose control and adjust doses of metformin if taking together with dolutegravir ↩ 130. If not known with diabetes, check glucose ↩ 17. • If known with epilepsy, check seizure control and for possible medication interactions ↩ 149. • Assess CVD risk ↩ 127. If CVD risk > 20% or known CVD[2], and on LPVr or ATV/r, switch to DTG ↩ 117. If unable to switch to DTG, switch to ATVr and change simvastatin to atorvastatin 10mg at night.
WHO Clinical Stage	Every visit to check if stage has worsened	• Check weight, mouth, skin, previous and current problems. Once on ART, the aim is for patient to be WHO Clinical Stage 1. • Use WHO Clinical Stage to decide when to start co-trimoxazole ↩ 113. If not on ART, use most advanced stage even if recovered. If on ART, use stage done at this visit.

WHO Clinical Stage 1	WHO Clinical Stage 2	WHO Clinical Stage 3	WHO Clinical 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/stomatitis • 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 →112.

[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.

Check tests according to table and review results below. *Results do not have to be available to start patient on ART same day. Record correct contact details in case of abnormal results to recall patient.*

At diagnosis	Starting/changing ART	After 1 month on ART	After 3 months on ART	After 10 months on ART	6 monthly	Yearly	Also
• **Urine:** dipstick and pregnancy test[1] • **Sputum:** TB NAAT • **Blood:** creatinine, Hb, HBsAg, CD4 (and CrAg[2] if CD4 < 100) • **Cervical screening**	• **Changing to TDF:** creatinine • **Changing from TDF:** HBsAg • **Starting AZT:** Hb	**AZT:** FBC + diff	• Viral load • **TDF:** creatinine • **AZT:** FBC + diff • **ATVr** or **LPVr:** total cholesterol, triglycerides	• Viral load • CD4 • **TDF:** creatinine	If previous CD4 < 200 or not on ART: CD4	• Viral load • **TDF:** creatinine • Sputum: TB NAAT	• Check viral load more often : - Pregnant: at 1st antenatal visit and delivery - Breastfeeding: 6 monthly - RR-TB: 6 monthly • Cervical screen 3 yearly

ABC - abacavir **ATVr** - atazanvir/ritonavir **AZT** – zidovudine **CrAg** - cryptococcal antigen **Diff** - differential white cell count **EFV** - efavirenz **FBC** – full blood count **FTC** - emtricitabine
Hb - haemoglobin **HBsAg** – hepatitis B surface antigen **LPVr** – lopinavir/ritonavir **RR-TB** – rifampcin-resistant TB **TDF** – tenofovir **TEE** - TDF + FTC + EFV **TLD** - TDF + 3TC + DTG **3TC** - lamivudine

Urine dipstick	• If proteinuria, check creatinine (eGFR) if not already done. Interpret result below. If pregnant, recheck urine dipstick, do BP and manage further ↻ **161**. • If glucose in urine: check random fingerprick glucose ↻ **17**.
Urine pregnancy test	• If pregnancy test positive, give antenatal care ↻ **159** and if not on ART, start same day. • If pregnancy test negative, advise to use reliable contraception (IUD, subdermal implant or sterilisation, *plus* condoms).
TB sputum test	Interpret sputum TB NAAT results ↻ **92**. Repeat TB sputum test yearly, at same time as yearly viral load done.
CD4	If CD4 < 100, check CrAg result. If CD4 < 200 or WHO stage 2, 3 or 4 disease at HIV diagnosis, start co-trimoxazole prophylaxis therapy (CPT) ↻ **113** and do a rapid urine LAM test for TB if TB symptoms ↻ **92**.
CrAg[2]	If cryptococcal antigen (CrAg) positive, refer for lumbar puncture (LP). If symptomatic (headache, confusion) or pregnant, refer urgently.
Hb (FBC + differential count)	• If Hb < 12 (woman) or < 13 (man), **anaemia** likely, do FBC and differential count if not already done ↻ **27**. If difficulty breathing, chest pain or dizziness, refer same day. • If Hb ≤ 8 or neutrophils ≤ 1.0: avoid zidovudine. If already on zidovudine, switch to TDF or ABC. If on AZT because of kidney problem and ABC hypersensitivity, discuss with HIV hotline ↻ **178**.
Hepatitis B (HBsAg)	• If HBsAg positive, TDF should form part of ART regimen ↻ **120**. • If HBsAg negative, check immune response and give 3 doses of hepatitis B vaccine if needed ↻ **120**.
Cervical screen	Interpret result ↻ **55**. Repeat 3 yearly if normal.
Creatinine (eGFR)	• If eGFR < 30, refer/discuss with HIV hotline ↻ **178**. • If eGFR ≤ 50 (or creatinine > 85 in pregnant patient): recall patient. Switch ART according to HbsAg result: - If HBsAg negative: stop TDF, use ABC instead. If on TLD or TEE: switch to ABC + 3TC + DTG. If previous hypersensitivity to ABC, use AZT instead of ABC. - If HBsAg positive: discuss management with experienced ART clinician or HIV hotline ↻ **178**. • Check if other medication doses need adjusting: eGFR can be used as acceptable estimate of creatinine clearance (CrCl). Check for proteinuria and repeat eGFR after 1 month. If repeat eGFR ≤ 50, refer to doctor to check BP, glucose, urine dipstick, send urine for protein/creatinine ratio and arrange kidney ultrasound.
ALT	• If ALT ≥ 200 or jaundice, stop medications and discuss/refer same day. • If ALT < 200: - If no symptoms, continue medications and monitor for symptoms. Also repeat ALT weekly until < 120. - If symptoms (nausea/vomiting/abdominal pain): • If ALT 120-199 (or total bilirubin > 40, if done): stop all medications and discuss/refer same day. • If ALT 50-120: doctor to assess for causes (check HBsAg; consider alcohol or drug-induced liver injury), consider interrupting/delaying ART. Repeat ALT within 1 week. If unsure, discuss with specialist.
Total cholesterol, triglycerides	• If triglycerides ≥ 10, discuss/refer same day. • If total cholesterol > 6 or triglycerides > 5, and on LPVr or ATV/r, switch to DTG ↻ **117**. If unable to switch to DTG, switch to ATVr and change simvastatin to atorvastatin 10mg at night. Repeat fasting total cholesterol and triglycerides after 3 months: if still raised, discuss/refer.
Viral load (VL)	• If VL < 50, continue routine VL monitoring (see table above). If not yet on TLD, switch ART ↻ **117**. Check if eligible to collect medications from a repeat prescription collection point ↻ **113**. • If VL ≥ 50, manage unsuppressed viral load ↻ **119**.

TB tests changing from 'Xpert Ultra' to 'TB NAAT'
(**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

Advise and treat the patient with HIV →113.

[1]Only do pregnancy test if woman of child bearing potential has missed period and is not on contraception. [2]CrAg - cryptococcal antigen. Laboratory will usually automatically do this if CD4 < 100.

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.

Treat the patient with HIV

If patient *not* on ART

Plan to start or restart TDF + 3TC + DTG (TLD)[1], same day if possible (or within 7 days). Follow Steps 1-5 ↩ 114.

If patient on ART

- If not on a DTG-based regimen, check if eligible to switch same day ↩ 117.
- Ask about any new medications: especially TB and epilepsy treatment, contraceptives and other common medications like: calcium, iron, zinc, antacids, metformin. If needed, adjust ART or dosing ↩ 118.

- Give influenza vaccine 0.5mL IM yearly. Avoid if CD4 ≤ 100. Check that patient is up to date with his/her COVID-19 vaccination.
- Give prophylaxis: TB preventive treatment (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 treatment (TPT)	• Start TPT if not already had TPT *and* no current TB symptoms. • Avoid if previous RR-TB, neuropathy, liver disease, alcohol misuse. • If TB contact[2]: start TPT even if already had TPT.	• If already on ART with VL < 50 in last 6 months, give 3HP and pyridoxine ↩ 89. • If starting ART or on ART and viral load ≥ 50, give instead isoniazid for 12 months (12H): give 300mg daily. Also give pyridoxine 25mg daily.	• If pain/numbness of feet, **peripheral neuropathy** likely ↩ 66. • If rash ↩ 67. • If jaundice: refer same day. • If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ↩ 112.	• If on 3HP, stop after 3 months. • If on 12H, stop after 12 months.
Co-trimoxazole preventive therapy (CPT)	Start if: • CD4 ≤ 200 *or* • WHO stage 2, 3 or 4 disease	• If CrCl > 50, give co-trimoxazole 160/800mg daily. • If CrCl 10-50, give co-trimoxazole 80/400mg daily. • If CrCl < 10, give co-trimoxazole 80/400mg 3 days a week (Mon/Wed/Fri).	• If jaundice: refer same day. • If nausea, vomiting abdominal pain: check ALT and review result within 24 hours ↩ 112. • If nausea/vomiting ↩ 45. • If rash ↩ 67.	Stop after at least 1 year once CD4 > 200, regardless of stage. If started for TB and CD4 > 200, stop after 6 months.
Fluconazole	• If CrAg[3] result positive, refer for lumbar puncture (LP). If delay in referral for LP, start fluconazole. • If pregnant/breastfeeding, liver disease, previous CCM[4], discuss with HIV hotline before starting ↩ 178.	• If delay in LP expected, give fluconazole 1200mg. • If CCM[3]: once discharged, give fluconazole 200mg daily to complete at least 1 year. • If no symptoms and LP clear: complete fluconazole 1200mg daily for 2 weeks, then 800mg daily for 2 months. Then fluconazole 200mg daily to complete at least 1 year.	• If jaundice: refer same day. • If nausea, vomiting abdominal pain: check ALT and review result within 24 hours ↩ 112. • If nausea/vomiting ↩ 45.	Stop after at least 1 year if CD4 > 200 and VL < 50.

Review the patient with HIV

Visit	Baseline visit	Month 1	Month 3	Month 4	Month 10	6-monthly	Yearly
Note	• Baseline tests - follow up results. Recall patient if needed. • Start ART.	• Review patient. • If well, give 2 months ART. • If unwell, review more often.	• Review patient. • Do viral load and other monitoring blood tests.	• Review results. • Assess for repeat prescription (below).	• Review patient. • Do viral load and other monitoring blood tests.	• Repeat medication script. • Do CD4 if needed.	• Review patient. • Do viral load and other monitoring blood tests.

- Patient eligible to use repeat prescription collection point (RPC)[5] if: 1) Viral load < 50, 2) Clinically well with no infections, 3) No other uncontrolled chronic conditions, 4) Not pregnant.
- If not eligible or RPC[5] refused: if patient well enough, give more than 1 month of medication at a time.

[1]**TDF** – tenofovir; **3TC** – lamivudine; **DTG** – dolutegravir; **TLD** – fixed combination dose tablet of TDF + 3TC + DTG. [2]A TB contact refers to a patient who shared an enclosed space (at work, socially, in a hostel, or in a household setting), for ≥ 1 night or for frequent/extended daytime periods, with an adult/adolescent with pulmonary TB ("index patient"), during the 3-month period before the index patient started their TB treatment. [3]CrAg - cryptococcal antigen. [4]CCM - Cryptococcal meningitis. [5]Repeat prescription collection points (RPC) include 'facility pick-up points' (FAC-PUP), 'external pick-up points' (EX-PUP), clubs. Medications are pre-dispensed by Central Dispensing Unit (CDU) or Central Chronic Medicine Dispensing and Delivery (CCMDD).

Start or restart ART

STEP 1. Decide what ART regimen to start or restart

Patient starting ART

Is patient known with kidney disease (eGFR ≤ 50 or if pregnant creatinine > 85)?

No

Choose: tenofovir (TDF) + lamivudine (3TC) + dolutegravir (DTG). The fixed dose combination known as TLD1.

Yes

Choose: abacavir (ABC) + lamivudine (3TC) + dolutegravir (DTG). The fixed dose combination known as ALD1.

Patient restarting ART after treatment interruption

- Explore and address reasons for treatment interruption and try to resolve issues ⮌ **173**.
- If on third-line ART, discuss with experienced ART doctor, HIV expert or HIV hotline ⮌ **178**.
- If not on third-line ART, check if previously taking LPVr or ATVr for 2 or more years?

No
Previously on: LPVr or ATVr for < 2 years, or a NVP-, EFV- or DTG-based regimen, or unknown.

- Restart TDF + 3TC + DTG same day. Fixed combination dose tablet known as TLD. Record as TLD1 if patient never failed a previous ART regimen and TLD2 if patient failed a previous ART regimen.
  - If known kidney disease (eGFR ≤ 50 or creatinine > 85 in pregnant woman), use instead ABC + 3TC + DTG. Fixed combination dose tablet known as ALD. Record as ALD1 if patient never failed a previous ART regimen and ALD2 if patient failed a previous ART regimen.
  - Only if previous hypersensitivity reaction to ABC, use instead AZT + 3TC + DTG.

Yes
First check eligibility to restarting ART and switching to TLD same day ⮌ **117**.

Then decide where patient will continue to collect medications and when to repeat viral load according to duration of interruption:

Patient has interrupted treatment for < 28 days

- Do VL as per routine yearly schedule.
- Enrol patient in RPC[1].
- Give a 3-month medication refill.

Patient has interrupted treatment for ≥ 28 days

Any of:

- Patient unwell with symptoms
- Known with CD4 < 200 or TB or stage 4 illness
- Interrupted for 90 days (3 months) or more
- Pregnant
- High VL before interruption
- Switching regimen to TLD today

Yes

- Manage any symptoms as on symptom page.
- If no TB test done in past year, send sputum for TB NAAT.
- Do CD4 at this visit, and repeat VL after 3 months if restarting ART.

STEP 2. Check for possible medication interactions and adjust ART or dosing if needed.
Ask about other medications patient is taking: especially TB and epilepsy treatment, contraceptives and other common medications like: calcium, iron, zinc, antacids, metformin ⮌ 118.

STEP 3. Take bloods according to chosen ART regimen ⮌ 112.

STEP 4. Check if there is a reason to delay ART → 115.

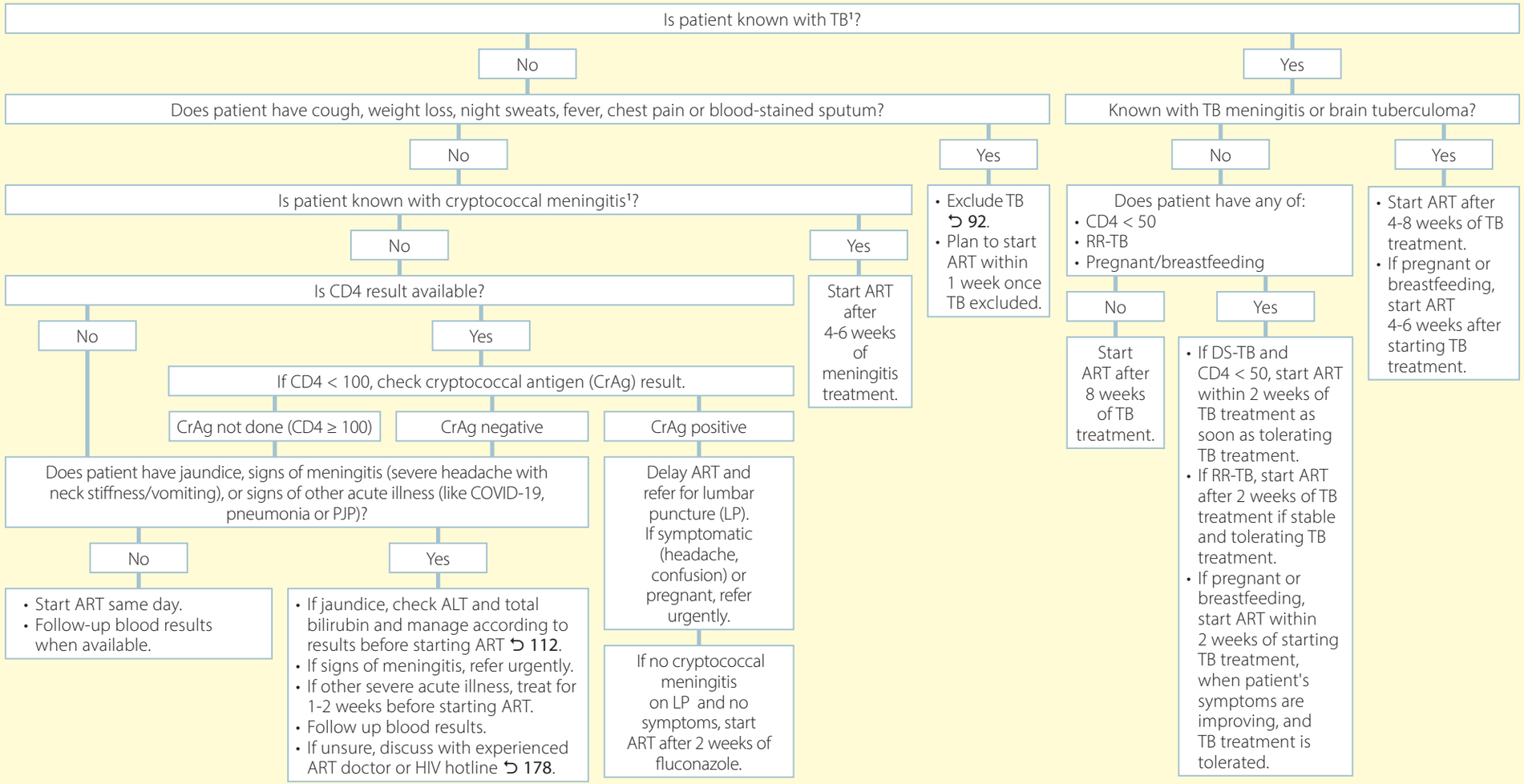
ABC – abacavir; **ATVr** - atazanavir/ritonavir; **AZT** – zidovudine; **DTG** – dolutegravir; **EFV** – efavirenz; **NVP** – nevirapine; **LPVr** – lopinavir/ritonavir; **TDF** – tenofovir; **3TC** – lamivudine

[1]Repeat prescription collection points (RPC) include 'facility pick-up points' (FAC-PUP), 'external pick-up points' (EX-PUP), clubs. Medications are pre-dispensed by Central Dispensing Unit (CDU) or Central Chronic Medicine Dispensing and Delivery (CCMDD).

STEP 4. Check if there is a reason to delay ART

Aim to start same day but first check if there is a reason to delay ART:

If any of: difficulty breathing, respiratory rate ≥ 30, temperature ≥ 38°C, pulse > 100, BP < 90/60, confusion or agitation, or unable to walk unaided, delay starting ART and refer same day.



STEP 5. Dose ART correctly according to chart →116.

[1]If patient has TB and cryptococcal meningitis, discuss with experienced ART clinician about when to start ART.

STEP 5. Dose ART correctly according to chart

- Give 3 antiretrovirals (1 from each of the 3 sections in the table below) according to chosen ART regimen and blood results, if available.
- Where available, use fixed dose combination tablets. Prescribe in full (e.g. for TLD (TDF + 3TC + DTG): write tenofovir, oral, 300mg daily + lamivudine, oral, 300mg daily + dolutegravir, oral, 50mg daily.

