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PACK Global Adult

Practical Approach to Care Kit

Guide for primary care

PACK
Practical Approach to Care Kit

2017

About PACK

The Practical Approach to Care Kit (PACK) Adult guide is a comprehensive guide for the primary care of the adult 18 years or older. It uses simple algorithms to evaluate and treat the patient with common symptoms and a standardised checklist format to care for the patient with a chronic condition. It supports the clinician to integrate the care of the patient with multiple problems and wherever possible prompts the diagnosis of priority chronic conditions.

PACK has been developed, tested and refined over a period of 15 years by the Knowledge Translation Unit (KTU), University of Cape Town Lung Institute, in consultation with clinicians and National and Provincial Department of Health managers and policy makers in South Africa.

PACK is designed to support primary health care delivery in low and middle income country settings, where resources and clinical skills are scarce and evidence is often lacking. In an attempt to make the recommendations in the PACK Global Adult guide as evidence-based, pragmatic and relevant as possible, it aligns with BMJ's clinical decision support tool, Best Practice, as well as the latest World Health Organization guidelines, including the 2015 WHO Model List of Essential Medicines. It is designed for use in a setting with a significant HIV and TB burden, as well as covering non-communicable diseases, women's health, mental health and palliative care.

The KTU has built a database that references BMJ Best Practice and sentinel guidelines which inform each of the roughly 3000 screening, diagnostic and management recommendations in PACK Global Adult. This database is designed to support the localisation of the guide to a country-specific setting as well as form the foundation for an annual update of PACK Global Adult to keep up with evolving evidence and updated guidelines.

The PACK Implementation toolkit is a localisation package that will assist the in-country localisation of PACK Global Adult to a policy- and resource-specific setting. It comprises tools to localise the guide content as well as accompanying training materials and health system interventions.

PACK Global Adult has the potential to enable the task shifting and task sharing needed to make primary care more manageable and more efficient. Doctor and nurse responsibilities can be clearly defined and referral pathways stipulated. All prescribed medications are highlighted in blue. Medications can be colour coded to delineate prescribing provisions for medication in each clinical scenario for the various cadres of health worker and their scope of practice.

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We acknowledge the sources of the photographs: the Centers for Disease Control and Prevention (CDC) Public Health Image Library, BMJ Best Practice, the Division of Rheumatology, Faculty of Health Sciences, Stellenbosch University and the patients and staff of the University of Cape Town's Division of Dermatology, Department of Medicine; Division of Otolaryngology, Department of Surgery and School of Public Health and Family Medicine. We acknowledge Pearl Spiller of the Knowledge Translation Unit, University of Cape Town Lung Institute for design and layout and Izak Volgraaf for the illustrations.

How to use PACK Global Adult

This PACK Global Adult guide is designed to reflect the process of conducting a clinical consultation with an adult patient in primary care:

- It is divided into three main sections: Address the patient's general health, Symptoms and Chronic Conditions.
  - In the stable patient start by addressing the patient's general health then address the patient's symptom/s and/or chronic conditions.
  - In the patient presenting with one or more symptoms, start by identifying the patient's main symptom. Use the Symptoms contents page to find the relevant symptom page in the guide. 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 guide.
  - In the patient known with a chronic condition, use the Chronic Conditions contents page to find that condition in the guide. Go to the colour-coded Routine Care pages for that condition to manage the patient's chronic condition using the 'Assess, Advise and Treat' framework.

- Arrows refer you to another page in the guide:
  - The return arrow (⮌) guides you to a new page but suggests that you return and continue on the original page.
  - The direct arrow (→) guides you to continue on another page.

- The assessment tables on the Routine Care pages are arranged in 3 tones to reflect those aspects of the history, examination and investigations to consider.

- Refer to the glossary for abbreviations and units used in PACK Global Adult.

For further information about the **PACK programme**, to order hard copies, buy the eBook or to provide feedback, contact the BMJ or KTU teams:

KTU: ktu@uct.ac.za or www.knowledgetranslation.co.za/contact-us or www.packglobal.org

BMJ: support@bmj.com or www.bmj.com/company/products-services/#service15

Contents: Address the patient's general health 8

Contents: symptoms

Contents: chronic conditions

Glossary

A

ACR	albumin creatinine ratio
AGUS	atypical glandular cells of undetermined significance
ALP	alkaline phosphatase
ALT	alanine aminotransferase
ART	antiretroviral therapy
ASC-H	atypical squamous cells, cannot exclude HSIL
ASC-US	atypical squamous cells of undetermined significance
AST	aspartate aminotransferase

B

BMI	body mass index
BP	blood pressure measured in millimeters of mercury [mmHg]

C

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

D

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

E

ECG	electrocardiogram
EDD	estimated date of delivery
eGFR	estimated glomerular filtration rate
ELISA	enzyme-linked immunosorbent assay
ESR	erythrocyte sedimentation rate

G

GCS	glasgow coma scale
GGT	gamma-glutamyl transferase

H

Hb	haemoglobin
HbA_{1c}	glycated haemoglobin
HBsAb	hepatitis B surface antibody
HBsAg	hepatitis B surface antigen
HIV	human immunodeficiency virus
HPV	human papillomavirus
HSIL	high-grade squamous intraepithelial lesion

I

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

L

LSIL	low-grade squamous intraepithelial lesion

M

MTB	*Mycobacterium tuberculosis*
MTB/RIF	*Mycobacterium tuberculosis* DNA and resistance to rifampicin
MU	million units

N

NET-EN	norethisterone enanthate
NSAIDs	non-steroidal anti-inflammatory drugs

P

PJP	*pneumocystis jiroveci* pneumonia
PCR	polymerase chain reaction
PEFR	peak expiratory flow rate
PEP	post-exposure prophylaxis
PMTCT	prevention of mother-to-child-transmission
PPE	papular pruritic eruption
PPD	purified protein derivative
Pulse rate	measured in beats per minute
PVD	peripheral vascular disease

R

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

S

SBP	systolic blood pressure
STI	sexually transmitted infection

T

TB	tuberculosis
TBSA	total body surface area
Td	tetanus and diphtheria vaccine
Tdap	tetanus, diphtheria, acellular pertussis vaccine
TIA	transient ischaemic attack
TOP	termination of pregnancy
TSH	thyroid stimulating hormone
TST	tuberculin skin test

V

VIA	visual inspection with acetic acid

Prescribe rationally

Assess the patient needing a prescription

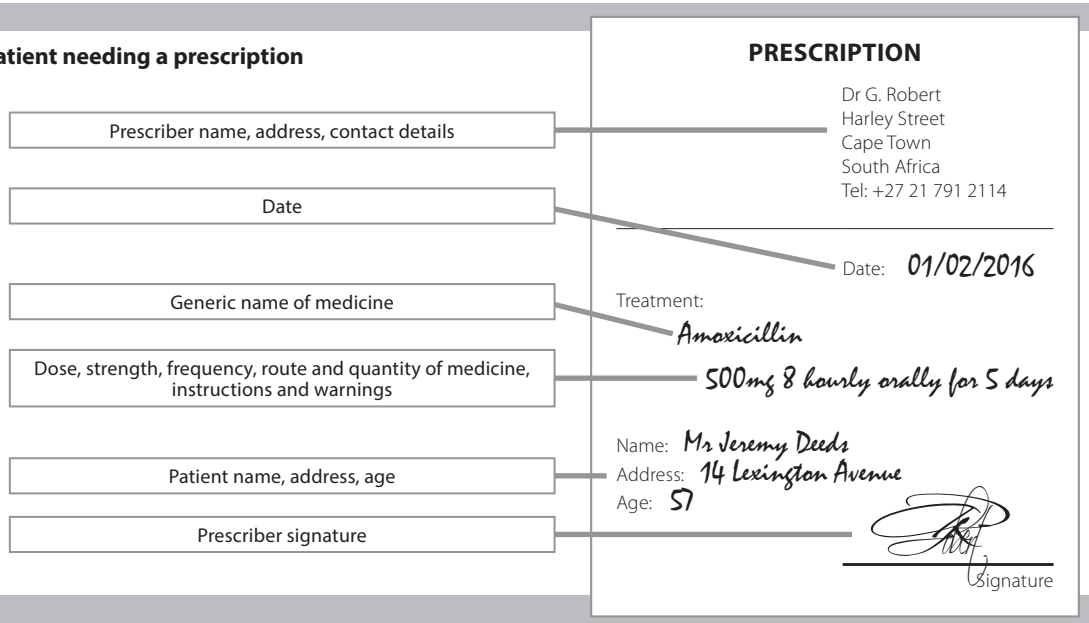
Assess	Note
Diagnosis	Confirm the patient's diagnosis, that the medication is necessary and that its benefits outweigh the risks.
Other conditions	It may be necessary to adjust dose (e.g. lamivudine in kidney disease) or give alternative medication (e.g. avoid ibuprofen if peptic ulcer, asthma, hypertension,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

Advise the patient needing a prescription

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

Treat the patient needing a prescription

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



Address the patient's general health

Assess the patient's general health at every visit		
Assess	**When to assess**	**Note**
Symptoms	Every visit	Manage symptoms as on symptom pages.
TB	Every visit	If cough ≥ 2 weeks, weight loss, night sweats, fever ≥ 2 weeks, chest pain on breathing or blood-stained sputum, exclude TB ⮌68.
Family planning	Every visit	• Discuss patient's contraception needs ⮌108 and pregnancy plans. If pregnant, give antenatal care ⮌112. • If HIV positive and planning pregnancy, advise patient to use contraception until viral load < 1000copies/mL.
Sexual health	Every visit	• Ask about genital symptoms ⮌34. • Ask about sexual orientation, risky behaviour (patient or partner has new or > 1 partner, unreliable condom use or risky alcohol/drug use ⮌101) and sexual problems ⮌41.
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 ⮌97.
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 ⮌101.
Smoking	Every visit	If patient smokes tobacco ⮌100. Support patient to change ⮌122.
Older person risk	Every visit if > 65 years	• If patient has a change in function, confusion or strange behaviour ⮌62. • 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 ⮌104. • Consider using lower medication doses (give full doses of antibiotics and ART) and avoiding unnecessary medications. Discuss with doctor if patient on diazepam, amitriptyline, theophylline, codeine, ibuprofen, amlodipine or fluoxetine or is using ≥ 5 medications.
CVD risk	If ≥ 40 years or ≥ 2 risk factors	• Assess CVD risk ⮌83 at first visit, then depending on risk. • Risk factors: smoking, parent/sibling with premature CVD (man < 55 years or woman < 65 years), BMI > 25, waist circumference > 80cm (woman) or 94cm (man), hypertension, diabetes, cholesterol > 5.2mmol/L.
BP	First visit, then depending on result	Check BP ⮌88.
BMI	Yearly	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If BMI > 25 ⮌83. If BMI < 18.5, refer for nutritional support.
Diabetes screen	• If ≥ 45 years • If BMI ≥ 25 *and* ≥ 1 other risk factor	• Check glucose ⮌85 at first visit, then depending on result. • Other risk factors: hypertension, cardiovascular disease, physical inactivity, family history of diabetes, high risk ancestry, previous gestational diabetes or big baby, previous impaired glucose tolerance or impaired fasting glucose.
HIV	• If status unknown • If sexually active: yearly • If pregnant: at 32 weeks gestation	Test for HIV ⮌73.
Cervical screen	When needed	• If HIV negative: screen 5 yearly from age 30. • If HIV positive: screen at HIV diagnosis (regardless of age) then 3 yearly. • If abnormal ⮌38.
Breast check	First visit, then yearly	Check for lumps in breasts ⮌29 and axillae ⮌16.

[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 about his/her general health

- Ask the patient about his/her concerns and expectations from this visit, and try to address these.
- Educate that not all tests, treatments and procedures help prevent or treat disease. Some provide little or no benefit and may even cause harm.
- Help patient to choose lifestyle changes to improve and maintain his/her general health. Support the patient to change ⮌122.

Smoking
If patient smokes tobacco ⮌100.

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

Avoid alcohol/drug use
- Limit alcohol intake < 2 drinks[1]/day and avoid alcohol on at least 2 days of the week.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌101.

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

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

Stress
Assess and manage stress ⮌63.

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

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

Treat preventively to maintain the patient's general health

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

Vaccine	When	Note
Influenza	If health worker, ≥ 65 years, pregnant, HIV or chronic lung disease	Give influenza vaccine 0.5mL IM yearly.
Tetanus, diphtheria, pertussis	If pregnant	Check if tetanus, diphtheria and pertussis immunisations are up to date (3 doses of tetanus/diphtheria in the past): • If up to date, give 1 dose of tetanus, diphtheria, acellular pertussis (Tdap) vaccine at 27-36 weeks gestation. • If not up to date/unknown, give 3 doses tetanus and diphtheria (Td) vaccine: immediately, then after 1 and then 6 months. Ensure 1 dose also contains acellular pertussis (Tdap), ideally at 27-36 weeks gestation.

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

The emergency patient

Give urgent attention to the emergency patient:

Does patient respond to your voice?

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

Yes

No pulse felt or unsure

Start CPR[1]:
- Give cycles of 30 chest compressions and 2 breaths (at rate of at least 100 compressions/minute).
- Check rhythm on defibrillator. If shockable, give 1 shock and immediately resume CPR.
- Give epinephrine 1mL (1:1000 solution) IV, followed by 5mL sterile water. Repeat every 3-5 minutes.
- Check rhythm every 2 minutes (5 cycles) and shock if needed. If not shockable, check for pulse:
  - If definite pulse returns, stop CPR and check breathing (as adjacent).
  - If no pulse, continue CPR for at least 30 minutes[2].

Pulse felt

Is patient breathing?

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

Yes

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

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

Breathing
- If difficulty breathing or oxygen saturation < 90%, give face mask oxygen.
- If respiratory rate < 9 or blue lips/tongue, connect bag valve mask to oxygen and slowly deliver each breath with the patient.
- Intubate if using bag valve mask and still difficulty breathing, oxygen saturation < 90% or blue lips/tongue.
- If sudden breathlessness, more resonant/decreased breath sounds/pain on 1 side, deviated trachea: **tension pneumothorax** likely:
  - Insert large bore cannula above 3rd rib in mid-clavicular line.
  - Arrange urgent chest tube.

Circulation
- Establish IV access.
- If BP < 90/60, pulse ≥ 100 or heavy bleeding, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Stop bleeding: apply pressure and elevate limb. If bleeding still severe, apply tourniquet above injury.

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

Glasgow Coma Score (GCS)

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

- Add scores to give single score out of 15:
  - If GCS ≤ 8, intubate patient.

Manage further according to disability and symptoms:
- If pupils unequal or respond poorly to light, raise head by 30 degrees. If injured, keep body straight and tilt to raise head (avoid bending spine).
- Apply rigid neck collar and sandbags/blocks on either side of head if injured with: head injury, GCS < 15, neck/spine tenderness, weak/numb limb or abnormal pupils. If needing to move patient, use spine board.
- Identify all injuries and look for cause: undress patient and assess front and back. If injured, use log-roll to turn. Then cover and keep warm.
- Assess patient further according to symptoms. Manage symptoms as on symptom pages. If unconscious →11. If injured →12.

[1]If the patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, consider whether or not to proceed. [2]Continue CPR for longer if temperature <35°C, patient drowned, poisoned or took medication.

The unconscious patient

Give urgent attention to the unconscious patient:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- Identify all injuries and look for cause: undress patient and assess front and back. If injured, use log-roll to turn. Then cover and keep warm.
- If fits, injuries or burns, also manage on symptom pages.
- If sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
  - Give sodium chloride 0.9% 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Check glucose, temperature and pupils:

Glucose

< 4mmol/L or unable to measure

- Give 25mL glucose 50% IV over 1-3 minutes.
- Repeat if glucose still < 4mmol/L after 15 minutes.
- Continue glucose 5% 1L 6 hourly IV.
- If known alcohol user, give thiamine 100mg IV before glucose.

> 11mmol/L

Give sodium chloride 0.9% 1L IV over 1 hour, then 500mL hourly for 4 hours, then 250mL hourly for 4 hours.

Temperature

≤ 35°C

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

≥ 38°C

- Take blood and urine cultures.
- Give ceftriaxone[1] 2g IV/IM.
- If meningitis suspected, also give vancomycin 1g IV and if ≥ 50 years or impaired immunity[2], add ampicillin[1] 2g IV.
- If patient was in malaria area and malaria test[3] positive, also give artesunate 2.4mg/kg IM.
- If temperature > 40°C:
  - Remove clothing.
  - Use fan and water spray to cool patient.
  - Apply ice-packs to axillae, groin and neck.
  - Stop once temperature < 39°C.

Pupils

Pinpoint

Illegal drug use and/or respiratory rate < 12

Opioid overdose likely

- Give 100% face mask oxygen.
- Give naloxone 0.4mg IV. Repeat every 2-3 minutes, increasing dose by 0.4mg each time until respiratory rate > 12, maximum 10mg.

Excessive secretions or muscle twitching

Organophosphate poisoning likely

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

Both equally dilated

Stimulant or other drug overdose likely

Unequal or respond poorly to light

- 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 ⮌123.

- Refer urgently.
- While awaiting transport:
  - Check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes. Insert urinary catheter.
  - If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 90% or drop in GCS, reassess and manage airway, breathing, circulation and level of consciousness ⮌10.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

The injured patient

Give urgent attention to the injured patient:

- First assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- Identify all injuries and look for cause: undress patient and assess front and back. If head or spine injury, use log-roll to turn. Then cover and keep warm.

Bruising and blood in urine

- Give sodium chloride 0.9% 1L IV hourly for 2 hours.
- Once urine output > 200mL/hour, give 500mL hourly.
- Stop if breathing worsens.

Wound and one or more of:

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

- Give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb.
- If bleeding severe and persists, apply tourniquet above injury.

Fracture and one or more of:

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

- Give morphine sulphate 5mg IV.
- If poor perfusion or 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 cefazolin[1] 1g IV.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

Head injury and one or more of:

- Any loss of consciousness
- 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, give phenytoin 20mg/kg IV over 60 minutes (avoid giving lorazepam/diazepam).

- Refer urgently. While awaiting transport, check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes.
- If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 90% or drop in GCS, reassess and manage airway, breathing, circulation and level of consciousness ⮌10.

Approach to the injured patient not needing urgent attention

- Refer same day if pregnant, known bleeding disorder, on anticoagulant, involved in high-speed collision, ejected from or hit by vehicle or fell > 3 metres.
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe.
- 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 ⮌101.
- If assault or abuse ⮌64.

Wound

- Apply direct pressure to stop bleeding.
- Remove foreign material, loose/dead skin. Irrigate with sodium chloride 0.9% or dilute povidone iodine solution if dirty.
- If sutures needed: suture and apply mupirocin 2% ointment and non-adherent dressing for 24 hours.
- Avoid suturing if > 12 hours (body), > 24 hours (head/neck), remaining foreign material, infected, gunshot or deep puncture:
  - Pack wound with saline-soaked gauze and give amoxicillin/clavulanate[1] 500/125mg 8 hourly for 5 days.
  - Review in 2 days. Suture if needed and no infection unless gunshot/deep puncture (irrigate and dress every 2 days instead).
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise patient to return if signs of infection (red, warm, painful, swollen, smelly or pus).
- Remove sutures after 5 days (face), 4 days (neck), 10 days (leg) or 7 days (rest of body).
- Refer if unable to close wound easily, weakness/numbness below injury or cosmetic concerns.

Fracture

- Splint limb to immobilise joint above and below fracture.
- Give paracetamol 1g 6 hourly and add codeine 30mg 4 hourly if needed.
- Do x-rays and refer to doctor same day.

Head injury

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

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Seizures/fits

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

- If current head injury →12.
- Place in left lateral lying (recovery) position and give 100% face mask oxygen.
- Establish IV access.
- If glucose < 4mmol/L or unable to measure, give 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose still < 4mmol/L after 15 minutes. Continue glucose 5% 1L 6 hourly IV. If known alcohol user, give thiamine 100mg IV before glucose.
- If ≥ 20 weeks pregnant up to 1 week postpartum →110.
- If not pregnant or < 20 weeks pregnant, give lorazepam 4mg slow IV *or* diazepam 10mg slow IV or rectally. If still fitting after 10 minutes, repeat dose.
- Also assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- If still fitting 10 minutes after second dose of lorazepam/diazepam *or* patient does not recover consciousness between fits:
  - Give phenytoin[1] 20mg/kg IV over 60 minutes (give phenytoin through different line to lorazepam/diazepam). If still fitting, repeat phenytoin[1] 10mg/kg IV over 30 minutes.
  - 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 one or more of:

- Temperature ≥ 38°C or neck stiffness/meningism: give ceftriaxone[2] 2g IV/IM and vancomycin 1g IV. If ≥ 50 years or impaired immunity[3], also give ampicillin[2] 2g IV. If patient was in malaria area, and malaria test[4] positive, also give artesunate 2.4mg/kg IM.
- New/different headache or headache getting worse/more frequent
- Patient with HIV and no known epilepsy
- Reduced level of consciousness > 1 hour after fit
- Glucose < 4mmol/L one hour after treatment or patient on gliclazide/insulin
- Glucose > 11mmol/L →85.
- New sudden asymmetric weakness or numbness, difficulty speaking or visual disturbance
- BP ≥ 180/110 more than one hour after fit has stopped
- Alcohol/drug overdose or withdrawal
- Recent head injury
- Pregnant or up to 1 week postpartum. If ≥ 20 weeks pregnant and just had fit →110.

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 →95.

No

- Check full blood count, eGFR, urea, sodium, calcium and magnesium and discuss with doctor.
- If focal seizures or new fits after meningitis, stroke or head trauma, discuss with specialist.
- If patient had ≥ 2 definite fits with no identifiable cause, doctor to consider epilepsy and give routine care →95.

No

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

Stroke or **TIA** likely →91.

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

Common faint likely →18.

If diagnosis uncertain, refer.

[1]IV phenytoin can cause low blood pressure and heart dysrhythmia: maximum infusion rate is 50mg/minute; monitor ECG and BP. [2]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [3]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [4]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

Weight loss

- Check that the patient who says s/he has unintentionally lost weight has indeed done so. Compare current weight with previous records and ask if clothes still fit.
- Investigate unintentional weight loss of ≥ 5% of body weight in last 6 months.

First check for TB, HIV and diabetes

Exclude TB
- Start workup for TB ⮌68.
- At the same time test for HIV ⮌73 and diabetes ⮌85 and consider other causes below.

Test for HIV
Test for HIV ⮌73. If HIV positive, give routine care ⮌74.

Check for diabetes
Check glucose ⮌85.

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 Pap smear →38.	Consider **breast cancer**. Examine breasts and axillae →29.	Consider **prostate cancer**. Do rectal examination. If hard, nodular prostate, refer.	Consider **bowel cancer**. If mass on abdominal or rectal examination or stool occult blood positive, refer.	Consider **lung cancer**. Do chest x-ray. If suspicious, refer.

If food intake inadequate, look for cause/s

Nausea and/or vomiting	Loss of appetite	Assess and manage stress ⮌63.	No money for food	The patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years.	Sore mouth or difficulty swallowing
→31.	• Eat small frequent meals. • Advise patient to eat nutrient dense foods (soya, meat, fish, nuts and seeds, beans, lentils, potatoes, rice, barley, wheat, maize).		If available, refer to social worker.	Give palliative care →118.	**Oral/oesophageal candida** likely →25.

- If none of above, check TSH if any of: pulse ≥ 100, palpitations, tremor, dislike of hot weather or thyroid enlargement. If abnormal, refer to 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 ⮌97.
- 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 ⮌101.
- Ask about neglect in the older or ill patient needing care. If yes, refer to social worker.

If persistent documented weight loss and no obvious cause, refer within 1 month for further investigation.

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

Fever

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

- Fits ⮌13
- Drowsiness, confusion or agitation
- Neck stiffness/meningism
- Respiratory rate > 30 or difficulty breathing
- BP < 90/60
- Severe abdominal or back pain
- Jaundice
- Easy bleeding or bruising
- Unable to sit up or walk unaided

Management:

- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Give ceftriaxone[1] 2g IV/IM. If meningitis suspected, also give vancomycin 1g IV and if ≥ 50 years or impaired immunity[2], add ampicillin[1] 2g IV.
- If patient was in a malaria area in past 3 months and malaria test[3] positive: give artesunate 2.4mg/kg IM *and* if glucose < 3mmol/L give 250mL glucose 10% IV. Repeat if glucose still < 3mmol/L after 15 minutes. Continue glucose 5% 1L 6 hourly IV.
- If on ART, check for urgent side effects ⮌78.
- If pregnant with travel to Zika area and any of: rash, joint pain or red eyes during/within 2 weeks of travel, refer for investigation.
- Refer urgently.

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

If cough ⮌27; sore throat ⮌25; blocked/runny nose ⮌24; lower abdominal pain ⮌30; vaginal discharge ⮌36; urinary symptoms ⮌42; rash ⮌51; diarrhoea ⮌32.

Has patient been in a malaria area in past 3 months?

Yes: do a malaria test[2]

No

Malaria test positive
Has patient received treatment for malaria in previous 4 weeks?

No

Give 1st line treatment:

- Give artemether/lumefantrine 80/480mg with food/milk: immediately, then after 8 hours, then 12 hourly for 2 days (total of 6 doses).
- If pregnant in 1st trimester give instead for 7 days: quinine sulphate 10mg/kg 12 hourly *and* clindamycin 10mg/kg 12 hourly.
- If pregnant, unable to tolerate oral medication or symptoms of severity develop (as above), refer same day.

Yes

If initially diagnosed with rapid diagnostic test, confirm with parasite slide microscopy[4].

Positive

Give 2nd line treatment:

- Give artesunate/amodiaquine 200/540mg daily for 3 days.
- If patient on zidovudine or efavirenz, give instead artesunate/mefloquine 200/440mg daily for 3 days.
- If pregnant in 1st trimester, give instead for 7 days: artesunate 4mg/kg daily *and* clindamycin 10mg/kg 12 hourly.
- If pregnant, unable to tolerate oral medication or symptoms of severity develop (as above), refer same day.

Negative

Malaria test negative

- Consider other cause of fever below.
- If fever persists after 2 days, repeat a malaria test[3].

No

Consider other cause of fever:

- If patient has any other symptoms, manage as on symptom pages.
- If fever ≥ 2 weeks, exclude TB ⮌68.
- Test for HIV ⮌73. If HIV positive, give routine care ⮌74.
- If cause uncertain or fever persists for > 3 weeks, refer.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test. [4]If parasite slide microscopy unavailable, refer for confirmation of diagnosis.

Lump/s in neck, axilla or groin

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

- If lump is in the skin →51.
- If lump is beneath the skin, first exclude thyroid mass, hernia and aneurysm:
  - Lump in neck that moves up when patient swallows, **thyroid mass** likely: check TSH and refer for further investigation.
  - Lump in groin that gets bigger when patient stands up or coughs, **inguinal hernia** likely: refer. If severe pain or cannot be reduced, refer urgently.
  - Pulsating lump, **aneurysm** likely: refer.
- If none of the above, a lump in neck, axilla or groin is likely an enlarged lymph node (lymphadenopathy). If unsure, refer.

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

Generalised lymphadenopathy

- Test for HIV ⮌73. If HIV positive, give routine care ⮌74.
- Test for syphilis. If positive ⮌39.
- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, check for TB ⮌68. Also aspirate lymph node for TB microscopy and cytology. If no TB found 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* patient well

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

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

Refer same week.

Localised lymphadenopathy

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

Neck

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

Axilla

- Check arms, breasts, chest, upper abdomen and back.
- If lump in breast →29.

Groin

Is the groin lump hot and tender?

No

Check lower abdomen, legs, buttocks, genitals, anal region.

Has a cause been found?

No

- Test for HIV ⮌73. If HIV positive, give routine care ⮌74.
- Test for syphilis. If positive ⮌39.
- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, check for TB ⮌68. Also aspirate lymph node for TB microscopy and cytology. If no TB found 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:

Yes

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

Yes

Treat patient and partner for **lymphogranuloma venereum**:

- First assess and advise the patient and partner ⮌34.
- Give doxycycline[1] 100mg 12 hourly orally for 21 days.
- If fluctuant lymph node, aspirate pus through healthy skin in sterile manner every 3 days as needed.
- Review after 14 days. If no better, refer.

How to aspirate lymph node for TB microscopy and cytology

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

[1]If pregnant/breastfeeding, give instead azithromycin 1g weekly for 3 weeks.

Weakness or tiredness

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

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- Chest pain →26
- Respiratory rate > 30 or difficulty breathing →27.
- Glucose < 4mmol/L: if known diabetes →86. If not, manage as below.
- Glucose > 11mmol/L: if known diabetes →86. If not →85.
- Dehydration: thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100.
- Worsening weakness of leg/s
- If on ART, check for urgent side effects ↩78.

Management:

- If dehydrated, give oral rehydration solution. If unable to drink or BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. If IV rehydration needed or no better with oral rehydration after 2 hours, refer.
- If glucose < 4mmol/L or unable to measure, give oral glucose 20g. If unable to take orally, give instead 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose still < 4mmol/L after 15 minutes. Continue glucose 5% 1L 6 hourly IV. If glucose still < 4mmol/L or weakness/tiredness persists, refer same day.
- If worsening weakness of leg/s, refer urgently.

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

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

- If temperature ≥ 38˚C ↩15. If < 38˚C but had a fever in past 3 days and recently in a malaria area, exclude malaria ↩15.
- If cough, weight loss, night sweats or fever, exclude TB ↩68.
- Test for HIV ↩73. If HIV positive, give routine care ↩74.
- Exclude pregnancy. If pregnant →110.
- Assess and manage stress ↩63.
- If patient has difficulty sleeping ↩65.
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ↩118.

If none of the above:

- If difficulty breathing worse on lying flat and leg swelling, heart failure likely →90.
- Exclude anaemia: check Hb. If < 12.5g/dL, discuss with doctor.
- Exclude diabetes: check glucose ↩85.
- Look for kidney disease: do urine dipstick. If patient has proteinuria on dipstick, diabetes, hypertension or is > 50 years, check eGFR.
- If weight gain, low mood, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.
- Review medication: loratidine, enalapril, amlodipine, metoprolol, fluoxetine, amitriptyline, metoclopramide, valproic acid, phenytoin and spironolactone can cause weakness or tiredness. 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 ↩97.
- 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 ↩101.

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

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

Collapse/falls

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

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- Unconscious →11
- Fit →13
- Chest pain →26
- Difficulty breathing →27
- 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
- Sudden diffuse rash or face/tongue swelling: **anaphylaxis** likely

Management:

- If glucose < 4mmol/L or unable to measure, give oral glucose 20g. If unable to take orally, give instead 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose still < 4mmol/L after 15 minutes. Continue glucose 5% 1L 6 hourly IV.
- If glucose > 11mmol/L ⮌85.
- If **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
  - Give sodium chloride 0.9% 1-2L IV rapidly regardless of BP.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient who has collapsed not needing urgent attention

- Ensure patient has had an ECG. If 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 ⮌101
- Check for orthostatic hypotension: measure BP lying and repeat after standing for 3 minutes:

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

- This is common in the elderly.
- If thirsty and pulse on standing ≥ 100, dehydration likely. Give oral rehydration solution and look for and manage cause.
- Check Hb: if < 12.5g/dL refer to doctor same week.
- Review medication: amitriptyline, amlodipine, enalapril, furosemide, glyceryl trinitrate, hydrochlorothiazide and metoprolol can cause syncope. Discuss with doctor.
- Advise patient to sit first before standing up from lying down.

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

Yes

Common faint likely

- May have had twitching of limbs that last < 15 seconds (not a fit).
- Advise to avoid overheating, prolonged standing and situations where fainting has occurred previously.
- Assess and manage stress ⮌63.

No

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

No

Is there known diabetes?

Yes

Give routine diabetes care ⮌86.

No

Yes

Refer to specialist.

If cause for collapse is uncertain, refer.

[1]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 (spinning/feeling of rotation of self or surroundings) and one or more of:

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- BP < 90/60
- Pulse < 50 or irregular
- Chest pain →26
- Difficulty breathing, especially on lying flat with leg swelling →90
- Recent head injury
- Unable to stand without support
- New sudden severe dizziness with nausea/vomiting, abnormal eye movements or walk

Management:

- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient with dizziness not needing urgent attention

- Ask about ear symptoms. If present ⮌23. 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 ⮌101.
- Review medication: antidepressants, hypertension and epilepsy treatment, furosemide and efavirenz can cause dizziness. Discuss with doctor.
- If diabetic, check glucose ⮌86.
- Check Hb: if < 12.5g/dL, refer to doctor same week.
- Check BP: if > 140/90 ⮌88. Assess for orthostatic hypotension: measure BP lying and repeat after standing for 3 minutes:

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

Orthostatic hypotension likely

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

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

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

Yes

Hyperventilation likely

- Reassure and encourage patient to breathe at a normal rate.
- Assess and manage stress ⮌63.

No

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

No

Yes

Refer.

Sudden dizziness lasts 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, perform particle repositioning (Epley) manoeuvre.
- Refer if hearing loss, tinnitus, headaches or visual symptoms.

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

Vestibular neuritis likely

- If nausea/vomiting, give metoclopramide 10mg 8 hourly as needed for up to 5 days.
- If no better after 2 weeks, hearing loss or tinnitus, 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 one or more of:

- Sudden severe headache
- New/different headache, or headache that is getting worse and more frequent
- Headache that wakes patient or is worse in the morning
- Temperature ≥ 38°C, neck stiffness/meningism or vomiting
- Worsening/persistent headache in HIV patient recently started on ART
- BP ≥ 180/110 and not pregnant →88
- Pregnant or 1 week post-partum, and BP ≥ 140/90 →110
- Decreased level of consciousness
- Confusion
- Sudden dizziness
- Vision problems (e.g. double vision) or eye pain →21
- Following a first seizure
- Recent head trauma
- Sudden weakness or numbness of face, arm or leg →91
- Speech disturbance
- Pupils different in size

Management:

- If temperature ≥ 38°C or neck stiffness/meningism, give ceftriaxone[1] 2g IV/IM and vancomycin 1g IV. If ≥ 50 years or impaired immunity[2], also give ampicillin[1] 2g IV. If patient was in malaria area, and malaria test[3] positive, also give artesunate 2.4mg/kg IM.
- Refer urgently

Approach to the patient with headache not needing urgent attention

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

Yes

Migraine likely

- Give immediately, and then as needed: ibuprofen[4] 400mg 6 hourly with food *or* paracetamol 1g 6 hourly for up to 5 days.
- If nausea, also give metoclopramide 10mg 8 hourly as needed up to 5 days.
- Give oral hydration.
- Advise patient to recognise and treat migraine early, rest in dark, quiet room.
- Advise regular meals, keep hydrated, regular exercise, good sleep hygiene.
- Keep a headache diary to identify and avoid migraine triggers like lack of sleep, hunger, stress, some food or drink.
- Avoid oestrogen-containing contraceptives ⮌108.
- If ≥ 2 attacks/month, refer/discuss for medication to prevent migraines.

No

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

Yes

Sinusitis likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If tooth infection, swelling over sinus or around eye, refer.
- If patient has recurrent sinusitis, test for HIV ⮌73.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[2])?

Yes

- Give amoxicillin/clavulanate 500/125mg *and* amoxicillin 250mg 8 hourly for 5 days.
- If penicillin allergic, discuss with doctor.

No

- Give amoxicillin 500mg 8 hourly for 5 days.
- If penicillin allergic, give instead doxycycline 100mg 12 hourly for 5 days.

No

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

Tightness around head or generalised pressure-like pain

Tension headache likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Assess and manage stress ⮌63.
- Advise regular exercise.

Constant aching pain, tender neck muscles

Muscular neck pain likely →46.

> 50 years, pain over temples

Giant cell arteritis likely

- Check CRP.
- Give single dose prednisolone 60mg and discuss/refer same day.

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

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

Eye/vision symptoms

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

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- BP ≥ 180/110 and not pregnant →88
- Pregnant or up to 1 week post-partum, and BP ≥ 140/90: treat as **severe pre-eclampsia** →110.
- Yellow eyes: **jaundice** likely →58.
- Single painful red eye
- Sudden loss or change in vision (including blurred or reduced vision)
- Painful red skin with blisters involving eye, eyelid or nose: **herpes zoster** (**shingles**) likely
- Whole eyelid swollen, red and painful: **orbital cellulitis** likely
- Penetrating eye trauma
- Foreign body that is metal, or from hammering, mechanical saw, welding, grinding or explosion
- Chemical burn to eye/s: immediately wash eye/s for at least 15 minutes continuously with sodium chloride 0.9% or clean water.

Management:

- If painful eye with redness, blurred vision, haloes around light, dilated unreactive pupil, headache or nausea/vomiting, **acute glaucoma** likely. Give acetazolamide 250mg orally and timolol 0.5% eye drops 1 drop in affected eye, followed 1 minute later by pilocarpine 2% eye drops 1 drop in affected eye.
- If **orbital cellulitis** likely, give clindamycin 600mg IV/IM.
- Refer urgently.

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

Eye/s discharging or watery
Is there prominent itch?

Yes

Is there eczema, hayfever or asthma and are both eyes involved?

No

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

Yes

Allergic conjunctivitis likely
- Advise cool compresses and to identify and avoid allergens that worsen/ trigger symptoms.
- Avoid steroid eye drops.
- Give loratadine 10mg daily as needed.
- If no better after 2 weeks, refer.

No

Is the discharge pus or clear?

Pus

Bacterial conjunctivitis likely
- Give azithromycin 1.5% eye drops 1 drop 12 hourly into affected eye/s on day 1, then daily for 4 days.
- Advise patient to wash hands regularly and not share towels or bedding. Patient can return to work after 2 days.

Clear

Viral conjunctivitis likely
- Advise cool compresses.
- Advise patient to wash hands regularly and not share towels or bedding. Patient can return to work after 1 week.
- If pregnant with travel to Zika area and any of: fever, rash or joint pain during/within 2 weeks of travel, refer for investigation.

If no better after 2 days, refer.

Gradual change in vision
- Exclude diabetes ⮌85 and hypertension ⮌88.
- Test for HIV ⮌73.
- Refer for visual assessment.

Red or swollen eyelid margins with crusting
Blepharitis likely
- Apply warm compress for 5-10 minutes 12 hourly and gently remove crusts.
- If no better, give azithromycin 1.5% eye drops 1 drop daily for 2 weeks.
- If no better after 2 weeks, refer.

Superficial foreign body
- Wash eye with clean water or sodium chloride 0.9% and clean corners of eye with damp cotton-tipped bud.
- Refer to specialist if:
  - Unable to remove foreign body as above
  - Damage to eye
  - Abnormal vision or eye movement
  - No better 2 days after removal of foreign body

Face symptoms

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

- If new sudden asymmetric weakness or numbness of face (with no/minimal forehead involvement), arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- New facial swelling with abnormal urine dipstick: **kidney disease** likely
- Sudden face/tongue swelling with difficulty breathing, BP < 90/60 or collapse, **anaphylaxis** likely
- Painful red facial swelling and temperature ≥ 38°C: **facial cellulitis** likely

Management:

- If **anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
  - Give sodium chloride 0.9% 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

Approach to the patient with face symptoms not needing urgent attention

Face pain

If rash on face →51.

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

Gum/tooth infection likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If temperature ≥ 38°C or difficulty opening mouth, give phenoxymethyl penicillin 250mg 6 hourly for 5 days and metronidazole[1] 500mg 8 hourly for 5 days. If penicillin allergic, give instead clindamycin 600mg on day 1, then 300mg 6 hourly for 5 days.
- Advise good oral hygiene and a soft diet for a few days.
- Refer to dentist same week.

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

Sinusitis likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Refer if neck stiffness/meningism, tooth infection or swelling over sinus/around eye.
- If patient has recurrent sinusitis, test for HIV ↩73.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[2])?

Yes

- Give amoxicillin/clavulanate 500/125mg *and* amoxicillin 250mg 8 hourly for 5 days.
- If penicillin allergic, discuss with doctor.

No

- Give amoxicillin 500mg 8 hourly for 5 days.
- If penicillin allergic, give instead doxycycline 100mg 12 hourly for 5 days.

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

Bell's palsy likely

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

Swelling of face

Painless swelling in patient on enalapril

Angioedema likely

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

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

Parotitis (**mumps**) likely

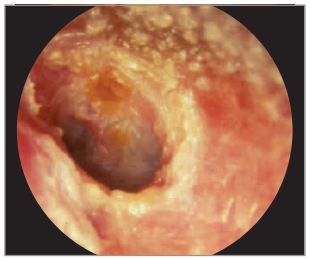
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise patient s/he can return to work after 5 days and that symptoms usually resolve within 1 to 2 weeks.
- Refer if:
  - Neck stiffness/meningism
  - Painful scrotal swelling
  - Loss of hearing

Ear/hearing symptoms

Manage according to symptom: is ear itchy, painful, is there discharge from ear or difficulty hearing/tinnitus (ringing/buzzing in ear/s)?

Itchy ear

Redness and/or pus in ear canal



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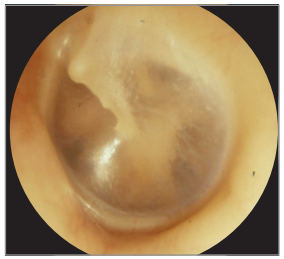
Otitis externa likely

- Clean ear[1].
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Instil ciprofloxacin 0.3% drops 4 drops in ear 12 hourly for 7 days.
- If severe pain, temperature ≥ 38°C, impaired immunity[2] or no response to ciprofloxacin drops: also give ciprofloxacin 500mg orally 12 hourly for 5 days.
- If no response to oral ciprofloxacin after 2 days, refer.

Painful ear

Normal drum and canal



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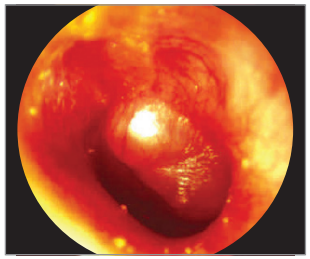
Referred pain likely

- Look for cause:
  - If dental problem, refer to dentist.
  - If throat problem →25.
  - If pain in temporo-mandibular joint, check for joint problem →44.
  - If painful swelling of one/both sides of face, mumps likely →22.

Discharge from ear

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



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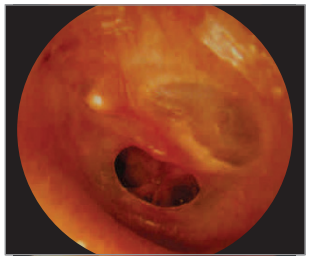
Acute otitis media likely

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Clean ear[1] if discharge.
- Give amoxicillin 500mg 8 hourly for 5 days. If penicillin allergic, give instead erythromycin 500mg 6 hourly for 5 days.
- Refer if:
  - No response to antibiotics after 5 days
  - Recurrent otitis media
- Refer urgently if:
  - Painful swelling behind ear
  - Neck stiffness/meningism

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



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Chronic suppurative otitis media likely

- Clean ear[1] 3 times a day. The ear can heal only if dry.
- Instil ciprofloxacin 0.3% drops 4 drops in ear 12 hourly for 2 weeks.
- Refer if:
  - No better after 2 weeks
  - Foul-smelling discharge or yellow/white deposit on eardrum, **cholesteotoma** likely.
  - Large perforation
  - Hearing loss
  - Pain in ear
- Refer urgently if:
  - Painful swelling behind ear
  - Neck stiffness/meningism
- If poor response to treatment, check for TB ⮌68 and HIV ⮌73.

Difficulty hearing or tinnitus (ringing/buzzing in ear/s)

- If itchy/painful ear or discharge from ear, see adjacent column/s.
- If normal looking ear, check for wax:

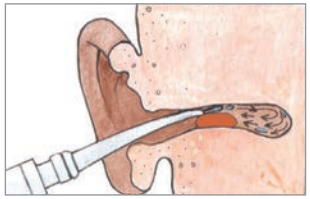
Wax

- Instil acetic acid 2% 1 dropperful into ear and leave for
- 20 minutes.
- Then syringe ear with warm water. If unsuccessful after 3 attempts or causes pain, stop and refer.
- If hearing does not improve after wax removal, refer.

No wax

- 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 kanamycin

How to syringe an ear



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

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

Nose symptoms

Runny or blocked nose
Ask about duration and associated symptoms.

Sore throat or fever

Body aches/muscle pains or chills

No	Yes
Common cold likely	**Influenza (flu)** likely

- Advise patient to avoid contact with others to prevent spread, use tissues when sneezing/coughing and dispose of these carefully, and to wash hands regularly.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Explain that antibiotics are not necessary.
- Advise patient to return if symptoms persist > 7 days.
- Advise yearly influenza vaccination if patient ≥ 65 years, pregnant, HIV, chronic heart or lung disease.

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

Sinusitis likely
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Refer if neck stiffness/meningism, tooth infection or swelling over sinus/around eye.
- If patient has recurrent sinusitis, test for HIV ⮌73.
- If nasal discharge for > 10 days or symptoms worsen after initial improvement, give antibiotic:
  - Is there risk of severe infection (> 65 years, alcohol abuse or impaired immunity[1])?

Yes	No
• Give amoxicillin/clavulanate 500/125mg *and* amoxicillin 250mg 8 hourly for 5 days. • If penicillin allergic, discuss with doctor.	• Give amoxicillin 500mg 8 hourly for 5 days. • If penicillin allergic, give instead doxycycline 100mg 12 hourly for 5 days.

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

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

Bleeding nose

- Firmly pinch nostrils together for 10 minutes.
- Check BP:
  - If < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
  - If ≥ 140/90 ⮌88.
- If still bleeding:
  - Insert cotton strips or swabs saturated with mixture of lidocaine 4% and xylometazoline 0.05% into bleeding nostril/s for 15 minutes.
  - If bleeding persists, refer.
- If patient has recurrent episodes:
  - Advise patient to apply petroleum jelly or saline spray inside nostrils and avoid nose-picking or rubbing, contact sports and trauma to nose.
  - Advise patient to avoid aspirin and NSAIDs (e.g. ibuprofen) as they may prolong bleeding.
  - Educate patient to firmly pinch nostrils together if bleeding occurs.

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

Mouth and throat symptoms

Give urgent attention to the patient with mouth/throat symptoms and one or more of:
- Unable to open mouth
- Unable to swallow at all
- If on ART, check for urgent side effects ⮌78.

Management:
- Refer same day.

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

Red throat

Are there 3 or more of:
- Fever
- No cough
- Pus/patches on tonsils
- Tender neck lymph nodes

No

Viral pharyngitis likely
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Salt water gargle may help.
- Explain that antibiotics are not necessary.

Yes

Bacterial pharyngitis/ tonsillitis likely
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Give phenoxymethyl-penicillin 500mg 12 hourly for 10 days *or* single dose benzathine benzylpenicillin 1.2MU IM. If penicillin allergic give instead erythromycin 500mg 6 hourly for 10 days.

If severe, recurrent episodes, discuss with specialist possible tonsillectomy.

White patches on cheeks, gums, tongue, palate.

Oral candida likely
- Give nystatin 500 000IU tablet 6 hourly for 7 days. Keep in mouth as long as possible.
- If patient uses inhaled corticosteroids, ensure s/he uses spacer and rinses mouth with water after use ⮌79.
- Test for HIV ⮌73 and diabetes ⮌85.
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.

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

Painful blisters on lips/mouth

Herpes simplex likely
- Give as needed for pain:
  - lidocaine 4% on blisters 8 hourly.
  - paracetamol 1g 6 hourly up to 5 days.
- Give aciclovir 200mg 5 times a day for 7 days. Start as soon as possible after onset of symptoms.
- Test for HIV ⮌73.

Painful ulcer/s in mouth/throat

Aphthous ulcer/s likely
- Give as needed for pain: lidocaine 4% applied to ulcer/s 6 hourly or rinse with aspirin 600mg in water 6 hourly.
- Refer if:
  - Not healed within 3 weeks
  - Ulcer > 1cm

Dry mouth

- If thirst, urinary frequency or weight loss, check for diabetes ⮌85.
- If runny or blocked nose ⮌24.
- Look for and treat oral candida as in adjacent column.
- Review medication: furosemide, amitriptyline, chlorpheniramine antipsychotics and morphine can cause dry mouth. Discuss with doctor.
- Advise patient to sip fluids frequently. Sucking on oranges, pineapple, lemon or passion fruit may help.
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.

Red, cracked corners of mouth

Angular cheilitis likely
- Apply petroleum jelly 8 hourly.
- If patient also has oral candida, treat as in adjacent column and apply miconazole cream 12 hourly for 2 weeks.
- If crusts and blisters around mouth, **impetigo** likely ⮌57.
- If very itchy, **contact dermatitis** likely. Identify and remove irritant.
- If dentures, ensure good fit and advise to clean every night.
- If using inhaled corticosteroids, advise to rinse mouth after use.

If no better or uncertain of cause:
- Check Hb.
- Test for HIV ⮌73 and diabetes ⮌85.
- If still uncertain, refer.

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

Chest pain

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

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

Do an ECG.

ECG abnormal (ST elevation, ST depression or left bundle branch block) → 92

ECG normal/other abnormalities or unavailable or uncertain

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

No → 92

Yes

Manage and refer urgently:

- If oxygen saturation < 90%, oxygen saturation machine not available, respiratory rate > 30 or difficulty breathing, give face mask oxygen.
- If sudden breathlessness, more resonant/decreased breath sounds/pain on one side, deviated trachea, **tension pneumothorax** likely:
  - Insert large bore cannula above 3rd rib in mid-clavicular line.
  - Arrange for urgent chest tube.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly. Repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If BP ≥ 180/110, discuss with specialist the need for urgent treatment.
- If temperature ≥ 38°C, give ceftriaxone[1] 1g IV/IM.

Approach to the patient with chest pain not needing urgent attention

- If recurrent episodes of central chest pain, brought on by exertion and relieved by rest, **ischaemic heart disease** likely → 92.
- If cough, fever or pain on breathing deeply ↩ 27.
- Ask about site of pain and associated symptoms:

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

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night. Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ↩ 100. Support patient to change ↩ 122.
- If drinks alcohol ≥ 4 drinks[2]/session ↩ 101.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ↩ 83.
- Give omeprazole 20mg daily for 4 weeks.
- Refer same week if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive or abdominal mass.

Tender at costochondral junction, no fever or cough

Musculoskeletal problem likely

- Give ibuprofen 400mg 8 hourly with food up to 10 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If pain persists > 4 weeks, refer.

Burning pain on one side of body with or without rash

Herpes zoster (**shingles**) likely → 52.

If uncertain of diagnosis, refer same week.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Cough or difficulty breathing

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

- If wheeze/tight chest and no rash or face/tongue swelling →28.
- Difficulty breathing worse on lying flat and leg swelling: **heart failure** likely →90.
- Rapid deep breathing with glucose > 11mmol/L →85.
- Sudden diffuse rash or face/tongue swelling
- Breathless at rest or while talking
- Respiratory rate > 30
- Coughs ≥ 1 tablespoon fresh blood
- Confused or agitated
- BP < 90/60
- Swelling and pain in one calf

Manage and refer urgently:

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

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

Sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely
- Raise legs.
- Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
- Give sodium chloride 0.9% 1-2L IV rapidly, regardless of BP.

Sudden breathlessness, more resonant/decreased breath sounds/pain on one side, deviated trachea, **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% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

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

- Test for HIV ⮌73. If on ART, check for urgent side effects ⮌78.
- Ask about duration of cough or difficulty breathing:

Cough or difficulty breathing < 2 weeks

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

No

Acute bronchitis likely

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

Yes

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

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

No

Give doxycycline 100mg 12 hourly for 5 days.

Yes

Give amoxicillin[1] 1g 8 hourly and doxycycline[3] 100mg 12 hourly for 5 days.

- Advise to return if symptoms worsen.
- If worsens or no better after 2 days, refer.

Wheeze with no leg swelling →28.

Cough or difficulty breathing ≥ 2 weeks

- Exclude TB ⮌68.
- Consider asthma and COPD ⮌79 and other cause for cough or difficulty breathing:

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

Pneumocystis pneumonia (**PJP**) likely
Diagnose on history/x-ray

- Give co-trimoxazole 320/1600mg 6 hourly for 21 days.
- Refer if x-ray atypical/unavailable, diagnosis uncertain, patient adherent to co- trimoxazole prophylaxis and ART, or no better on treatment.

Smoker
- If patient smokes tobacco ⮌100.
- Has patient lost weight?

Yes

Consider **lung cancer** ⮌14.

No

Coughing sputum most days of 3 months for ≥ 2 years, **chronic bronchitis** likely. Discuss.

Recent upper respiratory tract infection, no difficulty breathing

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

Relieve cough or difficulty breathing in the patient needing palliative care ⮌118:

- If thick sputum, give steam inhalations. If more than 30mL/day, try deep fast breathing with postural drainage.
- If excess thin sputum or annoying dry cough, discuss with palliative care specialist.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [3]If pregnant, give instead erythromycin 500mg 6 hourly for 5 days. [2]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids.

Wheeze/tight chest

- If sudden diffuse rash or face/tongue swelling, **anaphylaxis** likely →27.
- If difficulty breathing worse on lying flat and leg swelling, **heart failure** likely →90.

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%. If no better, repeat salbutamol every 20 minutes during first hour.
- If known asthma or COPD, give prednisolone 40mg orally. If unable to take oral medication, give instead hydrocortisone 100mg IV.
- Give face mask oxygen between each dose of salbutamol (if known COPD, give 24-28% face mask oxygen).
- Monitor response regularly:

Improving or no change at 1 hour

Check respiratory rate. Can patient talk normally?

Able to talk normally *and* respiratory rate < 20

Wheeze/tight chest resolved

- If first episode of wheeze/tight chest, assess for asthma and COPD →79.
- If known asthma/COPD, give routine care: if asthma →81, if COPD →82.

Wheeze/tight chest still present

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

No → Yes

Continue salbutamol and refer.

Unable to talk normally *or* respiratory rate > 20

Worsening despite treatment

- Refer urgently.
- While awaiting transport:
  - Give 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9% via nebuliser every 20 minutes (or continuously if needed). If nebuliser not available, use a spacer to give inhaled salbutamol 400-800mcg (4-8 puffs) every 20 minutes instead.
  - Give inhaled ipratropium bromide 80mcg (4 puffs) using a spacer every 20 minutes (or more often if needed).
  - Give face mask oxygen between nebulisations/doses (if known COPD, give 24-28% face mask oxygen).
  - Give hydrocortisone 100mg IV if not already given.

Breast symptoms

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

Breast lump/s

Both breasts, with/without pain

This is likely to be cyclical.
- Reassure.
- If on hormonal contraceptive, consider non-hormonal method ⮌108.
- Advise patient to return if symptoms change/worsen.

One breast

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

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

Breast pain

- Reassure patient that breast cancer rarely causes pain.
- Advise a well-fitting bra.
- If pregnant, reassure and give antenatal care ⮌112.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- May be a side effect of hormonal contraceptive. If no better after 3 months, change method →108.

Nipple discharge

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

- **Yes** → Refer same week.
- **No**
  - If pregnant, reassure and give antenatal care ⮌112.
  - Review medication: haloperidol, antidepressants, oral contraceptive and metoclopramide can cause nipple discharge. Discuss with doctor.

Breast enlargement

One breast

Refer same week.

Both breasts

- Confirm that this is not obesity. If BMI > 25 assess CVD risk ⮌83.
- Review medication: efavirenz and amlodipine can cause breast enlargement. Discuss with doctor.

Approach to the patient with a breast symptom who is breastfeeding

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

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

Painful breast/s
Is there a breast lump?

No
Temperature ≥ 38°C or body pain?

- **Yes** → **Mastitis** likely
  - Give cloxacillin 500mg 6 hourly for 10 days. If penicillin allergic, give instead erythromycin 500mg 6 hourly for 14 days.
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
  - Advise warm compresses and, if HIV negative, frequent breastfeeds.
  - Advise HIV patient to stop feeding from the breast, express and heat-treat[1] the milk, and cup-feed baby until mastitis resolves.
  - If no better after 2 days, refer.
- **No** → **Engorgement** likely
  - Advise frequent breastfeeding, warm compresses and to gently massage breast.
  - Advise to return to clinic if worse/no better.

Yes
Temperature ≥ 38°C or body pain?

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

Ensure the breastfeeding HIV patient and her baby receive routine HIV care ⮌74 and ⮌114.

[1]Heat-treat milk to rid it of HIV and bacteria: place breastmilk in sterilized glass jar. Close lid and place in pot. Fill pot with water 2cm above milk and heat water. Remove jar when water is rapidly boiling.