	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)**	• CrCl > 50: give 300mg daily. • CrCl ≤ 50: avoid.	• Kidney disease: eGFR or CrCl ≤ 50 • If pregnant: creatinine > 85	Kidney failure: • If CrCl < 30, refer same day. • If CrCl 30-50 and unwell, refer same day. • If CrCl 30-50 and well, refer to doctor.	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	Anaemia (pallor) with respiratory rate ≥ 30, dizziness/faintness or chest pain.	Headache, nausea, muscle pain, fatigue (if Hb ≤ 8 doctor to switch ART ⮌ 117).	Lipoatrophy (fat loss in face, limbs and buttocks): switch to TDF or ABC.
2	**Lamivudine (3TC)**	• 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)	• CrCl > 50: give 200mg daily. • CrCl 30-50: give 200mg every 2 days. • CrCl < 30: discuss.		Uncommon	Uncommon	Darkening of palms/ soles
3	**Dolutegravir (DTG)**	• 50mg daily • If also on any of these medications, adjust medications/ dosing ⮌ 118: rifampicin (DS-TB), iron, calcium, magnesium or aluminium, metformin, carbamazepine, phenytoin.		Uncommon	• Headache, nausea, diarrhoea • Insomnia: advise to take treatment in the morning.	
	Efavirenz (EFV)	• ≥ 40kg: give 600mg daily. • < 40kg: give 400mg daily.	• Active psychiatric illness • On bedaquiline	• Rash ⮌ 67. Jaundice. Psychosis. • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌ 112.	• Rash ⮌ 67. • Headache, dizziness, sleep problems • Low mood ⮌ 86.	Gynaecomastia (breast enlargement): switch to DTG ⮌ 117.
	Lopinavir/ ritonavir (LPVr)	• 400/100mg 12 hourly (with food). If never taken LPVr or ATVr in past, give 800/200mg daily. • If also on any of these medications, adjust medications/dosing ⮌ 118: rifampicin, carbamazepine, phenytoin, lamotrigine, oral contraceptive, fluticasone/budesonide.	• Chronic diarrhoea • Cholesterol/ triglycerides raised • CVD risk > 20%	• Jaundice • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌ 112.	Diarrhoea: if intolerable or > 6 weeks, switch to DTG ⮌ 117.	Dyslipidaemia: if total cholesterol > 6 or triglycerides > 5, switch to ATVr ⮌ 112.
	Atazanavir/ ritonavir (ATVr)	• 300mg/100mg daily (with food) • If also on any of these medications, adjust medications/ dosing ⮌ 118: rifampicin, carbamazepine, phenytoin, lamotrigine, oral contraceptive, fluticasone/budesonide.	• On rifampicin • On lansoprazole	• Jaundice *with* other symptoms • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⮌ 112.	• Headache • Jaundice *without* other symptoms: check ALT, review result within 24 hours. ATVr can cause jaundice without hepatitis. Discuss with ART doctor or HIV hotline ⮌ 178.	

Switch ART

Aim to switch all patients to dolutegravir (DTG). Resistance to DTG is rare and DTG provides rapid VL suppression and has minimal side effects.

Check if patient eligible to switch, or restart, DTG-based regimen same day:
Does patient's ART regimen include LPVr or ATVr?

No

- Patient on one of following:
  - TDF + FTC + EFV (TEE)
  - ABC + 3TC + EFV
  - AZT + 3TC + EFV
  - AZT + 3TC + DTG
  - NVP-based regimen
- If patient on regimen other than above, discuss with doctor, HIV expert or HIV hotline ⮌ **178.**

Switch to DTG-regimen today, regardless of VL.

- Check VL result done in last 12 months:
  - If VL ≥ 50: continue to switch but assess and support adherence ⮌ **173**.
  - If VL not done in last 12 months, do it at this visit. No need to wait for results before switching.

- Switch to TDF + 3TC + DTG same day. Fixed combination dose tablet known as TLD Record as TLD1 if patient never failed a previous ART regimen and TLD2 if patient failed a previous ART regimen.
  - If known kidney disease (eGFR ≤ 50 or creatinine > 85 in pregnant woman), use instead ABC + 3TC + DTG. Fixed combination dose tablet known as ALD. Record as ALD1 if patient never failed a previous ART regimen and ALD2 if patient failed a previous ART regimen.
  - Only if previous hypersensitivity reaction to ABC, use instead AZT + 3TC + DTG.
- If unsure, discuss with experienced ART doctor, HIV expert or HIV hotline ⮌ **178.**

- If VL done in last 12 months < 50, continue routine viral load monitoring ⮌ **112**.
- If VL done in last 12 months ≥ 50, repeat VL in 3 months (or 4-6 weeks if pregnant).

Yes

Has patient been on LPVr or ATVr for 2 or more years?

No

Both VL results < 1000

VL < 1000

Yes

Manage further according to last two VL results, taken at least 2 years after starting LPVr or ATVr (if VL unknown, discuss):

Latest VL result ≥ 1000
- Continue same regimen and assess and support adherence ⮌ **173**.
- Repeat VL in 3 months:

Both VL results ≥ 1000

VL ≥ 1000

Virological failure confirmed
- If pregnant, discuss with HIV expert/hotline ⮌ **178**.
- Assess adherence in last 6-12 months by checking script for pharmacy refills and notes for clinic appointment attendance[1].
- Have refills been collected > 80%[2] of time or has patient attended > 80%[3] clinic visits?

No

- Adherence considered poor. Resistance test is *not* indicated.
- Switch to TDF + 3TC + DTG same day. This is available in a fixed combination dose tablet called TLD2.
  - If known kidney disease (eGFR ≤ 50 or creatinine > 85 in pregnant woman), use instead ABC + 3TC + DTG. Fixed combination dose tablet known as ALD2.
  - Only if previous hypersensitivity reaction to ABC, use instead AZT + 3TC + DTG (2nd-line).
- If unsure, discuss with ART doctor, HIV expert or HIV hotline ⮌ **178**.
- If restarting ART, manage further →**116**.
- Repeat VL in 3 months.

Yes

- Adherence considered good.
- Discuss need for resistance testing and choice of new ART regimen with HIV expert, infectious disease specialist, third line ART committee or HIV hotline ⮌ **178**.

- Ask about other medications: especially TB or epilepsy treatment, contraceptives and calcium, iron, zinc, antacids, metformin. Check if ART needing adjusting ⮌ **118**.
- Check if bloods needed ⮌ **112**: if starting TDF, take baseline creatinine. If stopping TDF, check HBsAg before switching ART. If starting AZT, check Hb.
- Dose ART correctly according to chart ⮌ **116**.

ABC – abacavir; **ATVr** - atazanavir/ritonavir; **AZT** – zidovudine; **DTG** – dolutegravir; **EFV** – efavirenz; **FTC** – emtricitabine; **NVP** – nevirapine; **LPVr** – lopinavir/ritonavir; **TDF** – tenofovir; **VL** – viral load; **3TC** – lamivudine

[1]If available, also do drug level on urine or blood specimen: adherence is considered good if medications are detected in patient's urine/blood. [2]Calculate adherence % for pharmacy refills: 'number of *actual refills done* during period assessed' ÷ 'number of months in period assessed'. Then x by 100. [3]Calculate adherence % for clinic attendance: 'number of scheduled visits *actually attended* by patient during period assessed' ÷ 'number of scheduled visits during period assessed'. Then x by 100.

Manage ART medication interactions

- Ask patient if s/he is taking any over-the-counter or herbal/traditional medications.
- If on or needing contraception: reassure that there are no interactions with DTG. If on other ART regimen, assess eligibility to switch to DTG ↩ 117, otherwise manage below.
- For other interactions: check SAMF, EMGuidance app, Liverpool HIV iChart app, use web-based interaction checker (see QR code) or discuss with HIV expert/hotline ↩ 178.

Check for HIV medication interactions

Assess and manage common medication interactions:

If on this ART medication	Check for interacting medications	Adjust medications and/or doses
Dolutegravir (DTG)	Rifampicin	• Increase DTG dose to 50mg 12 hourly. If on TLD or ALD fixed dose combination tablet, add DTG 50mg 12 hours after TLD or ALD dose. Continue this dose until 2 weeks after TB treatment completed, *or* • If already on TB treatment and starting ART (patient has never been on ART): consider TEE (TDF + FTC + EFV). Switch to DTG-based regimen 2 weeks after TB treatment complete.
	Anticonvulsants: • Carbamazepine • Phenytoin	• Avoid giving carbamazepine or phenytoin together with DTG: - Switch to lamotrigine ↩ 149. If unable to use lamotrigine, consider valproate ↩ 149. Avoid valproate if woman of child-bearing potential. - If unable to switch anticonvulsant and patient to remain on carbamazepine, increase dose of DTG to give 50mg 12 hourly.
	Iron and/or calcium	• If taking iron only, advise to take iron and DTG together with food. • If taking calcium only, advise to take calcium and DTG together with food. • If taking iron *and* calcium, advise to take DTG and calcium together with food, then to take iron at least 4 hours later.
	Zinc	Advise to take zinc at least 6 hours before *or* 2 hours after DTG.
	Magnesium/aluminium (antacids)	Advise to take antacid at least 6 hours before *or* 2 hours after DTG.
	Metformin	Avoid giving more than 500mg metformin 12 hourly. If diabetes uncontrolled, move to step 2 (start glimepiride) ↩ 131.
Lopinavir/ritonavir (LPVr)	Rifampicin	• Assess eligibility to switch to DTG ↩ 117. If not eligible for DTG switch, gradually increase dose of LPVr according to ALT ↩ 97.
	Anticonvulsants: • Carbamazepine • Phenytoin	• Assess eligibility to switch to DTG ↩ 117. If switching to DTG, continue to manage as above (see dolutegravir row). • If not eligible for DTG switch, avoid giving carbamazepine or phenytoin together with LPVr: - Switch anticonvulsant to lamotrigine and double lamotrigine dose ↩ 149. If unable to use lamotrigine, consider valproate ↩ 149. Avoid valproate if woman of child-bearing potential. If unsure, discuss with HIV expert/hotline ↩ 178.
	Oral contraceptive	Avoid with LPVr. Assess eligibility to switch to DTG ↩ 117. If not eligible to switch to DTG, use instead an IUD, subdermal implant or injectable *and* condoms.
	Fluticasone/budesonide	Avoid with LPVr. Assess eligibility to switch to DTG ↩ 117. If not eligible to switch to DTG, use instead beclomethasone 12 hourly.
Atazanavir/ritonavir (ATVr)	Rifampicin	• Avoid ATVr. Assess eligibility for switch to DTG ↩ 117. • If not eligible for DTG switch, discuss with TB expert/hotline to switch rifampicin to rifabutin *or* switch ATVr to LPVr ↩ 178.
	Carbamazepine or phenytoin	• Assess eligibility to switch to DTG ↩ 117. If switching to DTG, also adjust choice of anticonvulsant as for LPV/r above. • If unable to switch to DTG, discuss with HIV hotline ↩ 178
	Oral contraceptive	Avoid with ATVr. Assess eligibility to switch to DTG ↩ 117. If not eligible to switch to DTG, use instead an IUD, subdermal implant or injectable *and* condoms.
	Fluticasone/budesonide	Avoid with ATVr. Assess eligibility to switch to DTG ↩ 117. If not eligible to switch to DTG, use instead beclomethasone 12 hourly.
Efavirenz (EFV)	Bedaquiline	Avoid EFV. Switch to DTG ↩ 117.
	• Oral contraceptive • Subdermal implant	• Avoid giving these contraceptives together with EFV. Assess eligibility to switch to DTG ↩ 117. • If not eligible to switch to DTG, use instead IUD or injectable *and* condoms.
Zidovudine (AZT)	Linezolid	Avoid AZT. Discuss with HIV expert/hotline ↩ 178.

ATVr - atazanvir/ritonavir; **AZT** – zidovudine; **EFV** - efavirenz; **FTC** - emtricitabine; **LPVr** – lopinavir/ritonavir; **TDF** – tenofovir; **TEE** - TDF + FTC + EFV; **TLD** - TDF + 3TC + DTG; **3TC** - lamivudine

Manage the patient with an unsuppressed viral load (VL ≥ 50)

Assess and manage possible causes of unsuppressed viral load (VL ≥ 50):

- If pregnant or breastfeeding →166.
- Check for underlying causes of unsuppressed VL, especially adherence issues and medication interactions ↩ 173.
- Emphasise condom use and contraception, especially while VL is unsuppressed

- If patient is *not* on TLD (or ALD), check if same day ART switch is appropriate ↩ 117.
- If patient is on DTG-based regimen, continue below.

Repeat VL in 3 months:

Second viral load result < 50

Continue routine VL monitoring ↩ 112.

Second viral load result ≥ 50

- Increase efforts to resolve adherence[1] issues and address possible drug-drug interactions ↩ 173.
- Manage further according to duration:

Patient has been on DTG-based regimen for less than 2 years

Patient has been on DTG-based regimen for at least 2 years.

- Assess adherence in last 6-12 months by checking script for pharmacy refills and notes for clinic appointment attendance[2].
- Have refills been collected > 80%[3] of time or has patient attended > 80%[4] clinic visits?

No → Adherence considered poor.

Yes → Adherence considered good.

Has patient had 2 or more VL results ≥ 1000 after starting DTG-based regimen?

No → Has patient had at least one VL ≥ 1000 with either: CD4 < 200, or an opportunistic infection[5]?

No → Has patient failed previous regimen before s/he started DTG-based regimen (on TLD2 or ALD2/2nd-line)?

No

- No resistance testing needed. If drug interactions suspected, then discuss with HIV expert or HIV hotline ↩ 178.
- Continue to address adherence and possible interactions.
- Repeat VL at next scheduled routine VL.

Yes

- Discuss need for resistance testing and choice of new individualised regimen with HIV expert, infectious disease specialist, third line ART committee or HIV hotline ↩ 178.
- If VL ≥ 1000, monitor CD4 6 monthly. If CD4 ≤ 200, restart co-trimoxazole ↩ 113.
- Repeat VL 3 months after starting new regimen.

Yes → **Virological failure** confirmed.

[1]Resistance to a DTG-based regimen is rare – the most probable cause for VL non-suppression is poor adherence. [2]If available, also do drug level on urine or blood specimen: adherence is considered good if medications are detected in patient's urine/blood. [3]Calculate adherence % for pharmacy refills: 'number of *actual refills done* during period assessed' ÷ 'number of months in period assessed'. Then x by 100. [4]Calculate adherence % for clinic attendance: 'number of scheduled visits *actually attended* by patient during period assessed' ÷ 'number of scheduled visits during period assessed'. Then x by 100. [5]Examples of opportunistic infections include TB, *Cryptococcal disease, Pneumocystis jirovecii* pneumonia *(PJP), Cryptosporidium, Isospora belli (Cystoisospora belli).*

HEPATITIS B (HBV)

Test for hepatitis B: send blood for hepatitis B surface antigen (HBsAg) if:

- Jaundiced (yellow skin/eyes)
- ALT raised
- HIV positive starting ART
- As part of post/pre-exposure prophylaxis (PEP/PrEP) workup
- Contact[1] of person known with hepatitis B
- Pregnant (at booking visit)

- If patient has yellow skin or eyes, jaundice likely, assess and manage ↩ 79.
- If not done already, also test for for HIV ↩ 110 and syphilis ↩ 53. Manage further according to HBsAg result:

HBsAg positive

Patient has hepatitis B infection

- Notify.
- Educate that infection requires no specific treatment at this stage. Advise 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. Advise household contact/s and needle-sharing/sexual contact/s to test.
- 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 ↩ 178.
- 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 and HIV negative: consider need for PrEP (do ALT) ↩ 106. Tenofovir/emtricitabine (TDF/FTC) will also function as, treatment to prevent transmission of hepatitis B to baby. If needed, discuss with doctor/specialist.
- If able, arrange delivery at facility where hepatitis B immunoglobulin (HBIG) and hepatitis B monovalent vaccine available, ↩ 167.
- 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 and cancer.
- 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 TDF + 3TC/FTC. If not, discuss with experienced ART clinician or HIV hotline ↩ 178.
  - 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[2] advise to repeat HBsAg yearly.

HBsAg negative

Patient does not have hepatitis B.

Any of:

- Health worker[3]
- HIV positive
- Contact[1] of person known with hepatitis B
- Person who injects drugs (PWID)
- Man who has sex with men (MSM)
- Sex worker
- Pregnant

No

- If not known to be immunised[4], send blood for HBsAbs[5]:
  - If HBsAbs ≥ 10: patient is immune, no further management needed.
  - If HBsAbs < 10: give 3 doses of hepatitis vaccine 1mL IM at 0, 1 month and 6 months. Re-check HBsAbs 2 months after last vaccine:

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 HBsAbs 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.

Yes

Manage the baby born to mother with hepatitis B infection →167.

[1]Contact refers to household contact or needle-sharing/sexual partner of person known with hepatitis B (HBsAg-positive). [2]New/multiple sexual partners, unprotected sex, exposure through skin like tattoo, piercing, sharing needles/other sharps. [3]This includes student health care workers, clinic support staff (cleaners) and laboratory staff. [4]Patient has no documentation of hepatitis B vaccination (e.g. Road to health booklet) or was born before April 1995 when hepatitis B vaccine was introduced into expanded programme on immunisation (EPI). [5]**HBsAbs** - hepatitis B surface antibodies.

LONG COVID: ROUTINE CARE

A patient is considered to have 'Long COVID' if s/he has ongoing symptoms for 2 or more months following acute COVID-19 infection (usually 3 months from the onset of COVID-19 symptoms).

Assess the patient with Long COVID

Assess	When to assess	Note
Symptoms	Every visit	• Ask about symptom/s: specifically ask about difficulty sleeping and ongoing pain. Manage as on symptom pages. • If patient was hospitalised for COVID-19 and breathlessness lasts > 6 weeks after discharge, refer to physiotherapist, if available, for assessment/home programme. • If persistent dry cough ≥ 8 weeks, consider referral to a speech and language therapist, if available. • If symptoms still present and troubling after 12 weeks, or uncommon (like palpitations, skin rash), refer/discuss with doctor/specialist.
TB	Every visit	Follow up TB sputum results. If no TB sputums sent during 'Long COVID' work-up, send 1 sputum sample for TB NAAT at this visit ⮌ 92.
Daily activities	Every visit	If patient not able to cope with activities of daily living (like bathing, dressing, grooming, homemaking), consider referral to available rehab team member.
Chronic conditions	Every visit	If patient has chronic condition, check control and give routine care. Check that routine bloods have been done.
Mental health	Every visit	If stress, anxiety or low mood, assess and manage further ⮌ 86.
Family planning	At diagnosis	If patient had severe COVID-19 and is on combined oral contraceptive (COC), doctor to discuss risks of thrombosis and consider switch to progestogen-only pill, copper IUD or subdermal implant. Assess family planning needs ⮌ 154.
Carer/family	Every visit	Ask how carer/family is coping.
CVD risk	At diagnosis	Assess CVD risk at diagnosis ⮌ 127.
Weight	Every visit	If weight loss, assess further ⮌ 23.
Chest x-ray	If cough/breathlessness ≥ 12 weeks	If chest x-ray abnormal, refer/discuss.
Thyroid	Tiredness ≥ 12 weeks	Check TSH. If abnormal, refer to doctor.