Abdominal pain (no diarrhoea)

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

- Unable to pass urine and distended abdomen →42
- Chest pain →26
- Pregnant or up to 1 week post-partum, and BP ≥ 140/90 →110
- Recent termination of pregnancy/miscarriage/delivery →114
- Pregnant and vaginal bleeding →110
- Sudden severe upper abdominal pain spreading to back with nausea/vomiting: **pancreatitis** likely
- Pulsatile abdominal mass: **abdominal aortic aneurysm** likely
- Peritonitis (guarding, rigidity or rebound tenderness)
- Jaundice
- Temperature ≥ 38°C
- No stool or flatus/wind for last 24 hours with/without vomiting
- If drowsiness, confusion, nausea/vomiting, rapid deep breathing: check glucose ↩85.
- If on ART, check for urgent side effects ↩78.

Management:

- If **pancreatitis** likely, give Ringer's lactate 1L IV rapidly regardless of BP, then give 1L 4 hourly. Stop if breathing worsens.
- If **abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen rupture).
- Refer urgently.

Approach to the patient with abdominal pain not needing urgent attention

- If sexually active woman with lower abdominal pain and abnormal vaginal discharge →36.
- If the patient has urinary symptoms →42.
- If the patient is constipated →33.

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

Yes

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night.
- Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ↩100. Support patient to change ↩122.
- If drinks alcohol ≥ 4 drinks[1]/session ↩101.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ↩83.
- Give omeprazole 20mg daily for 4 weeks.
- Refer same week if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive, abdominal mass or uncertain of diagnosis.

No

Has patient lost weight?

Yes

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

Yes

Exclude TB ↩68.

No

Consider **cancer**. Refer same week.

No

Does the patient report worms?

Yes

- Tapeworm or worm segments: give single dose praziquantel 10mg/kg.
- Other worm or unsure: give single dose albendazole 400mg.
- Educate on personal hygiene.

No

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

- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Review regularly until pain resolves or a cause is found.

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

Nausea or vomiting

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

- Headache →20
- Chest pain →26
- Sudden severe upper abdominal pain spreading to back: **pancreatitis** likely
- Dehydration: thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100
- Peritonitis (guarding, rigidity or rebound tenderness)
- Vomiting blood
- Jaundice
- Abdominal pain/distention and no stools or flatus/wind
- If drowsiness, confusion, abdominal pain, rapid deep breathing: check glucose ⮌85.
- If on ART, check for urgent side effects ⮌78.

Management:

- If **pancreatitis** likely, give Ringer's lactate 1L IV rapidly regardless of BP, then give 1L 4 hourly. Stop if breathing worsens.
- If dehydrated, give oral rehydration solution. If unable to drink or BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. If IV rehydration needed or no better with oral rehydration after 2 hours, refer.
- Refer urgently.

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

- Exclude pregnancy. If pregnant →110.
- If associated dizziness ⮌19.
- Review medication: NSAIDs (e.g. ibuprofen), metformin, contraceptives, hormone therapy, theophylline, chemotherapy and morphine can cause nausea/vomiting. Discuss with doctor. If on TB medication ⮌71 or ART ⮌78.
- 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 ⮌101.
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.

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

Yes

Dyspepsia (**heartburn**) likely

- Advise to avoid caffeine and if heartburn at night, prop up head of bed and avoid eating late at night.
- Stop NSAIDS (e.g. ibuprofen), aspirin.
- Ask about smoking. If patient smokes tobacco ⮌100. Support patient to change ⮌122.
- If waist circumference > 80cm (woman) or 94cm (man), encourage weight loss and assess CVD risk ⮌83.
- Give omeprazole 20mg daily for 4 weeks.
- Refer same week if any of: no better after 14 days of omeprazole, new onset pain and > 50 years, pain on swallowing, persistent vomiting, weight loss, loss of appetite, early fullness, blood in stool or occult blood positive, abdominal mass or uncertain of diagnosis.

No

- If new onset vomiting, usually with diarrhoea, cramping abdominal pain, loss of appetite, body pains and weakness, reassure patient that vomiting/diarrhoea is likely due to a viral infection or food poisoning and should resolve within 1-3 days.
- Give metoclopramide 10mg 8 hourly as needed for up to 5 days.
- If vomiting/diarrhoea, give oral rehydration solution.
- Advise patient to drink lots of fluids, eat small frequent meals as able and avoid fatty food.
- Advise patient to return if vomiting > 3 days, not tolerating oral fluids or needing urgent attention as above: refer same day.
- If nausea persists > 2 weeks or uncertain of cause, discuss.

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

Diarrhoea

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

- Dehydration: thirst, dry mouth, poor skin turgor, sunken eyes, decreased urine output, drowsiness/confusion, BP < 90/60, pulse ≥ 100
- If on ART, check for urgent side effects ⮌78.

Management:

- Give oral rehydration solution. If unable to drink or BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If IV rehydration needed or no better with oral rehydration after 2 hours, refer same day.

Approach to the patient with diarrhoea not needing urgent attention

- Confirm patient has diarrhoea: watery stools and/or > 3 stools/day.
- If > 65 years, bed-bound or receiving palliative care, check for faecal impaction (solid immobile bulk of stool in rectum). If impacted, gently remove stool from rectum using lubrication. Follow with mineral oil enema. If bleeding or severe pain, stop and refer.
- Advise patient to increase fluid and salt intake, eat small frequent meals when able and avoid sweet/caffeinated drinks.
- Ask about duration of diarrhoea:

Diarrhoea for ≤ 2 weeks

- Give oral rehydration solution.
- Is there blood in stool?

Yes

Dysentery likely

- Give ciprofloxacin 500mg 12 hourly for 5 days. If pregnant, give instead azithromycin 1g daily for 5 days.
- If no better after 2 days, add metronidazole[1] 500mg 8 hourly for 7 days.

No

- Give loperamide 4mg initially, then 2mg after each loose stool, maximum 16mg/day.
- Avoid antibiotics. They are unnecessary and increase the likelihood of antibiotic resistance and side effects.

Review in 2 weeks if diarrhoea still present.

Diarrhoea for > 2 weeks

- Give oral rehydration solution to prevent dehydration.
- Send stool for 'ova, cysts and parasites'.
- Knowing the patient's HIV status helps in the management. Test for HIV ⮌73.

HIV positive

- Also send stool for culture.
- Give routine HIV care ⮌74.
- Lopinavir/ritonavir can cause ongoing diarrhoea.
- Review symptoms and stool result in 1 week.

Stool positive
Treat according to result.

Stool negative

- Give loperamide 4mg initially, then 2mg after each loose stool, maximum 16mg/day.
- Avoid antibiotics. They are unnecessary and increase the likelihood of antibiotic resistance and side effects.
- Review medication: omeprazole, NSAIDs (e.g. ibuprofen) and metformin can cause diarrhoea. Discuss with doctor.

HIV negative

Review stool result.

Stool positive
Treat according to result.

If diarrhoea persists despite treatment, refer to specialist.

If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care →118.

Constipation

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

Management:
- Refer same day.

Approach to the patient with constipation not needing urgent attention
- Review diet, fluid intake and medication (amitriptyline, schizophrenia treatment, codeine and morphine can cause constipation: discuss with doctor). Ask about regular use of enemas or laxatives.
- Exclude pregnancy. If pregnant ⮌110.
- 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 and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.
- If > 65 years, bed-bound or receiving palliative care, check for impaction (solid immobile bulk of stool in rectum). If impacted, gently remove stool from rectum using lubrication. Follow with mineral oil enema. If bleeding or severe pain, stop and refer.
- Advise a high fibre diet (vegetables, fruit, wholemeal cereals, bran and cooked dried prunes), adequate fluid intake and at least 30 minutes moderate exercise (e.g. brisk walking) most days of the week.
- If no better with diet and exercise, give docusate sodium 100mg 12 hourly as needed for 3-5 days.
- If on codeine/morphine, also give senna 15mg 12 hourly.
- If no response after 1 week of laxative use, recent change in bowel habits, weight loss, blood in stool or occult blood positive, or uncertain cause for constipation, refer.

Anal symptoms

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

Management:
- Refer same day.

Assess patient with anal pain, bleeding, discharge or itch/irritation.
If patient has anal sex, also ask about genital symptoms ⮌34.

Crack/s
- Advise as for constipation above and to take sitz baths.
- If constipated, give docusate sodium as above.
- Apply lidocaine 2% gel after each bowel action.

Lump/pile
- Advise as for constipation above and to avoid straining.
- Apply hydrocortisone 1% cream 12 hourly for 5 days.

Ulcer/s

Treat as for genital ulcer →37.

Perianal warts

Treat as for genital warts →38.

Red/raw skin
- Advise good hygiene.
- Look for contact cause. If diarrhoea ⮌32.
- Apply petroleum jelly to raw areas. If severe itching, also apply hydrocortisone 1% cream 12 hourly for 5 days.

Suspected worms
- Give single dose mebendazole 100mg and repeat dose 14 days later. If pregnant, give instead pyrantel 11mg/kg and repeat dose 14 days later.
- Treat family members at the same time.

If no better with treatment, refer.

Genital symptoms

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

Assess	Note
Symptoms	Ask about genital discharge, rash, itch, lumps, ulcers and manage as below. Manage other symptoms as on symptom pages.
Sexual health	Ask about sexual orientation, risky behaviour (patient or partner has new or > 1 partner, unreliable condom use or risky alcohol/drug use ⮌101) and sexual problems ⮌41.
Abuse	Ask about sexual assault. If yes ⮌64.
Family planning	Assess patient's contraception needs ⮌108 and discuss infertility. Exclude pregnancy. If pregnant ⮌110.
Examination	• Woman: examine abdomen for masses, look for discharge, ulcers, rash, lumps. Do bimanual palpation for cervical tenderness or pelvic masses and speculum examination for cervical abnormalities. • Man: look for discharge, inguinal lymph nodes, ulcers, scrotal swelling or masses.
HIV	Test for HIV ⮌73.
Syphilis	Test for syphilis if patient has an STI, is pregnant, was raped or whose partner has an STI or is syphilis positive. If positive ⮌39.
Cervical screen	• If HIV negative, screen 5 yearly from age 30. If HIV positive, screen at HIV diagnosis (regardless of age) then 3 yearly. If abnormal ⮌38. • Do cervical screen once an abnormal discharge has been treated ⮌36. If cervix looks abnormal/suspicious of cancer, refer same week.

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

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

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

Patient's diagnosis	Treat the patient's partner/s according to the patient's diagnosis as well as the partners' symptoms (if any)
Cervicitis	Give partner single dose each of ceftriaxone[1] 250mg IM and azithromycin 1g orally.
Pelvic inflammatory disease	Give partner single dose each of ceftriaxone[1] 250mg IM and azithromycin 1g orally.
Male urethritis	Give partner single dose each of ceftriaxone[1] 250mg IM and azithromycin 1g orally.
Epididymitis/epididymo-orchitis	Give partner single dose each of ceftriaxone[1] 250mg IM and azithromycin 1g orally.
Genital ulcer	Give partner single dose each of benzathine benzylpenicillin 2.4MU IM and azithromycin 1g orally. If penicillin allergic, manage instead ⮌37.
RPR positive	Give partner single dose benzathine benzylpenicillin 2.4MU IM. If penicillin allergic, manage instead ⮌39.
Balanitis/balanoposthitis	Give female partner single dose clotrimazole vaginal tablet 500mg or clotrimazole 1% vaginal cream applied once at night for 7 days.
Pubic lice	Give partner permethrin 1% ⮌38.
Lymphogranuloma venereum	Give partner single dose azithromycin 1g orally.

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

Genital symptoms in a man

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

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

Management:

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

Approach to the man with genital symptoms not needing urgent attention

First assess and advise the patient and his partner/s ↩34.

Urethral discharge or dysuria/burning urine

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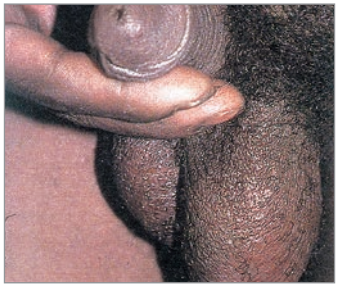
Male urethritis likely

- Give single dose ceftriaxone 250mg IM *and*
- Single dose azithromycin 1g orally
- If severe penicillin allergy[1], omit ceftriaxone and increase azithromycin dose to 2g.
- If partner has cervicitis/vaginitis, also give single dose metronidazole[2] 2g orally.
- Treat patient's partner/s ↩34.

Advise patient to return in 7 days if symptoms persist:

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

Scrotal pain or swelling



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Pain with/without swelling or discharge

Epididymitis/epididymo-orchitis likely

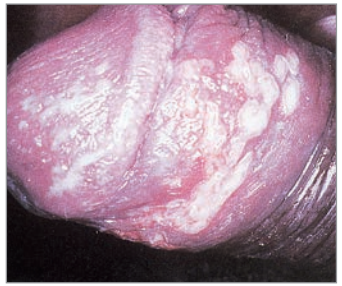
- Give single dose ceftriaxone 250mg IM *and* doxycycline 100mg 12 hourly for 14 days.
- If severe penicillin allergy[1], omit ceftriaxone and give azithromycin 2g orally.
- Treat patient's partner/s ↩34.
- For pain, give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, also give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If no better after 7 days, refer.

Painless lump

Testicular cancer likely

Refer.

Painful, itchy or smelly glans



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Balanitis/balanoposthitis likely

- Advise patient to wash daily with water, avoid soap. Retract foreskin while washing then dry fully.
- Give clotrimazole cream 12 hourly for 7 days.
- Offer referral for medical male circumcision, especially if persistent/recurrent or difficulty retracting foreskin.
- Treat patient's partner/s ↩34.
- Advise patient to return in 7 days if symptoms persist:
  - If adherence poor, repeat treatment.
  - Test for diabetes ↩85 and HIV ↩73.
- If still no better, refer.

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

Vaginal discharge

- It is normal for a woman to have a vaginal discharge. Abnormal discharges are itchy or different in colour or smell. Not all women with a discharge have an STI.
- First assess and advise the patient and her partner/s ↩34.

If the vulva is red, scratched and inflamed or curd-like discharge, **vaginal candida** likely:
- Give single dose clotrimazole vaginal tablet 500mg inserted at night or single dose fluconazole 150mg orally.
- If severe, give instead single dose fluconazole 150mg orally and repeat after 3 days.

Is there lower abdominal pain or cervical tenderness?

No

Treat for **vaginitis**:
- Give metronidazole[1] 500mg orally 12 hourly for 7 days.
- If recurrent vaginitis, also give partner single dose metronidazole[1] 2g orally.

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

No

Review in 7 days:
- If ongoing discharge: examine cervix for cancer and do cervical screen ↩38.
- If ongoing vaginal candida also test for diabetes ↩85 and HIV ↩73.
- Refer same week.

Yes

Also treat for **cervicitis**:
- Give single dose ceftriaxone 250mg IM *and*
- Single dose azithromycin 1g orally
- If severe penicillin allergy[2], omit ceftriaxone and increase azithromycin to 2g.
- Treat the patient's partner/s ↩34.

Yes

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

Management:
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Give ceftriaxone 1g IV and metronidazole[1] 400mg orally. If severe penicillin allergy[2], omit ceftriaxone and discuss with doctor.
- Refer same day.

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

Cervical tenderness with or without lower abdominal pain

Lower abdominal pain only, no cervical tenderness

Check urine dipstick. If nitrites positive, **urinary tract infection** likely →42.
If nitrites negative, treat below.

Pelvic inflammatory disease likely
- Give single dose ceftriaxone 250mg IM (if severe penicillin allergy[2], omit ceftriaxone and discuss) *and*
- Give doxycycline 100mg orally 12 hourly for 14 days *and*
- Give metronidazole[1] 500mg orally 12 hourly for 14 days.
- For pain, give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, also give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Treat the patient's partner/s ↩34.
- Review within 2 days. If no better, refer same day.

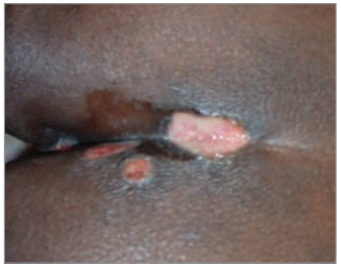
[1]Advise no alcohol until 24 hours after last dose of metronidazole. [2]Penicillin allergy with angioedema, anaphylaxis or urticaria.

Genital ulcer

- First assess and advise the patient and his/her partner/s ⮌34.
- The patient may have blister/s, sore, ulcer or swollen inguinal (groin) lymph nodes that might be tender or fluctuant with/without a vaginal/urethral discharge.

Treat for **herpes**:

- Start as soon as possible after onset of symptoms:
  - If first episode, give aciclovir 400mg 8 hourly for 10 days.
  - If recurrent episode, give aciclovir 400mg 8 hourly for 5 days. If impaired immunity[1], give aciclovir 400mg 8 hourly for 10 days.
- For pain:
  - Advise sitz baths as needed (sit for 10 minutes in lukewarm water with no salts).
  - Give lidocaine 2% gel applied topically to lesions 8 hourly as needed.
  - Give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, also give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Keep lesions clean and dry.
- Explain that herpes infection is lifelong and that herpes transmission can occur even when asymptomatic. Advise patient to use condoms and to abstain from sex when symptomatic. The likelihood of HIV transmission is increased when there are ulcers.
- If recurrent episodes are severe or > 6 in 1 year or cause distress, doctor to give aciclovir 400mg 12 hourly. Stop after 12 months. If no better, refer.



Also treat for **early syphilis** and **chancroid**:

- Give single dose benzathine benzylpenicillin 2.4MU IM and single dose azithromycin 1g orally.
  - If penicillin allergic and not pregnant/breastfeeding, omit benzylpenicillin, do baseline RPR and give instead doxycycline 100mg 12 hourly orally for 14 days. If penicillin allergic and pregnant/breastfeeding, refer to confirm diagnosis and for possible penicillin desensitisation. Advise patient to return for repeat RPR in 6 and 12 months. If RPR at 12 months is not at least 4 times lower, refer.
- If vaginal/urethral discharge, also treat patient and partner/s for **gonorrhoea** (chlamydia already covered for above): give single dose ceftriaxone[2] 250mg IM.

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

No

If no better after 7 days, refer.

Yes

Also treat patient and partner/s for **lymphogranuloma venereum**:

- Give doxycycline 100mg 12 hourly orally for 21 days. If pregnant/breastfeeding, give instead azithromycin 1g weekly for 3 weeks.
- If fluctuant lymph node (hernia and aneurysm excluded), aspirate pus through healthy skin in sterile manner every 3 days as needed.
- Review after 14 days. If no better, refer.

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

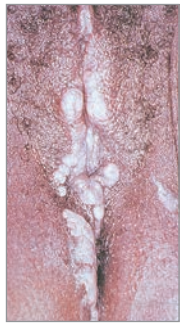
Other genital symptoms

First assess and advise patient and partner/s ⮌34.

Lumps

Genital warts

- Test for syphilis. If positive ⮌39.
- Protect surrounding skin with petroleum jelly and apply podophyllum 15% (avoid applying internally). Wash off after 4 hours. Repeat weekly for 6 weeks.
- Do cervical screen.
- Refer if:
  - Warts > 1cm
  - Multiple troublesome lesions
  - Warts in vagina or on cervix
  - Pregnant
- Reassure patient that most warts resolve spontaneously within 2 years.



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Molluscum contagiosum

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

Itchy rash in pubic area

Pubic lice

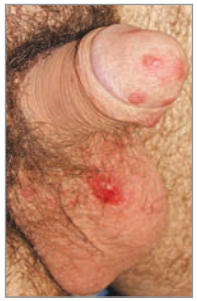
Treat patient and partner/s:

- Apply permethrin 1% cream to affected areas and adjacent hairy areas. Wash off after 10 minutes. Avoid mucous membranes, urethral opening and raw areas. Repeat after 7 days if needed.
- Wash clothes and linen in very hot water.
- For itch, give loratadine 10mg daily as needed.

Scabies

Treat patient, partner/s and household contacts:

- Apply permethrin 5% from the neck down. Wash off after 14 hours. Avoid mucous membranes, urethral opening and raw areas.
- Repeat after 10 days if needed.
- Wash and iron clothes and linen.
- For itch, give loratadine 10mg daily as needed.



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Cervical screening

- A cervical screen detects cervical abnormalities which occur before cancer develops. Cervical cancer is caused by certain types of human papilloma virus (HPV). HPV is usually transmitted sexually.
- Both a Papanicolaou (Pap) smear and a visual inspection with acetic acid (VIA) are cervical screening methods. They should be performed by trained personnel.
- Women who smoke are more likely to have cervical abnormalities. If patient smokes tobacco ⮌100. Support patient to change ⮌122.
- An asymptomatic HIV-negative woman should receive a cervical screen 5 yearly from age 30 if the result is normal.
- An asymptomatic HIV-positive woman should receive a cervical screen at HIV diagnosis (regardless of age), then 3 yearly if the result is normal.

Manage according to VIA:

- If normal: arrange repeat VIA date according to HIV status (above).
- If VIA abnormal, refer.

Manage according to Pap smear result:

- If normal: arrange repeat Pap smear date according to HIV status (above).
- If unsatisfactory smear: repeat Pap smear within 3 months.
- If suspicious of cancer: refer for urgent colposcopy.
- Refer for colposcopy if:
  - ASC-US
  - ASC-H/AGUS
  - LSIL
  - HSIL

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

ASC-US: atypical squamous cells of undetermined significance; LSIL: low-grade squamous intraepithelial lesions; HSIL: high-grade squamous intraepithelial lesions; ASC-H: atypical cells - cannot exclude HSIL; AGUS: atypical glandular cells of undetermined significance.

Positive syphilis result

If fingerprick syphilis test was done, confirm positive result with Rapid Plasmin Reagin (RPR) test. If RPR negative, repeat test in 4-6 weeks.

Approach to the patient with a positive RPR result
First assess and advise the patient and his/her partner/s ⮌34.

Is previous RPR result available?

No

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

No

- Treat for **late syphilis**:
  - Give benzathine benzylpenicillin 2.4MU IM weekly for 3 weeks.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg 12 hourly for 28 days.
  - If penicillin allergic and pregnant/breastfeeding, refer to confirm diagnosis and for possible penicillin desensitisation.
- Repeat RPR in 6, 12 and 24 months. If RPR at 24 months is not at least 4 times lower, refer.
- Treat partner/s ⮌34.

Yes

- Treat for **early syphilis**:
  - Give single dose benzathine benzylpenicillin 2.4MU IM.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg 12 hourly for 14 days.
  - If penicillin allergic and pregnant/breastfeeding, refer to confirm diagnosis and for possible penicillin desensitisation.
- Repeat RPR in 6 and 12 months. If RPR at 12 months is not at least 4 times lower, refer.
- Treat partner/s ⮌34.

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 **late syphilis**:
  - Give benzathine benzylpenicillin 2.4MU IM weekly for 3 weeks.
  - If penicillin allergic and not pregnant/breastfeeding, give instead doxycycline 100mg 12 hourly for 28 days.
  - If penicillin allergic and pregnant/breastfeeding, refer to confirm diagnosis and for possible penicillin desensitisation.
- Repeat RPR in 6, 12 and 24 months. If RPR at 24 months is not at least 4 times lower, refer.
- Treat partner/s ⮌34.

No

Yes

- No further treatment needed.
- If not already treated, treat partner/s ⮌34.

Manage the newborn of the RPR positive mother:
- If baby well and mother fully treated > 1 month before delivery: give single dose benzathine benzylpenicillin 50 000 units/kg IM.
- If signs of congenital syphilis[2], or mother not fully treated or treated < 1 month before delivery doctor to start procaine benzylpenicillin 50 000 units/kg IM daily for 10 days, and refer.

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

Abnormal vaginal bleeding

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

- Pregnant →110
- BP < 90/60
- Postpartum or following miscarriage/termination of pregnancy →114.
- Pallor with pulse ≥ 100, respiratory rate > 30, dizziness/faintness or chest pain

Management:

- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

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

- Do a bimanual palpation for pelvic masses, a speculum examination to visualise cervix and a cervical screen ⮌38. If abnormal, refer.
- If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ⮌117. If new bleeding occurs > 1 year after final period, refer same week.
- If patient is not menopausal determine the type of bleeding problem:

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

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

Yes

- Check full blood count.
- Refer to doctor same week.

No

- If Hb ≤ 12g/dL, give ferrous sulphate 200mg (65mg elemental iron) 1 tablet 8 hourly until 3 months after Hb reaches 12g/dL.
- Give combined oral contraceptive: ethinylestradiol/ levonorgestrel 30/150mcg for 3 cycles ⮌108.
- If combined oral contraceptive contraindicated ⮌108, or pregnancy desired, give instead ibuprofen 400mg 8 hourly with food for 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If on injectable contraceptive or subdermal implant: reassure (common in first 3 months). If bleeding persists, give combined oral contraceptive or ibuprofen as above.
- Refer the patient:
  - Same week if mass in abdomen
  - If no better after 3 months on treatment
  - If excessive bleeding after IUD insertion

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

- If weight change, pulse ≥ 100, tremor, weakness/ tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.
- Give combined oral contraceptive: ethinylestradiol/ levonorgestrel 30/150mcg for 6 months ⮌108.
- If pregnancy desired, refer instead.

Bleeding after sex

- Assess for STI ⮌34.
- If assault or abuse ⮌64.

Spotting between periods

- Assess for STI ⮌34.
- If on hormonal contraceptive, manage according to method:

Oral contraceptive:

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

Injectable contraceptive or subdermal implant:

- Reassure (common in first 3 months).
- If bleeding persists, give combined oral contraceptive: ethinylestradiol/ levonorgestrel 30/150mcg for 3 cycles ⮌108.
- If combined oral contraceptive contraindicated ⮌108, give instead ibuprofen 400mg 8 hourly with food for 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).

Refer the patient within 2 weeks if:

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

Sexual problems

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

Problems getting or maintaining an erection

Does patient often wake with an erection in morning?

Yes

- Assess and manage stress ↪63.
- Ask about relationship problems, anxiety/ fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If sexual assault or abuse ↪64.
- 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 ↪97.
- Discuss condom use. Ensure patient knows how to use condoms correctly.

No

- Assess and manage CVD risk ↪83.
- Review medication: metoprolol, hydrochlorothiazide, spironolactone, fluphenazine decanoate, fluoxetine and amitriptyline can cause sexual problems. Discuss with doctor.
- 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 ↪101.
- If patient smokes tobacco ↪100. Support patient to change ↪122.
- Assess and manage stress ↪63.
- If no better once chronic condition/s stable and treatment optimised, refer.

Painful ejaculation

- If genital symptoms ↪34.
- If urinary symptoms ↪42.
- 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 ↪34.
- If anal symptoms ↪33.
- If urinary symptoms ↪42.
- Ask about vaginal dryness:
  - If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping ↪117.
  - 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 ↪34.
- 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

- Assess and manage stress ↪63.
- If sexual assault or abuse ↪64.