Advise the patient with Long COVID

- Reassure that many people with COVID-19 have ongoing symptoms, even in mild cases. Explain that, normally, symptoms slowly resolve without specific treatment.
- Advise that symptoms may fluctuate and to expect good days and bad days. Advise to rest and pace activity. Set achievable targets and gradually increase activity according to symptom severity.
- Advise to look after general health: eat a healthy diet, get enough sleep, limit alcohol and caffeine and avoid illicit drugs.
- Extend sick leave as needed. Suggest patient speaks to employer about options to return to work more slowly. If unemployed, refer to SASSA to apply for COVID-19 Social Relief of Distress Grant.
- If needed, discuss what can be done to support carer/s and family. Identify local resources, social worker, counsellor, NGO, community action networks. Refer to occupational therapy if available.

Treat the patient with Long COVID

- Treat pain with paracetamol 1g 4-6 hourly (up to 4g in 24 hours) or ibuprofen 400mg 8 hourly with food for up to 2 weeks. Review need for pain medications after 2 weeks.
- Chronic overuse may cause headaches: if using painkillers > 2 days/week for ≥ 3 months, advise to reduce or stop pain medication.
- Encourage patient to get vaccinated unless unwell and being actively investigated, then discuss with specialist.
- Help patient to manage ongoing symptoms of tiredness, breathlessness and cough ⮌ 122. Avoid prescribing inhalers used for asthma to treat breathlessness unless patient known with asthma.

Review the patient with Long COVID

- If TB sputums sent at this visit: review in 2 days, otherwise review 2-4 weekly as needed. Expect gradual improvement.
- If no gradual improvement, refer/discuss. Advise to return urgently if breathlessness worsens, new or worsening confusion or unable to wake patient, chest pain or pressure that won't go away, new sudden weakness or numbness in face, leg or arm: refer.

Support the patient with 'Long COVID' to manage his/her symptoms at home

- Explain that symptoms may differ between patients (no typical presentation) and may vary from day to day. S/he may find normal activities difficult (like washing/dressing/doing housework).
- Invite patient to look at the below and help him/her to choose lifestyle changes that may help to manage his/her symptoms. Explore what might hinder or support this.

Pace yourself, plan and prioritise tasks

- Build a regular routine. Plan each day so important tasks are done first.
- Avoid overdoing things on a good day. This may cause exhaustion the next day.
- Allow enough time to complete activities and to rest in between. Break tasks down into smaller ones.
- Ask others to help with the less important tasks. Think about how others can help you save your energy, like helping with groceries, cleaning and cooking.

Keep a diary to track improvement

Learn your patterns: learn what brings on utter exhaustion or other symptoms, and try to avoid these.

Get enough sleep

- Tiredness feels much worse if sleep patterns are disturbed. If difficulty sleeping:
  - Establish a routine: try to get up at the same time each day (even if tired) and go to bed the same time every evening. Avoid day time napping if able.
  - Avoid caffeine and smoking for several hours before bedtime.
  - Allow time to unwind/relax before bed.
  - Use bed only for sleeping and sex.
  - 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.

Eat well

- Where possible, eat regular healthy meals that include fruit and vegetables.
- Drink plenty of water.
- Limit alcohol and caffeine.

Get help when you need it

- Discuss your worries with someone you trust. Join a support group, if available.
- Consider speaking to your employer about options to return to work more slowly.
- If you have financial worries, arrange to see a social worker.

Keep active

- Start with light exercise (walking) for around 4-6 weeks. Gradually increase intensity to aim for 150 minutes per week (moderate intensity - working in garden). Monitor immediate symptoms (like fatigue/breathlessness) as well as delayed symptoms and adapt as needed.
- Before returning to sport, ensure you are able to complete activities of daily living and walk 500m on the flat without excessive fatigue or breathlessness. Ensure you have at least 10 days' rest and be symptom-free for a minimum of 7 days before starting.

Look after your mental health

- Find time to relax: relaxing activities can help sleep and mental well-being– try deep breathing exercises, yoga, reading or having a relaxing bath or shower.
- Find a creative or fun activity that you enjoy.
- Set small achievable goals that will give you a sense of accomplishment.
- Stay connected: spend time with supportive family and friends.
- Talk to your family/family or friends: share/explain the impact that symptoms are having on your life. It can be hard for them to understand.

Help the patient to manage ongoing breathlessness and cough

- **Advise patient to do the following when feeling breathless:**
  - Stay calm, relax your neck and shoulders and choose a position that eases your work of breathing (see pictures). Think about your breathing: breathe in slowly through your nose, as if you are smelling roses. Breathe out through your mouth, pursing your lips as if you are blowing out a candle and try to relax rather than forcing it. Slowly count to 2 when inhaling and 3 counts during relaxation.
  - Wipe a cool wet cloth over your nose and cheeks, this can help to relieve the feeling of breathlessness.

- Sit on a chair and lean forward with elbows resting on knees.

- Lean forward with elbows resting on the back of a chair.

- Lean forward with hands resting on knees.

- Lean against a wall for support and rest your hand on your thigh or tuck your hand into your pocket.

- **Advise the patient with ongoing dry cough:**
  - Avoid breathing through your mouth as dry air irritates the airways and causes a cough. Try to interrupt cough cycle by closing your mouth, swallowing repeatedly and gently breathing through your nose until the urge to cough goes away. Sip drinks regularly (hot or cold). Suck boiled sweets or lozenges.
- **If productive cough, arrange physiotherapist for further techniques.**

ASTHMA AND COPD: DIAGNOSIS

Asthma and chronic obstructive pulmonary disease (COPD) both present with cough, wheeze, tight chest or difficulty breathing. Distinguish asthma from COPD:

Asthma likely if several of:

- Onset before 20 years of age
- Associated 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 ⮌ 125.

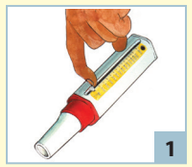
COPD likely if several of:

- 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 ⮌ 126.

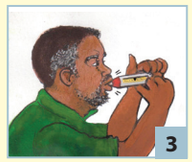
Doctor to confirm diagnosis. If doctor not available, treat as asthma →125 and refer to doctor within 1 month.

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.

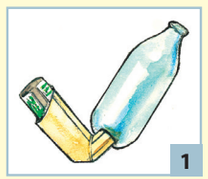
How to assess response to inhaled beta-agonist

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 = $\frac{\text{(repeat PEFR – initial PEFR)}}{\text{Initial PEFR}} \times 100$
- If % PEFR response is ≥ 20%, **asthma** likely.

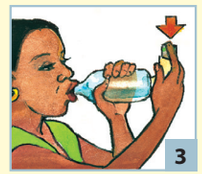
Using inhalers and spacers[2]

- 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 insert into spacer.

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



Press pump once to release one puff into spacer.

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

[1]Peak expiratory flow rate. [2]If no spacer available, explain how to use inhaler without spacer: take off cap and shake inhaler. Stand up and breathe out. Then form seal with lips around inhaler mouthpiece. Breathe in slowly. As breathing in, press pump once and keep breathing in slowly. Close mouth and hold breath for 10 seconds. Breathe out.

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 ↻ 123. 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.

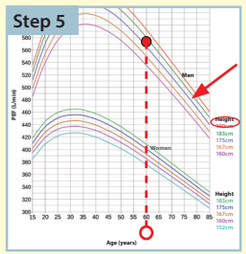
Step 5 Identify the patient's age on the bottom axis and draw a line up until it meets the coloured height line identified in step 4.
e.g. this patient is 60 years old

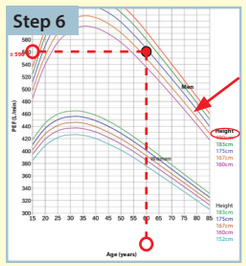
Step 6 From this point on the coloured line, draw a straight line left until you reach the left axis (labelled Predicted PEFR). The closest number is the 'predicted PEFR'.
e.g. this patient's 'predicted PEFR' is ± 590 L/min.

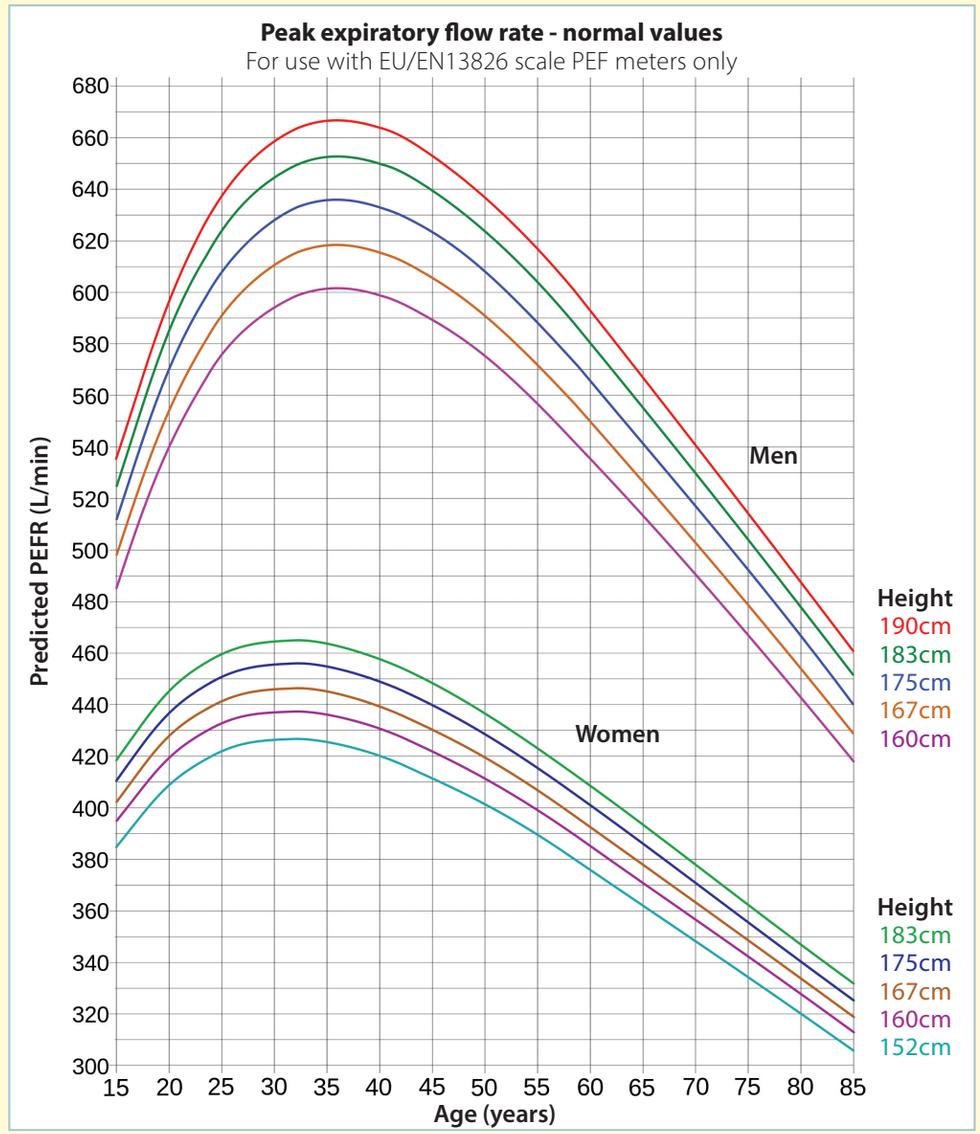
Step 7 Calculate % of predicted PEFR:
observed PEFR ÷ predicted PEFR x 100
e.g. 450 ÷ 590 x 100 = 76%.

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.







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. Refer the patient with newly diagnosed asthma for community health worker support, if available.

Assess the patient with asthma

Assess	When to assess	Note
Asthma symptoms to determine control	Every visit	• If wheeze, tight chest or difficulty breathing and no response to salbutamol inhaler, manage acute exacerbation ↩ 39. • 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 ↩ 34 and dyspepsia ↩ 44. • If using inhaled corticosteroid and white patches on cheeks/gums/tongue/palate, **oral candida** likely ↩ 35.
Adherence and inhaler technique	Every visit	Check adherence and that patient is using inhaler and spacer correctly ↩ 123. If not adherent, give adherence support ↩ 173.
Peak expiratory flow rate (PEFR)	At diagnosis, if symptoms worsening, if change to medication at last visit	Calculate % of predicted PEFR ↩ 124. 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 ↩ 141. Support the patient to make a change ↩ 177.
- Ensure the patient understands medication: beta-agonist inhaler (salbutamol) relieves symptoms but does not control asthma. Inhaled corticosteroid (beclomethasone 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 influenza vaccine 0.5mL IM yearly. Check that patient is up to date with COVID-19 vaccine.
- 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.
- If acute exacerbation was managed at this visit:
  - Give prednisone 40mg daily for a total of 7 days. If > 2 courses of oral prednisone given in past 6 months or exacerbation occurs on maximum treatment, also refer to doctor.
  - Only give antibiotic if fever or thick yellow/green sputum: give amoxicillin[1] 500mg 8 hourly for 5 days. If severe penicillin allergy[1], give instead azithromycin 500mg daily for 3 days.
- Manage further according to asthma control:

Asthma not controlled or acute exacerbation

- Before stepping up treatment, ensure adherent and using inhaler/spacer correctly ↩ 123 and check patient is avoiding smoking, allergens and certain medications[2].
- Give inhaled beclomethasone 200mcg 12 hourly. If already on it, increase dose to 400mcg 12 hourly.
- If still not controlled, doctor to stop beclomethasone 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 beclomethasone[3] 400mcg 12 hourly.
  - If on beclomethasone, decrease dose to 200mcg 12 hourly. If already on 200mcg, stop beclomethasone.
  - 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 symptoms persist/worsen.**

[1]History of anaphylaxis, urticaria or angioedema. [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 ⮌ 39. • 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 ⮌ 92.
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 ⮌ 35. • If swelling in both legs, refer to doctor to consider heart failure. • If pain ≥ 4 weeks, assess and advise ⮌ 61.
Adherence and inhaler technique	Every visit	Check adherence and that patient can use inhaler correctly ⮌ 123. If not adherent, give adherence support ⮌ 173.
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 ⮌ 143.
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 ⮌ 170.
CVD risk	At diagnosis	The patient with COPD is at increased risk of cardiovascular disease. Assess CVD risk ⮌ 127.
Peak expiratory flow rate (PEFR)	• At diagnosis • If symptoms worsening • If change to medication at last visit	Calculate % of predicted PEFR ⮌ 124. • If 50-80%, COPD is **moderate**. • If < 50%, COPD is **severe**.

Advise the patient with COPD

- If patient smokes, encourage to stop ⮌ 141. Stopping smoking is the mainstay of COPD care. Support patient to change ⮌ 177.
- Encourage the patient to take a walk daily and to increase activities of daily living like gardening, housework and using stairs instead of lifts.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of salmeterol/fluticasone.

Health for All ⮌ 120

Treat the patient with COPD

- Give influenza vaccine 0.5mL IM yearly. Check that patient is up to date with COVID-19 vaccine.
- 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 ⮌ 123.
- If patient has **moderate** or **severe** COPD and not controlled on salbutamol alone, decide 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 or hydrocortisone, 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.
  - Refer to Lung Unit to arrange long-term home oxygen therapy if patient is not smoking and still has moderate to severe symptoms (decreased oxygen saturations) despite treatment for ≥ 3 months.

[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 →129.
- If current/recent chest pain, especially on exertion and relieved by rest, consider **ischaemic heart disease** ⮌ 137.
- If current/recent leg pain, especially on walking and relieved by rest, consider **peripheral vascular disease** ⮌ 139.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** ⮌ 136.

Step 2

Look for modifiable CVD risk factors:

- Ask about **smoking**: consider the patient who quit smoking in the past year a smoker for CVD risk assessment.
- Calculate **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 ⮌ 132.
- Look for **diabetes**: if not known with diabetes, check glucose ⮌ 17.

Step 3

Calculate the patient's CVD risk if no established CVD:

- If total and HDL cholesterol results available, calculate the patient's 10-year CVD risk score below or use the EMGuidance app tool.
- If cholesterol results are not available, use instead the chart that calculates CVD risk using BMI ⮌ 128.

If no established CVD and cholesterol available, calculate the patient's 10-year CVD risk using the scoring system below

- 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 **man**: if score < 11, then CVD risk is < 10%. If score 11-14, then CVD risk is 10-20%. If score ≥ 15, then CVD risk is > 20%.
  - If **woman**: if score < 13, then CVD risk is < 10%. If score 13-17, then CVD risk is 10-20%. If score ≥ 18, 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

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 a less than 1 in 10 chance that s/he may have a heart attack or stroke over the next 10 years.
- If CVD risk is 10-20%, there is a 1-2 in 10 chance that s/he may have a heart attack or stroke over the next 10 years.
- If CVD risk is > 20%, there is a more than 2 in 10 chance that s/he may have a heart attack or stroke over the next 10 years.

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 →129.
- If CVD risk < 10% and no CVD risk factors, reassess CVD risk after 5 years.

CVD risk: diagnosis if cholesterol not available

Step 3

If no established CVD and cholesterol *not* available, calculate the patient's 10-year CVD risk using the chart based on BMI instead of cholesterol:

- Use the patient's sex, age, BMI, systolic BP and smoking status to work out what colour block they fall into.