Loss of libido

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

- Assess and manage stress ↪63.
- Review medication: phenytoin, metoprolol, hydrochlorothiazide, spironolactone, chlorpromazine, fluphenazine decanoate, 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 ↪97.
- 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 ↪101.
- Ask about relationship problems, anxiety/ fear about sex, unwanted pregnancy, infertility and performance anxiety.
- If woman > 40 years, screen for menopause ↪117.
- If sexual assault or abuse ↪64.
- Assess the patient's contraception needs ↪108.
- 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 one or more of:

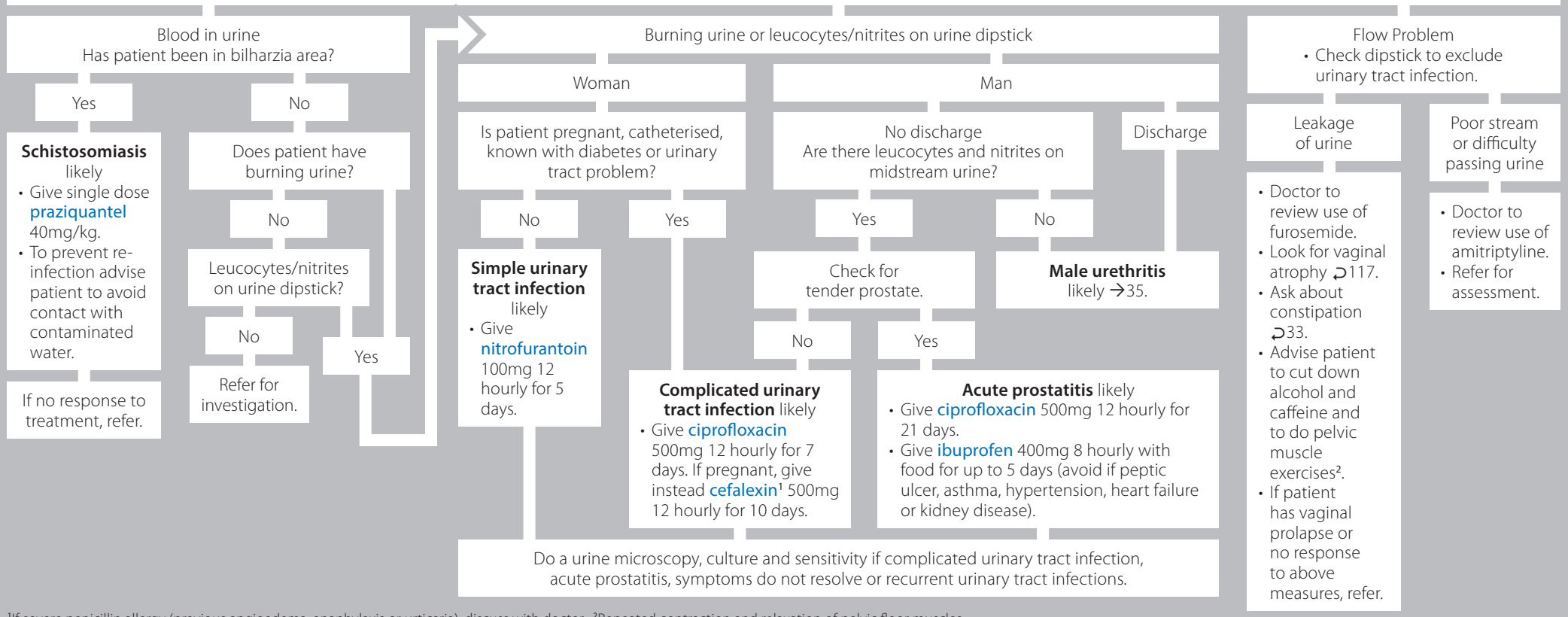
- Unable to pass urine with lower abdominal discomfort/distention
- Flank pain with leucocytes/nitrites on urine dipstick, **pyelonephritis** likely. If also vomiting, BP < 90/60, pulse ≥ 100, temperature > 39°C, pregnant, ≥ 60 years or chronic illness: **complicated pyelonephritis** likely.

Management:

- If unable to pass urine, insert urinary catheter.
- If **complicated pyelonephritis** likely, give ceftriaxone[1] 1g IV/IM. If **pyelonephritis not complicated**, treat below. If unsure about diagnosis or severe pain, refer. If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer same day.

Approach to the patient with urinary symptoms not needing urgent attention

- If **pyelonephritis not complicated**: send urine for microscopy, culture, sensitivity. Give ciprofloxacin 500mg 12 hourly for 10 days and paracetamol 1g 6 hourly. If no better after 2 days, refer.
- Ask about blood in urine, burning urine and flow problem. Check urine dipstick.



[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Repeated contraction and relaxation of pelvic floor muscles.

Body/general pain

Approach to the patient who aches all over

- If on ART, check for urgent side effects ⮌78.
- Check temperature and weight.
- Ask about a sore throat, runny/blocked nose or fever in the past 3 days.

Normal

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

- If temperature ≥ 38˚C or fever in the past 3 days →15 .
- If weight loss ≥ 5% of body weight in past 3 months→14.
- If sore throat →25.
- If runny/blocked nose →24.

Unable to do all actions comfortably

Able to do all actions comfortably

Examine the joints.

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

→44

Joints are normal.

- Test for HIV ⮌73.
- Assess and manage stress ⮌63.
- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, discuss with specialist.
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, give palliative care →118.
- Ask about duration of pain:

< 3 months

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

≥ 3 months

- Give paracetamol 1g 6 hourly as needed for up to 5 days. Advise to avoid long term regular use.
- Check CRP, creatinine, glucose and Hb.
- If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance, check TSH.
- Review in 2 weeks.

Blood results all normal

Consider **fibromyalgia** →107.

Blood results abnormal

Refer for further assessment.

Joint symptoms

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

- Short history of single warm, swollen, extremely painful joint with limited range of movement
- If pregnant with travel history to Zika area and any of: fever, rash or red eyes during/within 2 weeks of travel, refer for investigation.

Management:

- If recent trauma, immobilise and arrange x-ray.
- If known with gout, discuss with specialist if referral necessary or if to manage as **acute gout** →106.
- Refer urgently.

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

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

Able to do all actions comfortably

Joint problem unlikely

- If generalised body pain →43.
- If back pain →45.
- If neck pain →46.
- If arm symptoms →46.
- If leg symptoms →47.
- If foot symptoms →48.

Unable to do all actions comfortably

Has there been recent trauma?

Yes

Musculoskeletal sprain/strain likely

- Rest and elevate joint.
- Apply ice.
- Apply pressure bandage.
- Give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, give ibuprofen 400mg 8 hourly with food as needed for up to 7 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Advise patient 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

≥ 6 weeks

Chronic arthritis likely →105

< 6 weeks

Recent genital discharge or painless non-itchy skin rash?

Yes

Gonococcal arthritis likely

- Usually involves wrists, ankles, hand and feet.
- Refer patient same day.
- Treat patient's partner/s as for cervicitis/male urethritis ↩34.

No

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

Yes

Acute gout likely →106

No

- Give paracetamol 1g 6 hourly as needed for up to 5 days. If no response, give ibuprofen 400mg 8 hourly with food as needed (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Test for HIV ↩73.
- Review after 1 month or sooner if joint pain worsens. If worsens, refer.

Back pain

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

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

Management:

- If **pancreatitis** likely: give Ringer's lactate 1L IV rapidly regardless of BP, then give 1L 4 hourly. Stop if breathing worsens.
- If **abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen rupture).
- If **complicated pyelonephritis** likely: give ceftriaxone[1] 1g IV/IM. If **pyelonephritis not complicated**: treat as below. If unsure about diagnosis or severe pain, refer. If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **kidney stone** likely: give sodium chloride 0.9% 1L IV 6 hourly and ibuprofen[2] 800mg orally.
- Refer urgently.

Approach to the patient with back pain not needing urgent attention

- If **pyelonephritis not complicated**: send urine for microscopy, culture, sensitivity. Give ciprofloxacin 500mg 12 hourly for 10 days and paracetamol 1g 6 hourly as needed. If no better after 2 days, refer same day.
- Does patient have any of: cough, weight loss, night sweats or fever?

Yes

Exclude TB
↩68 *and*

- Do back x-ray.
- Check ESR.
- Discuss with specialist.

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

- Do back x-ray.
- Check ESR.
- Discuss with specialist.

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 ↩83.
- Assess and manage stress ↩63.
- Reassure patient that back pain is very common, normally not serious and will get better on its own.
- Advise patient to be as active as possible, continue normal activity and avoid resting in bed.
- Advise patient that regular exercise may prevent recurrence of back pain.
- Give ibuprofen 400mg 8 hourly with food for up to 5 days or paracetamol 1g 6 hourly as needed for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If pain persists > 4 weeks or unable to cope with daily activities, refer for physiotherapy.
- If pain persists > 6 weeks, do back x-ray and discuss with specialist. If bladder/bowel disturbance, numbness or weakness develops, refer urgently.

Yes

Inflammatory back pain likely

- Do back x-ray.
- Check ESR.
- Discuss with specialist.

Unsure

- Do back x-ray.
- Check ESR.
- Discuss with specialist.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Neck pain

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

- Neck stiffness/meningism and temperature ≥ 38°C: give ceftriaxone[1] 2g IV/IM and vancomycin 1g IV. If ≥ 50 years or impaired immunity[2], also give ampicillin[1] 2g IV.
- Neurological symptoms in arms/legs: weakness, numbness, clumsiness, stiffness, change in gait or difficulty with co-ordination
- Recent trauma and x-ray unavailable or abnormal, or neurological symptoms: immobilise neck with rigid collar and sandbags/blocks on either side of head.

Management

- Refer urgently.

Approach to the patient with neck pain not needing urgent attention

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

Yes

- Do cervical spine x-rays.
- Check ESR.
- Discuss with specialist

No

- Give pain relief as needed: give ibuprofen[3] 400mg 8 hourly with food or paracetamol 1g 6 hourly for up to 5 days.
- If no arm pain, refer for physiotherapy.
- If no response after 6 weeks, weakness/numbness develops or pain worsens, do cervical spine x-rays and refer.

Arm symptoms

Check if problem is in the joint: patient to place hands behind head; then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. If unable to do all actions comfortably →44.

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

- Arm pain with chest pain →26.
- Recent trauma with pain and limited movement: immobilise, arrange x-ray and discuss with doctor. If arm/hand cold, pale, decreased pulses or numb or open fracture, refer urgently.
- If new sudden weakness of arm, may have difficulty speaking or visual disturbance: consider **stroke** or **TIA** →90.

Approach to the patient with arm symptoms not needing urgent attention

Painful shoulder

Referred pain likely
Ask about neck pain (see above), cough/difficulty breathing →27, abdominal pain →30, pregnancy →110.

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

Carpal tunnel syndrome likely
Refer.

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

Tennis or golfer's elbow likely

- Advise patient to apply ice to elbow and rest arm.
- Give ibuprofen[3] 400mg 8 hourly with food for 10 days.
- If no better after 6 weeks or worsens, refer.

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

Tenosynovitis of hand/wrist likely

- Rest and splint joint.
- Give ibuprofen[3] 400mg 8 hourly with food.
- If no better after 6 weeks or worsens, refer.

[1]If penicillin allergy with previous angioedema, anaphylaxis or urticaria, discuss with doctor. [2]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [3]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Leg symptoms

- Check if problem is in the joint: ask patient to walk. Sit and stand up with arms folded. If unable to do all actions comfortably →44.
- If the problem is also in the foot →48.

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

- Unable to bear weight following injury ⮌12.
- Swelling and pain in one calf: **deep venous thrombosis** likely, especially if BMI > 30, smoker, immobile, pregnant, on oestrogen, leg trauma, recent hospitalisation, TB or cancer
- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Muscle pain in legs or buttocks on exercise associated with pain at rest, gangrene or ulceration: **critical limb ischaemia** likely

Management:

- Refer same day.

Approach to the patient with leg symptoms not needing urgent attention

- Review patient's medication. If on simvastatin and muscle pain/cramps and weakness, discuss with specialist.
- Is there leg swelling?

No

Pain in buttock radiating down back of lower leg

Irritation of sciatic nerve likely

- Give paracetamol 1g 6 hourly as needed. If no response give ibuprofen 400mg 6 hourly with food only as needed for up to 1 month (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Advise patient to be as active as possible, continue normal activity and avoid resting in bed.
- Advise patient to return and refer same day if:
  - Retention or incontinence of urine or stool
  - Numbness of buttocks, perineum or legs
  - Leg weakness
  - Difficulty walking
- If no better after 1 month, refer.

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

Peripheral vascular disease likely →94.

Yes

Both legs swollen

Is there difficulty breathing worse on lying flat?

Yes

Heart failure likely →90.

No

- Exclude pregnancy. If pregnant →110.
- Check for kidney disease on urine dipstick: if blood or protein, check BP ⮌88 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

Musculoskeletal sprain/strain likely

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

No

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

Yes

→51

No

Check for groin lump/s.

Yes

→16

No

Refer same week.

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 →44.

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

- Unable to bear weight following injury ⮌12.
- Sudden severe foot pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Muscle pain in legs or buttocks on exercise associated with foot pain at rest, gangrene or ulceration: **critical limb ischaemia** likely

Management:

- Refer same day.

Approach to the patient with foot symptoms not needing urgent attention

Generalised foot pain

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

Peripheral neuropathy likely

- Test for HIV ⮌73. If HIV positive, give routine care ⮌74.
- Exclude diabetes ⮌85.
- Give amitriptyline 10-75mg at night and paracetamol 1g 6 hourly.
- If no response, add ibuprofen 400mg 8 hourly with food up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer same week if one-sided, other neurological signs or loss of function.
- Check if patient is on IPT, TB treatment or ART:
  - If on IPT or TB treatment: give pyridoxine 75mg daily.
  - If on stavudine: switch medication ⮌78.

Foot pain with muscle pain in legs or buttocks

Peripheral vascular disease likely →94.

Localised pain

Ensure that shoes fit properly.

Heel pain, worse on starting walking

Plantar fasciitis likely

- Advise patient to avoid bare feet and to apply ice.
- If BMI > 25, assess CVD risk ⮌83.
- Give as needed: paracetamol 1g 6 hourly or ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer for physiotherapy.

Foot deformity

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

Bunion likely

- Advise pain relief as needed: apply ice, give paracetamol 1g 6 hourly or ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- If severe pain or ulcer, refer.

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

- Skin: callus, corns, cracks, wet soft skin between toes ⮌53, ulcers ⮌57.
- Foot deformity: check for bunions (see above). If foot deformity, refer for specialist care.
- Sensation: light prick sensation abnormal after 2 attempts
- Circulation: absent or reduced foot pulses

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

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

Burn/s

Give urgent attention to the patient with burn/s:

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

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

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

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

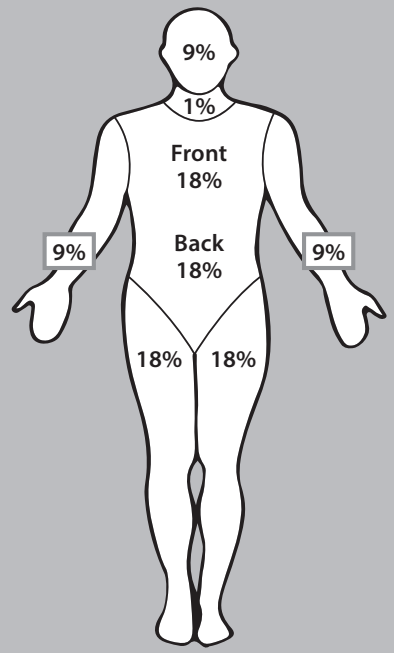
Give medication:
- If pain severe, dilute morphine sulphate 10mg with 10mL water for injection. Give 1mL/min up to 5mL. If pain not severe, give paracetamol 1g orally 6 hourly.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.

Give wound care:
- Cover burn with a non-adherent dressing or wrap in clean, dry sheet and blanket.

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

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

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



Review daily the patient with a burn not needing same day referral:
- Clean with water and mild soap. Dress wound daily: apply silver sulfadiazine 1% cream and cover with non-adherent dressing. Check for infection (red, warm, painful, swollen, smelly or pus).
- Give paracetamol 1g 6 hourly as needed for up to 5 days. If increased pain/anxiety with dressing changes, give codeine 30mg 1 hour before changing dressing.
- Refer if signs of infection, pain despite medication or burn not healed within 2 weeks.

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

Bites and stings

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

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

Management:

- **If snake bite:**
  - Reassure patient.
  - Remove jewellery and immobilise bitten limb. Avoid applying tourniquet or trying to suck out venom.
  - Discuss antivenom with specialist or local poison helpline ⮌123.
- **If anaphylaxis likely:**
  - Raise legs and give face mask oxygen.
  - Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
  - Give sodium chloride 0.9% 1-2L IV rapidly, regardless of BP. Then if BP < 90/60, also give fluids as below.
  - Remove stinger.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- Remove loose/dead skin and clean wound with soap and water. Irrigate under pressure with sodium chloride 0.9% for 15 minutes. Avoid suturing the wound.
- Give tetanus toxoid 0.5mL IM if none in past 5 years. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe.
- Refer urgently.

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

Human or animal bite/s

- Remove loose/dead skin and clean wound with soap and water. Irrigate under pressure with sodium chloride 0.9% for 15 minutes. Avoid suturing the wound.
- Consider rabies risk if bite/scratch or licking of eyes/mouth/broken skin by a dog, fox, raccoon, skunk, jackal or mongoose; or any contact with a bat.
  - Discuss with specialist or local poison hotline ⮌123.
  - Clean wound thoroughly with povidone iodine solution.
  - Give rabies vaccine 1 ampoule IM into shoulder/upper arm muscle immediately and repeat on day 3. If patient unimmunised or unsure, repeat vaccine on day 7 and 14 and if impaired immunity[1], also give a 5th dose on day 28.
  - If patient unimmunised, also give rabies immunoglobulin 20 units/kg immediately. Inject most into wound, and the rest IM at a distant site.
- If impaired immunity[1] or bite is deep, infected, involves hand/head/neck/genitals or bite from cat or human: give amoxicillin/clavulanate[2] 500/125mg 8 hourly for 7 days.
- If human bite has broken the skin, also assess need for HIV and hepatitis B post-exposure prophylaxis ⮌67.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If bite infected and no response to antibiotics, refer.

Insect/spider/scorpion bite or sting

- Remove stinger. Clean wound with soap and water. Apply ice pack for pain/swelling.
- If itch and rash, give loratadine 10mg daily and ranitidine 150mg daily for 3 days. If no response, give prednisolone 60mg daily for 5 days.
- If pain, give ibuprofen[3] 400mg 8 hourly with food for up to 5 days.
- If very painful scorpion sting, inject lidocaine 2% 2mL around site.

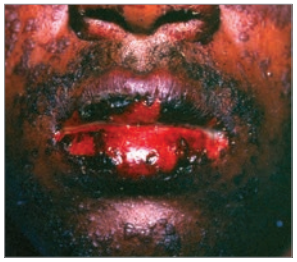
Give tetanus toxoid 0.5mL IM if none in past 5 years. If < 3 tetanus vaccine doses in lifetime, also give tetanus immunoglobulin 250 units IM at different site to toxoid with separate syringe.

[1]Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. [2]If penicillin allergic, give instead clindamycin 300mg 6 hourly and co-trimoxazole 160/800mg 12 hourly for 7 days. [3]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Skin symptoms

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

- Sudden diffuse rash or face/tongue swelling with difficulty breathing, BP < 90/60 or collapse: **anaphylaxis** likely
- Purple rash with fever, headache, neck stiffness/meningism, nausea/vomiting or confusion: **meningococcal disease** likely
- Extensive blisters
- If on abacavir, check for abacavir hypersensitivity reaction ⮌78.
- **Serious drug reaction** likely if on any medication and one or more of:
  - Temperature ≥ 38°C
  - BP < 90/60
  - Jaundice
  - Vomiting/abdominal pain/diarrhoea
  - Involves mouth, eyes or genitals
  - Blisters, peeling or raw areas
- If pregnant with travel to Zika area and any of: fever, joint pain or red eyes during/within 2 weeks of travel, refer for investigation.



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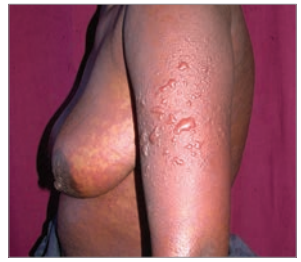

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Management:

- **Anaphylaxis** likely:
  - Raise legs and give face mask oxygen.
  - Give immediately epinephrine 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5-15 minutes if needed.
  - Give sodium chloride 0.9% 1-2L IV rapidly, regardless of BP.
- **Meningococcal disease** likely: give ceftriaxone[1] 2g IV.
- **Serious drug reaction** likely: stop all medication and refer urgently. If peeling or raw skin, also manage as for burns before referral ⮌49.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Refer urgently.

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

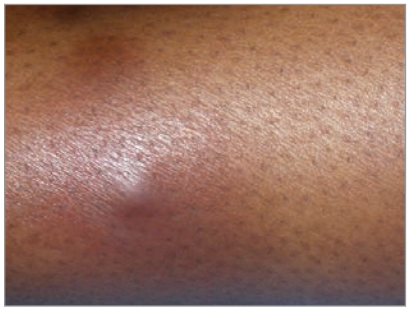
Pain	Itch		Generalised, non-itchy rash	Lump/s	Ulcers	Crusts	Changes in skin colour
→52	No rash	Rash	→55	→56	→57	→57	→58
		Localised: →53					
		Generalised: →54					

If rash is extensive, recurrent or difficult to treat, test for HIV ⮌73.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor.

Painful skin

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



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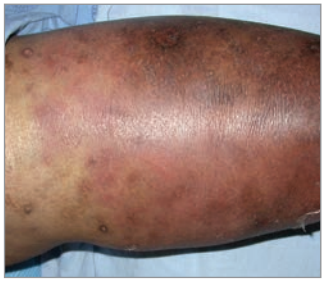
Boil/abscess likely

- Advise patient to wash with soap and water, keep nails short, and avoid sharing clothing or towels.
- If fluctuant, incise and drain.
- If multiple lesions, extensive surrounding infection or impaired immunity[1], give **cloxacillin** 500mg 6 hourly for 7 days. If penicillin allergic, give instead **clindamycin** 300mg 6 hourly for 7 days.
- Give **paracetamol** 1g 6 hourly as needed for up to 5 days.
- If recurrent boils or abscesses:
  - Test for HIV ⮌73 and diabetes ⮌85.
  - Wash once with **chlorhexidine 5%** solution from neck down.
  - Apply **mupirocin 2%** ointment inside nostrils twice a day for 5 days.
- Refer if:
  - Difficult area to drain (face, genitals, hands)
  - No response to treatment within 2 days

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

Poorly-defined borders



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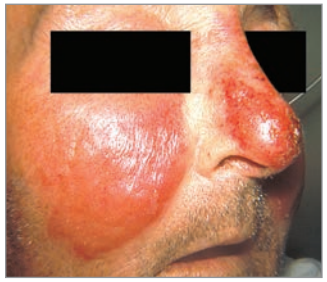
Cellulitis likely

- Give **cloxacillin** 500mg 6 hourly for 7 days. If penicillin allergic, give instead **clindamycin** 300mg 6 hourly for 7 days.
- Give **paracetamol** 1g 6 hourly as needed for up to 5 days.

Clearly-defined borders



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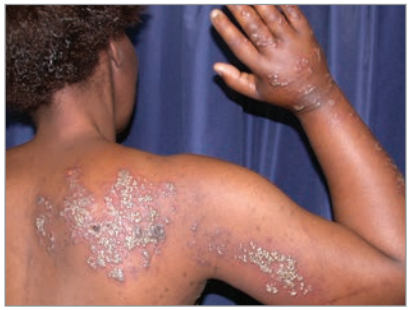
Erysipelas likely

- Give **phenoxymethylpenicillin** 500mg 6 hourly for 5 days. If penicillin allergic, give instead **clindamycin** 300mg 6 hourly for 5 days.
- Give **paracetamol** 1g 6 hourly as needed for up to 5 days.

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

Painful blisters in a band along one side



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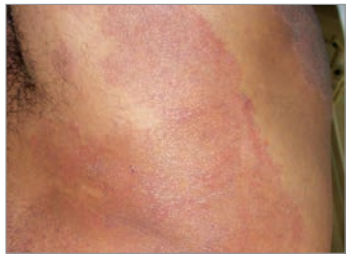
Herpes zoster (**shingles**) likely

- Test for HIV ⮌73.
- Advise to keep lesions clean and dry, and avoid skin contact with others until crusts have formed.
- Apply **calamine** lotion to rash 4 times a day as needed.
- Give **aciclovir** 800mg 5 times a day for 7 days if ≤ 3 days since onset of rash (or if ≤ 1 week since onset of rash if impaired immunity[1]).
- For pain:
  - Give **paracetamol** 1g 6 hourly for up to 5 days.
  - If needed, add **codeine** 30mg 4 hourly.
  - If poor response or pain persists after rash has healed, give **amitriptyline** 25mg at night. Increase by 25mg every week to 75mg if needed.
- If infected, give **cloxacillin** 500mg 6 hourly for 7 days. If penicillin allergic, give instead **clindamycin** 300mg 6 hourly for 7 days.
- Refer same day if:
  - Eye, ear or nose involvement
  - Signs of meningitis (headache, temperature ≥ 38°C, neck stiffness/meningism)
  - Rash involves more than one region

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

Itch with localised rash

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



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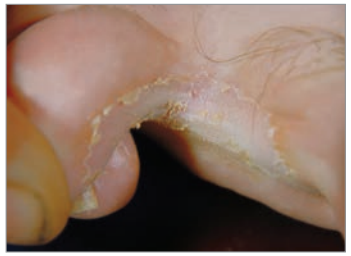
Tinea (**ringworm**) likely

- If extensive or involves nails, test for HIV ↩73. If HIV positive, give routine care ↩74.
- Advise to keep skin clean and dry and avoid sharing towels/clothes.
- Apply terbinafine 1% cream twice a day. Use for 1 week after rash has cleared.
- If rash on scalp or no response to terbinafine, give griseofulvin 500mg daily until cured (up to 8 weeks).

Scaling moist lesions between toes or on soles of feet



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

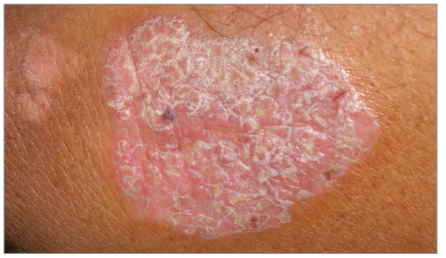
- Apply terbinafine 1% cream twice a day. Continue for 1 week after rash has cleared.
- Advise to wash and dry feet well.
- Encourage open shoes/sandals.

Intense itch on scalp or in pubic area

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

- Apply permethrin 1% lotion to damp hair. Rinse after 10 minutes. Repeat after 1 week.
- Soak all combs and brushes in permethrin for at least 2 hours.
- Wash clothes and linen in very hot water.
- Treat household contacts if infected or share a bed. If pubic lice, also treat sexual partners.

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



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Psoriasis likely
Confirm diagnosis with doctor.

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

Itch with no rash

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

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

Yes

Medication side-effect likely

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

No

- Advise to avoid soap (wash with aqueous cream instead).
- Moisturise skin twice a day.
- Give loratadine 10mg daily for 5 days.
- If itch persists, check ESR, eGFR, ALT, glucose and TSH. Discuss results with doctor.

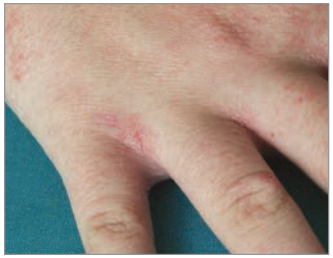
Yes

Dry skin (xeroderma) likely

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

Generalised itchy rash

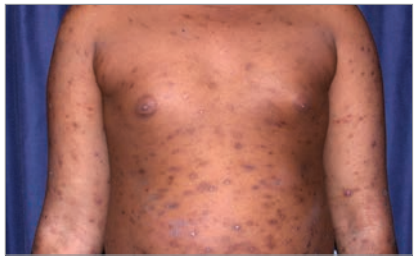
Widespread, very itchy rash with burrows, in web-spaces of hands/feet, axillae and genitals. Especially itchy at night.



Scabies likely

- Apply permethrin 5% cream, avoid eyes and mouth. Wash off after 12 hours.
- Treat all household contacts and sexual partners at the same time, even if asymptomatic.
- Wash linen and clothing in very hot water and dry well.
- For itch, give loratadine 10mg daily until itch subsides.

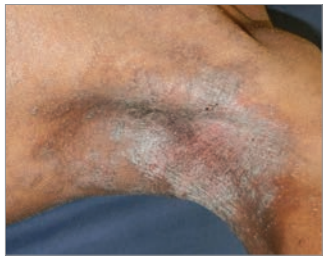
Itchy bumps on extremities, face or trunk. Skin often remains hyperpigmented.



Papular pruritic eruption (PPE) likely

- Test for HIV ⮌73. If HIV positive, give routine care ⮌74.
- May temporarily worsen when starting ART.
- First treat for scabies in adjacent column.
- Moisturise skin twice a day.
- Apply betamethasone 0.1% cream twice a day. For face, use instead hydrocortisone 1% cream.
- For itch, give loratadine 10mg daily until itch subsides.

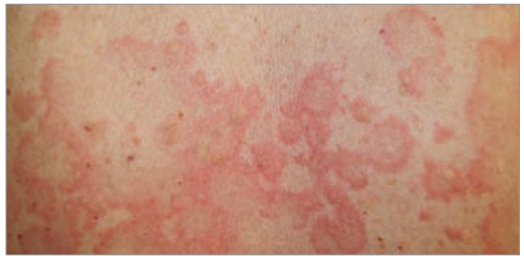
Patches of dry, scaly skin



Eczema likely

- Moisturise skin twice a day and immediately after bathing.
- Apply hydrocortisone 1% cream twice a day until improved (up to 4 weeks). If poor response, apply betamethasone 0.1% cream twice a day (avoid face).
- For itch, give loratadine 10mg daily.
- If infected, treat with cloxacillin 500mg 6 hourly for 7 days. If penicillin allergic, give instead clindamycin 300mg 6 hourly for 7 days.
- If patient also has asthma, give routine asthma care ⮌81.

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



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

If sudden rash with difficulty breathing, BP < 90/60 or collapse, **anaphylaxis** likely →51.

Approach to the patient not needing urgent attention:

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

- If recently started new medication, check for drug reaction ⮌55.
- If no response to treatment, refer to specialist.

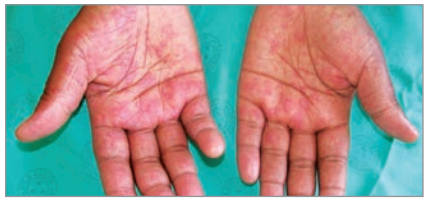
Generalised non-itchy red rash

Is patient taking any medication?

Yes

Drug reaction likely

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



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Are there any markers of severity?

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

Yes

Manage as **serious drug reaction** →51.

No

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

Yes

- Refer to doctor if available.
- If on abacavir, check for hypersensitivity reaction ⮌78. If likely, stop ART and refer same day.
- If itchy, give loratadine 10mg daily and apply hydrocortisone 1% cream to rash twice a day.
- Check ALT and review result within 24 hours:

ALT ≥ 100U/L or patient unwell

Manage as **serious drug reaction** →51.

ALT < 100U/L and patient well

- Continue medication.
- If on nevirapine:
  - If on once daily dose, avoid increasing until rash resolved.
  - Repeat ALT after 1 week. If ≥ 100U/L, refer same day.
  - If rash persists > 4 weeks after starting nevirapine, switch medication ⮌77.
- If on co-trimoxazole prophylaxis[1]: stop it until rash resolved. Discuss with doctor about re-starting co-trimoxazole or changing instead to dapsone 100mg daily.
- Review patient within 2 days.
- Advise patient to return urgently if markers of severity develop.
- If rash no better after 2 weeks, discuss/refer.

No

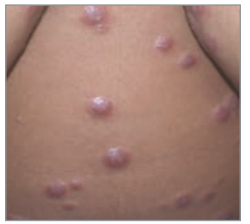
- Discuss with doctor if medication should be stopped or changed.
- If itchy, give loratadine 10mg daily and and apply hydrocortisone 1% cream to rash twice a day.
- Refer if:
  - Any markers of severity develop.
  - Rash does not improve within 2 weeks of stopping/changing medication.

No

- Check patient does not need urgent attention ⮌51.
- Most likely due to an infection.
- Patient may have fever, headache, lymphadenopathy, muscle pain.
- If pain or fever, give paracetamol 1g 6 hourly as needed for up to 5 days.
- Test for syphilis and HIV ⮌73.

Syphilis test positive

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



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Treat patient for **early syphilis** →39.

HIV negative

Rash may be part of HIV seroconversion illness.

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

HIV positive

Give routine HIV care →74.

If no better after 1 week, discuss/refer.

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

[1]If on co-trimoxazole treatment for pneumocystis pneumonia (PJP), toxoplasmosis or *Isospora belli* diarrhoea, discuss with specialist.

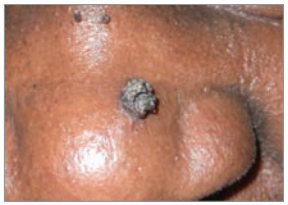
Skin lump/s

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 →52.

Round, raised papules with rough surfaces



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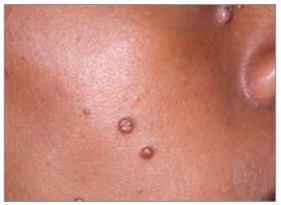
Warts likely

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

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

Small, skin-coloured bumps with pearly central dimples



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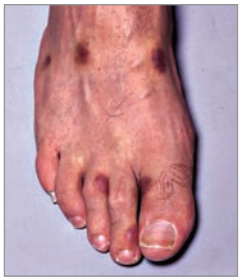
Molluscum contagiosum likely
May be extensive in HIV.

- Test for HIV ↩73.
- Reassure patient that lesions may resolve spontaneously after several years or with ART.
- If intolerable, remove with curettage or apply podophyllum 15% for 4 hours, then wash off. Repeat podophyllum weekly for up to 6 weeks.
- If extensive or no resolution after 4 years and intolerable for patient, refer.

Painless, purple/brown lumps on skin



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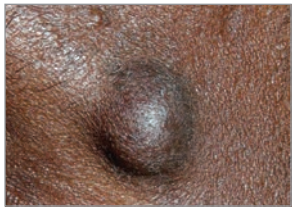
Kaposi's sarcoma likely
Lesions vary from isolated lumps to large ulcerating tumours and may also appear in mouth and on genitals.

- Test for HIV ↩73. If HIV positive, give routine care and ART ↩74.
- 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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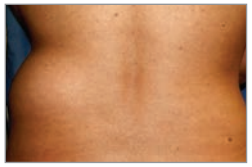
Epidermoid cyst likely
Usually found on face and trunk, uncommon on limb

- If not infected, reassure patient there is no need to treat.
- If surrounding skin is red, warm and tender, cyst is infected:
  - If fluctuant, incise and drain.
  - Give cloxacillin 500mg 6 hourly for 7 days. If penicillin allergic, give instead clindamycin 300mg 6 hourly for 7 days.
- Refer if recurrent, intolerable for patient or diagnosis uncertain.

Soft, doughy lump which is painless and moves easily.



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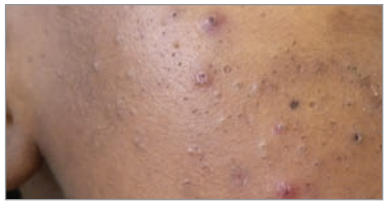
Lipoma likely
Usually found on trunk or upper arm/leg

- Reassure patient that 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 > 4 weeks
  - Intolerable for patient
  - Diagnosis uncertain

Red papules, pustules, nodules and blackheads, usually on face



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Acne likely
May involve chest, back and upper arms

- Advise patient to wash skin with mild soap twice a day and to avoid picking, squeezing and scratching.
- Apply benzoyl peroxide 5% cream twice a day after washing. Continue for 2 weeks after lesions have gone. Avoid in pregnancy.
- If red and swollen, also give doxycycline 100mg daily for at least 3 months. Doxycycline may interfere with oral contraceptive. Advise patient to use condoms as well. Avoid in pregnancy.
- In woman needing contraception, advise combined oral contraceptive ↩108.
- Advise patient that response may take several weeks to months.
- If severe or no response after 6 months of treatment, refer.

Ulcers and crusts

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

No

Is ulcer on the leg or foot?

No

- If genital ulcer →37.
- If elsewhere on body and no obvious cause like trauma, refer to exclude skin cancer.

Yes

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

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

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

No

Does patient have diabetes ⮌85?

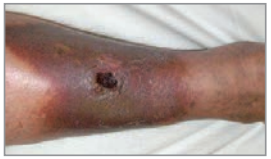
No

- If cough ≥ 2 weeks, weight loss, night sweats or fever ≥ 2 weeks, exclude TB ⮌68.
- Refer for further assessment.

Yes

Diabetic ulcer likely
- Avoid pressure/weight-bearing on ulcer.
- Give foot care advice ⮌48.
- Clean ulcer daily and cover with non-adherent dressing.
- If infected (skin red, warm, painful), give clindamycin 300mg 6 hourly and ciprofloxacin 500mg 12 hourly for 10 days.
- Give diabetes routine care ⮌85.
- Refer if
  - Fever, pus or extensive infection
  - Ulcer > 2cm, or tendon or bone visible
  - Ulcer no better after 2 weeks of treatment

Yes



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Venous stasis ulcer likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess and manage CVD risk ⮌83.
- Clean ulcer daily and cover with non-adherent dressing.
- Refer if:
  - Recurrent ulcers
  - No better after 3 months

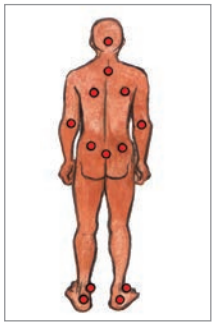
Pulses reduced or muscle pain in legs/buttocks on exercise that is relieved by rest

Peripheral vascular disease (**PVD**) likely

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

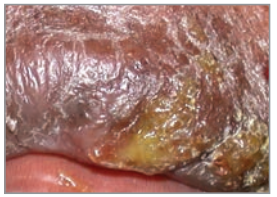
- Refer to specialist.
- Clean ulcer daily and cover with non-adherent dressing.
- Avoid compression bandage.
- Give PVD routine care →94.

Yes



Bedsore likely
- Relieve pressure on ulcer and reposition patient every 2 hours.
- Clean ulcer daily and cover with non- adherent dressing.
- If infected (skin red, warm or tender), apply silver sulfadiazine 1% cream to ulcer until infection better.
- Give paracetamol 1g 6 hourly as needed for up to 5 days. If needed, add codeine[1] 30mg 4 hourly.
- Refer to dietician to ensure adequate calorie and protein intake.
- Refer if:
  - Fat, bone, muscle or tendon visible
  - Yellow/grey/black tissue
  - Extensive or worsening infection
  - Ulcer not healing with treatment
- If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care →118.

Blisters which dry to form honey coloured crusts



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

- Test for HIV ⮌73.
- Impetigo is contagious:
  - Advise patient to avoid close contact with others and to wash with soap and water twice a day.
  - Advise contacts to avoid sharing towels and to add a spoon of potassium permanganate solution (1:10 000) to bathwater 2-3 times a week.
- Apply mupirocin 2% cream to lesions and nostrils 3 times a day for 7 days.
- If extensive or no response to above treatment, add cloxacillin 500mg 6 hourly for 7 days. If penicillin allergic, give instead erythromycin 250mg 6 hourly for 7 days.
- Refer if:
  - Cellulitis or abscess
  - Temperature ≥ 38°C
  - No response to antibiotic

[1]If no diarrhoea, give senna 15mg 12 hourly and docusate sodium orally as needed for constipation.

Changes in skin colour

Yellow skin

Jaundice likely

Refer urgently the patient with jaundice and one or more of:
- Temperature ≥ 38°C
- Hb < 12.5g/dL
- BP < 90/60
- Severe abdominal pain
- Drowsy or confused
- Easy bruising or bleeding
- Pregnant
- Alcohol dependent ⮌101 or recent alcohol binge (≥ 5 drinks[1]/session)
- Using any medication or illegal drugs

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

Is ALP/GGT predominantly raised?

No
- If ALT/AST raised, send blood for hepatitis serology.
- Discuss with specialist.

Yes

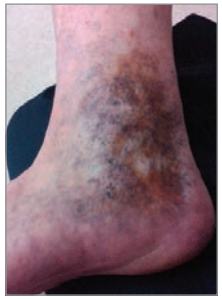
Refer.

Darkening of skin

Is darkened area only on lower leg/s?

Yes

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



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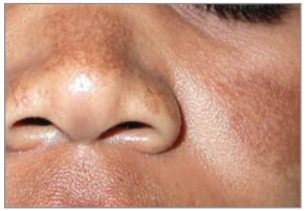
Venous stasis likely
- Encourage exercise.
- Advise elevating leg when possible and to avoid prolonged standing.
- Apply compression bandage from foot to knee.
- Assess and manage CVD risk ⮌83.
- If ulcer:
  - Clean daily and cover with non-adherent dressing.
  - If no better after 3 months or recurrent ulcers, refer.

No

Is skin smooth or scaly?

Smooth

Flat, brown patches on cheeks, forehead and upper lip



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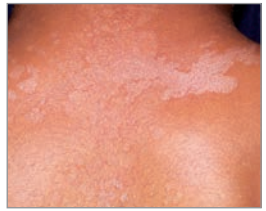
Melasma likely
- Hormones and sunlight will worsen melasma:
  - Advise patient to apply sunscreen daily and avoid sun exposure.
  - Avoid oral contraceptive, rather use alternative contraception ⮌108.
  - If pregnant, advise patient lesions may resolve up to 1 year after pregnancy.
- Avoid facial products other than bland emollients.
- Often difficult to treat. If not responding to above and intolerable for patient, refer.

Scaly

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



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

Lightening of skin

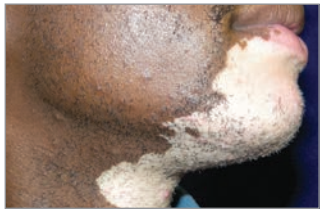
If in a leprosy area and decreased sensation of skin, refer to exclude leprosy.

Is skin smooth or scaly?

Smooth

Is absence of colour generalised or patchy?

Patchy



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

Generalised

Present from birth. Involves skin, hair and eyes.

Albinism likely
- Advise patient to apply sunscreen daily and avoid sun exposure.
- If any skin lesions develop, especially in sun-exposed areas, refer to exclude skin cancer.
- Refer to specialist for eye care.

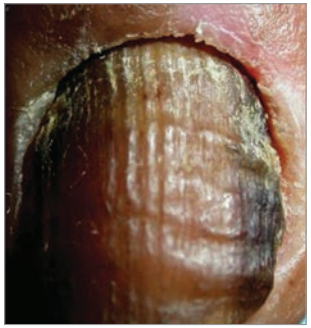
If diagnosis is uncertain, refer.

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

Nail symptoms

If nails long and dirty and patient unkempt, screen for mental health problem and abuse/neglect ↩64.

Disfigured nail with swollen nail bed and loss of cuticle



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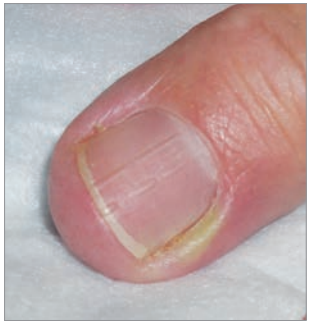
Chronic paronychia likely
Usually associated with excessive exposure to water and irritants like nail cosmetics, soaps and chemicals.

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

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



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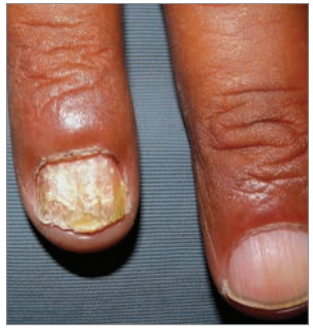
Acute paronychia likely
Often with history of trauma, such as nail biting or pushing the cuticle.

- Advise patient to stop trauma to nail.
- If any pus, incise and drain.
- Advise warm saline soaks for 20 minutes twice a day.
- Apply mupirocin 2% cream after soaking.
- If severe pain, pus, infection beyond nail fold or temperature ≥ 38°C, give cloxacillin 500mg 6 hourly for 7 days. If penicillin allergic, give instead clindamycin 300mg 6 hourly for 7 days.
- If no response, refer.

White/yellow disfigured nails



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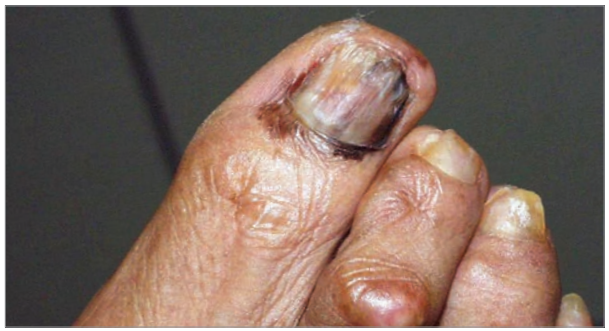
Fungal infection likely

- Test for HIV ↩73.
- Fungal nail infection is difficult to treat.
- Treat if:
  - Previous cellulitis on affected limb
  - Diabetes
  - Painful nail
  - Cosmetic concerns
- Send nail clippings for microscopy and culture to confirm diagnosis before starting treatment.
- If fungal infection confirmed, give fluconazole 150mg weekly until cure (can take up to 12 months).

Blue/brown/black discolouration of nail



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Has there been recent trauma to nail?

Yes

Haematoma likely

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

No

- Psoriasis may discolour nails. If psoriasis on skin ↩53.
- Review medication: chloroquine, 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.

Self-harm or suicide

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

Has patient attempted self-harm or suicide?

Yes

- First assess and manage airway, breathing, circulation and level of consciousness ⮌10.
- If oral overdose or harmful substance in past 1 hour and patient fully conscious, give activated charcoal 100g in 500mL water via nasogastric tube. Avoid if paraffin, petrol, corrosive poisons, iron, lithium or alcohol.
- If opioid (morphine/codeine) overdose and respiratory rate < 12: give 100% face mask oxygen and naloxone 0.4mg IV immediately. Repeat every 2-3 minutes, increasing dose by 0.4mg each time until respiratory rate > 12, maximum 10mg.
- If exposed to carbon monoxide (exhaust fumes): give 100% face mask oxygen.
- If no response, or overdose/poisoning with other or unknown substance, discuss with specialist or local poison helpline ⮌123.

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

Yes

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

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

Yes

No

No

High risk of self-harm or suicide

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

- Remove any possible means of self-harm (firearms, knives, pills).
- If aggressive or violent, ensure safety: assess patient with other staff, use security personnel or police if needed. Sedate only if necessary ⮌61.
- Refer urgently.
  - While awaiting transport, monitor closely. Avoid leaving patient alone. If patient refuses admission, consider involuntary admission ⮌96.

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

Assess	When to assess	Note
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 ⮌97.
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 ⮌101.
Other mental illness	Every visit	If hallucinations, delusions, disorganised speech, disorganised or catatonic behaviour, discuss with specialist same day.
Stressors	Every visit	• Assess and manage stress ⮌63. • Help identify psychosocial stressors. Ask about trauma, sexual abuse/violence ⮌64, family or relationship problems, financial difficulty, bereavement, chronic ill-health.
Chronic condition	Every visit	• If chronic pain, assess and manage pain ⮌43 and underlying condition. Link patient with helpline or support group ⮌123. • If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.

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 ⮌123.

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

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

Aggressive/disruptive patient

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

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

Management:

- Ensure the safety of yourself, the patient and those around you: ensure security personnel present, call police if needed. They should disarm patient if s/he has a weapon. 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.
- 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 ⮌62.
- Consider involuntary admission if signs of mental illness *and* refuses treatment or admission *and* a danger to self, others, own reputation or financial interest/property ⮌96.

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

Yes

- Give buccal[1] midazolam 7.5-15mg or diazepam 5mg orally *or* haloperidol 2-5mg (2mg if > 65 years) orally.
- Assess response after 30 minutes:

Patient calm

Patient still aggressive/disruptive after 30 minutes

No

Patient refuses oral medication

Decide which medication to sedate patient according to likely cause:

Exact cause unknown	Alcohol/drug withdrawal	Stimulant drug intoxication	Alcohol intoxication	Psychosis
Give midazolam[2] 2.5-5mg IM (1mg if > 65 years) *or* lorazepam[2] 2-4mg (1mg if > 65 years) IM.			Give haloperidol 2-5mg (2mg if elderly) IM.	

Assess after 30 minutes:

Patient calm	Partial response Repeat same dose of IM medication used above.	No response • If lorazepam/midazolam used above, give haloperidol 2-5mg (2mg if > 65 years) IM. • If haloperidol used above, give lorazepam[2] 2-4mg (1mg if > 65 years) IM *or* midazolam[2] 2.5-5mg IM (1mg if > 65 years).

- Monitor and record temperature, BP, respiratory rate and pulse rate and level of consciousness every 15 minutes for the first hour and every 30 minutes until patient alert and walking.
- If haloperidol used and painful muscle spasms, **acute dystonic reaction** likely, give biperiden 2mg IM. Repeat every 30 minutes, until spasms resolve, up to 4 doses in 24 hours.
- Once patient is calmer, reassess for underlying cause and manage further ⮌62.

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

[1]To give a buccal dose, draw up correct dose midazolam in syringe, remove needle and give between cheek and gum. [2]If midazolam/lorazepam unavailable, give diazepam 5-10mg IV slowly (avoid IM).

Abnormal thoughts or behaviour

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

Management:
- If aggressive/disruptive, assess and manage ⮌61. Sedate only if absolutely needed.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** →91.
- Just had a fit →13.
- If difficulty breathing, respiratory rate > 30, oxygen saturation < 90% or oxygen saturation machine not available, give face mask oxygen.
- If glucose < 4mmol/L or unable to measure, give oral glucose 20g. If unable to take orally, give instead 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose still < 4mmol/L after 15 minutes. Continue glucose 5% 1L 6 hourly IV. If known alcohol user, give thiamine 100mg IV before glucose. If glucose > 11mmol/L →82.
- 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% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If suicidal thoughts or behaviour ⮌60.
- 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 ⮌96.
- Look for delirium, mania, psychosis, intoxication, withdrawal or poisoning and manage before referral:

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

Delirium likely
- Give ceftriaxone[1] 2g IV/IM. If meningitis suspected, also give vancomycin 1g IV and if ≥ 50 years or impaired immunity[2], add ampicillin[1] 2g IV.
- If patient was in malaria area recently and malaria test[3] positive, also give artesunate 2.4mg/kg IM.

Abnormally happy, energetic, talkative, irritable or reckless

Mania likely

Lack of insight with ≥ 1 of:
- Hallucinations (seeing/ hearing things)
- Delusions (unusual/ bizarre beliefs)
- Disorganised speech or behaviour

Psychosis likely

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

Stimulant drug intoxication likely
If pulse irregular, chest pain or BP ≥ 140/90, do ECG and discuss with specialist or local poison helpline ⮌123.

Smells of alcohol, slurred speech, incoordination, unsteady gait

Alcohol intoxication likely
- Give thiamine 100mg IV/IM.
- Give sodium chloride 0.9% 1L 6 hourly.
- Check for head injury.

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

Alcohol/drug withdrawal likely
- If no other sedation given, give diazepam 10mg orally or IV.
- If alcohol withdrawal, also give thiamine 100mg orally or IV/IM and oral rehydration solution.
- If ≥ 8 hours since last alcohol, start alcohol detoxification programme →101.

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

Poisoning likely
Discuss urgently with specialist or local poison helpline ⮌123.

Refer urgently *unless*:
- Patient with known schizophrenia who is otherwise well: give routine schizophrenia care ⮌102.
- Patient with known diabetes and low glucose, not on glicazide or insulin: if abnormal thoughts/behaviour resolve following oral or IV glucose, no need to refer, give routine diabetes care ⮌86.
- Patient with known alcohol use who is otherwise well: if abnormal thoughts/behaviour resolve once sober, no need to refer ⮌101.

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** →104.
- If unsure of diagnosis, refer for further assessment.

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Known with HIV or lymphoma, pregnant or receiving chemotherapy or corticosteroids. [3]Test for malaria with parasite slide microscopy or if unavailable, rapid diagnostic test.

Stressed or miserable patient

Give urgent attention to the stressed or miserable patient with:
- Suicidal thoughts or behaviour ⮌60.

Assess the stressed or miserable patient

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 ⮌98. • If anxiety is induced by a particular situation/object (phobia) or is repeated sudden fear with physical symptoms and no obvious cause (panic), discuss/refer.
Depression	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 ⮌97.
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 ⮌101.
Trauma/abuse	• Has the patient ever had a bad experience that is causing nightmares, flashbacks, avoidance of people/situations, jumpiness or a feeling of detachment? If yes ⮌64. • If patient is being abused ⮌64.
Stressors	• Help identify psychosocial stressors. Ask about family or relationship problems, financial difficulty, bereavement, chronic ill-health. • If patient has a life-limiting illness and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118. • Ask about loneliness in older person and if available, refer to nearest social club in the area for older people.
Women's health	• If recent delivery, give postnatal care ⮌114. • If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ⮌117.
Medication	Review medication: prednisolone, efavirenz, metoprolol, metoclopramide, theophylline and contraceptives can cause mood changes. Discuss with doctor. Consider alternative contraceptive ⮌108.

Advise the stressed or miserable patient

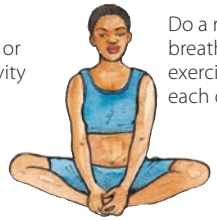
- Encourage patient to question negative thinking and be realistic if s/he often predicts the worst, generalises, exaggerates problem, inappropriately takes the blame, takes things personally.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If patient has difficulty sleeping ⮌65.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Find a creative or fun activity to do.



Do a relaxing breathing exercise each day.

Get active
Regular exercise may help.

Access support
Link patient with helpline or support group ⮌123.

- Refer to available counsellor, psychiatric nurse/psychologist or social worker.
- If stressors identified, discuss possible solutions.
- 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 ⮌121.

Offer to review the patient in 1 month. If no better, discuss with specialist.

[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 one or more of:

- Injuries needing attention ⮌12
- Immediate risk of being harmed and in need of shelter
- Suicidal thoughts or behaviour ⮌60
- Recent sexual assault:
  - If severe vaginal or anal bleeding, refer urgently.
  - Arrange same day doctor assessment.
  - Aim to prevent HIV, hepatitis B, STIs and pregnancy urgently:

Prevent HIV and hepatitis B ⮌66.

Prevent STIs

- Give single dose each of ceftriaxone 250mg IM, azithromycin 1g orally and metronidazole[1] 2g orally.
- If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), omit ceftriaxone and increase azithromycin dose to 2g orally.

Prevent pregnancy

- Do pregnancy test. If pregnant ⮌110.
- If not pregnant, not on reliable contraception and ≤ 5 days since rape, give emergency contraception:
  - Give single dose levonorgestrel 1.5mg[2] orally. If patient vomits < 2 hours after taking, repeat dose *or*
  - Insert copper intrauterine device instead ⮌108.

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

Assess the traumatised/abused patient

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Ask about genital symptoms even if no recent sexual assault ⮌34.
Family planning	Every visit	Assess patient's contraception needs ⮌108. If pregnant ⮌110.
Mental health	Every visit	• Assess and manage stress ⮌63. • 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 ⮌97. • 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 ⮌101. • If patient has ever had an experience so horrible that s/he has had ≥ 3 of the following for > 1 month: 1) Nightmares or involuntary thoughts/flashbacks 2) Avoided certain situations/people 3) Been constantly on guard, watchful or easily startled 4) Felt numb or detached from other people, activities or surroundings: **post-traumatic stress disorder** likely, refer.
HIV	First visit	Test for HIV ⮌73.
Syphilis (if sexual assault)	If negative: repeat at 6 weeks, 3 months	If positive ⮌39.

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 ⮌123.
- Encourage patient to report case to the police and to apply for protection order. Respect patient's wishes if s/he declines to do so.

Review the traumatised/abused patient

- If sexually assaulted, review within 3 days →67. Also check syphilis at 6 weeks and 3 months.
- Offer to review the traumatised/abused patient who has not been sexually assaulted in 1 month.

[1]Advise no alcohol until 24 hours after metronidazole. [2]If patient taking ART, rifampicin or phenytoin, offer copper intrauterine device instead or increase single dose levonorgestrel to 3mg. [3]One drink is 1 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 patient has a chronic condition, give routine care.
- Ask about snoring or restless legs. If present, refer for assessment.
- If pulse ≥ 100, weight loss, palpitations, tremor, dislike of hot weather or thyroid enlargement, check TSH. If abnormal, refer to doctor.

Review medication:

- Over-the-counter decongestants, salbutamol, theophylline, fluoxetine and efavirenz can cause difficulty sleeping. Discuss with doctor.
- Reassure patient that difficulty sleeping from efavirenz is usually self-limiting and resolves within 4 weeks on ART. If > 4 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 ⮌101.

Screen for possible stressors and mental health problem:

- Assess and manage stress ⮌63.
- 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 ⮌64.
- 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 ⮌97.
- If abnormal thoughts or behaviour ⮌62.
- 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 ⮌104.

Ask about menopausal symptoms:

- If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes and sexual problems ⮌117.

Advise the patient with difficulty sleeping

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

Refer 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.