Step 4

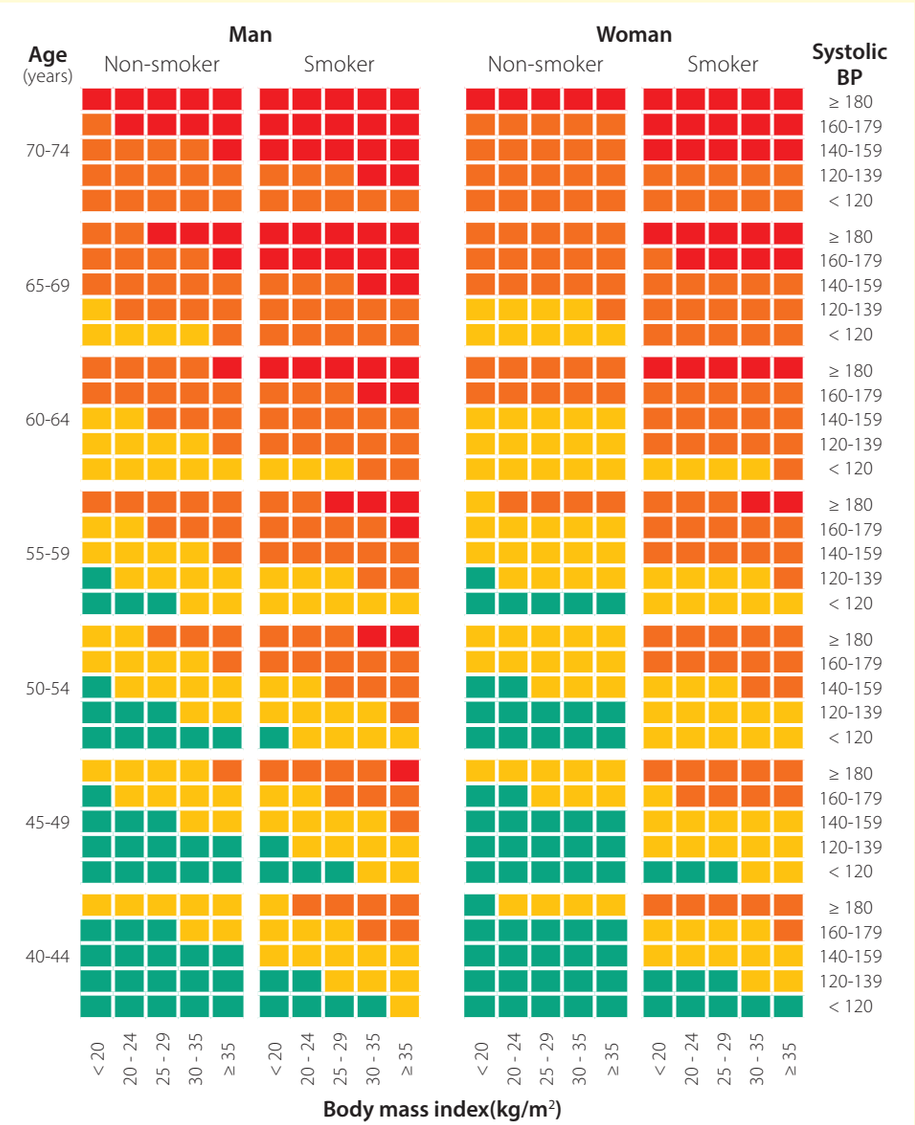
Explain to the patient what his/her risk of heart attack or stroke might be over next 10 years:

- **CVD risk is < 5%:** this means there is less than a 1 in 20 chance that s/he may have a heart attack or stroke over the next 10 years.
- **CVD risk is 5-10%:** this means there is between a 1 in 20 and a 1 in 10 chance that s/he may have a heart attack or stroke over the next 10 years.
- **CVD risk is 10-20%:** this means there is between a 1 in 10 and a 1 in 5 chance that s/he may have a heart attack or stroke over the next 10 years.
- **CVD risk is > 20%:** this means there is more than 1 in 5 chance that s/he may have a heart attack or stroke over the next 10 years.

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 →129.
- If *no* CVD risk factors and CVD risk < 10%, reassess CVD risk after 5 years.



[1]Adapted from WHO cardiovascular disease risk non-laboratory-based Southern Sub-Saharan Africa. From: HEARTS technical package for cardiovascular disease management in primary health care: risk based CVD management. World Health Organization. Geneva, 2020.

CARDIOVASCULAR DISEASE (CVD) RISK: ROUTINE CARE

Assess the patient with CVD risk

Assess	When to assess	Note
Symptoms	Every visit	Ask about chest pain ↩ 37, difficulty breathing ↩ 38, leg pain ↩ 65 and symptoms of stroke/TIA ↩ 136.
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 ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132.
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 ↩ 130. If not known with diabetes, check glucose ↩ 17.
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 ↩ 177.
- 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 ↩ 141.

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 ↩ 142.

Health for All ↩ 37 and 41

Stress
Assess and manage stress ↩ 86.

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 ↩ 178.
- 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 ↩ 176.

Treat the patient with CVD risk

- If **known CVD**[1]: give simvastatin[4] 40mg at night. If on amlodipine, give instead simvastatin[4] 20mg at night. Avoid simvastatin if pregnant or liver disease.
  - If patient develops muscle pain/cramps, reduce dose to 10mg at night.
- If **no known CVD**: if CVD risk > 20%, give simvastatin[4] 10mg at night. 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 at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin.

DIABETES: ROUTINE CARE

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

- Chest pain →37.
- Fitting ↩ 19.
- 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 ↩ 131.
- 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 ↩ 37 and leg pain ↩ 65.
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 ↩ 143.
Alcohol/drug use	At diagnosis and if control poor	In the past year, has patient: 1) drunk ≥ 4 drinks[4]/session, 2) used drugs or 3) misused prescription or over-the-counter medications? If yes to any ↩ 142.
BP	Every visit	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132.
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). If trying to lose weight: check BMI/waist circumference 3 monthly.
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 ↩ 66.
Family planning	Every visit	Assess patient's contraceptive needs ↩ 154. If pregnant or planning pregnancy, refer for specialist care.
Glucose	Every visit	If fasting glucose > 8 or non-fasting glucose taken 2 hours after eating > 10, step up treatment ↩ 131.
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 ↩ 131. 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 ↩ 131. • If no protein and not on enalapril, send urine to lab for albumin/creatinine ratio. If ratio > 3, start enalapril ↩ 131.
Creatinine (eGFR)	• At diagnosis, then yearly • If on enalapril: at baseline and 4 weeks[5] • If eGFR < 60: 3-6 monthly	• 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 ↩ 127. 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 ⮌ 129. Educate on foot care to prevent ulcers and amputation ⮌ 66.
- 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 difficulty with adherence, give adherence support ⮌ 173 and refer to a community health worker, if available.
- 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.
- Advise patient that s/he is at risk of severe COVID-19 disease and should adhere strictly to physical distancing, good hand/respiratory hygiene and keep up to date with his/her COVID-19 vaccinations.
- If on/starting insulin: discuss injection technique/sites (abdomen, thighs, arms), store insulin in fridge/cool dark place, meal frequency, symptoms of hypoglycaemia/hyperglycaemia, disposal of sharps. 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

- Check that patient is up to date with COVID-19 vaccine. If age > 65 years , or known HIV or heart or lung disease, give influenza vaccine 0.5mL IM yearly.
- If **known CVD**[1]: give simvastatin[2] 40mg[3] at night and aspirin daily. Avoid simvastatin if pregnant and avoid aspirin if peptic ulcer, dyspepsia, kidney disease. Avoid both if liver disease.
- If **no known CVD**[1] but CVD risk > 20%, eGFR < 60, known with diabetes > 10 years or age > 40 years, give simvastatin[2] 10mg at night. 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.

Step	Medication	Breakfast	Supper	Bedtime (before 22h00)	Note
1	Metformin	500mg 500mg 850mg 1g	 500mg 850mg 1g		• Avoid if eGFR < 30, liver disease, uncontrolled heart failure, alcoholism. • If on dolutegravir or eGFR 30-45, halve dose, up to maximum of metformin 500mg 12 hourly. • Take with meals. May cause self-limiting nausea, abdominal cramps or diarrhoea. Advise 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 *(Preferred in elderly patients: > 65 years)* *or* glibenclamide	1mg 2mg 3mg 4mg (up to 8mg)			• Continue metformin. • **Glimepiride**: take glimepiride with breakfast. - Increase glimepiride by 1mg, at weekly intervals, up to 8mg daily if fasting glucose > 8 (or postprandial[5] glucose > 10) or HbA_{1c} > 8%, and patient is adherent. • **Glibenclamide**: avoid glibenclamide if > 65 years. - Take glibenclamide 30 minutes before breakfast. Avoid missing meals. - Increase every 2 weeks if fasting glucose > 8 (or postprandial[5] glucose > 10) or HbA_{1c} > 8%, and patient is adherent. • Avoid both in pregnancy, severe kidney (eGFR < 60) and liver disease, co-trimoxazole allergy. • If after 3 months on maximum dose HbA1c > 8%, move to step 3.
		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 glucose remains raised, increase by 2-4units each week.	• Stop glimepiride/glibenclamide but continue metformin when starting insulin. Educate about insulin as above. • Advise patient to check glucose daily after a meal and on waking 3 times a week. Keep a record of readings. • If fasting glucose frequently > 8 (or postprandial[5] glucose > 10), increase by 2-4units each 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. Educate about insulin as above. • 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. • Advise patient to check glucose daily after a meal and on waking 3 times a week. Keep a record of readings. • If fasting glucose frequently > 8 (or postprandial[5] glucose > 10), increase dose by 4 units each week. • If 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 at night. [3]If on amlodipine, reduce simvastatin dose to 20mg at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin. [4]Avoid in pregnancy, previous angioedema or renal artery stenosis. If persistent cough, refer to doctor to consider alternative. [5]Two hours after eating.

HYPERTENSION: DIAGNOSIS

Check blood pressure (BP)

- **Position patient:** ask patient to remove tight clothing covering upper arm. Seat with back against chair, both feet flat on floor and arm supported at heart level. Patient to avoid talking during reading.
- **Position cuff** correctly and ensure appropriate size: if obese (mid-upper arm circumference is ≥ 33cm), use a large BP cuff.
- **Measure and record** systolic BP (SBP) and diastolic BP (DBP). Take at least two readings 1-2 minutes apart.
  - If first time BP measurement, or readings differ by > 5mmHg, or if BP ≥ 180/110, take a third reading. If able, use average of last 2 readings to interpret BP measurement, otherwise use lowest BP reading.
- If taking BP manually, SBP is the first appearance of sound. DBP is the disappearance of sound.
- If patient is pregnant, interpret reading →**159**.

Give urgent attention to the patient with BP ≥ 180/110 (SBP ≥ 180 and/or DBP ≥ 110) and any of:

- Visual disturbances
- Dizziness
- Confusion
- Severe headache
- Chest pain →37.
- Difficulty breathing worse on lying flat or with leg swelling →135.
- Sudden weakness on 1 or both sides, vision problems, dizziness, difficulty speaking or swallowing →136.

Manage and refer:

- If BP ≥ 180/130 (SBP > 180 and/or a DBP > 130) with symptoms listed above, treat as **hypertensive emergency**: give single dose amlodipine 10mg orally. Avoid short-acting nifedipine as it may drop the BP too quickly, causing a stroke. Refer urgently.
- If dizzy or faint after treatment, lie patient down. If BP < 160/100, raise legs.

Approach to interpreting a BP in a patient not needing urgent attention

If systolic BP and diastolic BP fall into 2 different categories, use the higher blood pressure reading to classify further.

BP < 140/90

- Assess CVD risk ↩ **127**.
- Decide on frequency of follow-up:

• BP < 120/80 *and* • CVD risk < 10% *and* • No CVD risk factors[1]	• BP 120/80 – 139/89 *or* • CVD risk ≥ 10% *or* • Any CVD risk factors[1]
Check BP after 5 years.	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	BP 140/90 - 159/99	BP 160/100 - 179/109
	Diagnose **mild hypertension**	Diagnose **moderate hypertension**

- Give routine hypertension care ↩ **133**.
- If < 30 years, refer to exclude secondary cause of hypertension.

BP ≥ 180/110

- If overweight, check that correct size cuff is being used.
- Repeat BP readings after patient has rested for 1 hour.
- Take at least 3 BP readings.

BP confirmed ≥ 180/110

Diagnose **severe hypertension**
Check to see if patient needs urgent attention above.

[1]CVD risk factors include smoking, diabetes, BMI > 25, waist circumference > 80cm (woman) or 94cm (man), cholesterol > 5.2, parent/sibling with early onset CVD (man < 55 years or woman < 65 years).

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 ↺ 135, ischaemic heart disease ↺ 137 or stroke/TIA ↺ 136.
Pregnancy	Women of child bearing age: every visit	• If pregnancy diagnosed, stop ACE-inhibitors (like enalapril), give instead methyldopa 250mg 8 hourly and refer to high-risk antenatal clinic. • If planning pregnancy, refer to doctor. • Assess patient's contraceptive needs ↺ 154.
Alcohol/drug use	At diagnosis	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 ↺ 142.
Adherence	Every visit	If BP is not controlled, assess and support adherence ↺ 173.
BP control	• Every visit (check 2 readings) • *For correct method ↺ 132.*	• If BP < 140/90, BP is **controlled**: continue current treatment and review 6 monthly. • If BP ≥ 140/90, BP is **not controlled**: if adherent, step up treatment ↺ 134. If not adherent, give support ↺ 173 and review in 1 month. - If ≥ 180/110: also check if needs urgent attention ↺ 132. • 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 ↺ 127.
Urine dipstick	At diagnosis, then yearly	If 1+ proteinuria on dipstick, check creatinine and eGFR. If glucose on dipstick, screen for diabetes ↺ 17.
Diabetes risk	Yearly and if glucose on urine dipstick	If known diabetes ↺ 130. If not known with diabetes, check glucose ↺ 17.
Creatinine (eGFR)	• If 1+ proteinuria on dipstick • Yearly if: CVD[2], hypertension for ≥ 10 years, uncontrolled hypertension , eGFR < 60	• If eGFR < 30, refer. • If eGFR < 60, send urine to lab for albumin/creatinine ratio and refer to doctor: if ratio > 3, discuss/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

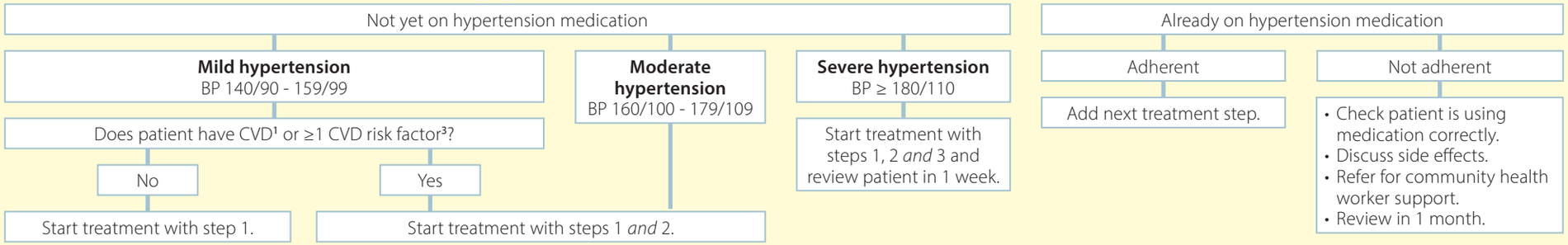
Advise the patient with hypertension

- 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.
- Emphasise salt restriction ≤ 1 teaspoon/day, regular physical exercise (150 minutes/week), weight reduction and smoking cessation. If patient smokes, encourage to stop ↺ 141.
- 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 to limit exposure to sunlight and use sunscreen when exposed to sunlight.

[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

- Give influenza vaccine 0.5mL IM yearly. Check that patient is up to date with his/her COVID-19 vaccine.
- If **known CVD**[1]:
  - Give simvastatin[2] 40mg at night. If on amlodipine, give instead simvastatin[2] 20mg at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin. If patient develops muscle pain/cramps, reduce dose to 10mg at night. Avoid if pregnant or liver disease.
  - Give aspirin 150mg daily. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- If **no known CVD**[1]: if CVD risk > 20%, give simvastatin[2] 10mg at night. 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 ↩ 129. 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 10mg daily instead of HCTZ. Then if needed, add HCTZ as next step once on maximum dose of enalapril.
3	Add enalapril 10mg at night.	• Avoid if pregnant, eGFR < 30 or potassium ≥ 5.0. • Advise patient to stop enalapril immediately if swelling of tongue/lips/face develops, **angioedema** likely ↩ 32.
4	Increase enalapril to 20mg at night.	
5	Add amlodipine 5mg at night.	Avoid if untreated heart failure. If on simvastatin, reduce simvastatin dose to 20mg at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin.
6	Increase amlodipine to 10mg at night.	
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 at night. [3]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 →37. • 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 40% face mask oxygen (6-8L/min).
- If systolic BP > 90: give furosemide 40mg slow IV. If no response after 30 minutes, give another 80mg IV. If good response, give 40mg IV after 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 ↩ 154. 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 ↩ 142.
Weight	Every visit	Assess changes in fluid balance by comparing with weight when patient least symptomatic.
BP and pulse	Every visit	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132. 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 ↩ 170.
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 ↩ 17. If abnormal, discuss with specialist. Test for HIV ↩ 110.

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 ↩ 129.
- 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. Check that patient is up to date with his/her COVID-19 vaccine.
- 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 liver disease. Use with caution in gout, previous skin cancer.
	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.
	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) ↩ 17.
- Avoid treating BP ≥ 140/90 as this may worsen stroke. If BP ≥ 220/120, discuss with specialist about need for pre-referral treatment.
- 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 ↩ 37 or leg pain ↩ 65.
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 ↩ 143.
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 or breathing problem, also give palliative care ↩ 170.
BP	Every visit	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132. If new hypertension, start treatment only 48 hours after a stroke ↩ 133.
Diabetes risk	At diagnosis and yearly	If known diabetes ↩ 130. If not known with diabetes, check glucose ↩ 17.
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, especially if age < 50 years	Test for HIV ↩ 110. If HIV, give routine care ↩ 111.
ECG	At diagnosis if not already done	If abnormal, discuss/refer.

Advise the patient with stroke/TIA

- 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. Refer to available helpline/s ↩ 178.
- Help patient to manage CVD risk ↩ 129. If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment ↩ 127.
- Avoid oral contraceptives containing oestrogen. Advise other method such as copper IUD, injectable, progestogen-only pill ↩ 154.

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[1] 40mg[2] at night for life, regardless of cholesterol if patient had an ischaemic stroke. If patient develops muscle pain/cramps, reduce dose to 10mg at night. Avoid if pregnant or liver disease.
- Check that patient is up to date with COVID-19 vaccine. If age > 65 years, or known HIV or heart or lung disease, give influenza vaccine 0.5mL IM yearly.

[1]If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg at night. [2]If on amlodipine, reduce simvastatin dose to 20mg at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin.

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 →37.

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 →138.

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 40% face mask oxygen.
- Give single dose aspirin 150mg chewed.
- Establish IV access.
- Doctor to review ECG and assess for streptokinase as soon as possible:
  - Give streptokinase only if ECG shows ST elevation[3] or left bundle branch block *and* if ≤ 6 hours since onset of chest pain or ongoing chest pain. If > 6hrs since onset of chest pain, discuss streptokinase with specialist or referral hospital.
  - Avoid if streptokinase given in past year[4] or known allergy to it, stroke in past 3 months, recent major trauma, surgery or head injury, bleeding within past month, active bleeding, known bleeding disorder, aneurysm or aortic dissection.
  - 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).
- If current chest pain and BP > 90/60:
  - Give isosorbide dinitrate sublingual 5mg every 5 minutes until pain relieved to a maximum of 4 doses of 5mg. Avoid if sildenafil (Viagra®) or vardenafil used within past 24 hours.
  - Only if ongoing severe pain: give morphine 2-4mg slow IV[5].
- If BP < 90/60 or > 180/130, discuss further management with specialist or referral hospital.
- 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 40% face mask oxygen.
- Give single dose aspirin 150mg chewed.
- Establish IV access.
- Doctor to review ECG and assess for streptokinase as soon as possible:
  - Give streptokinase only if ECG shows ST elevation[3] or left bundle branch block *and* if ≤ 6 hours since onset of chest pain or ongoing chest pain. If > 6hrs since onset of chest pain, discuss streptokinase with specialist or referral hospital.
  - Avoid if streptokinase given in past year[4] or known allergy to it, stroke in past 3 months, recent major trauma, surgery or head injury, bleeding within past month, active bleeding, known bleeding disorder, aneurysm or aortic dissection.
  - 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).
- If current chest pain and BP > 90/60:
  - Give isosorbide dinitrate sublingual 5mg every 5 minutes until pain relieved to a maximum of 4 doses of 5mg. Avoid if sildenafil (Viagra®) or vardenafil used within past 24 hours.
  - Only if ongoing severe pain: give morphine 2-4mg slow IV[5].
- If BP < 90/60 or > 180/130, discuss further management with specialist or referral hospital.
- Refer urgently.

No
Patient has **stable angina**. Give routine ischaemic heart disease care →138.

[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]ST elevation > 1mm in two or more contiguous limb leads *or* ST elevation > 2mm in two or more contiguous chest leads. [4]Discuss use of alteplase with specialist/referral hospital. [5]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.

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 ↩ 137. • Ask about leg pain ↩ 65 and symptoms of stroke/TIA ↩ 136.
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 ↩ 143.
BP	Every visit	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132.
Diabetes risk	At diagnosis and yearly	If known diabetes ↩ 130. If not known with diabetes, check glucose ↩ 17.

Advise the patient with ischaemic heart disease

- If patient has had a heart attack, s/he can resume normal daily and sexual activity 1 month after heart attack if symptom free.
- Emphasize the importance of lifelong adherence to medication. If difficulty with adherence, give adherence support ↩ 173.
- Ensure patient knows how and when to use sublingual nitrates. Explain that they are not addictive and can also be used before activities which may provoke chest pain.
- 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.

Treat the patient with ischaemic heart disease

- Give influenza vaccine 0.5mL IM yearly. Check that patient is up to date with COVID-19 vaccine.
- Help the patient to manage his/her CVD risk ↩ 129.
- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- Give simvastatin[1] 40mg at night. If on amlodipine, give instead simvastatin[1] 20mg at night (no dose adjustment needed for rosuvastatin, pravastatin, atorvastatin). 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 unstable angina or following heart attack: if signs of heart failure, 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	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.
	and Atenolol	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 20mg at night.
3	Add: isosorbide mononitrate	10mg at 8am and 2pm	20mg at 8am and 2pm	-
	or isosorbide dinitrate	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 at night.

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 ↩ 137 and symptoms of stroke/TIA ↩ 136. • Document the walking distance before onset of claudication.
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 ↩ 143.
BP	Every visit	If known hypertension ↩ 133. If not, check BP: if ≥ 140/90 ↩ 132.
Legs and feet	Every visit	Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education ↩ 66.
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 ↩ 130. If not known with diabetes, check glucose ↩ 17.

Advise the patient with peripheral vascular disease

- 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 ↩ 141. Support the patient to make a change ↩ 177.
- 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 ↩ 127.

Treat the patient with peripheral vascular disease

- Help the patient to manage his/her CVD risk ↩ 129.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] at night regardless of cholesterol level. If patient develops muscle pain/cramps, reduce dose to 10mg daily. Avoid if pregnant or 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 at night. [2]If on amlodipine, reduce simvastatin dose to 20mg at night. No dose adjustment needed for rosuvastatin, pravastatin, atorvastatin.

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 ⮌ 84. If restraints used, complete **MHCA 48** form.
- If patient is not alert, fully conscious or physically stable, check for underlying causes ⮌ 85.
- 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.

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.

Patient incapable of giving informed consent[1].

Patient *refuses* treatment/admission

Admit or treat as an **Assisted user** under the Mental Health Care Act (MHCA).

Patient *does not refuse* treatment/admission

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 ↩ 38, urinary symptoms ↩ 59 or weight loss ↩ 23. • Ask about symptoms of CVD[1]: chest pain ↩ 37, leg pain ↩ 65, new sudden onset of any of: asymmetric weakness of face, arm or leg; numbness, difficulty speaking or visual disturbance ↩ 136. • 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 ↩ 178. • 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 ↩ 86.
COPD	At diagnosis	If difficulty breathing when walking fast/up a hill, consider COPD ↩ 123. If known COPD ↩ 126.
CVD risk	At diagnosis	Assess CVD risk ↩ 127.

Advise the patient who smokes tobacco

- Ask if patient is willing to discuss tobacco smoking. For tips on how to communicate effectively ↩ 176. Support the patient to make a change ↩ 177.
- 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 ↩ 178 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 ↩ 178, 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 ⮌ 141.

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** ⮌ 85. • If aggressive/violent or disruptive behaviour ⮌ 84. • If patient has suicidal thoughts or plans, refer same day ⮌ 83.
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 ⮌ 88.
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 ⮌ 143. If stress or anxiety ⮌ 86.

Advise the patient with unhealthy alcohol use or any drug use

Health for All ⮌ 37 and ⮌ 41

- 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 ⮌ 178. 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 ⮌ 177.

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.
- Consider the need for PrEP ⮌ 106.

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 ⮌ 178. • 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

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 ⮌ 27.

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 ⮌ 142.

Check for medication side effects
Review medication: prednisone, efavirenz, metoclopramide, theophylline and contraceptives can cause depression. Discuss with specialist.

No

Continue to assess and manage the patient with low mood, stress or anxiety →86.

If none of above or depressive symptoms persist despite treatment: does the patient have any psychotic symptoms[2]?

Yes

Refer same day.

No

Check if known bipolar disorder or symptoms of mania (now or in the past): 3 or more of the following for ≥ 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.

No

Yes: does patient have ideas of suicide or self-harm, feelings of worthlessness or is s/he talking or moving unusually slowly?

Yes

No: has patient had depression in the past?

Yes

No: symptoms likely due to loss/bereavement. Provide support ⮌ 86. If persists ≥ 6 months, discuss/refer.

Depression likely →144.

[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

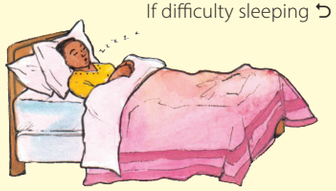
Assess	When to assess	Note
Symptoms	Every visit	• Assess symptoms of depression and anxiety. If no better after 8 weeks of treatment or worse on treatment, discuss/refer. • Manage other symptoms as on symptom pages.
Self-harm	Every visit	Asking a patient about thoughts of self-harm/suicide does not increase the chance of this. If patient has suicidal thoughts or plans, assess and manage risk before continuing ↩ 83. 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 ↩ 88.
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** ↩ 148.
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 ↩ 142.
Side effects	Every visit	Ask about side effects of antidepressant medication ↩ 145.
Stressors	Every visit	Help identify domestic, social and work factors contributing to depression or anxiety. If patient is being abused ↩ 88. If recently bereaved ↩ 86.
Family planning	Every visit	• Assess patient's contraceptive needs ↩ 154 • 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. If difficulty with adherence, give support ↩ 173.
- 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:

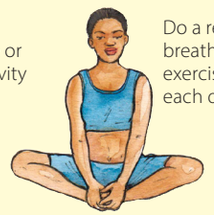
Get enough sleep
If difficulty sleeping ↩ 87.



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 ↩ 178.

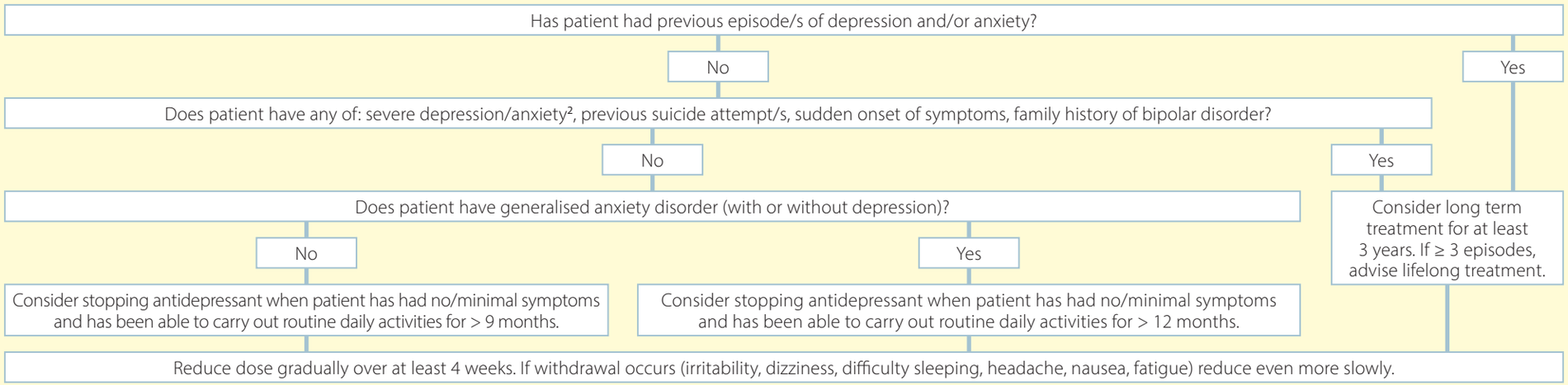
[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

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 ↩ 178.
  - 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 ⮌ 84. - Varying levels of consciousness over hours/days and/or temperature ≥ 38°C, **delirium** likely ⮌ 85. - Patient has interrupted treatment: restart intramuscular treatment ⮌ 147 and explore reasons for poor adherence (like side effects, substance misuse) ⮌ 173. - 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, refer same day ⮌ 83. 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 ⮌ 88.
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 ⮌ 142.
Family planning	Every visit	Assess patient's contraceptive needs ⮌ 154. If patient is pregnant, planning pregnancy or breastfeeding, refer to specialist.
Medication	Every visit	• Ask about treatment side effects ⮌ 147. • 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 ⮌ 130. If not known with diabetes, check glucose ⮌ 17.
Random total cholesterol	At diagnosis, then 2 yearly	• Assess and manage CVD risk ⮌ 127. • If cholesterol increasing, discuss with specialist about possible alternative schizophrenia treatment.
HIV	At diagnosis or if status unknown	Test for HIV ⮌ 110. If HIV positive, avoid efavirenz, discuss treatment with specialist.
Syphilis	At diagnosis	If positive, treat ⮌ 53 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 0.75mg 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 20–80mg IM every 4 weeks.	• Full response can take 2 months. • Fewer anticholinergic side effects[1] than chlorpromazine. • Monitor for extrapyramidal side effects[2] (EPSE): if any EPSE develop, start orphenadrine 50mg 8 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 200-600mg 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	Stop treatment and discuss/refer same day. Doctor to consider switch to risperidone (above).
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 interruption, 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 ⮌ 83. • If sudden deterioration in behaviour ⮌ 85. • 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.
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 ⮌ 170.
BP	At diagnosis	If known hypertension ⮌ 133. If not, check BP: if BP ≥ 140/90 ⮌ 132.
CVD risk	At diagnosis,then depending on risk	Assess CVD risk ⮌ 127.
HIV	At diagnosis or if status unknown	Test for HIV ⮌ 110. If HIV positive, give routine care ⮌ 111. If new HIV diagnosis with dementia, discuss with specialist.
Syphilis	At diagnosis	If positive, treat ⮌ 53 and refer.
Thyroid function	At diagnosis	Check TSH. If abnormal, refer.
Glucose	At diagnosis	If known diabetes ⮌ 130. If not known with diabetes, check glucose ⮌ 17.

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 ⮌ 178. 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 ⮌ 111, 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 →19. If not known with epilepsy and has had a recent fit →19 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 ⮌ 150. 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 ⮌ 178.
Family planning	Every visit	• Assess patient's contraceptive needs ⮌ 154. • If woman of child-bearing potential on sodium valproate, discuss the risk of birth abnormalities[2] and advise to switch anticonvulsant. If patient agrees, switch to lamotrigine ⮌ 150. If patient wishes to continue valproate, ensure patient on reliable contraception[3] and have patient sign risk acknowledgment form[4] yearly. • If pregnant or planning pregnancy: discuss/refer to specialist. Give routine antenatal care ⮌ 159 and give folic acid 5mg daily. 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 ⮌ 143.
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 ⮌ 142.

Advise the patient with epilepsy

Health for All ⮌ 124

- If newly diagnosed, refer to community health worker and Epilepsy South Africa for support ⮌ 178. Help to get a MedicAlert® bracelet ⮌ 178.
- 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 ⮌ 150) 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 ⮌ 150.
  - 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 ⮌ 150. If already on maximum dose for 4 weeks, switch anticonvulsant once ⮌ 150. 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 →150.

[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 intrauterine device (IUD), subdermal implant, injectable or sterilisation. [4]Form available from: www.sahpra.org.za/wp-content/uploads/2022/08/GLF-CEM-PV-S01_v1-Valproate-Annual-Risk-Acknowledgement-Form.pdf

Medication	Dose	Notes	Side effects
Lamotrigine	• **Starting dose:** - Week 1 and 2: 25mg daily - Week 3 and 4: 25mg 12 hourly - Week 5: 25mg in the morning and 50mg at night - Week 6: 50mg 12 hourly - Week 7 onwards: increase by 50mg every 2 weeks until controlled • **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. • Titrate lamotrigine up slowly: - Week 1 and 2: 25mg on alternate days - Week 3 and 4: 25mg daily - Week 5: 25mg 12 hourly - Week 6: 25mg in the morning and 50mg at night - Week 7: 50mg 12 hourly • 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 ⮌ 178. • If known liver or kidney disease, discuss with specialist. • If lamotrigine not suitable or not tolerated, refer. • If treatment is interrupted for > 1 week, titrate up again using starting dose.	• **Urgent:** rash ⮌ 73 • **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 ⮌ 178.	• **Urgent:** rash ⮌ 73 • **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	• Only use if already well controlled on phenytoin. • 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 ⮌ 178. • If on > 300mg daily, monitor drug levels regularly. Take trough level 2-3 days after initial dose adjustment (timing of trough levels is not critical if on extended release formulation). If needed, adjust dosing according to result. Repeat level after 5-8 days since initial dose change. Repeat weekly until stable. Once stable, monitor levels at 3-12 month intervals.	• **Urgent:** - Rash ⮌ 73 - 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 →152.
- 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.

Rheumatoid (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 rheumatoid 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. Assess and advise on chronic pain ↩ 61. If difficulty sleeping ↩ 87.
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.
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 ↩ 143.
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. If BMI > 25, assess CVD risk ↩ 127.
HIV	At diagnosis	Test for HIV ↩ 110.

Advise the patient with chronic arthritis

- If BMI > 25, advise to reduce weight to decrease stress on weight-bearing joints like knees and feet.
- Encourage the patient to be as active as possible, but to rest with acute flare-ups. If patient smokes, encourage to stop ↩ 141. Refer to support group/helpline ↩ 178.
- Ensure the patient using disease modifying medication knows to have regular blood monitoring depending on the prescribed medications from the specialist clinic.

Health for All ↩ 128

Treat the patient with chronic arthritis

- Give methyl salicylate ointment to apply to affected joints.
- If **osteoarthritis**: give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed. If better, reduce dose to 500mg 6-8 hourly as needed.
  - If no response to paracetamol and inflammation present, 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.
  - Refer to doctor if available to consider steroid injection/s.
- If **rheumatoid (inflammatory) arthritis**: refer to specialist to confirm diagnosis. Rheumatoid arthritis must be treated early with disease modifying anti-rheumatic medication to control symptoms, preserve function, and minimise further damage.
  - While awaiting appointment, give ibuprofen[1] 400mg 8 hourly with food for up to 3 months. If > 65 years, previous peptic ulcer, on aspirin or prednisone, also give lansoprazole 30mg daily to take while on ibuprofen.
  - If confirmed diagnosis and **acute flare** (symptoms much worse): refer. While waiting for appointment, give ibuprofen[2] 400mg 8 hourly with food for up to 2 weeks. Avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure, kidney disease or on warfarin: give instead prednisone 7.5mg daily for up to 2 weeks.
- If rheumatoid arthritis, or if osteoarthritis with difficulty with activities of daily living, refer to physiotherapist or occupational therapist.

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.

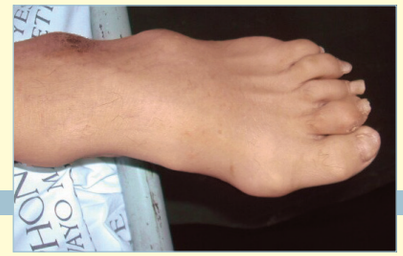
Assess the patient with gout

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 ↩ 142.
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 ↩ 127.
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

Health for All ↩ 129

- Help the patient to manage his/her CVD risk ↩ 129. If BMI[2] > 25 advise to reduce weight.
- 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.



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

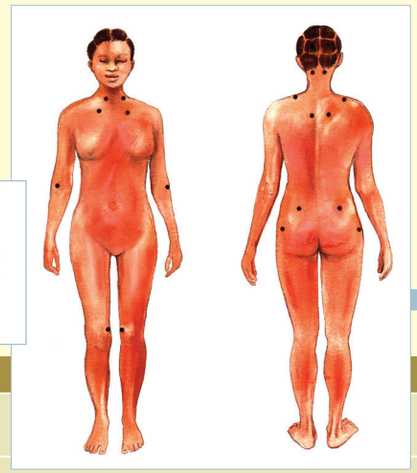
- Patient needs allopurinol if any of: ≥ 2 attacks per year, chronic tophaceous gout (picture), kidney stones, kidney disease, serum urate > 0.5.
- Wait at least 3 weeks after an acute gout attack before starting allopurinol.
- Start allopurinol 100mg (or 50mg if ≥ 65 years) daily. Use lowest dose to keep urate < 0.35: if needed, increase monthly by 100mg daily, up to 400mg daily in divided doses. Usual maintenance dose 300mg daily. For doses > 300mg, divide dose.

- If no response to treatment or unsure about diagnosis, doctor to discuss/refer patient to specialist.
- If patient < 40 years or has BMI[2] < 18.5, refer within 1 month to exclude possible cancer cause for gout.

[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 ⮌ 23.
  - 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 →62.
  - Check CRP, Hb, TSH and test for HIV ⮌ 110.
- **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.
Chronic pain	At diagnosis	Further assess and advise on chronic pain ⮌ 61.
Sleep	Every visit	If patient has difficulty sleeping ⮌ 87.
Stressors	Every visit	Help identify psychosocial stressors that may exacerbate symptoms. If stress or anxiety ⮌ 86.
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 ⮌ 143.
Chronic arthritis	Every visit	If patient also has chronic arthritis, give routine care 151.

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 s/he will have good days and bad days, but that fibromyalgia does not get worse over time. It 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 ⮌ 87.
  - Refer to available support group and helpline ⮌ 178.
  - If no better with a combination of education, exercise and medication, refer for cognitive behavioural therapy if available.

Treat the patient with fibromyalgia

- Give paracetamol 1g 4-6 hourly (up to 4g in 24 hours) as needed.
- 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/discuss.

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 wanting long-term contraception, check pregnancy test and if negative, insert Copper IUD[1] instead.
  - If patient > 80kg, BMI[2] ≥ 30, or on efavirenz, rifampicin, phenytoin or carbamazepine, increase dose of levonorgestrel to 3mg.
  - Give metoclopramide 10mg 8 hourly as needed for nausea/vomiting. If patient vomits < 2 hours after taking levonorgestrel, repeat dose.
  - Offer to start long-term contraceptive at same visit (if IUD not chosen). If injectable or implant given, check pregnancy test in 2 weeks.
- 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 ↩ 108.