Exposed to infectious fluid: post-exposure prophylaxis

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

Give urgent attention to the patient exposed to infectious fluid:

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

Yes

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

Yes

- Give immediate attention:
  - If broken skin, clean area immediately with soap and water.
  - If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water or sodium chloride 0.9%.
  - If sexual assault ⮌64.
- Assess need for HIV post-exposure prophylaxis:

Patient known HIV positive

- Send blood for HBsAg, hepatitis C antibody and:
  - If newly diagnosed HIV: HIV ELISA.
  - If sexual exposure: syphilis.
- Avoid giving HIV post-exposure prophylaxis, give routine HIV care ⮌74.

Patient HIV negative or unknown: do HIV rapid test ⮌73.

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

- Give HIV post-exposure prophylaxis (PEP) only if ≤ 72 hours since exposure (ideally within 1 hour):
  - Give tenofovir/emtricitabine 300/200mg *and* atazanavir/ritonavir[1] 300/100mg once daily for 28 days.
  - If known kidney disease, give zidovudine/lamivudine 300/150mg 12 hourly instead of tenofovir/emtricitabine.
  - If source on ART, start PEP as above and refer/discuss same day with experienced ART doctor to adjust PEP if needed.
- Send blood for HIV ELISA, HBsAg, hepatitis C antibody and creatinine[2]. If sexual exposure, also check syphilis.

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

Yes

Send blood for HBsAb titre.

No or not sure

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

Assess source: if s/he agrees, send blood for HIV ELISA, HBsAg and hepatitis C antibody. If sexual exposure, check syphilis.

Review patient and blood results within 3 days →67.

No

- Reassure that HIV and hepatitis B transmission is unlikely.
- Avoid giving HIV or hepatitis B post-exposure prophylaxis.
- If unsure, discuss with specialist.

[1]If atazanavir/ritonavir not available, give instead lopinavir/ritonavir 400/100mg 12 hourly. If on rifampicin, discuss with specialist. [2]If giving zidovudine, check full blood count instead of creatinine.

Review the patient on post-exposure prophylaxis

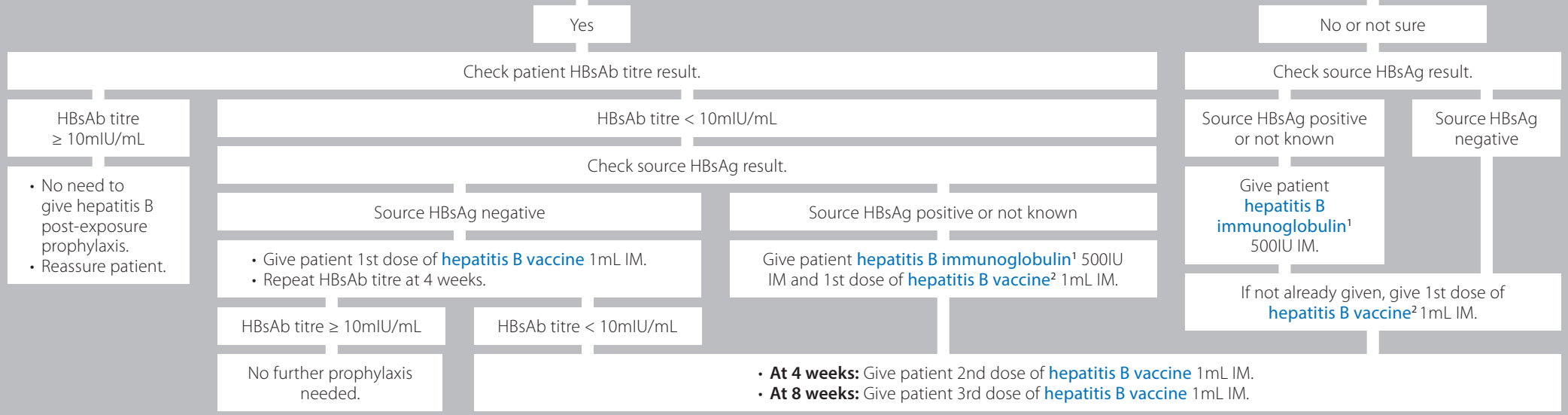
Review patient within 3 days, at 2 weeks, 6 weeks, 3 months and 6 months.

- Check adherence and ask about side effects from HIV post-exposure prophylaxis ⮌78. Advise patient to report side effects promptly if they occur.
- Advise patient to use condoms for 3 months until results confirmed.
- If assault or abuse ⮌64.
- Check bloods according to table and review results as below:

Assess	When to assess	Note
HIV ELISA	If negative: at 6 weeks, 3 months	If positive, stop HIV post-exposure prophylaxis and give routine HIV care ⮌74.
HBsAg	If negative: at 6 months	If positive, refer. If negative, manage as below.
Hepatitis C antibody	If negative: at 6 weeks, 3 months	If positive, refer.
Syphilis (if sexual exposure)	If negative: repeat at 6 weeks, 3 months	If positive ⮌39.
eGFR	If on tenofovir: at 2 weeks, 6 weeks	• If initial eGFR < 50mL/min: stop tenofovir/emtricitabine, give instead zidovudine/lamivudine 300/150mg 12 hourly and check full blood count. • If repeat eGFR < 50mL/min: discuss with specialist.
Full blood count	If on zidovudine: at 2 weeks, 6 weeks	If Hb < 7g/dL or neutrophils < 0.75 x 10^9/L, discuss with specialist.
Source blood results (if done)	-	• If HIV ELISA negative, discuss with specialist if patient should continue HIV post-exposure prophylaxis. If HIV ELISA positive, give routine HIV care ⮌74. • If HBsAg or hepatitis C antibody positive, refer. • If syphilis positive ⮌39.

Approach to the patient who is HBsAg negative

Has patient received 3 doses of hepatitis B vaccine?



[1]If giving both hepatitis B vaccine and immunoglobulin, give at different sites. [2]If patient previously completed 2 courses of hepatitis B vaccine (6 doses in total), omit the vaccine and give instead a 2nd dose of hepatitis B immunoglobulin 500IU IM at 4 weeks.

Tuberculosis (TB): diagnosis

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

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

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

Management:

- Give ceftriaxone[1] 1g IV/IM. If unavailable, discuss with doctor.
- Give face mask oxygen.
- Take 1 spot sputum specimen for Xpert MTB/RIF and arrange follow-up.
- Refer same day.

Start the workup to diagnose TB:

- Test for HIV ↩73.
- Send 1 spot sputum specimen for Xpert MTB/RIF, and ask patient to return for result within 2 days.
- If patient has chest pain on breathing or coughs blood without sputum, also arrange chest x-ray and doctor review (see below).

Xpert negative (MTB not detected)

- If fever or coughing sputum, give amoxicillin[3] 1g 8 hourly for 5 days.
- Manage according to HIV status. Encourage patient who has not tested to do so ↩73.

HIV positive

HIV negative
TB is unlikely

Advise patient to return if no better or symptoms worsen.

Send 2nd (ideally early morning) sputum specimen for Xpert MTB/RIF.

Xpert positive (MTB detected)

Rifampicin resistant
Send a 2nd sputum specimen for smear, culture and DST[2].

Diagnose Drug-Resistant TB
Refer for DR-TB treatment.

Rifampicin sensitive

Diagnose Drug-Sensitive TB

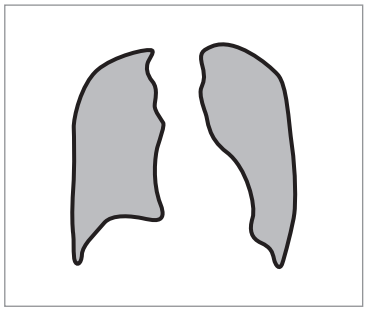
- Give routine DS-TB care and start DS-TB treatment same day →70.
- Register as a bacteriologically confirmed TB case.

Xpert negative (MTB not detected)

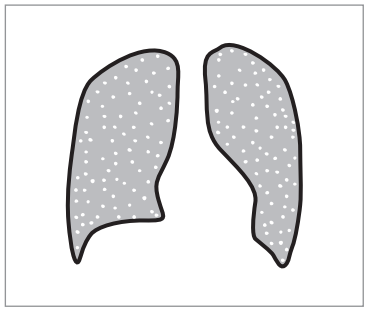
- Send for chest-x-ray and doctor review.
- If HIV positive, also send sputum specimen for culture and DST[2].

[1]If severe penicillin allergy (previous angioedema, anaphylaxis or urticaria), discuss with doctor. [2]Drug susceptibility testing. [3]If penicillin allergic, give instead erythromycin 500mg 6 hourly for 5 days.

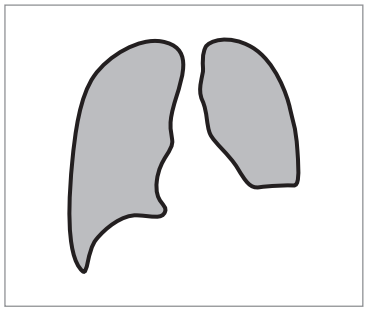
Doctor to review chest x-ray.



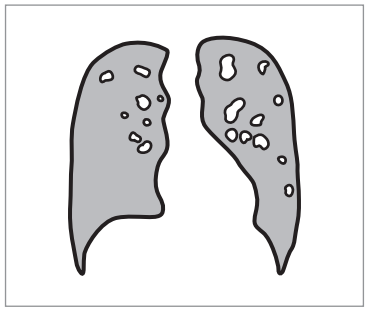
Intrathoracic lymphadenopathy



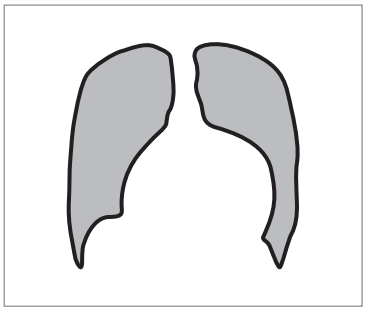
Miliary TB



Pleural effusion
Confirm with pleural tap.



Any lung opacification/s in HIV patient



Pericardial effusion
Confirm with ultrasound.

Doctor decision about chest x-ray

Chest x-ray similar to x-ray above

Diagnose TB on chest x-ray.
Give routine TB care and start DS-TB treatment same day →70.

Chest x-ray normal *or* different to above *or* unsure

- Look for extra-pulmonary TB. If diagnosed, give routine TB care ↩70:
  - If patient has abdominal pain, swelling or diarrhoea refer for further investigation.
  - If patient has headache, refer for lumbar puncture.
  - If patient has lymphnode ≥ 2cm, aspirate for TB and cytology ↩16.
- Look for other cause of cough, especially for pneumocystis pneumonia (PJP) in the HIV patient ↩27.

Review culture result if sent.

Culture positive (MTB confirmed)

Drug sensitive

Diagnose Drug-Sensitive TB
- If chest x-ray normal, doctor to review.
- Give routine DS-TB care and start DS-TB treatment same day →70.

Drug resistant

Diagnose Drug-Resistant TB
Refer for DR-TB treatment.

Culture negative or pending

- If symptoms persist, refer to specialist.
- If culture negative and symptoms resolve, advise to return if symptoms recur.

Drug-sensitive (DS) TB: routine care

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

Assess	When to assess	Note
Symptoms	Every visit	• If respiratory rate > 30, breathless at rest or while talking, or confused/agitated, give urgent attention ⮌68. • Expect gradual improvement on TB treatment. **If symptoms worsen or do not improve, refer to doctor.**
Contacts	At diagnosis and if contact symptomatic	• Screen symptomatic household and work contacts for TB. • Exclude TB and give 6 months IPT to asymptomatic contacts < 5 years of age.
Family planning	Every visit	Assess contraception needs to avoid pregnancy during treatment ⮌108. Avoid oral contraceptive and use subdermal implant[1] with caution while on TB treatment.
Adherence	Every visit	Check adherence on the TB card. Manage the patient who interrupts TB treatment ⮌72.
Side effects	Every visit	Ask about side effects on treatment ⮌71.
Alcohol/drug use	At diagnosis; if adherence poor	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 ⮌101.
Weight (BMI)	Every visit	• Expect weight gain on treatment and adjust TB treatment dose accordingly ⮌71. **If losing weight, refer same week to doctor.** • BMI = weight (kg) ÷ height (m) ÷ height (m). If BMI < 18.5, refer for nutritional support.
Chest x-ray	Not routinely, only if needed	Repeat chest x-ray at 2 months if Xpert negative and diagnosed on x-ray, patient deteriorates or coughs blood.
Glucose	At diagnosis	Check glucose ⮌85.
HIV	At diagnosis or if status unknown	Test for HIV ⮌73. If HIV positive and not already on ART, start ART once tolerating TB treatment ⮌74: • If CD4 ≤ 50 cells/mm³ or stage 4, start ART within 2 weeks. If TB meningitis, start ART after 4-6 weeks of TB treatment. • If CD4 > 50 cells/mm³ and not stage 4, start ART between 2-8 weeks of TB treatment.
Send 1 early morning sputum specimen for smear	Week 8, end of month 5 and month 6	• If smear negative at 8 weeks, change to continuation phase. • If smear positive at 8 weeks, manage as on 8 week smear positive algorithm ⮌72.
Culture and DST[3]	If sent during diagnostic workup	• If culture confirms MTB (*mycobacterium tuberculosis*) check DST: - If drug sensitive, continue treatment. - If drug resistant, diagnose DR-TB, stop DS-TB treatment and refer for DR-TB treatment. • If culture does not confirm MTB, discuss with doctor.
Treatment outcome	6 months	• If month 5 and month 6 sputa were smear negative, stop TB treatment and register as **cured**. • If month 5 or month 6 sputum was smear positive, repeat sputum smear. - If repeat smear positive, register as **treatment failure** and refer for doctor review. - If repeat smear negative, discuss with experienced TB doctor. • If unable to produce sputum, register as **treatment completed**.

Advise and treat the patient with TB ⮌71.

[1]If patient already has subdermal implant, advise to use condoms consistently and offer switch to IUD. [2]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [3]Drug susceptibility testing

Advise the patient with TB

- Arrange TB/HIV education and refer for community or workplace adherence support.
- Support the patient with poor adherence. Educate on adherence and the dangers of resistance and arrange adherence support. If treatment interrupted ⮌72.
- Educate patient about TB treatment side effects below and to report these promptly if they occur.
- Advise patient s/he can return to work after 2 weeks.
- Advise the patient misusing alcohol and/or using illegal or misusing prescription or over-the-counter medication to stop. Alcohol/drug misuse interferes with recovery and adherence ⮌101. If patient smokes tobacco ⮌100. Support patient to change ⮌122.

Treat the patient with TB

- Treat the patient with TB 7 days a week for 6 months:
  - Give intensive phase RHZE for 8 weeks.
  - Change to continuation phase RH at 8 weeks to complete 6 months of TB treatment. If sputum smear positive at 8 weeks, manage further ⮌72.
- If TB meningitis, TB spine or tuberculous pus collection, treat for at least 9 months, guided by a specialist.
- Dose TB treatment according to weight and adjust as weight increases. **If losing weight, refer to doctor.**
- Give pyridoxine 25mg daily until treatment completed.

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

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

Manage the TB/HIV co-infected patient:

- If TB diagnosed while patient on IPT, stop IPT and start TB treatment.
- Avoid starting nevirapine with DS-TB treatment. If already on nevirapine, consider switching medication ⮌77.
- Avoid rifampicin with lopinavir/ritonavir and atazanavir/ritonavir. If patient on/starting lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist about switching rifampicin to rifabutin.

Look for and manage TB treatment side effects

Jaundice and vomiting	Most TB medications	Stop all medications and refer same day.
Skin rash/itch	Most TB medications	Assess and manage ⮌51.
Loss of colour vision	Ethambutol	Refer same day.

Nausea/poor appetite	Rifampicin	Take treatment at night. Give metoclopramide 10mg 8 hourly up to 5 days.
Joint pain	Pyrazinamide	Give ibuprofen 400mg 8 hourly up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
Orange urine	Rifampicin	Reassure.
Burning feet	Isoniazid	Increase pyridoxine to 75mg daily.

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

Manage the patient with a positive 8 week sputum smear

- Look for explanation for result: ask about alcohol/drug use ⮌101, stress ⮌63 and side effects. Give increased adherence support and educate the patient about the risks of poor adherence ⮌71.
- Send 1 sputum specimen for DST[1]. Indicate on the request form that the patient's 8 week sputum is smear positive. Review results in 5 days:

Drug sensitive or DST not available

- Change to continuation phase.
- At 12 weeks, send 1 sputum specimen for smear.

Smear positive

- Send 1 sputum specimen for culture and DST[1].
- Refer to TB doctor.

Smear negative
Continue DS-TB treatment continuation phase.

At the end of month 5 and month 6, send 1 sputum specimen for smear.

Smear positive
Repeat sputum smear.

Positive
Register as **treatment failure**.

Negative

Discuss with experienced TB doctor.

Smear negative

- Stop treatment at 6 months.
- Register as **cured**.

Drug resistant

Diagnose DR-TB
Refer for DR-TB treatment.

Manage the patient who interrupts TB treatment

- Trace the patient and look for explanation for treatment interruption. Ask about alcohol/drug use ⮌101, stress ⮌63 and side effects.
- Give increased adherence support and educate the patient about the risks of poor adherence ⮌71.
- Manage treatment interruption according to duration of interruption:

Interrupted for < 1 month

- Continue TB treatment.
- Ensure patient makes up missed doses.

Interrupted for 1-2 months

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

Sensitive

- Continue TB treatment.
- Ensure patient makes up missed doses.

Resistant

Refer for DR-TB treatment.

Interrupted for ≥ 2 months

- Register patient as **lost to follow up**.
- Send sputum for smear, culture and DST[1].
- Start TB treatment only if patient is unwell, otherwise wait for results.

Positive smear or culture

- Restart full course of DS-TB treatment.
- Review DST result.

Sensitive

Complete full course of DS-TB treatment.

Resistant

Refer for DR-TB treatment.

Negative smear *and* culture and patient well

Doctor to decide if to restart treatment or to give no more TB treatment and monitor monthly.

[1]Drug susceptibility testing

HIV: diagnosis

Encourage the patient and his/her partner to test for HIV.

Obtain informed consent
- Educate patient 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.
- If consent is granted, proceed to testing immediately.

Test
Do first rapid HIV test on finger-prick blood.

- Positive
  - Do a confirmatory[1] rapid HIV test on finger-prick blood.
    - Positive
      - Patient has HIV.
        - Give routine HIV care at this visit →74.
        - Offer to help disclose status to sexual partner/s.
        - Encourage HIV testing for sexual partners and children.
        - Refer for community care worker support.
    - Negative
      - Repeat both the first and the confirmatory rapid HIV tests above.
        - Both tests positive
          - Patient has HIV.
            - Give routine HIV care at this visit →74.
            - Offer to help disclose status to sexual partner/s.
            - Encourage HIV testing for sexual partners and children.
            - Refer for community care worker support.
        - One positive and one negative
          - Send blood for an HIV ELISA test.
            - ELISA positive
              - Inconclusive result
                - Repeat rapid HIV tests above after 14 days.
            - ELISA negative
              - HIV test result negative
                - Was patient at risk of HIV infection in the past 4 weeks (new or multiple sexual partners, or unprotected sex)?
                  - Yes
                    - Repeat HIV test after 4 weeks.
                    - Encourage patient to follow safe sex practices.
                  - No
                    - Patient does not have HIV.
                    - Encourage patient to remain negative and advise when to re-test:
                      - If sexually active: yearly
                      - If pregnant: at 32 weeks
                    - Offer referral for male circumcision to diminish risk of HIV infection.
        - Both tests negative
          - HIV test result negative
            - Was patient at risk of HIV infection in the past 4 weeks (new or multiple sexual partners, or unprotected sex)?
              - Yes
                - Repeat HIV test after 4 weeks.
                - Encourage patient to follow safe sex practices.
              - No
                - Patient does not have HIV.
                - Encourage patient to remain negative and advise when to re-test:
                  - If sexually active: yearly
                  - If pregnant: at 32 weeks
                - Offer referral for male circumcision to diminish risk of HIV infection.
- Negative
  - HIV test result negative
    - Was patient at risk of HIV infection in the past 4 weeks (new or multiple sexual partners, or unprotected sex)?
      - Yes
        - Repeat HIV test after 4 weeks.
        - Encourage patient to follow safe sex practices.
      - No
        - Patient does not have HIV.
        - Encourage patient to remain negative and advise when to re-test:
          - If sexually active: yearly
          - If pregnant: at 32 weeks
        - Offer referral for male circumcision to diminish risk of HIV infection.

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

[1]Use a different rapid test for the confirmatory test.

HIV: routine care

Assess the patient with HIV

Assess	When to assess	Note
Symptoms	Every visit	Manage patient's symptoms as on symptom pages. If TB symptoms ⮌68 or genital symptoms ⮌34.
TB	Every visit	If cough, weight loss, night sweats or fever, exclude TB ⮌68. Start ART after TB has been excluded.
Adherence	Every visit	Check record of attendance. If poor adherence/attendance, give increased adherence support.
Side effects	Every visit	Ask about side effects from ART ⮌78, isoniazid preventive therapy (IPT) ⮌76, co-trimoxazole ⮌76 and fluconazole ⮌76.
Mental health	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 ⮌97. • 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 ⮌101. • If ≥ 1 of: memory/co-ordination problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia ⮌104.
CVD risk	At diagnosis	Assess the patient's CVD risk ⮌83.
Sexual health	Every visit	Ask about sexual orientation, risky behaviour (patient or partner has new or > 1 partner, unreliable condom use or risky alcohol/drug use ⮌101) and sexual problems ⮌41.
Family planning	Every visit	• Advise reliable[2] contraception (IUD, injectable or sterilisation *plus* condoms) ⮌108. • If planning pregnancy, advise patient to use contraception until viral load < 1000copies/mL.
PMTCT	If pregnant or breastfeeding	If not on ART, start ART same week. If pregnant, give antenatal care ⮌112.
Palliative care	If deteriorating	If patient deteriorating on ART or failing 3rd line ART and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.
Weight (BMI)	Every visit	• If weight loss ≥ 5% of body weight in 4 weeks ⮌14. If weight < 40kg and on efavirenz, adjust dose ⮌78. • If BMI < 18.5, refer for nutritional support. BMI = weight (kg) ÷ height (m) ÷ height (m).
Stage	Every visit	• Check weight, mouth, skin, previous and current problems. • If stage 3 or 4: give co-trimoxazole and prioritise patient for ART. • If clinical stage worsens while patient on ART, refer to doctor.

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

Tuberculin skin test (TST)	If no current or previous IPT and no TB symptoms	• Clean arm with alcohol swab, pull skin taut and inject 2 units PPD-RT23 or 5 units PPD-S into skin to see wheal develop. Measure swelling after 48-72 hours: - If ≥ 5mm: TST is positive, give IPT. - If < 5mm: TST is negative, avoid IPT. • If TST unavailable, give IPT and check TST when available.
Cervical screen	At diagnosis, then 3 yearly if normal	If abnormal ⮌38.

Continue to assess the patient with HIV →75.

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

Continue to assess the patient with HIV

Do blood tests at diagnosis, before starting ART and regularly on ART:

At diagnosis	Starting/changing ART regimen	3 months	6 months	1 year	6 monthly	Yearly
• Syphilis • HBsAg, Hepatitis C antibody • CD4 • Cryptococcal antigen if CD4 ≤ 100cells/mm³	• **Starting TDF:** eGFR or creatinine[1] • **Changing from TDF:** HBsAg • **Starting AZT:** Hb+diff • **Starting NVP:** ALT • **Starting LPV/r:** cholesterol, triglycerides	• **TDF:** eGFR or creatinine[1] • **AZT:** Hb+diff	• Viral load • CD4 • **TDF:** eGFR or creatinine[1] • **AZT:** Hb+diff • **LPV/r:** cholesterol, triglycerides	• Viral load • CD4 • **TDF:** eGFR or creatinine[1] • **AZT:** Hb+diff • **LPV/r:** cholesterol, triglycerides	• **TDF:** eGFR or creatinine[1] • **AZT:** Hb+diff • **LPV/r:** cholesterol, triglycerides • **NVP:** ALT	Viral load

HBsAg - hepatitis B surface antigen **TDF** - tenofovir **AZT** - zidovudine **Hb+diff** - haemoglobin and differential **NVP** - nevirapine **LPV/r** - lopinavir/ritonavir

Review results of routine blood tests

Assess	When to assess	Note
Syphilis	At diagnosis	If positive ⮌39.
Hepatitis	At diagnosis and if changing from TDF	• If HBsAg or hepatitis C antibody positive, refer to doctor. • If changing regimen: if HBsAg positive, continue tenofovir as a 4th medication (avoid stopping tenofovir) and refer to doctor.
CD4	At diagnosis and 6 monthly until stable	• Start ART regardless of CD4, especially if CD4 ≤ 350cells/mm3. • If CD4 ≤ 350cells/mm3, also give co-trimoxazole. • Stop CD4 checks after 1 year on ART if stable: if 2 consecutive viral loads < 1000copies/mL and patient well.
Cryptococcal antigen	At diagnosis if CD4 ≤ 100cells/mm³	If cryptococcal antigen positive: • If symptomatic, (headache, confusion), refer same day. • If asymptomatic, give fluconazole ⮌76 for cryptococcal infection and start ART 4 weeks later.
eGFR (if not pregnant)	On TDF: before starting, at 3 and 6 months, then 6 monthly	If eGFR < 50: • Avoid tenofovir and start instead zidovudine[2]. If already on tenofovir, doctor to switch medication ⮌77. Adjust doses of other medications. • Check BP, glucose, urine dipstick and arrange kidney ultrasound. Discuss with specialist.
Creatinine (if pregnant)		If creatinine ≥ 85µmol/L, avoid tenofovir and discuss/refer.
Hb and diff	On AZT: before starting, at 3 and 6 months, then 6 monthly	• At diagnosis: - If Hb 7-7.9g/dL or neutrophil 1.0-1.5 x 10^9/L: start ART and repeat in 4 weeks. If neutrophil 0.75-0.99 x 10^9/L, start ART and repeat in 2 weeks. - If Hb < 7g/dL or neutrophils < 0.75 x 10^9/L: avoid zidovudine, discuss/refer. • On ART: - If Hb 7-7.9g/dL or neutrophil 1.0-1.5 x 10^9/L: continue ART and repeat in 4 weeks. If neutrophil 0.75-0.99 x 10^9/L, continue ART and repeat in 2 weeks. - If Hb < 7g/dL or neutrophils < 0.75 x 10^9/L: doctor to switch medication ⮌77.
ALT	On NVP: before starting, then 6 monthly	• At diagnosis: - If ALT > 200, refer same day. If ALT 100-200, doctor to review hepatitis results, medications, alcohol use and discuss with specialist. Avoid nevirapine. • On ART: - If ALT > 200, refer same day. If ALT 100-200, continue medication and repeat ALT within 1 week.
Random total cholesterol, triglycerides	On LPV/r: before starting, then 6 monthly	If cholesterol > 5.2mmol/L or triglycerides ≥ 2.3mmol/L: • Assess and manage CVD risk ⮌83. • Avoid lopinavir/ritonavir: doctor to give instead atazanavir/ritonavir. • If statin needed, discuss with specialist as simvastatin cannot be given with lopinavir/ritonavir or atazanavir/ritonavir.
Viral load	At 6 months, 12 months, then 12 monthly	• If viral load > 1000copies/mL for 1st time, give increased adherence support and repeat viral load within 3 months. • If viral load > 1000copies/mL for 2nd time, patient has virological failure: doctor to change to 2nd line ART. If already on 2nd line ART, discuss/refer.

Advise and treat the patient with HIV →76.

[1]If not pregnant, check eGFR. If pregnant, check creatinine instead. [2]If previously on zidovudine, give instead abacavir, lamivudine and lopinavir/ritonavir.

Advise the patient with HIV

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

Treat the patient with HIV

- Give prophylaxis: isoniazid preventive therapy (IPT), co-trimoxazole and fluconazole as needed (see below).
- Give influenza vaccine 0.5mL IM yearly.
- Give ART regardless of CD4 or stage ⮌77, especially if CD4 ≤ 350, stage 3 or 4, pregnant or breastfeeding.
- If already on ART, continue treatment.
  - If viral load > 1000copies/mL for 2nd time, contraindication to current ART, intolerable side effect or on stavudine, change ART ⮌77.