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 ↩ **49**. Manage other symptoms as on symptom pages.
Chronic conditions	First visit	Check suitability of method if any of: cancer (especially breast, cervical, uterine), blood clots, hypertension, CVD, stroke, ischaemic heart disease, diabetes, liver disease, migraines, or unexplained vaginal bleeding ↩ **156**.
Medication	Every visit	If on ART, TB or epilepsy treatment, check method is suitable ↩ **156**.
Periods	Every visit	Ask about periods: interval between periods, blood loss, number of days period lasts, dysmenorrhoea (pain/cramps associated with periods).
Menopause	If > 40 years: yearly	Ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping. If menopausal ↩ **169**.
Sexual health	Every visit	If risky sexual behaviour: new or multiple partner/s, uses condoms unreliably, has sex under influence of alcohol/drugs, give safe sex advice.
Adherence	Every visit	• If already on contraceptive, ask about concerns and satisfaction with method. If unsatisfied, consider different contraceptive, rather than risking unwanted pregnancy. • If patient has missed injections or pills, manage ↩ **155**.
Side effects	Every visit	If already on contraceptive, ask about and manage side effects ↩ **155**.
Weight (BMI[2])	Every visit	If BMI > 25, assess CVD risk ↩ **127**.
BP	First visit; every visit if on pill or injectable	• Check BP: if ≥ 140/90 ↩ **132**. • 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[3]	Check for lumps in breasts ↩ **43** and axillae ↩ **25**.
Pregnancy	Every visit	• Before starting contraception, exclude pregnancy ↩ **157**. • If pregnancy suspected (nausea/breast tenderness or missed period when using combined oral contraceptive), exclude pregnancy ↩ **157**.
HIV	Every visit	Test for HIV ↩ **110**. If positive, give routine HIV care ↩ **111**. If negative, consider need for PrEP, if available ↩ **106**.
Cervical screen	When needed	If HIV negative: do 3 cervical screens, each 10 years apart from age 30 ↩ **55**; if HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly ↩ **55**.

Health for All ↩ 51

Advise the patient starting/on 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.
- Recommend dual contraception: one method of contraception *plus* condoms to protect from STIs and HIV. Demonstrate and give male/female condoms.
- Discuss risky sexual behaviour. Explain risks of pregnancy and infections. Encourage patient to have 1 partner at a time and if HIV negative to test for HIV between partners. Advise that partner/s test too.
- Educate about the availability of emergency contraception (see above) and termination of pregnancy ↩ **158** to prevent unwanted pregnancy. Also educate about PrEP, if available.
- Advise patient on pill or implant to tell clinician if starting ART, TB or epilepsy treatment as these may interfere with pill or implant effectiveness.
- If on pill: 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.

[1]The newly available levonorgestrel IUD 52mg (LNG-IUD) is not coded for emergency contraception as yet. [2]BMI = weight (kg) ÷ height (m) ÷ height (m). [3]If patient > 40 years old: check breasts 6 monthly.

Treat the patient according to her current situation:

Starting or changing contraception
Use steps 1-4 to help patient to choose best option according to her needs ↩ 156.

Already using contraceptive
- If patient satisfied with method, check method is still suitable.
- If using IUD or subdermal implant, check when replacement needed.

Recent delivery, miscarriage or termination of pregnancy (TOP)
- Insert IUD within 48 hours of delivery/miscarriage or TOP if no reason to avoid ↩ 157, otherwise can be inserted ≥ 4 weeks *or*
- Insert subdermal implant, or start injectable or POP at any stage, *or*
- Offer sterilisation (tubal ligation), if appropriate, *or*
- Start COC or POP immediately after miscarriage/TOP.
- Start POP immediately after delivery:
  - Avoid COC for 6 weeks after delivery.
  - Avoid COC for 6 months if breastfeeding.

Menopausal
- 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.

Manage the patient who has missed an injection or pill:

Late injection
- If ≤ 4 weeks late: give the injection.
- If > 4 weeks late: exclude pregnancy ↩ 157.
- If not pregnant, give injection and use condoms/abstain for 7 days. If unprotected sex in past 5 days, offer emergency contraception ↩ 154.

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 ↩ 154.

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 ↩ 154, 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.

Manage contraception side effects

Side effect	Management
Menstrual abnormalities	Reassure that menstrual abnormalities usually resolve within 3-6 months. If no periods or periods irregular, heavy or painful: assess and manage ↩ 57.
Headaches	• Reassure that headaches usually resolve within 3 months. If headaches persist, consider switch to non-hormonal method like copper IUD. • If using LNG-IUD and first time migraines/severe headaches: refer.
Sexual problems	• If using IUD: if irritation of partner's penis during sex: cut IUD strings shorter. • Reassure that contraceptives unlikely to affect sexual function. If sexual problems persists, consider alternative method: consider IUDs, or subdermal implant or sterilisation if appropriate.
Acne	Reassure that acne usually resolve within 3 months. If problem, consider switch to COC.
Weight gain	Reassure this is often a temporary side effect due to fluid retention, and resolves within 3 months. If BMI > 25, assess CVD risk ↩ 127. Advise healthy lifestyle.
Breast tenderness	Reassure that this usually resolves within 3 months. Advise to wear supportive bra.
Moodiness	Reassure this should resolve. If persists, assess for low mood, stress or anxiety ↩ 86 or consider switch to non-hormonal method like copper IUD.
Red, swollen, painful wound after implant insertion or sterilisation	• Refer to doctor, if available: clean with saline or antiseptic solution (diluted povidone iodine or chlorhexidine solution), remove slough– leave on for 5-15 minutes. Apply an antiseptic ointment (silver or povidone iodine or chlorhexidine or honey) and moisture absorbent dressing. Change dressing daily. • If surrounding tissue involved, give flucloxacillin 500mg 6 hourly ***or*** cefalexin 500mg 6 hourly for 5 days. If unwell with fever or pulse > 100, refer.

Review the patient on contraception
- If IUD or subdermal implant inserted this visit, review in 3-6 weeks. Thereafter, review yearly as needed.
- If oral or injectable contraceptive started this visit, review in 3 months. Thereafter, review as needed.

Start or change contraception

STEP 1. Help the patient decide which method is the best option according to her needs.

- If wanting long term protection, consider IUD (5 years), subdermal implant (3-5 years), injectable (3 months), sterilisation (permanent).
- If needing quick return to fertility, consider IUD or subdermal implant.
- If worried about adherence issues, consider IUD, subdermal implant or injectable.
- If problems with heavy/painful/irregular periods, acne or premenstrual syndrome, consider COC.
- If the patient prefers to avoid hormones, consider copper IUD and/or reliable condom use (both hormone free), sterilisation or LNG-IUD (low dose hormone released locally into uterus).

STEP 2. Check if reasons to avoid chosen method (use table). If there is a reason, consider another method (or sterilisation, if appropriate) that will be acceptable to patient:

Heavy or painful periods
Use LNG-IUD or COC.

≥ 35 years old and smoker
Use IUD, implant, injectable or POP.

Medications
- If on rifampicin: use injectable, IUDs.
- If on phenytoin, carbamazepine: use injectable, IUD.
- If on lamotrigine: use IUD, implant, injectable, POP.
- If on EFV: use IUD or injectable.
- If on NVP, LPVr, ATVr: use IUD, implant or injectable.
- If on DTG: use IUD, implant, injectable, COC, POP.

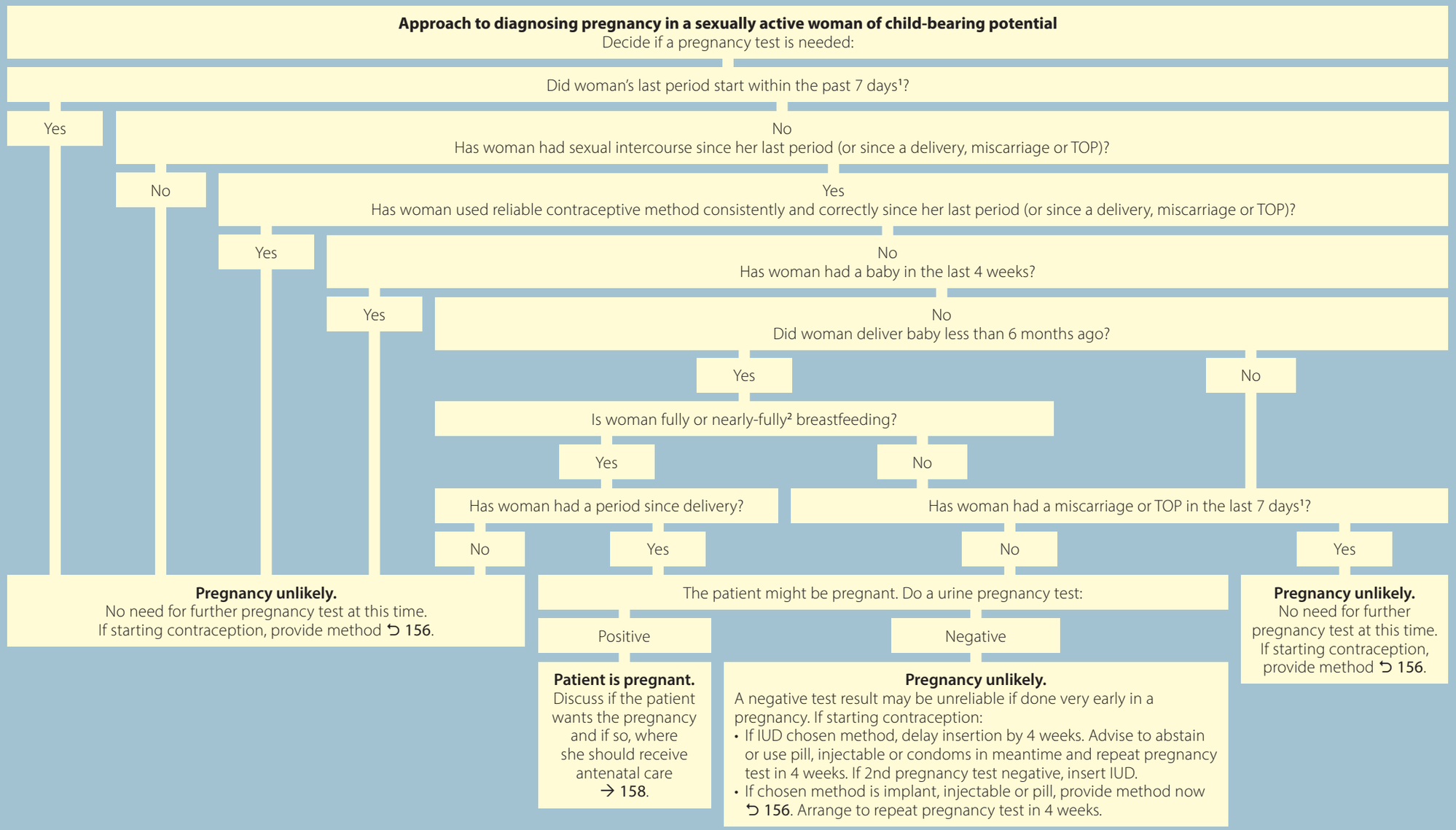
Chronic conditions
- If breast cancer (avoid pregnancy for 5 years after diagnosis): use copper IUD.
- If cancer of uterus/cervix/ovary: use implant, injectable, COC, POP.
- If severe liver disease: use copper IUD.
- If history of blood clots: if stable on blood thinner, use implant, LNG-IUD, POP, injectable.
- If history stroke/TIA, heart attack, ischaemic heart disease: use IUD, implant, POP.
- If hypertension or BP ≥ 140/90, use: IUD, implant, POP. Only use injectable if BP < 160/100.
- If diabetes complications (eye, nerve, kidney damage): use IUD, implant, POP.

STEP 3. Explain possible side effects. If unacceptable to patient, consider another method.
STEP 4. Explain instructions for use (use table) and check understanding.

Method	Reasons to avoid	Side effects	Instructions for use
Intrauterine devices (IUDs) *(Small device fitted inside the uterus)* **1.** Levonorgestrel IUD 52mg (LNG-IUD) **2.** Copper IUD eg. Cu T380A	• Avoid both IUDs if: current STI/PID, unexplained vaginal bleeding, abnormality or cancer of cervix/uterus, or if unwell with advanced stage 3 or 4 HIV disease. • Also avoid LNG-IUD if: severe liver disease, breast cancer. • Also avoid copper IUD if: heavy/prolonged periods. • Postpartum (≤ 48 hours): avoid if chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage.	• Discomfort or cramping during/ following insertion. • Menstrual abnormalities. LNG-IUD usually results in no/ lighter periods, but may cause irregular bleeding. • Rarely, headaches with LNG-IUD.	• Trained staff to insert/remove. Insert any time during cycle. • If pain, give ibuprofen[1] 400mg 8 hourly with food for 3 days. • Gives long-term protection: 5 years. • No significant drug interactions expected. • Advise to return if excessive bleeding/pain, fever, foul-smelling discharge: refer. • If after delivery/miscarriage/TOP: insert ≤ 48 hours (if no reason to avoid) or ≥ 4 weeks.
Subdermal implant *(Small plastic rod/s just under skin of upper arm)* **1.** Etonorgestrel 68mg (1x rod: 3 years) **2.** Levonorgestrel 2x 75mg (2x rods: 5 years)	• Unexplained vaginal bleeding, previous breast cancer, liver disease. • Patient on rifampicin, efavirenz, phenytoin, carbamazepine.	• Pain/bruising. • Irregular bleeding, breast tenderness, weight gain, acne, headaches, moodiness, nausea.	• Trained staff to insert/remove. • If inserted after day 7 of cycle, use condoms/ abstain for 7 days. • If pain: give ibuprofen[1] 400mg 8 hourly with food for 3 days. • Gives long-term protection: 3-5 years depending on device used.
Injectable *(Long-lasting injection into upper arm)* eg. Medroxyprogesterone (DMPA) IM 150mg 12 weekly	Unexplained vaginal bleeding, breast cancer, ischaemic heart disease, stroke, severe liver disease, diabetes complications (eye, nerve, kidney damage).	Irregular, heavy, prolonged bleeding or no periods, hot flushes, breast tenderness, appetite changes, weight gain, acne, nausea/bloating.	• If started after day 7 of cycle, use condoms/ abstain for 7 days. • Protection lasts 3 months. • No need to adjust dosing interval for ART, TB or epilepsy treatment. • May be a delay in return of fertility (± 9 months).
Oral pill *(tablet to be swallowed every day)* **1.** Combined oral contraceptive (COC): 1 tablet daily • Monophasic: eg. ethinylestradiol/ levonorgestrel 30mcg/150mcg • Triphasic: eg. ethinylestradiol/ levonorgestrel (varying doses) **2.** Progestogen-only pill (POP): 1 tablet daily eg. levonorgestrel 30mcg	• Avoid both POP and COC if: breast cancer, severe liver disease or on rifampicin, phenytoin, carbamazepine, EFV, NVP, LPVr, ATVr. • Also avoid COC if: on lamotrigine, blood clots or stroke, smoker ≥ 35 years, migraines and ≥ 35 years or visual disturbances, BP ≥ 140/90, hypertension, CVD risk > 10%, ischaemic heart disease, diabetes complications (eye, nerve, kidney damage), for 6 weeks after delivery and for 6 months if breastfeeding.	Menstrual abnormalities, breast tenderness, headaches, moodiness, weight gain.	• If POP started after day 5 of cycle, use condoms/abstain for 2 days. If COC started after day 5, use condoms/abstain for 7 days. • Strict adherence needed: take every day at same time. POP less effective if taken ≥ 3 hours late. • If vomits < 2 hours or severe diarrhoea < 12 hours of taking pill, repeat dose. If > 24 hours diarrhoea/vomiting, use condoms or abstain. Continue for 7 days after better. • May be a delay in return of fertility (± 3 months). • Give 3 month supply.
Sterilisation (Tubal ligation/Vasectomy) *Reproductive tubes closed.*	Ensure patient understand that this is permanent and cannot be reversed: avoid if patient unsure.	• No return to fertility. • Surgical complication risks	• Permanent. • Refer for procedure. Consent needed

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

PREGNANCY



[1]Or 12 days if excluding pregnancy as part of work up to insert IUD. [2]Fully breastfeeding means baby gets all his/her food from suckling at the breast. Nearly-fully breastfeeding means baby gets some liquid or food in addition to breastfeeding but no more than 1 or 2 mouthfuls a day.

Approach to the newly diagnosed pregnant patient

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 ⮌ 154.
- 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 ⮌ 49.
  - Do a cervical screen if needed ⮌ 55.
  - Test for HIV ⮌ 110.
- 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 outpatient TOP.
- If 9 - 12 weeks, refer for facility-based 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 and operations. 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

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

Ask about general medical problems. Does patient have any of:
- Diabetes
- Heart disease
- Kidney disease
- Asthma
- Epilepsy
- TB
- Alcohol/drug use disorder
- Hypertension

No

Patient is eligible for basic antenatal care.
- Continue with routine first antenatal visit ⮌ 159.
- If ≥ 5 pregnancies or previous postpartum haemorrhage, arrange hospital delivery.

Yes

Patient is *not* eligible for basic antenatal care.
- Complete booking/first antenatal visit at this visit, then refer to next level of care ⮌ 159.
- If known hypertension: stop ACE-inhibitors (like enalapril), give instead methyldopa 250mg 8 hourly and refer.

Yes

Yes

ROUTINE ANTENATAL CARE

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**
- 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
- Vaginal bleeding
- Temperature ≥ 38°C and severe back or abdominal pain
- Difficulty breathing
- Swollen painful calf
- Decreased/no fetal movements ⮌ 161.

Manage urgently:

- 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 →19.
- 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 4-6 hourly (up to 4g in 24 hours)

If temperature ≥ 38°C , pulse > 100, 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 50mcg 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.
  - 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/stays 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.
    - 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.

The booking/first antenatal visit

Assess the pregnant patient at the booking visit, ideally before 14 weeks. If already booked →161. If not done, check patient wants pregnancy and is eligible for Basic Antenatal Care ⮌ 158.