	When to give	What to give	Side effects	When to stop
Isoniazid preventive therapy (IPT)	• TST positive or unavailable • If also starting ART, start IPT once tolerating ART. • Avoid if TB symptoms, on TB treatment[1], peripheral neuropathy, liver disease, alcohol abuse.	• Isoniazid 300mg daily • Pyridoxine 25mg daily	• Peripheral neuropathy ⮌48 • Rash ⮌51 • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌75.	• If TST positive, stop after 36 months. • If TST unavailable, stop after 36 months. If later TST negative, stop IPT immediately.
Co-trimoxazole	• CD4 ≤ 350cells/mm³ • Stage 3 or 4	• If CrCl > 30mL/min, give co-trimoxazole 160/800mg daily. • If CrCl 15-30mL/min, give co-trimoxazole 80/400mg daily. • If CrCl < 15mL/min, avoid co-trimoxazole and discuss with doctor.	• Nausea/vomiting ⮌31 • Rash ⮌51 • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌75.	Stop after 1 year on ART if CD4 > 350cells/mm³ and viral load < 1000copies/mL.
Fluconazole	Cryptococcal antigen positive	• If pregnant, breastfeeding or known liver disease, avoid fluconazole and refer/discuss same day. • If symptomatic (headache, confusion), refer same day. • If asymptomatic, give fluconazole 800mg daily for 2 weeks, then 400mg daily for 2 months, then 200mg daily to complete at least 1 year.	• Nausea/vomiting ⮌31 • Hepatitis - If jaundice: refer same day. - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌75.	Stop after at least 1 year on ART and fluconazole if 2 consecutive CD4s ≥ 100cells/mm³ and viral load < 1000copies/mL.

Review the patient with HIV

- If starting ART: review 2 weeks after starting ART, then monthly.
- Once on ART for ≥ 1 year, 2 consecutive viral loads < 1000copies/mL, not pregnant or breastfeeding, is adherent and well, review 3-6 monthly.
  - If unwell or problems with adherence, see more often.
- If declines ART: review patient 6 monthly. Advise patient to return sooner if unwell or s/he decides to start ART.

[1]If previous TB and patient eligible for IPT, start IPT immediately after completing TB treatment.

Start or change ART in the patient with HIV

1. Decide which ART regimen the patient needs

Currently not on ART

Never had ART

Choose 1st line ART

Known with kidney disease?

Yes

Doctor to choose zidovudine, lamivudine and efavirenz.

No

Known with active psychiatric illness?

Yes

- Doctor to choose tenofovir, emtricitabine and nevirapine.
- If CD4 > 250cells/mm³ (woman) or > 400cells/mm³ (man), avoid nevirapine and choose instead lopinavir/ritonavir.

No

Choose tenofovir, emtricitabine and efavirenz.

Previously had ART ≤ 1 month

Choose 1st line ART

Known with kidney disease?

Yes

Doctor to choose zidovudine, lamivudine and efavirenz.

No

Known with active psychiatric illness?

Yes

- Doctor to choose tenofovir, emtricitabine and nevirapine.
- If CD4 > 250cells/mm³ (woman) or > 400cells/mm³ (man), avoid nevirapine and choose instead lopinavir/ritonavir.

No

Choose tenofovir, emtricitabine and efavirenz.

Previously had ART > 1 month

Previous virological failure? (2 viral loads > 1000copies/mL)

No

Choose same regimen as before and discuss with doctor.

Yes

Choose 2nd line ART

- Previously on tenofovir or abacavir:
  - Choose zidovudine, lamivudine and lopinavir/ritonavir.
- Previously on zidovudine or stavudine:
  - Choose tenofovir, emtricitabine and lopinavir/ritonavir.
- If currently on tenofovir and HBsAg positive, continue tenofovir as a 4th medication.

Currently on ART

Is there virological failure? (2 viral loads > 1000copies/mL)

No

Patient has contraindication, intolerable side effect or is on stavudine.

Viral load < 1000copies/mL in last 6 months

Yes

Switch to a medication from the same section ↩78.

No

Discuss with doctor.

2. Check other medications and change if needed

- If epilepsy, avoid phenytoin and use instead valproic acid ↩95.
- If on oral contraceptive, change method ↩108. If implant and starting efavirenz, offer removal and change to IUCD or injectable contraceptive ↩108.
- If on rifampicin and starting lopinavir/ritonavir or atazanavir/ritonavir, switch rifampicin to rifabutin ↩71.
- If on simvastatin and starting lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin and discuss with specialist.

3. Take bloods according to chosen regimen ↩75

If blood results abnormal, alter regimen choice ↩78. Discuss if needed.

4. Decide when to start/change ART

If starting ART:

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

If changing ART:

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

5. Start/change ART

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

	Medication	Dose	Urgent side effects (stop medication and refer same day)	Self-limiting side effects (discuss with doctor if persist after 6 weeks)	Long-term side effects
1	Tenofovir (TDF)	300mg daily	Kidney failure	Nausea, diarrhoea	-
	Zidovudine (AZT)	• 300mg 12 hourly • If CrCl < 15mL/min: refer/discuss	• Lactic acidosis[1] • Symptomatic anaemia (pallor with respiratory rate > 30, dizziness/faintness or chest pain)	• Headache • Nausea • Muscle pain • Fatigue (if Hb ≤ 7g/dL doctor to switch medication ⮌77)	Fat loss in face, limbs and buttocks; fat accumulation (central obesity, breast enlargement); switch to tenofovir or abacavir ⮌77.
	Abacavir (ABC) Avoid if previous Abacavir Hypersensitivity Reaction (AHR)	300mg 12 hourly or 600mg daily	AHR likely if ≥ 2 of: • Fever • Rash • Fatigue/body pain • Nausea/vomiting/diarrhoea/abdominal pain • Sore throat/cough/difficulty breathing	• Nausea • Vomiting • Diarrhoea	-
2	Lamivudine (3TC)	• 150mg 12 hourly or 300mg daily • If CrCl < 50mL/min, reduce dose: - CrCl 30-50mL/min: give 150mg daily. - CrCl < 30mL/min: refer/discuss	Uncommon	Uncommon. Occasional nausea and diarrhoea	Uncommon
	Emtricitabine (FTC)	200mg daily		Uncommon. Occasional nausea and diarrhoea	Darkening of palms and soles
3	Efavirenz (EFV) Avoid if active psychiatric illness	• 600mg daily. • If < 40kg: give 400mg daily.	• Rash ⮌51 • Jaundice/hepatitis[2] • Psychosis	• Rash ⮌51 • Headache, dizziness, sleep problems, low mood - take dose at night. If on 600mg daily, doctor to consider giving 400mg daily.	Fat loss in face, limbs and buttocks; fat accumulation (central obesity, breast enlargement); switch to nevirapine or lopinavir/ritonavir ⮌77.
	Nevirapine (NVP)	200mg daily for 2 weeks, then 200mg 12 hourly	• Rash ⮌51 • Jaundice/hepatitis[2]	• Rash ⮌51 • Nausea	-
	Lopinavir/ritonavir (LPV/r)	400/100mg 12 hourly (with food)	• Jaundice/hepatitis[2] • Dyslipidaemia	Diarrhoea: if intolerable or > 6 weeks, doctor to switch to atazanavir/ritonavir ⮌77.	Dyslipidaemia: discuss with doctor.
	Atazanavir/ritonavir (ATV/r)	300mg atazanavir and 100mg ritonavir daily (with food)	• Kidney stone • Hepatitis - If jaundice: refer same day[3] - If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌75.	• Rash ⮌51 • Headache • Nausea, abdominal pain, diarrhoea	-

[1]Lactic acidosis likely if 2 or more of: fatigue/weakness, body pain, nausea/vomiting, diarrhoea, weight loss, loss of appetite, abdominal pain, difficulty breathing (more likely if rapid lactate ≥ 2.5mmol/L). [2]If jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours ⮌75. [3]Atazanavir can cause jaundice without hepatitis. If patient well with no nausea, vomiting or abdominal pain, check ALT and review result within 24 hours ⮌75. Discuss with specialist.

Asthma and COPD: diagnosis

- The patient with chronic cough may have more than one disease. Also consider TB, pneumocystis pneumonia (PJP), lung cancer, bronchitis, heart failure and post-infectious cough ⮌27.
- 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, eczema, allergic conjunctivitis, 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% ⮌80.

Give routine asthma care →81.

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 working in dusty environment
- Previous diagnosis of TB
- Previous doctor diagnosis of COPD

Give routine COPD care →82.

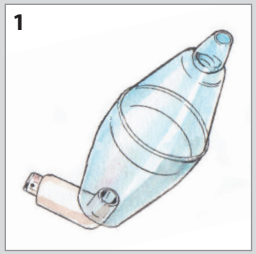
Doctor to confirm diagnosis. If doctor not available, treat as asthma ⮌81 and refer to doctor within 1 month.

Using inhalers and spacers

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

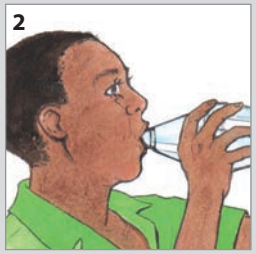
How to use an inhaler with a spacer[2]

1



Shake inhaler and insert into spacer.

2

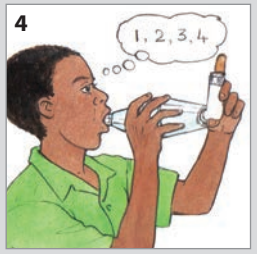


- Stand up and breathe out.
- Then form a seal with lips around mouthpiece.

3

Press pump once to release one puff into spacer.

4



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

[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. While breathing in, press pump once and keep breathing in slowly. Close mouth and hold breath for 10 seconds. Breathe out.

Using a peak expiratory flow meter

- The peak expiratory flow meter measures how well air moves out of a patient's lungs.
- Use a peak expiratory flow meter to help diagnose asthma and to monitor control and response to medications.
- Use the same peak expiratory flow meter each time.

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 in mouth.
- Form a seal with lips.

Breathe out as hard and as fast as possible (keeping fingers clear of scale).

- Record the result.
- Move marker back to bottom and repeat twice. Use the highest of 3 results.

How to measure PEFR response to inhaled beta-agonist

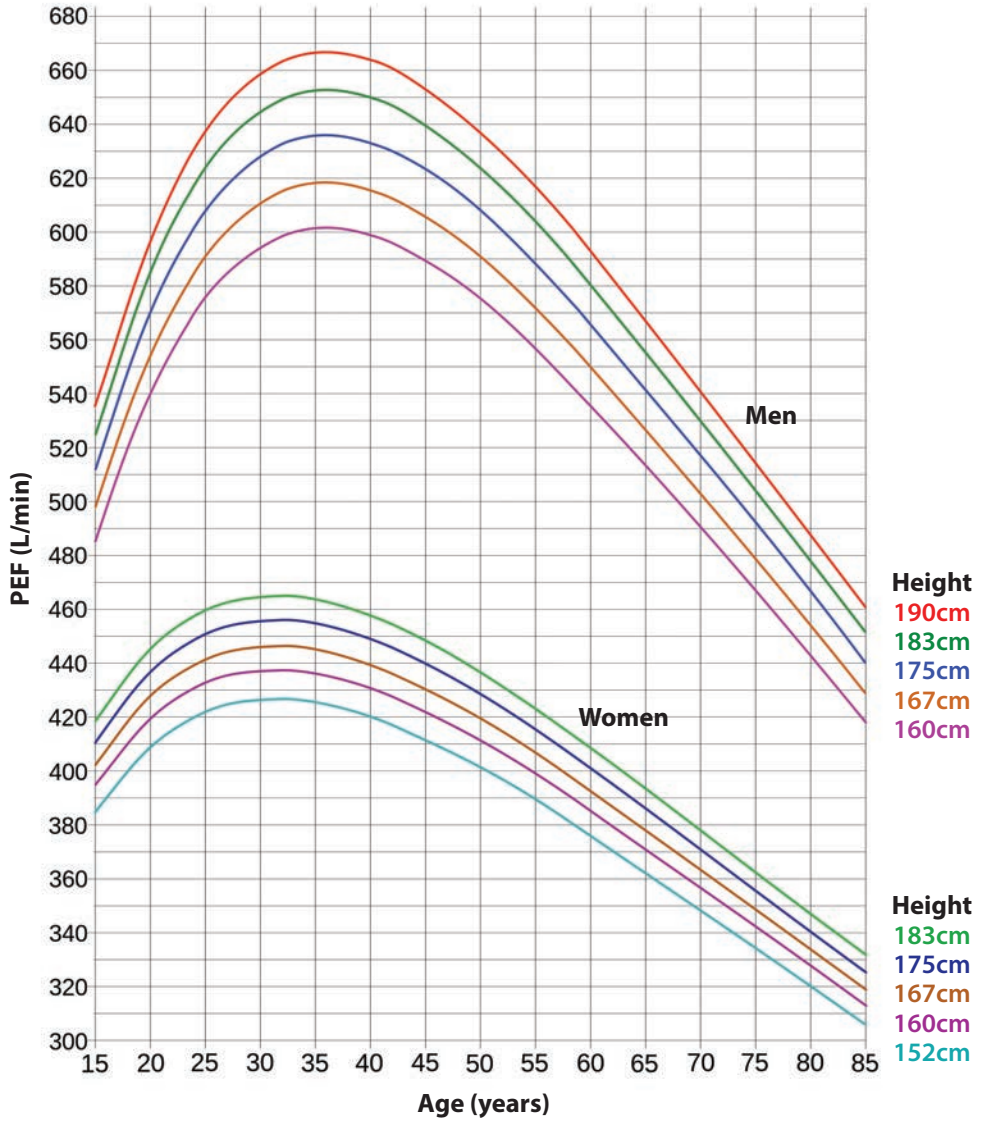
- Measure PEFR as above (use the highest of 3 results). This is the initial PEFR.
- Give inhaled salbutamol 200µg (2 puffs) and wait for 15 minutes.
- Repeat PEFR as above.
- Calculate % response = $\frac{\text{(repeat PEFR – initial PEFR)}}{\text{initial PEFR}} \times 100$

How to calculate % of predicted PEFR

- Measure PEFR as above (use the highest of 3 results). This is the observed PEFR.
- Determine patient's predicted PEFR using adjacent graph:
  - Plot the patient's sex, height and age.
  - Read predicted PEFR on left of graph.
- Calculate % of predicted PEFR = observed PEFR ÷ predicted PEFR x 100.

Peak expiratory flow rate - normal values[1]

For use with EU/EN13826 scale PEF meters only



[1]Adapted by Clement Clarke for use with EN13826 / EU scale peak flow meters from Nunn AJ, Gregg I. BMJ 1989;298:1068-70

Asthma: routine care

Ensure that a doctor confirms the diagnosis of asthma.

Assess the patient with asthma

Assess	When to assess	Note
Symptom control	Every visit	• If patient has wheeze/tight chest and is breathless at rest or while talking or respiratory rate > 30, manage acute exacerbation ⮌28. • Any of the following indicate that the patient's asthma is **not controlled**: - Daytime cough, difficulty breathing, tight chest or wheeze > 2 times a week - Night-time or early morning waking due to asthma symptoms - Limitation of daily activities due to asthma symptoms - Need to use salbutamol inhaler > 2 times a week • If none of the above then asthma is **controlled**.
Other symptoms	Every visit	• Manage symptoms as on symptom pages. Ask about and manage hayfever ⮌24 and dyspepsia ⮌30. • Ask the patient using inhaled corticosteroids about a sore mouth. Check for oral candida ⮌25.
Medication use	Every visit	Check adherence and that patient can use inhaler and spacer correctly ⮌79. If not adherent, refer for community care worker support.
Peak expiratory flow rate (PEFR)	• At diagnosis • If symptoms worsen • If change to medication at last visit	Calculate % of predicted PEFR ⮌80: If < 80% asthma is **not controlled.**

Advise the patient with asthma

- Ask about smoking. If patient smokes tobacco ⮌100. Support patient to change ⮌122.
- Ensure patient understands medication: beta-agonist (salbutamol) relieves symptoms but does not control asthma. Inhaled corticosteroid (budesonide) prevents but does not relieve symptoms and it is the mainstay of asthma control.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of budesonide.
- Advise patient to avoid allergens that worsen/trigger asthma or hayfever (e.g. animals, dust, chemicals, pollen, grass). Also advise to avoid aspirin, NSAIDs (e.g. ibuprofen) and beta-blockers (e.g. metoprolol).

Treat the patient with asthma

- Give inhaled salbutamol 200mcg (2 puffs) as needed, up to 4 times a day. If exercise-induced asthma, give patient salbutamol 200mcg (2 puffs) to use before exercise.
- If patient received prednisolone or hydrocortisone for an acute exacerbation, give prednisolone 40mg daily for 5 days.
- If acute exacerbation or asthma is **not controlled**, step up treatment:
  - Before adjusting treatment ensure patient is adherent and can use inhaler and spacer correctly ⮌79. Also check patient is avoiding smoking, allergens and medications (aspirin, NSAIDs, beta-blockers).
  - Give inhaled budesonide 200mcg 12 hourly if not already on it. If already on it, increase budesonide to 400mcg 12 hourly.
  - If still not controlled, add slow release theophylline 200mg 12 hourly. Increase theophylline to 300mg 12 hourly if needed. If not controlled after 1 month, refer to specialist.
- If asthma is **controlled**: continue medication at same dose. If controlled and no acute exacerbations for ≥ 6 months, step down treatment:
  - If on theophylline, decrease dose or stop.
  - If on budesonide, decrease total daily dose by 200mcg. If on 200mcg daily, stop budesonide.
  - If symptoms worsen while stepping down treatment, step up again to same medication and dose as when the patient was controlled.
- Give influenza vaccination 0.5mL IM yearly.
- If acute exacerbation, only give antibiotic if fever or thick yellow/green sputum: give doxycycline 100mg 12 hourly for 5 days.
- If > 2 courses of prednisolone given in past 6 months or acute exacerbation occurs on maximum treatment, refer to doctor.

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

Chronic obstructive pulmonary disease (COPD): routine care

Ensure that a doctor confirms the diagnosis of COPD and refer for spirometry if available.

Assess the patient with COPD

Assess	When to assess	Note
COPD symptoms: cough and difficulty breathing	Every visit	• If patient has wheeze/tight chest and breathless at rest or while talking or respiratory rate > 30, manage acute exacerbation ⮌28. • Assess disease severity: If difficulty breathing with activities of daily living (like dressing), COPD is **severe**. If unable to walk at same pace as others of same age, COPD is **moderate**. If difficulty breathing only when walking fast/up a hill, COPD is **mild**. • Investigate for TB only if patient has other TB symptoms like weight loss, night sweats, blood-stained sputum ⮌68.
Other symptoms	Every visit	• Manage symptoms as on symptom pages. • Ask the patient using inhaled corticosteroids about a sore mouth. Check for oral candida ⮌25. • If swelling in both legs, refer to doctor to consider heart failure.
Medication use	Every visit	Check adherence and that patient can use inhaler and spacer correctly ⮌79. If not adherent, refer for community care worker support.
Depression	Every visit	In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either ⮌97.
Palliative care	Every visit	If severe COPD, > 3 hospital admissions for COPD in 1 year or heart failure and you would not be surprised if s/he died within the next 2 years, also give palliative care ⮌118.
CVD risk	At diagnosis, then depending on risk	Assess CVD risk ⮌83. If < 10% with CVD risk factors or 10-20% reassess after 1 year, if > 20% reassess after 6 months.
Peak expiratory flow rate (PEFR)	• At diagnosis • If symptoms worsen • If change to medication at last visit	Calculate % of predicted PEFR ⮌80. • If 50-80%, COPD is **moderate**. • If <50% COPD is **severe**.

Advise the patient with COPD

- Ask about smoking. If patient smokes tobacco ⮌100. Support patient to change ⮌122. Stopping smoking is the mainstay of COPD care.
- Encourage the patient to take a walk daily and to increase activities of daily living like gardening, housework and using stairs instead of lifts.
- Help the patient to manage his/her CVD risk ⮌84.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of budesonide.

Treat the patient with COPD

- Give inhaled salbutamol 200mcg (2 puffs) when needed, up to 4 times a day.
- If patient received prednisolone or hydrocortisone for acute exacerbation at this visit, give prednisolone 40mg daily for 5 days.
- Before adjusting treatment ensure patient is adherent and can use inhaler and spacer correctly ⮌79.
- If **moderate** or **severe** COPD, add inhaled ipratropium bromide 40mcg (2 puffs) when needed (up to 4 times a day).
- If **moderate** or **severe** COPD and ≥ 2 exacerbations in 1 year, add budesonide 400mcg 12 hourly.
- If **severe** COPD, add slow release theophylline 200mg 12 hourly. Increase to 300mg 12 hourly if needed. If no better after 1 month, refer to specialist.
- If sputum increases or changes in colour to yellow/green treat for chest infection:
  - Give doxycycline 100mg 12 hourly for 5 days.
  - If increased breathlessness, also give prednisolone 40mg daily for 5 days if not already on it.
- If ≥ 2 courses of prednisolone given in 6 months, refer to doctor for review and spirometry.
- Give influenza vaccination 0.5mL IM yearly.

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

Cardiovascular disease (CVD) risk: diagnosis

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

CVD risk[1]:

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

Identify if the patient has established CVD:

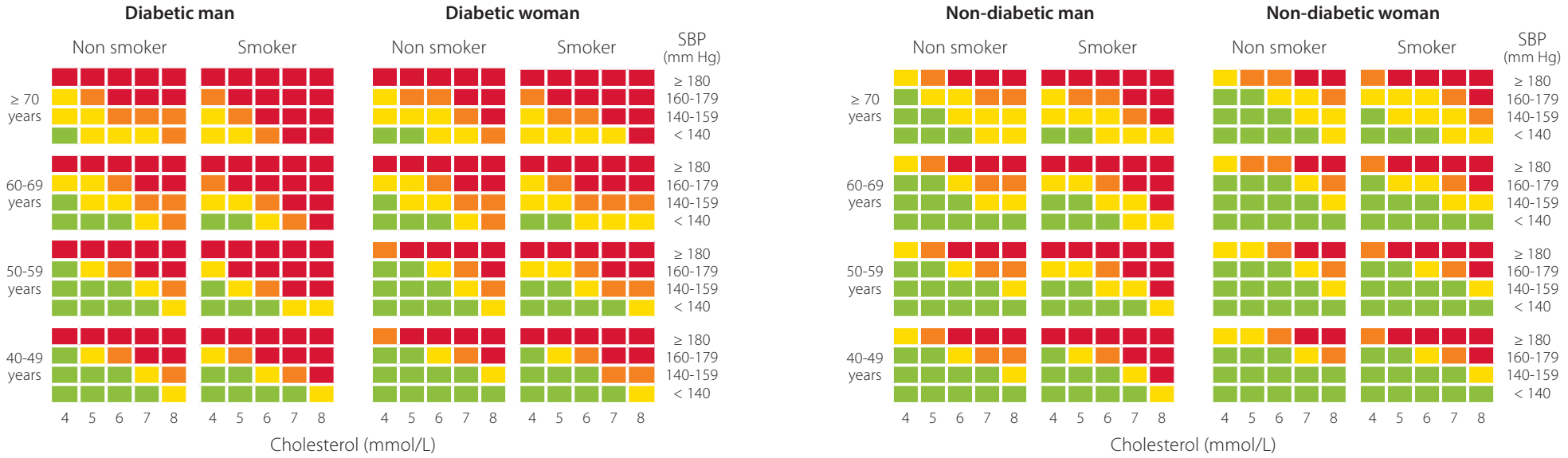
- Patient known with any of: previous heart attack, angina or heart failure, previous stroke or TIA or peripheral vascular disease.
- If patient has current/recent chest pain, especially on exertion and relieved by rest, screen for ischaemic heart disease ↩92.
- If patient has current/recent leg pain, especially on walking and relieved by rest, screen for peripheral vascular disease ↩47.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider **stroke** or **TIA** ↩91.

Look for CVD risk factors:

- Ask about **smoking**: consider the patient who quit smoking in the past year a smoker for CVD risk assessment.
- Ask about **family history**: a parent or sibling with premature CVD (man < 55 years or woman < 65 years) is a risk factor.
- Calculate **Body Mass Index** (BMI): weight (kg) ÷ height (m) ÷ height (m). A BMI > 25 is a risk factor.
- Measure **waist circumference** over no/light clothing, at the end of a normal breath out, midway between lowest rib and top of iliac crest. More than 80cm (woman) or 94cm (man) is a risk factor.
- Look for **hypertension**: check BP ↩88.
- Look for **diabetes**: check glucose ↩85.
- Check random total **cholesterol**. If unavailable, use cholesterol of 5.2mmol/L to calculate CVD risk.

Calculate the patient's CVD risk:

- Plot patient's risk on charts[1] below using diabetes status, age, sex, systolic BP (SBP), cholesterol and smoking status. Show the patient what his/her risk of heart attack or stroke might be over next 10 years.
- Avoid using these charts to decide treatment if patient has established CVD or kidney disease. Treat as if the patient has a CVD risk > 30%.



- **If CVD risk factors or CVD risk ≥ 10% or established CVD, manage the CVD risk →84.**
- If CVD risk < 10% and no CVD risk factors, reassess CVD risk after 5 years.

[1]Adapted from WHO/ISH Cardiovascular Risk Prediction Chart for WHO epidemiological sub-regions AFR E. From: Prevention of Cardiovascular Disease. Pocket Guidelines for Assessment and Management of Cardiovascular Risk. World Health Organization. Geneva, 2007.

Cardiovascular disease (CVD) risk: routine care

Assess the patient with CVD risk factors or CVD risk ≥ 10% or established CVD

Assess	When to assess	Note
Symptoms	Every visit	Ask about chest pain ⮌26, difficulty breathing ⮌27, leg pain ⮌47, or new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance ⮌91.
Modifiable risk factors	Every visit	Ask about smoking, diet and physical activity. Manage as below.
BMI	Every visit	BMI = weight (kg) ÷ height (m) ÷ height (m). Aim for < 25.
Waist circumference	Every visit	Measure while standing, on breathing out, midway between lowest rib and top of iliac crest. Aim for < 80cm (woman) and < 94cm (man).
BP	Every visit	Check BP ⮌88. If known hypertension ⮌89.
CVD risk	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.
Glucose	At diagnosis, then depending on result	Check glucose ⮌85. If known diabetes ⮌86.
Random total cholesterol	• At diagnosis • 3 months after starting statin	• If cholesterol > 8mmol/L, start simvastatin as below and refer for further assessment. • If repeat cholesterol > 5mmol/L increase simvastatin as below. If already on 40mg daily discuss with specialist.

Advise the patient with CVD risk factors or CVD risk ≥ 10% or established CVD

- Discuss CVD risk: explore the patient's understanding of CVD risk and the need for a change in lifestyle.
- Invite patient to address 1 lifestyle CVD risk factor at a time: help plan how to fit the lifestyle change into his/her day. Explore what might hinder or support this. Together set reasonable target/s for next visit.

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

Smoking
If patient smokes tobacco ⮌100.

Weight
- Aim for BMI < 25, and waist circumference < 80cm (woman) and < 94cm (man).
- Any weight reduction is beneficial, even if targets are not met.

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

Stress
Assess and manage stress ⮌63.

Screen for alcohol/drug use
- Limit alcohol intake ≤ 2 drinks[1]/day and avoid alcohol on at least 2 days of the week.
- In the past year, has patient: 1) drunk ≥ 4 drinks[1]/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ⮌101.

- Identify support to maintain lifestyle change: health education officer or dietician/nutritionist, friend, partner or relative to attend clinic visits, a healthy lifestyle group.
- Be encouraging and congratulate any achievement. Avoid judging, criticising or blaming. It is the patient's right to make decisions about his/her own health. For tips on communicating effectively ⮌121.