Assess	Note
Symptoms	Manage symptoms as per symptom page. Check if patient needs urgent attention ⮌ 159.
Estimated Delivery Date (EDD)	• Use first day of the patient's last period and SFH[1] to determine EDD and current gestation. • If unsure of dates and SFH[1] < 24cm, refer for ultrasound to confirm EDD.
Fetal movements	If > 20 weeks, ask about fetal movements: if reduced ⮌ 161.
TB	• If cough, weight loss, night sweats or fever, check for TB ⮌ 92. If patient has TB, refer to next level of antenatal care clinic. • If HIV positive, send 1 sputum sample for TB NAAT, 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 ⮌ 143. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ⮌ 83.
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 ⮌ 92 and HIV ⮌ 110 and refer for nutritional support or to dietician, if available. Arrange advanced midwife/doctor review. • If MUAC ≥ 33cm or BMI ≥ 32, check diabetes risk below.
Abdomen	• Use tape measure to measure size of uterus from symphysis pubis to top point of uterus. This is the symphysis-fundal height (SFH). • Plot SFH according to gestation on SFH growth chart. Assess growth by looking where measurement falls in relation to percentile lines: - If SFH < 24 cm at booking, refer for ultrasound (ideally at 18-20 weeks), if facilities available. - If < 28 weeks and measurement above 90th percentile or **multiple pregnancy** likely, refer. - If SF below 10th percentile, check SF at next visit: if still below 10th percentile, refer/discuss for likely **poor fetal growth**. • If ≥ 34 weeks: palpate presenting part: if breech or transverse lie suspected, reassess at ≥ 38 weeks. If breech or transverse lie still suspected, refer. • If mass other than uterus in abdomen or pelvis, refer for assessment.
Vaginal discharge	If abnormal discharge, treat ⮌ 49. If watery discharge and no contractions, suspect **prelabour rupture of membranes** ⮌ 159.
BP	• If BP ≥ 160/110, manage and refer urgently →159. • If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP: - If repeat BP ≥ 150/100, refer same day ⮌ 159. - If repeat BP < 150/100, check urine dipstick for protein: • If ≥ 1+ proteinuria, refer same day. • If no proteinuria but headache, blurred vision or severe abdominal pain, treat for **severe pre-eclampsia** ⮌ 159. • 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** ⮌ 163 and review weekly. If proteinuria/symptoms develop, refer urgently ⮌ 159. - 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** ⮌ 59. • If proteinuria: - If trace or 1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above. - If ≥ 2+ proteinuria, repeat dipstick on a new urine specimen: if still ≥ 2+ proteinuria, discuss/refer. • If glucose in urine, check diabetes risk.
Diabetes risk	• Screen for diabetes only if risk factor[5]. • To screen for diabetes: 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.

Continue to assess the pregnant patient →161.

TB tests changing from 'Xpert Ultra' to 'TB NAAT' (**NAAT** = nucleic acid amplification test and includes Xpert as well as newer TB tests).

[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.

Booking/first antenatal visit continued:

Assess	Note
Haemoglobin (Hb)	Give iron according to Hb ↩ 163. Refer if: • If Hb < 6, or Hb 6-7.9 *with* symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day to regional hospital. • If Hb 6-7.9 without symptoms: refer within 1 week to next level of care clinic. • If booking late and 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, patient will need anti-D immunoglobulin IM after delivery.
Syphilis	• Ideally, use rapid fingerprick test, as result immediately available. If HIV negative or unknown, use a dual HIV syphilis rapid test, if available. If syphilis positive ↩ 53. If HIV positive ↩ 110. • If rapid tests unavailable: send blood for syphilis serology (RPR). On request form, write: "If RPR titre 1:4 or less, do specific syphilis test on same specimen." If syphilis positive ↩ 53.
HIV	• If HIV negative or status unknown, test for HIV ↩ 110. If test negative, consider need for PrEP ↩ 106. • If HIV positive, start ART same day if not on ART yet ↩ 111. If on ART, switch to DTG-based regimen if not on already ↩ 117. Offer couple/partner testing.
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 (ideally within 1 week) ↩ 163. • If on ART for < 3 months: do VL at 3 months on ART or at delivery if this is sooner.
Hepatitis B (HBsAg)	Manage according to result ↩ 120.
Cervical screen	• If ≥ 20 weeks: delay cervical smear. Plan to do it at 6-week postnatal visit. • If < 20 weeks: - If HIV negative: if patient ≥ 30 years *and* no screen in past 10 years, do cervical screen ↩ 55. - If HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly ↩ 55.

Note: fill in the code 'C#PMTCT' on the blood request form for viral load to be identified as that of pregnant woman

Continue to advise and treat the pregnant patient →163.

Follow-up antenatal visits

Assess the pregnant patient at booking/first visit ↩ 160 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 ↩ 159.
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.
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:
TB	Every visit	• Check for TB symptoms at every visit: if cough, weight loss/poor weight gain or fever, exclude TB ↩ 92. If patient has TB, refer to next level of antenatal care clinic. • If HIV positive, check TB NAAT result sent at first visit (if not done, do at this visit, even if no symptoms): - If TB NAAT positive, start TB treatment and refer to next level of care antenatal clinic. - If TB NAAT negative (or unable to produce sputum) and: • TB symptoms: if CD4 ≤ 200 or WHO stage 3 or 4 disease, do a urine LAM[2]. If LAM positive, start TB treatment and refer. If CD4 > 200 or LAM negative, refer/discuss. • No TB symptoms: start ART, if not already done ↩ 113 and TB preventive treatment (TPT) ↩ 113.
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 ↩ 143. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ↩ 83.
Alcohol/drug use	Every visit	• Any alcohol/drug use is risky for the baby. • 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.

Continue to assess the pregnant patient →162.

[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.

Follow-up antenatal visit continued:

Assess	When to assess	Note
Abdomen	Every visit	• Measure and plot SFH[1] according to gestation on SFH growth chart. • Assess growth by looking at pattern of growth over time and where measurement falls in relation to percentile lines: - If < 28 weeks and measurement > 90th centile or **multiple pregnancy** likely, refer. - Refer/discuss for likely **poor fetal growth** if: • Two *consecutive* SF measurements below 10th percentile (or *three separate* SF measurements below 10th percentile) • Three *consecutive* SF measurements remain the same (or *two consecutive* SF measurements, taken at least 6 weeks apart, remain the same). • SF measurement less than measurement recorded 2 visits previously. • 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 ↩ **49**. • If watery discharge with history of a sudden gush of clear or pale fluid from vagina, and no contractions, suspect **prelabour rupture of membranes** ↩ 159.
BP	Every visit	• If BP ≥ 160/110, manage and refer urgently →**159**. • If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP: - If repeat BP ≥ 150/100, refer same day ↩ **159**. - If repeat BP < 150/100, check urine dipstick for protein: • If ≥ 1+ proteinuria, refer same day. • If no proteinuria but headache, blurred vision or severe abdominal pain, treat for **severe pre-eclampsia** ↩ 159. • 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** ↩ **163** and review weekly. If proteinuria/ symptoms develop, refer urgently ↩ **159**. - 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** ↩ 59. • If proteinuria: - If trace or 1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above. - If ≥ 2+ proteinuria, repeat dipstick on a new urine specimen: if still ≥ 2+ proteinuria, discuss/refer. • If glucose in urine, check diabetes risk.
Diabetes risk	If risk factor[2]: 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)	• Between 28 and 32 weeks • At 36 weeks • If patient pale • If Hb < 10: 1 month after treatment started	Give iron according to Hb ↩ **163**. Refer if: • If Hb < 6, or Hb 6-7.9 *with* symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day to regional hospital. • If Hb 6-7.9 without symptoms: refer within 1 week to next level of care clinic. • If Hb 8-9.9 and Hb is not improving after 1 month of treatment: refer within 1 week to next level of care clinic. • If Hb < 10 at ≥ 36 weeks: refer to next level of care clinic and arrange delivery at hospital.
If Rh negative: anti-D antibodies	Send Coombs test to check for antibodies at 26, 34 and 38 weeks	• 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.
Syphilis	20, 26, 30, 34, 38 weeks and at delivery	• Use fingerprick test, as result immediately available. If HIV negative/unknown, use dual HIV syphilis rapid test. If HIV positive ↩ **111**. If syphilis positive ↩ **53**. • If rapid tests unavailable: send syphilis serology (RPR). On request form, write: "If RPR titre 1:4 or less, do specific syphilis test on same specimen." If positive ↩ **53**. • Follow positive syphilis results up: check mother has received all 3 treatment doses ↩ **53**.
HIV	20, 26, 30, 34, 38 weeks and at delivery	• If HIV negative or status unknown, test for HIV ↩ **110**. If patient refuses, offer at each visit, even in early labour. If test negative, consider need for PrEP ↩ **106**. • If HIV positive, give routine HIV care and check that mother on ART. If not on ART, start ART same day ↩ **111**.
Viral load (VL) if HIV positive	• 3 months on ART • At delivery	• If VL < 50, continue ART and repeat VL at delivery. • If VL ≥ 50, manage unsuppressed viral load ↩ **166**. **Note:** fill 'C#PMTCT' or 'C#DELIVERY' in code field on request form so VL not rejected.

Continue to advise and treat the pregnant patient →163.

[1]Symphysis-fundal height. [2]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.

Advise the pregnant patient

Health for All ⮌ 55

- Complete Maternity Case Record and give to patient, remind patient to bring it to every visit and when in labour.
- 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.
- Advise patient to only take medications prescribed by nurse/doctor who knows she is pregnant. If she is unsure, advise her to check with nurse/doctor.
- Alert patient to the risks of smoking and drinking alcohol and urge to stop. Support patient to change ⮌ 177 and refer patient to available helpline ⮌ 178.
- Discuss safe sex. Advise patient to use condoms throughout pregnancy and have only 1 partnership at a time.
- Discuss contraception choice for after delivery ⮌ 154.
- 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 infant feeding:
  - Encourage exclusive breastfeeding for 6 months, regardless of HIV status: this means that baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, infant prophylaxis.
  - From 6 months, introduce food while continuing with feeding choice. Continue breastfeeding until 2 years for all, ensuring that HIV positive mother is adherent on ART and virally suppressed.
  - If mother chooses to exclusively formula feed, check that mother will be able to afford it long-term, has access to clean boiled water, and that it will be acceptable (i.e. no disclosure issues).

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[1] 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[2], 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 elemental calcium 1g daily (given as 3 tablets of calcium carbonate (420mg tablets), 12 hourly) to reduce the risk of pre-eclampsia.
  - If previous pre-eclampsia, discuss giving low-dose aspirin from 6 weeks' gestation (preferably before 16 weeks) with specialist.
- If first pregnancy, give tetanus toxoid (TT) 0.5mL IM into arm (when available, give instead Tdap). If < 5 previous tetanus vaccinations[4] in lifetime documented, catch up vaccinations.
- Give influenza vaccine 0.5mL IM if at time of annual campaign.
- Check that patient is up to date with COVID-19 vaccination.
- 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 ⮌ 161.
  - 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 treatment) needed ⮌ 113.
- 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 not on ART, give together single dose NVP 200mg as early as possible in labour *and* single dose (TLD) TDF/3TC/DTG 300/300/50mg.
- Give ideally during early labour, and urgently if delivery is imminent.
- Start mother on ART next day ⮌ 114. Give mother 2 months ART supply.
- Decide HIV transmission risk of HIV-exposed baby and give infant prophylaxis according to risk ⮌ 168.

Note: fill 'C#DELIVERY' in the code field on blood request form so VL not rejected.

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 →164.

[1]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. [2]Abdominal pain, nausea, vomiting, constipation. [3]If on dolutegravir and taking at same time as calcium, take with food. [4]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** →159.
- 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. Repeat after 10–15 minutes if no response to 1st dose, while arranging referral.
    - 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 ↩ 143. • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes ↩ 83.
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 ↩ 142.
Family planning	Every visit	Assess patient's contraceptive needs ↩ 154. Ideally, insert IUD within 48 hours of delivery if no contraindications[5] *or*, insert subdermal implant or start injectable or POP at any stage after delivery, *or* offer tubal ligation if appropriate. Avoid COC pill for 6 weeks after delivery and for 6 months if breastfeeding.
Infant feeding	Every visit	If breastfeeding: check for breast problems ↩ 43. Check that baby latches well. If formula feeding: ensure correct mixing of formula and water.
Baby	Every visit	• Assess and manage the baby according to the IMCI guide. • Ensure baby gets immunisations at birth and 6 weeks. If mother known to have TB, hepatitis B or syphilis, prevent infections in the newborn ↩ 167.
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 ↩ 132, 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 →165.

[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 IUD if: chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage.

Assess	When to assess	Note
Syphilis	If not done or not repeated later in pregnancy	Ideally, use rapid fingerprick test, as result immediately available. If HIV negative or unknown, use a dual HIV syphilis rapid test, if available.
HIV test in mother	• At delivery (if not done/repeated) • If breastfeeding: at 10 weeks, 6 months, then 3 monthly	• Test for HIV ↩ 110. If test negative, consider need for PrEP ↩ 106. • If HIV positive, give routine HIV care and start ART same day ↩ 113. Test baby for HIV same day and if breastfeeding, give infant prophylaxis ↩ 166.
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 ↩ 111. • If VL ≥ 50: manage unsuppressed VL ↩ 166.
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. • If baby < 18 months old: use HIV PCR as initial test. If positive, start ART and confirm result with second HIV PCR (or HIV viral load). • If baby 18-24 months old: use rapid HIV test as initial test. If positive, confirm with HIV PCR test before starting ART. • If baby ≥ 24 months old: as for adult testing ↩ 110.
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.
Cervical screen	From 6 weeks	• HIV negative: do cervical screen if ≥ 30 years and no screen in past 10 years ↩ 55. • HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly ↩ 55.
Rhesus (Rh)	If mother 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.

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.
  - Advise to only introduce food from 6 months of age while continuing with feeding choice. Advise the working mother to consider expressing breast milk for baby while away.
  - Regardless of HIV status, continue to breastfeed until 2 years of age. If HIV positive, ensure viral suppression on ART. If HIV negative, advise 3-monthly HIV tests.
  - If mother chooses to formula feed: check that she is able mix it correctly, afford it long-term, has access to clean boiled water, and that it will be acceptable (i.e. no disclosure issues).
- 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 4-6 hourly (up to 4g in 24 hours) and ibuprofen[3] 400mg 8 hourly with food for up to 5 days.
- If HIV positive mother not on ART, start ART same day ↩ 113, especially if breastfeeding.

- **Treat the HIV-exposed baby →166.**
- **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.

MANAGE THE PREGNANT/BREASTFEEDING PATIENT WITH AN UNSUPPRESSED VIRAL LOAD (VL ≥ 50)

Assess and manage possible causes of unsuppressed viral load (VL ≥ 50):

- Check adherence and dosing and give enhanced adherence support ⮌ 173. Check if pregnant mother has been vomiting up medications. Encourage disclosure.
- Consider medication interactions: ask about other medications, especially TB and epilepsy treatment and common over-the-counter medications like: calcium, iron, antacids. If using any of these, manage possible medication interactions ⮌ 118 or discuss with experienced ART doctor or HIV hotline ⮌ 178.

Switch to the DTG-based regimen

- If *not* on TLD (or ALD), check if same day ART switch is appropriate ⮌ 117.
- If on DTG-based regimen, continue below.

If breastfeeding, assess and manage baby:

- Do HIV test on baby same day.
- If baby not on prophylaxis currently, start/restart AZT 12 hourly for 6 weeks and NVP daily for *at least* 12 weeks ⮌ 168 (only stop NVP once mother's VL < 50 or 4 weeks after final breastfeed).

Repeat mother's VL after 4 weeks (if VL done at delivery, VL can be repeated at the 6-week postnatal visit):

Second viral load result < 50

Repeat VL as per routine VL monitoring:

- If pregnant: repeat VL at delivery.
- If breast-feeding: repeat VL 6 monthly.

Second viral load result ≥ 50

- Increase efforts to resolve adherence[1] issues and address possible drug-drug interactions ⮌ 173.
- Manage further according to duration of DTG-based ART:

On DTG for less than 2 years

Continue to support adherence and repeat VL in 3 months or at delivery if this is sooner: if ≥ 2 viral loads ≥ 1000 after starting DTG-based regimen (with adherence > 80%):

On DTG for 2 years or more

- Assess adherence in last 6-12 months by checking script for pharmacy refills and notes for clinic appointment attendance[1].
- Have refills been collected > 80%[2] of time or has patient attended > 80%[3] clinic visits?

No → Adherence considered poor.

Yes → Adherence considered good. Has woman had 2 or more consecutive viral load results ≥ 1000 after starting DTG-based regimen?

No → Continue to support adherence and repeat VL in 3 months or at delivery if this is sooner: if ≥ 2 viral loads ≥ 1000 after starting DTG-based regimen (with adherence > 80%):

Yes → **Virological failure** confirmed.

- Discuss with HIV expert, specialist, third line ART committee or HIV hotline ⮌ 178.
- If VL ≥ 1000, monitor CD4 6 monthly.
- If CD4 ≤ 200, restart co-trimoxazole ⮌ 113.

[1]If available, also do drug level on urine or blood specimen: adherence is considered good if medications are detected in patient's urine/blood. [2]Calculate adherence % for pharmacy refills: 'number of *actual refills done* during period assessed' ÷ 'number of months in period assessed'. Then x by 100. [3]Calculate adherence % for clinic attendance: 'number of scheduled visits *actually attended* by patient during period assessed' ÷ 'number of scheduled visits during period assessed'. Then x by 100.

PREVENT COMMUNICABLE INFECTIONS IN THE NEWBORN

Assess and manage the newborn exposed to HIV, TB, hepatitis B or syphilis. If exposed to HIV, assess and manage further ⮌ 168.

Assess the newborn exposed to TB, or the newborn who tests positive for HIV, for TB preventive treatment (TPT)

Was baby born to mother or household contact with TB and any of: 1) diagnosed with TB ≤ 2 months before delivery, 2) poor clinical response to TB treatment, 3) TB smear or TB culture positive or unknown at delivery, 4) diagnosed with TB soon after delivery?

- **Yes**
- **No**
  - Baby HIV positive
  - Baby HIV negative: No need for TPT. Give routine care.

Baby HIV positive:

- If x-ray available, do anterior-posterior (AP) and lateral chest x-ray on baby and arrange doctor review.
- Does baby have any of: 1) respiratory rate > 60, 2) breathing problem, 3) feeding problem, 4) birth weight < 2500g/premature, 5) abdominal distension/enlarged liver/spleen, 6) jaundice, 7) weight loss > 10% , 8) appears unwell/lethargic?

- **Yes**
  - **Congenital TB** likely. Refer urgently and notify[1].
  - Avoid giving BCG vaccine if not yet given.
- **No**
  Treat further according to TB exposure history and HIV status:
  - TB exposed
    - Avoid giving BCG vaccine soon after birth. Give BCG vaccine after TPT completed.
    - If exposed to drug-resistant TB, discuss with TB expert/hotline ⮌ 178.
    - HIV unexposed: Give 3RH and pyridoxine and review after 1 month ⮌ 90.
    - HIV positive or HIV exposed on nevirapine: Give 6H and pyridoxine and review after 1 month ⮌ 90.
  - HIV positive, not TB exposed
    - Give BCG vaccine if not yet given.
    - Start 6H and pyridoxine at 14 weeks routine care visit.
    - If not yet done, give HIV routine care.

Manage the baby born to mother with hepatitis B infection

- Arrange delivery at a facility that stocks immunoglobulin (HBIG) and the monovalent hepatitis B vaccine:
  - Give hepatitis B immunoglobulin (HBIG) 200IU IM and hepatitis B vaccine 0.5mL (10mcg/0.5mL) IM, as soon after delivery as possible, within 12-24 hours.
- Continue routine hepatitis B immunisations at 6, 10, 14 weeks and 18 months.

Arrange follow up when baby is 9 months old: take blood from baby for HBsAg and hepatitis B surface antibodies (HBsAbs):

- HBsAg positive: Baby has **hepatitis B infection,** refer and notify[1].
- HBsAg negative and HBsAbs positive (HBsAb titre ≥ 10): Baby has immunity against hepatitis B. Reassure parent/carer, no further testing needed.
- HBsAg negative and HBsAbs negative (HBsAb titre <10): Repeat hepatitis B vaccine 0.5mL (10mcg/0.5mL) IM at this visit and again in 1 month. Then repeat HBsAbs test 1 month later: if HBsAbs still negative, refer.

Manage the baby born to mother with syphilis

- If rash (peeling rash, red/blue spots or bruising especially on soles and palms), jaundice, pallor (pale conjunctiva/palms of hands), distended abdomen, swelling, birth weight < 2500g, runny nose, respiratory distress, hypoglycaemia, **congenital syphilis** likely. Refer urgently and notify[1].
- If no signs/symptoms of congenital syphilis and any of the following, give baby single dose benzathine benzylpenicillin 50 000 units/kg IM into outer thigh, and discuss/refer:
  1) Mother received < 3 doses of benzathine benzylpenicillin injections
  2) Mother received antibiotic other than benzathine benzylpenicillin to treat syphilis
  3) Delay (> 14 days) between maternal doses of benzathine benzylpenicillin
  4) Baby delivered within 30 days of mother receiving last dose of benzathine benzylpenicillin

[1]Complete notifiable medical conditions (NMC) case notification form and send to NMCsurveillanceReport@nicd.ac.za or notify electronically: https://www.nicd.ac.za/nmc-overview/notification-process.

PREVENT VERTICAL TRANSMISSION OF HIV

Assess and manage the newborn exposed to HIV

- 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[1] and HIV PCR test on baby. If < 72 hours since delivery, manage as high risk formula feeding baby below.

Start post-exposure prophylaxis (PEP) as soon as possible, ideally within 1 hour of birth

- Give baby zidovudine (AZT) 12 hourly (see dosing table below) and give nevirapine (NVP) once daily (see dosing table below). Give supply for 6 weeks and advise carer to bring all medication to next visit.
- Advise to return for baby's HIV PCR and mother's viral load results in 3-6 days.

At 3-6 day postnatal visit, check results of baby's HIV PCR and mother's viral load and manage according to results:
If results not available, continue AZT and NVP and follow-up after 1 week. If no HIV PCR done, do at this visit and follow-up after 1 week.

Baby's HIV PCR negative

Mother's VL < 50 at delivery

Low risk

- Stop AZT[2].
- Give NVP daily for 6 weeks (see table).
- If breastfeeding: repeat mother's VL 6 monthly.

Mother's VL ≥ 50 or unknown at delivery

Higher risk

- Manage mother's unsuppressed VL ↩ 166.
- If mother's VL ≥ 1000, discuss need for HIV resistance test for mother and baby with HIV expert/hotline ↩ 178.

Breastfeeding[3]

- Give AZT 12 hourly for 6 weeks (see dosing table below)*and*
- Give NVP daily for at least 12 weeks (see dosing table below)
- Stop NVP only once mother's VL < 50 or 4 weeks after final breastfeed.
- If mother on TLD2 or 3rd line ART for ≥ 3 months *and* VL ≥ 1000, alert to risks of breastfeeding, discuss changing to formula feeding and refer to nutritional therapeutic programme (NTP). Discuss with HIV expert/hotline ↩ 178.

Formula feeding

Give AZT (12 hourly) *and* NVP (daily) for 6 weeks (see dosing tables below).

- Repeat baby's HIV test at 10 weeks, 6 months, 18 months, 6 weeks after final breastfeed or nevirapine stopped (if given ≥ 12 weeks) or any time if baby unwell.
- If mother's VL ≥ 50 at any time during breastfeeding after NVP and/or AZT stopped or mother tests HIV positive for the first time during breastfeeding: repeat/do child's HIV test at that visit, restart/start NVP and AZT (see above), and reassess once child's HIV test result available.

Nevirapine syrup (10mg/mL)

Age	Current Weight	Once daily dose
Birth to 6 weeks	2-2.49kg[4]	1mL (10mg) daily
	≥ 2.5kg	1.5mL (15mg) daily
6 weeks to 6 months		2mL (20mg) daily
6 to 9 months		3mL (30mg) daily
≥ 9 months		4mL (40mg) daily

Zidovudine syrup (10mg/mL)

Age	Current Weight	12 hourly dose
Birth to 6 weeks	2-2.49kg[4]	1mL (10mg) 12 hourly
	≥ 2.5kg	1.5mL (15mg) 12 hourly
6 weeks to 6 months		6mL (60mg) 12 hourly
≥ 6 months		Dose 12 hourly according to weight.

Baby's HIV PCR positive

- Send 2nd HIV PCR test and refer to doctor to change to ART.
- Advise mother to breastfeed for at least 2 years.
- If formula feeding, consider feasibility of re-establishing breastfeeding.

Baby's HIV PCR indeterminate

- Continue HIV PEP according to mother's delivery VL result (see adjacent).
- Do HIV PCR test and HIV viral load, review child and check results within 3 days.

[1]An HIV rapid test shows whether baby was exposed to HIV, but cannot determine whether baby is infected with HIV. An HIV PCR test determines if baby is infected with HIV. [2]Return unused AZT to pharmacy to be discarded. [3]A breastfed baby has breastfed in the past 7 days or is mixed feeding. [4]If weight < 2kg, discuss medication options with HIV expert/hotline ↩ 178.

MENOPAUSE

- Exclude pregnancy before diagnosing menopause ⮌ 157.
- 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 ⮌ 87 and sexual problems ⮌ 58. • If night sweats, ask about other TB symptoms : if cough, weight loss or fever, exclude TB ⮌ 92. • Manage other symptoms as on symptom pages.
Vaginal bleeding	Every visit	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 ⮌ 143.
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 ⮌ 154.
BP	3 monthly on HT[1]	If known hypertension ⮌ 133. If not, check BP: if ≥140/90 ⮌ 132.
CVD risk	At diagnosis	Assess CVD risk ⮌ 127.
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 cervical screens, each 10 years apart from age 30 ⮌ 55; if HIV positive: do cervical screen at HIV diagnosis (regardless of age), then 3-yearly ⮌ 55.
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 ⮌ 178.
- 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 (estradiol valerate 2mg for 11 days, followed by estradiol valerate/cyproterone acetate 2mg/1mg for 10 days, then placebo tablet for 7 days).
- 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).

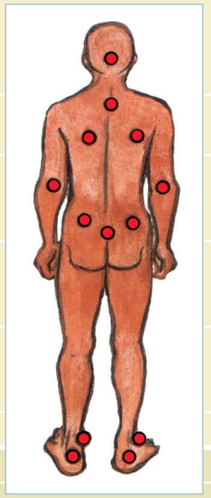
ROUTINE PALLIATIVE CARE

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	• If pain: assess and advise ⮌ 61. Give medication/s to treat pain ⮌ 171. 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. • If constipation, diarrhoea, nausea/vomiting, abdominal cramps, itchiness, acute anxiety or cough/difficulty breathing, manage ⮌ 171. • If patient has difficulty sleeping ⮌ 87. • Manage other symptoms as on symptom pages.
Side effects	• Ask about side effects from pain medication (see next page). • If on morphine, advise that nausea, confusion and sleepiness usually resolve after a few days. Check that patient is using regular laxative.
Mental health	• Ask if patient has persistent feelings of hopelessness or worthlessness? If yes ⮌ 143. • If patient has suicidal thoughts or plans ⮌ 83. • If low mood, stress or anxiety ⮌ 86.
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. • If known kidney failure with eGFR < 15, discuss.
Psychosocial	• Ask how patient is coping and what support and/or spiritual care is needed. • Ask how the carer/family are coping and what support they need now and in the future. • Ask about distressing social issues: problems with family relationships, finances, home care. 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 ⮌ 172.
Mouth	Check oral hygiene and look for dry mouth, ulcers and thrush ⮌ 35. If gum or tooth problem ⮌ 36. 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 ⮌ 75.



Advise the patient needing palliative care and his/her carer

- In a caring manner, explain the condition and prognosis. Explaining what is happening relieves fear and anxiety. Support the patient to give as much self care as able.
- 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, social worker, physiotherapist, counsellor, spiritual counsellor, support group ⮌ 178 Deal with bereavement issues ⮌ 86.
- 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 or in wheelchair, prevent pressure ulcers: 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).
- If bedridden, 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 and encourage fluid intake.
- 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

- If pain, aim to have patient pain free at rest, able to sleep and manage daily tasks. Start pain medication based on type and severity of pain:

Non-cancer pain
- If **mild** (1-3) pain, start at step 1.
- If **moderate** (4-7) or **severe** (8-10) pain start at step 2.
- If **nerve pain** or **central pain**, also give amitriptyline at any step.

Cancer pain
- If **mild** (1-3) pain, start at step 1.
- If **moderate** (4-7) pain start at step 2. If **severe** (8-10) pain start at step 3.
- Also consider adding amitriptyline at any step.

If unsure, start at lower step and increase pain medication if needed.

- If pain controlled, continue same dose. Once controlled for 1 month, consider reducing dose/stepping down. If pain worsens, then increase dose/step up again.
- If pain persists > 2 days or worsens, increase dose to maximum. If still no better after 2 days, move to next step.
- If pain not responding well, assess and provide additional social, spiritual and emotional support ↩ 61.
- If non-cancer pain uncontrolled on step 2, refer. If cancer pain uncontrolled on step 3, discuss.

Step	Pain medication	Start dose	Maximum dose	Note
Step 1 Start one or both 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.
	Ibuprofen	400mg 8 hourly	1.2g daily	• If starting step 1 with ibuprofen, reassess pain after 4 hours. If no better, add paracetamol. • Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. • If also taking aspirin, advise to take at least 30 minutes apart.
Step 2 Add to step 1:	Tramadol	50mg 4-6 hourly	400mg daily	• If constipation or nausea/vomiting, manage as below. • Use with caution if patient on amitriptyline as may cause over-sedation.
Step 3 (**only if cancer pain**) Stop tramadol, continue paracetamol/ ibuprofen and add:	Morphine hydrochloride (short-acting, solution) ***or***	5-10mg 4 hourly If ≥ 65 years: start 2.5-5mg	• No maximum- titrate against pain. • If sedated/ confused or respiratory rate<12, skip 1 dose, then halve usual doses.	• Start with morphine hydrochloride. Once dose stable, consider changing to long-acting morphine sulphate. • Also give lactulose 10-20mL daily to prevent constipation. Avoid if diarrhoea. • If constipation, nausea/vomiting or itchiness, manage as below. • If on morphine hydrochloride and **breakthrough pain** (pain that occurs before next scheduled dose): - Give one extra dose morphine, then continue regular dose at scheduled times for the rest of that day. - Increase morphine doses the 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 sulphate (long-acting, tablet)	10-20mg 8-12 hourly		
Add **adjuvant therapy** to any step	Amitriptyline	• 25mg at night • If ≥ 65 years: 10mg	75mg at night	• Use at night. Advise it may cause dizziness, drowsiness and to avoid driving and using heavy machinery. • Avoid if on bedaquiline, refer/discuss if pain uncontrolled on above medication.

Treat side effects from pain medication or other symptoms

Constipation
- Check for impaction (solid bulk of stool in rectum). If impacted, gently remove stool from rectum using lubrication. If unsuccessful, refer.
- 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. If no response, refer.

Diarrhoea

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.

Nausea/vomiting
- 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.

Abdominal cramps

Give hyoscine butylbromide 10mg 6 hourly as needed for up to 3 days.

Generalised itchiness

Give chlorphenamine 4mg 6-8 hourly as needed.

Acute anxiety

Give diazepam 2.5-5mg 12 hourly as needed for up to 10 days.

Cough or difficulty breathing
- 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.
- If low oxygen saturation, refer for home-based oxygen.

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.

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. A doctor should confirm this.

Assess the dying patient's needs every 4 hours

Assess	Note
Symptoms	Assess for noisy/difficulty breathing, agitation, pain, constipation, diarrhoea, nausea/vomiting and abdominal cramps. If present, manage below.
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 carer/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. If carer unable to cope at home, refer patient to hospital/hospice.
Mouth	Check oral hygiene. Ensure patient's mouth is moist and clean. Consider using glycerine to keep lips/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 and that carer/family have been referred to social worker and community health worker.
- 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 noisy breathing, excessive secretions likely: try changing position.
- If difficulty breathing, use fan or open window/s. Give morphine hydrochloride solution 2.5-5mg. Increase slowly as needed.
- If urinary retention, insert urethral catheter.
- If pain, constipation, diarrhoea, nausea/vomiting or abdominal cramps, manage ↩ 171.
- If agitated:
  - First assess for and manage pain, urinary retention, constipation and dehydration.
  - If none of above, consider changing position and give diazepam 5mg (or 2.5mg if liver failure). If no better, repeat dose.

Review the dying patient

- Doctor to review every 3 days or sooner if carer/family concerned about current plan of care or if 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.

SUPPORT THE PATIENT TAKING LONG-TERM MEDICATION

Assess the patient taking long-term medication

Assess	Note
Adherence	• Ask patient open ended questions like "What makes it difficult for you to take your treatment? Do you sometimes find it difficult to remember to take your medication? How many doses have you missed this week?" Encourage patient to open up with statements like "We all miss doses now and then". • Ask about factors that may influence adherence: - Is the **cost** of clinic visits a problem (like transport, loss if income for the day, paying another person to take on responsibilities at home). - Is the **time** it takes to visit clinic a problem (like time away from work, home, responsibilities). - Are medications causing any **side effects**? If patient stopped taking ART because of a side effect, refer to doctor to review to switch out responsible medications ⮌ 116. - Is there **difficultly taking** the medications (like do they taste terrible, are they difficult to swallow, is food available so meds aren't taken on empty stomach). - Is **disclosure** an issue? Is patient trying to keep treatment a secret at home? - Is patient **feeling well** enough to take medications (like is there a problem with nausea, diarrhoea, constipation or heart burn). Manage on symptom pages. - Is there a problem with **understanding**: check patient knows his/her diagnosis and understands his/her condition and what it means to be well controlled.
Recent illness	Ask about and document recent infection/s or illness. Manage other symptoms as on symptoms pages. Test for TB if cough, weight loss, night sweats or fever ⮌ 92.
Correct doses	• Ask patient to show you his/her pills and tell you the dose and how often s/he should take it. Check patient knows how the medication works and why it is important to take it as advised. • Check that dose is correct for weight.
Drug interactions	• Review other medications that patient may be on and check for known interactions: especially ART, TB and epilepsy treatment, contraceptives and other common medications like: calcium, iron, zinc, antacids, metformin. Consult the South African Medicines Formulary (SAMF), use web-based drug interaction checker[2] (see QR code) or MIC helpline (021) 406 6829 if unsure. • Ask if patient is taking herbal/traditional medications. Discuss with MIC helpline (021) 406 6829 if unsure.
Resistance to treatment	If on TB or HIV treatment, consider drug resistance if other causes have been excluded and patient is adherent. Discuss with HIV hotline ⮌ 178.
Daily routine	Ask about patient's daily routine and if it causes difficulty with adherence. Identify opportunities that can be used as reminders to take medication.
Support	Ask if patient receives support from family, friends or others in the community.
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 ⮌ 143. If stress or anxiety ⮌ 86.
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 ⮌ 142.

Check for HIV medication interactions

Advise the patient taking long-term medication

- Be supportive and non-judgemental. If newly diagnosed or poor understanding, spend extra time educating and counseling the patient. Explain the condition and the benefits of medication.
- If difficulty with adherence, avoid blaming patient. Rather explore his/her reasons for poor adherence and come up with ideas together to improve.
- Discuss ways to help patient to remember to take medication, like diaries, alarms, pill boxes. Use reminders that form part of daily routine.
- Explain that good adherence is taking medication at the correct dose and time every day, and will improve control and reduce risk of long-term complications.
- Encourage patient to involve partner or family member in his/her treatment.

Treat the patient taking long-term medication

- Refer for extra support: if challenges taking/remembering to take treatment, refer to counsellor for enhanced adherence counselling (EAC). Consider linking with a support group, treatment buddy, or community health worker.
- Try to keep medication regimen simple with as few tablets and doses as possible. Use fixed dose combination tablets if available. Avoid changing medications or doses without good reason.
- Involve patient in his/her treatment plan and adapt treatment schedule to daily routine as much as possible. Schedule appointments on days and times that suit the patient.
- If difficulty with adherence, see the patient more frequently (e.g. weekly instead of monthly).

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]www.hiv-druginteractions.org/checker

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 ↩ 106.

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 correctly in sharps bins.

Wear protective gear:

- Wear gloves when handling blood, body fluids, secretions or non-intact skin.
- Wear surgical mask if in contact with patient with respiratory illness (N95 respirator if performing aerosol-generating procedure or patient has suspected or confirmed infectious TB.).
- Wear surgical mask with a visor or glasses if at risk of splashes.

Get vaccinated:

- Get vaccinated against hepatitis B (if not yet done) and yearly against influenza.
- Ensure COVID-19 and pertussis vaccinations are up to date.

Know your HIV status:

- Test for HIV ↩ 110. ART and TPT 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 patients with suspected respiratory infections, TB or acute gastroenteritis.

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 patients with possible TB promptly:

- The patient with cough ≥ 2 weeks is has possible TB.
- Separate patients with possible TB 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 surgical mask) if in contact with a patient with infectous TB.

Screen and test yourself for TB every 6 - 12 months:

- Screen and test for TB according to your facility policy. If TB test negative and depending on your risk profile, discuss TB preventive treatment (TPT) with your occupational health practitioner.

Reduce risk of respiratory infections (including pertussis, influenza and COVID-19)

- Before managing a patient with suspected or confirmed respiratory infection, wear appropriate PPE.
- Wash hands with soap and water. Wear a surgical mask over mouth and nose during procedures.
- Encourage patient to wear face mask, 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 ↩ 178.
- 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 ↩ 176.
- 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	• 'I can trust this person'	• Talk too much	• 'I am not being listened to'
• Recognise non-verbal behaviour	• 'I feel respected and valued'	• Rush the consultation	• 'I feel disempowered'
• Be honest, open and warm	• 'I feel hopeful'	• Give personal advice	• 'I am not valued'
• Avoid distractions e.g. phones	• 'I feel heard'	• Interrupt	• '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	• 'I choose what I want to deal with'	• Force your ideas onto the patient	• 'I am not respected'
• Offer information	• 'I can help myself'	• Be a 'fix-it' specialist	• 'I am unable to make my own decisions'
• Encourage patient to find solutions	• 'I feel supported in my choice'	• Let the patient take on too many problems at once	• 'I am expected to change too fast'
• Respect the patient's right to choose	• 'I can cope with my problems'		

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'	• 'I can get through this'	• Judge, criticise or blame the patient	• 'I am being judged'
• Allow the patient to express emotion	• 'I can deal with my situation'	• Disagree or argue	• 'I am too much to deal with'
• Be supportive	• 'My health worker understands me'	• Be uncomfortable with high levels of emotions and burden of the problems	• 'I can't cope'
	• 'I feel supported'		• '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	• 'I can make changes in my life'	• Direct the decisions	• 'My health worker disapproves of my decisions'
• Agree on a plan	• 'I have something to work on'	• Be abrupt	• 'I feel resentful'
• Offer to write a list of his/her options	• 'I feel supported'	• Force a decision	• 'I feel misunderstood'
• Offer a follow-up appointment	• 'I can come back when I need to'		

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 ↩ 178).
- 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)