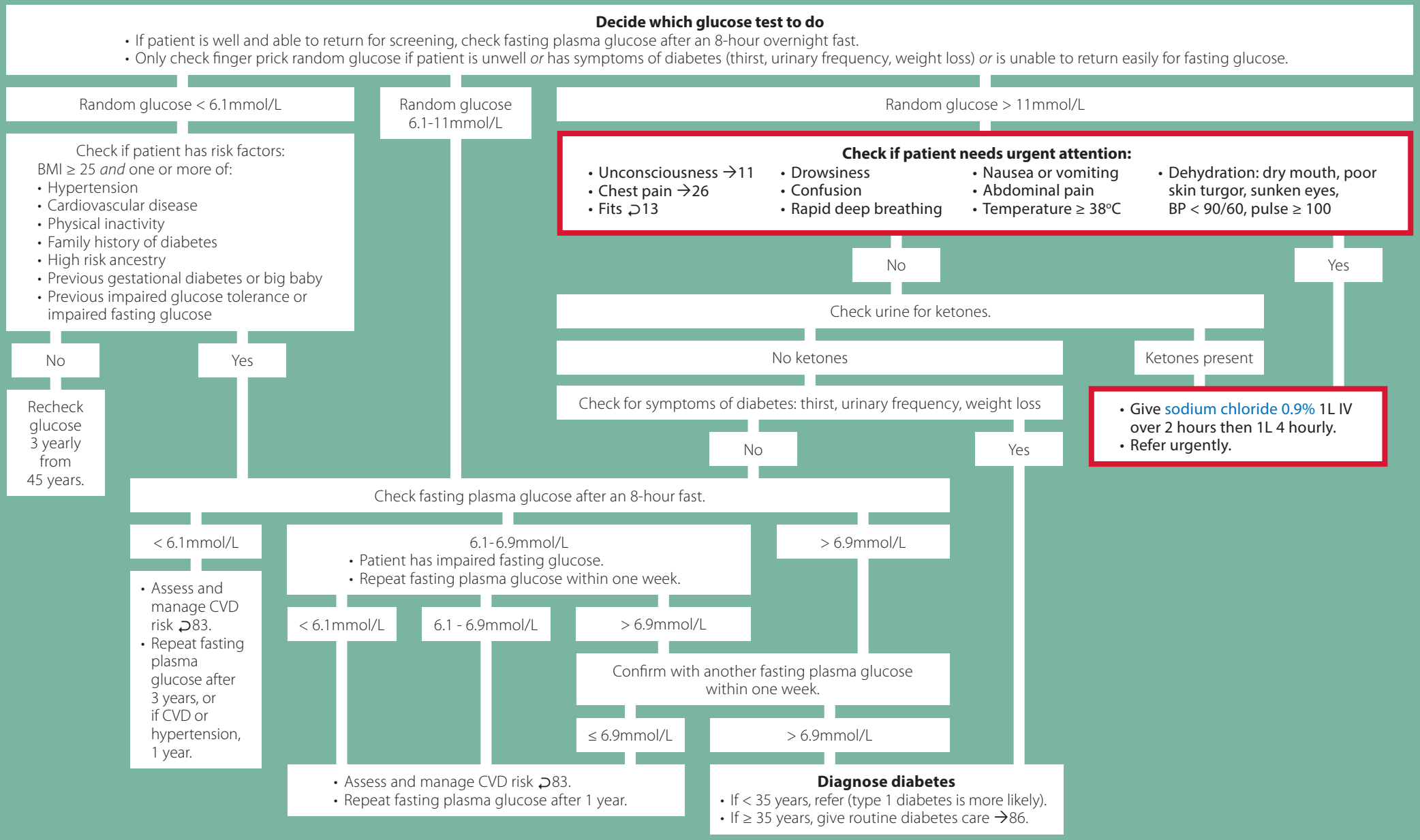
Treat the patient with CVD risk

Give simvastatin[2] if patient has established CVD, cholesterol > 8 mmol/l, CVD risk ≥ 30%, diabetes in patient ≥ 40 years or CVD risk > 20%. Start 20mg daily. If repeat cholesterol > 5mmol/L increase to 40mg daily. If already on 40mg daily discuss with specialist.

If CVD risk remains > 30% after 6 months, refer.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

Diabetes: diagnosis



Diabetes: routine care

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

- Chest pain →26
- Fitting ⮌13
- 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, sunken eyes, BP < 90/60, pulse ≥ 100

Check random fingerprick glucose:

Glucose < 4mmol/L with/without symptoms

- Give oral glucose 20g. If unable to take orally, give instead 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose < 4mmol/L after 15 minutes.
- Give the patient food as soon as s/he can eat safely.
- Identify cause and educate about meals and doses ⮌87.
- If incomplete recovery, refer same day. Continue glucose 5% 1L 6 hourly IV.
- Discuss referral if on gliclazide or insulin.

Glucose > 11mmol/L with symptoms

- Give sodium chloride 0.9% 1L IV over 2 hours then 1L 4 hourly.
- Refer urgently.

Glucose > 11mmol/L without symptoms

Check urine for ketones.

- **Ketones in urine** → Give sodium chloride 0.9% 1L IV over 2 hours then 1L 4 hourly. Refer urgently.
- **No ketones in urine** → Give routine diabetes care below.

Assess the patient with diabetes

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Ask about chest pain ⮌26 and leg pain ⮌47.
Family planning	Every visit	Assess patient's contraception needs ⮌108. If pregnant or planning pregnancy, refer for specialist care.
CVD risk	At diagnosis, then yearly	Assess CVD risk ⮌83. Start simvastatin if CVD risk > 20% ⮌87.
BP	Every visit	Check BP ⮌88. If known hypertension ⮌89.
Eyes for retinopathy	At diagnosis, yearly and if visual problems	If visual problems, cataracts or new retinopathy, refer.
Feet	• Visual: every visit • Comprehensive: at diagnosis then yearly, more often if problems	• Visual assessment: look for ulcers, calluses, redness, warmth, deformity. • Comprehensive assessment: visual assessment as above, foot pulses, reflexes, sensation in toes and feet • If ulcers ⮌57. If severe infection or other abnormalities, refer to specialist.
Random glucose	Only if symptoms or adjusting glucose-lowering medication	If random glucose < 4mmol/L or > 11mmol/L give urgent attention above.
HbA_{1c} (aim for < 7%)	• 6 monthly if HbA_{1c} < 7% • 3 monthly if HbA_{1c} ≥ 7% or after treatment change	• If HbA_{1c} < 7%: continue same treatment for diabetes ⮌87 and repeat HbA_{1c} in 6 months. • If HbA_{1c} 7-10% and adherent: step up treatment ⮌87 and repeat HbA_{1c} after 3 months. • If HbA_{1c} 7-10% and not adherent: educate on importance of adherence and repeat HbA_{1c} after 3 months. • If HbA_{1c} > 10%: discuss with doctor.
Urine albumin creatinine ratio (ACR)	At diagnosis, then yearly if not on enalapril	If ACR raised, exclude urine infection, repeat ACR twice to confirm diabetic kidney disease and start enalapril ⮌87.
Creatinine and eGFR	At diagnosis, then yearly	If eGFR < 60mL/min/1.73m³, refer to doctor.
Random total cholesterol	• At diagnosis then yearly • 3 months after starting simvastatin	• If cholesterol > 8mmol/L, start simvastatin ⮌87 and refer for further assessment. • If repeat cholesterol > 5mmol/L increase simvastatin ⮌87. If already on 40mg daily discuss with specialist.

Advise the patient with diabetes

- Help the patient to manage his/her CVD risk ⮌84.
- Explain importance of adherence and to eat regular meals. If newly diagnosed, poor adherence or attendance, refer for community care worker support.
- Ensure patient can recognise and manage hypoglycaemia (shaking, sweating, palpitations, weakness, hunger):
  - Drink sugar water or eat a sweet/sandwich. Always carry something sweet. If fits, confusion/coma, rub sugar inside mouth.
  - Identify and manage the cause: increased exercise, missed meals, inappropriate dosing of glucose-lowering medications, alcohol, illnesses like infections.
- Encourage the patient to eat a healthy, balanced, low-fat diet including lots of vegetables. Eat fewer sweet foods.
- Educate the patient to care for his/her feet to prevent ulcers and amputation: avoid walking barefoot or without socks, wash feet in lukewarm water and dry well especially between the toes, avoid cutting calluses or corns, use care when cutting nails. Look at feet every day and see health care worker if any problem or injury.

Treat the patient with diabetes

- Give simvastatin[1] if ≥ 40 years, CVD risk > 20%, established CVD or cholesterol > 8mmol/L. Start simvastatin[1] 20mg daily. If repeat cholesterol > 5mmol/L increase to 40mg daily. If already on 40mg daily discuss with specialist.
- Start aspirin 150mg daily if patient has CVD. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- Give enalapril 5mg daily if diabetic kidney disease confirmed with urine albumin creatinine ratio (ACR), even if no hypertension. Increase gradually to 20mg daily if systolic BP remains > 100. Avoid in angioedema.
- Give glucose-lowering medication in a stepwise fashion below. Ensure patient is adherent before increasing treatment. If not adherent, refer for community care worker support. If HbA_{1c} ≥ 7% after 3 months on maximum dose then move to next step.

Step	Medication	Start dose	Maximum dose	Note
1	Metformin	500mg daily	1g 12 hourly	• Take with or after meals. • Increase by 500mg/day every week if random glucose ≥ 10mmol/L and patient is adherent. • Avoid in kidney or liver disease, or heart failure.
2	Add gliclazide	40mg daily	320mg daily	• Continue metformin. • Take with breakfast. • If random glucose ≥ 10mmol/L and patient is adherent, increase once a week by 40mg/day. • If total daily dose > 160mg then give in 2 divided doses. • Avoid in kidney or liver disease.
3	Add basal insulin	0.1 units/kg/dose subcutaneously		• Take at bedtime. • Continue metformin. Decrease gliclazide gradually until stopped. • Increase by 2 units every 3 days until morning fasting blood glucose is between 5.0 and 7.2mmol/L. • Educate patient on home blood glucose monitoring and issue meter. • Once stable, patient to check fasting glucose on waking once a week. • Educate about insulin: - Explain injection technique and recommended sites: abdomen, thighs, upper arms. - Advise patient to store insulin in fridge or a cool dark place. - Ensure patient can recognise hypoglycaemia and hyperglycaemia. - Arrange for sharps disposal at clinic. • If > 30IU needed, episodes of hypoglycaemia at night or HbA_{1c} > 7% after 3 months, discuss/refer.

Review the patient with diabetes 6 monthly once stable.

[1]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

Hypertension: diagnosis

Check blood pressure (BP)

- Seat patient with back against chair and arm supported at heart level for 5 minutes.
- Use a larger cuff if mid-upper arm circumference is > 34cm.
- Record systolic BP (SBP) and diastolic BP (DBP): SBP is the first appearance of sound, DBP is the disappearance of sound.
- Check two readings 5 minutes apart. Use the lowest reading to determine the patient's BP.
- If patient is pregnant, interpret reading →110.

Give urgent attention to the patient with BP ≥ 180/110 and one or more of:

- Visual disturbances
- Dizziness
- Weakness or numbness
- Confusion
- Headache
- Chest pain →26
- Difficulty breathing worse on lying flat or with leg swelling →90
- BP > 200/120

Management:

- Avoid antihypertensives as these can cause a severe drop in BP and a stroke. Discuss with specialist whether to give BP-lowering treatment before referral.
- Refer urgently.

Approach to the patient not needing urgent attention

BP < 140/90

Assess CVD risk ⮌83.

BP < 120/80

Recheck BP after 5 years.

BP 120/80-139/89

Patient's BP is a CVD risk factor.
- Manage CVD risk ⮌84.
- Recheck BP after 1 year.

BP ≥ 140/90

Repeat BP check on 2 more occasions.
Avoid diagnosing hypertension based on one reading alone.

BP < 140/90 on repeat checks

BP confirmed on 3 occasions ≥ 140/90

Diagnose hypertension
- Give routine hypertension care →89.
- If < 40 years, refer to exclude secondary hypertension.

Hypertension: routine care

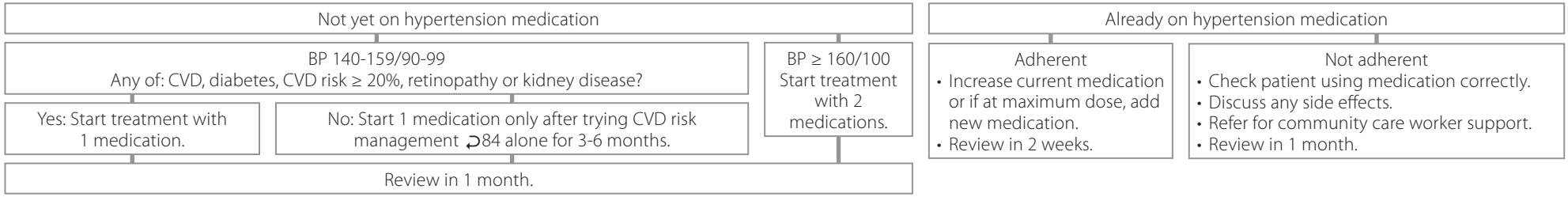
Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms on symptom pages. Ask about symptoms of heart failure ⮌90, ischaemic heart disease ⮌92 or stroke/TIA ⮌91.
BP	• Check 2 readings at every visit. • For correct method ⮌88.	• If BP < 140/90 (< 150/90 if ≥ 60 years), BP is **controlled**: continue current treatment and review 6 monthly. • If BP ≥ 140/90 (≥ 150/90 if ≥ 60 years), BP is **not controlled**: decide treatment below. If ≥ 180/110: also check if needs urgent attention ⮌88.
CVD risk	At diagnosis, then depending on risk	Assess CVD risk ⮌83. If < 10% with CVD risk factors or 10-20% reassess after 1 year, if > 20% reassess after 6 months.
Eyes for retinopathy	At diagnosis, then yearly and if visual problems	If new retinopathy, visual problems or cataracts, refer.
Glucose	At diagnosis, then yearly	Check glucose ⮌85. If known diabetes ⮌86.
eGFR	At diagnosis, then yearly	If eGFR < 60mL/min/1.73m², discuss with specialist.
Urine dipstick	At diagnosis, then yearly	If blood or protein on dipstick, refer to doctor and repeat dipstick at next visit. If glucose on dipstick, screen for diabetes ⮌85.
Random total cholesterol	• At diagnosis, then yearly • 3 months after starting simvastatin	• If cholesterol ≥ 8mmol/L start simvastatin as below and refer for further assessment. • If repeat cholesterol > 5mmol/L increase simvastatin as below. If already on 40mg daily discuss with specialist.
ECG	At diagnosis, then yearly	If abnormal, discuss with doctor.

Advise the patient with hypertension

- Help patient to manage his/her CVD risk ⮌84. Emphasise salt restriction ≤ 1 teaspoon/day, weight reduction and smoking cessation. If patient smokes tobacco ⮌100.
- Advise patient to avoid NSAIDs (e.g. ibuprofen) and combined oral contraceptive ⮌108. If pregnant or planning pregnancy, discuss with specialist.
- Explain importance of adherence and that patient will need lifelong hypertension care to prevent stroke, heart disease and kidney disease. If newly diagnosed, refer for community care worker support.

Treat the patient with hypertension

- Give simvastatin[1] if CVD, cholesterol ≥ 8mmol/L, diabetes in patient ≥ 40 years or CVD risk > 20%. Start 20mg daily. If repeat cholesterol > 5mmol/L increase to 40mg daily.
- Give aspirin 150mg daily if patient has CVD. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
- If BP is not controlled, decide treatment for hypertension using algorithm and table below:



Medication	Decide which medication to use	Start dose	Maximum dose	Side effects
Hydrochlorothiazide	First-line therapy. Avoid in gout, severe liver/kidney disease. Discuss if impaired glucose tolerance, diabetes or raised cholesterol.	12.5mg daily in morning	50mg daily or in 2 divided doses	Impaired glucose tolerance, gout attack, gastrointestinal disturbances
Enalapril	Use first if diabetes with proteinuria or kidney disease. Avoid if previous angioedema. Add to hydrochlorothiazide if patient needs > 1 medication.	5mg daily or in 2 divided doses	40mg daily in 2 divided doses	Cough (common, discuss with doctor), dizziness, angioedema (swelling tongue, lips, face, difficulty breathing: stop enalapril immediately ⮌22).
Amlodipine	Use if peripheral vascular disease. Discuss if patient has heart failure.	2.5mg daily	10mg daily	Dizziness, flushing, headache, fatigue
Metoprolol (immediate release)	Use if ischaemic heart disease. Avoid in uncontrolled heart failure, asthma, COPD.	50mg daily	200mg daily	Tight chest, fatigue, slow pulse, headache, cold hands/feet, impotence

[1]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

Heart failure: routine care

The patient with heart failure has leg swelling and difficulty breathing which worsens on lying down/with effort. **A doctor must confirm the diagnosis and refer for specialist assessment.**

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

- Chest pain →26
- Rapid worsening of symptoms
- Respiratory rate > 30 at rest
- BP < 90/60
- New wheeze

Management:

- Sit patient up and if oxygen saturation < 90% or oxygen saturation machine not available, give face mask oxygen.
- If systolic BP > 90: give furosemide 40mg slowly IV. If no response after 30 minutes, give 80mg IV; if still no better after 20 minutes, give a further 40mg IV. If IV furosemide unavailable, give orally.
- If systolic BP > 90: give sublingual isosorbide dinitrate 5mg even if there is no chest pain. Repeat 4 hourly.
- Refer urgently

Assess the patient with heart failure

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. If cough or difficulty breathing ⮌27. Refer same day if temperature ≥ 38°C, fever/chills or fainting/blackouts.
Family planning	Every visit	Discuss contraception needs ⮌108. 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 ⮌101.
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 ⮌97.
Weight	Every visit	Assess changes in fluid balance by comparing with weight when patient least symptomatic.
BP and pulse	Every visit	Check BP ⮌88. If known hypertension ⮌89. If new irregular pulse, refer same day.
eGFR and potassium	At diagnosis, 6 monthly	Also check 1-2 weeks after starting/increasing dose of spironolactone/enalapril. If abnormal, discuss with specialist. If potassium > 5mmol/L, stop spironolactone.
Other blood tests	At diagnosis	Check Hb, glucose (also yearly ⮌85 to interpret results), TSH. If abnormal, discuss with specialist. Test for HIV ⮌73.

Advise the patient with heart failure

- Advise patient to adhere to treatment even if asymptomatic.
- Help the patient to manage his/her CVD risk ⮌84. Emphasize salt restriction to < 1 teaspoon/day and advise regular exercise within limits of symptoms.
- Advise patient to restrict fluid intake to 1.5L/day (6 cups) and if possible to monitor weight daily. If s/he gains ≥ 2kg in 2 days, advise to return to clinic.

Treat the patient with heart failure

Aim to have patient on steps 1, 2 and 3. Add step 4 if patient has ongoing symptoms on steps 1-3. If uncontrolled on steps 1-4, refer to specialist.

Step	Medication	Dose	Note
1	Give furosemide	Start: 20-40mg daily. Use lowest dose to prevent leg swelling.	Use if moderate-severe heart failure or eGFR < 60mL/min/1.73m². Expect response within 2-3 days.
	or hydrochlorothiazide	25-50 mg daily	Use if mild heart failure and eGFR ≥ 60mL/min/1.73m². Avoid in gout, liver disease.
2	Add enalapril	Start 2.5 mg 12 hourly. Maximum: 20mg 12 hourly.	• Increase gradually. Continue maximum tolerated dose. • Side effects: cough (common, discuss with doctor), dizziness, angioedema (stop enalapril immediately).
3	Add carvedilol	Start 3.125mg 12 hourly. Maximum: 25mg 12 hourly.	• Start once on enalapril and no oedema. Double dose 2 weekly. Continue maximum tolerated dose. • Avoid in asthma/COPD, peripheral vascular disease or if pulse < 60.
4	Add spironolactone	Start 25mg daily. Maximum: 50mg daily	Avoid if eGFR < 60mL/min/1.73m² or potassium > 5mmol/L. 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: diagnosis and routine care

Sudden onset of one or more of the following suggests a stroke or a transient ischaemic attack (TIA):

- Weakness or numbness of the face, arm or leg, especially on one side of the body
- Blurred or decreased vision in one/both eyes or double vision
- Difficulty speaking or understanding
- Difficulty walking, dizziness, loss of balance or co-ordination

A doctor must confirm the diagnosis of stroke.

Give urgent attention to the patient with a stroke/TIA:

- If oxygen saturation < 95% or oxygen saturation machine not available, give face mask oxygen.
- If glucose < 4mmol/L or unable to measure, give 25mL glucose 50% IV over 1-3 minutes. Repeat if glucose still < 4mmol/L after 15 minutes.
- Keep patient nil by mouth until swallowing is formally assessed.
- Give sodium chloride 0.9% 1L IV 4-6 hourly. If glucose ≥ 4mmol/L, avoid fluids containing glucose/dextrose as raised blood glucose may worsen a stroke.
- If BP ≥ 220/120, discuss with specialist about need for pre-referral treatment. If raised BP < 220/120, avoid treating as this may worsen stroke.
- Refer the patient:
  - Refer *urgently* for thrombolysis (to specialist stroke unit if available) if patient can reach hospital within 4 and a half hours of onset of symptoms.
  - Refer same day and give single dose aspirin 300mg orally (avoid if sudden onset severe headache) if patient cannot reach hospital within 4 and a half hours of onset of symptoms.

Assess the patient with stroke/TIA

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. • Ask about symptoms of another stroke/TIA. Also ask about chest pain ⮌92 or leg pain ⮌94.
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 ⮌97.
Rehabilitation needs	Every visit	Refer to physiotherapy for mobility, occupational therapy for self care, speech therapy for swallowing, coughing after eating, speaking or drooling.
BP	Every visit	• Check BP ⮌88. If new hypertension, avoid starting treatment until > 48 hours after a stroke. • If known hypertension ⮌89.
Glucose	At diagnosis, then yearly	Check glucose ⮌85. If known diabetes ⮌86.
Random total cholesterol	At diagnosis, then yearly	• If total cholesterol > 8mmol/L, refer to specialist. • Start simvastatin regardless of cholesterol level. If repeat cholesterol > 5mmol/L on treatment, discuss with specialist.
HIV	At diagnosis or if status unknown	Test for HIV ⮌73.

Advise the patient with stroke/TIA

- Advise the patient to seek medical attention immediately should symptoms recur. Quick treatment of a minor stroke/TIA can reduce the risk of major stroke.
- Help patient to manage his/her CVD risk ⮌84.
- If patient is < 55 years (man) or < 65 years (woman), advise the first degree relatives to have CVD risk assessment ⮌83.
- Refer patient to support group/helpline ⮌123.
- Avoid combined oral contraceptive. Advise other method such as IUD, injectable, progestogen-only pill or subdermal implant ⮌108.

Treat the patient with an ischaemic stroke/TIA

- Give aspirin 150mg daily for life. Avoid if haemorrhagic stroke, peptic ulcer, dyspepsia, kidney or liver disease. If heart valve disease or atrial fibrillation, refer for warfarin instead.
- Give simvastatin[1] 40mg daily at night for life, regardless of cholesterol level.

[1]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

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, sweating or shortness of breath

No

Chest pain different to above

Assess for other causes of chest pain →26.

Yes

Is chest pain/discomfort:
- Brought on by exercise, effort or anxiety *and*
- Relieved by rest *and*
- Lasts < 20 minutes

Yes

Stable angina likely
- A doctor must confirm the diagnosis.
- Give routine ischaemic heart disease care →93.

No

Acute coronary syndrome (**heart attack** or **unstable angina**) likely

Do ECG[2] within first 10 minutes. While doing ECG start management and, if available, discuss with doctor:
- If oxygen saturation < 90% or oxygen saturation machine not available, or respiratory rate ≥ 30, give face mask oxygen.
- Give single dose aspirin 300mg chewed.
- Establish IV access.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV. Avoid if crackles on auscultation. Repeat BP: if still < 90/60, discuss.
- If current chest pain and BP > 90/60 (if BP < 90/60, discuss):
  - Give glyceryl trinitrate sublingual 0.5mg every 5 minutes until pain relieved to a maximum of 1.5mg. Avoid if sildenafil within past 24 hours.
  - If ongoing severe pain, give morphine: dilute 10mg with 9mL glucose 5%. Give 2mL slow IV. Repeat every 5-15 minutes (maximum 10mg) until pain relieved. Monitor BP.
- Doctor to review ECG and assess for streptokinase:
  - Give streptokinase only if ECG shows ST elevation[3] or new left bundle branch block *and* if < 12 hours since onset of chest pain.
  - Avoid if gastrointestinal bleed in last 3 months, peptic ulcer, stroke in past 6 months or previous haemorrhagic stroke, active bleeding or known bleeding disorder, streptokinase given in past year or known allergy to it, or recent major trauma, surgery or head injury.
  - Give streptokinase 1.5 million IU diluted in 100mL glucose 5% or sodium chloride 0.9% IV over 60 minutes.
  - Monitor BP: if < 90/60, slow rate of infusion (avoid stopping it) and give fluids as above.
- Refer urgently.

Yes

Is chest pain/discomfort any of:
- Occurs at rest or with minimal effort *or*
- Not relieved by rest or sublingual nitrates *or*
- Lasts ≥ 20 minutes *or*
- Worse/lasts longer than usual *or*
- Occurs more often than usual

Yes

→ Acute coronary syndrome (heart attack or unstable angina) likely

No

Patient has **stable angina**. Give routine ischaemic heart disease care →93.

[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.

Ischaemic heart disease (IHD): routine care

Assess the patient with ischaemic heart disease

Assess	When to assess	Note
Symptoms	Every visit	• Do initial assessment if not already done ⮌92. • Ask about leg pain ⮌47 and symptoms of stroke/TIA ⮌91.
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 ⮌97.
BP	Every visit	Check BP ⮌88. If known hypertension ⮌89.
Glucose	At diagnosis, then yearly	Check glucose ⮌85. If known diabetes ⮌86.
Random total cholesterol	At diagnosis, then yearly	• If total cholesterol > 8mmol/L, refer to specialist. • Start simvastatin regardless of cholesterol level. If repeat cholesterol > 5mmol/L on treatment, discuss with specialist.

Advise the patient with ischaemic heart disease

- Help the patient to manage his/her CVD risk ⮌84.
- Patient can resume normal daily and sexual activity 6 weeks after heart attack if symptom free.
- Emphasize the importance of lifelong adherence to medication. Ensure patient knows how to use isosorbide dinitrate as below.
- Advise patient to avoid NSAIDs (e.g. ibuprofen), as they may precipitate chest pain or a heart attack.
- If patient is < 55 years (man) or < 65 years (woman), advise first degree relatives to have CVD risk assessment ⮌83.

Treat the patient with ischaemic heart disease

- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver desease.
- Give simvastatin[1] 40mg daily at night for life, regardless of cholesterol level.
- Give metoprolol (immediate release) 50mg 12 hourly, even if no chest pain/discomfort. Avoid in asthma/COPD uncontrolled heart failure, pulse < 50, systolic BP < 100.
- If patient also has hypertension, diabetes or chronic kidney disease, give enalapril 5mg daily and increase slowly to 20mg daily. Avoid in angioedema.
- If patient has angina, treat using stepwise approach as in table below: if angina persists 4 weeks after starting/changing medication, increase dose to maximum, then add next step. Ensure patient is adherent before increasing treatment.

Step	Medication	Dose	Maximum dose	Note
1	Glyceryl trinitrate *and* Metoprolol (immediate release)	0.5mg sublingual with chest pain and before exertion 50mg 12 hourly	3 doses of 0.5mg with each episode of chest pain 200mg 12 hourly	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 attention urgently. Avoid metoprolol in asthma/COPD, uncontrolled heart failure, pulse < 50, systolic BP < 100 or side effects (headache, cold hands/feet, impotence, tight chest, fatigue) are intolerable. Use amlodipine instead.
2	Amlodipine	5mg in the morning	10mg daily	Avoid in heart failure, discuss with specialist.

If metoprolol and amlodipine contra-indicated/not tolerated or chest pain/discomfort persists on full treatment, refer to specialist.

[1]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

Peripheral vascular disease (PVD): diagnosis and routine care

- Peripheral vascular disease is characterised by claudication: muscle pain in legs or buttocks on exercise that is relieved by rest. Leg pulses are reduced and skin may be cool, shiny and hairless.
- Refer the patient newly diagnosed with peripheral vascular disease for specialist assessment.

Give urgent attention to the patient with peripheral vascular disease and one or more of:

- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: **acute limb ischaemia** likely
- Leg pain occurring at rest, ulcer or gangrene on leg: **critical limb ischaemia** likely
- Pulsatile mass in abdomen with abdominal/back pain or BP < 90/60: **ruptured abdominal aortic aneurysm** likely

Management:

- **Ruptured abdominal aortic aneurysm** likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen the rupture).
- Refer urgently.

Assess the patient with peripheral vascular disease

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. Ask about chest pain ⮌92 and symptoms of stroke/TIA ⮌91. • Document the walking distance before onset of claudication.
BP	Every visit	Check BP ⮌88. If known hypertension ⮌89.
Legs and feet	Every visit	Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education ⮌45.
Abdomen	Every visit	If a pulsatile mass felt, refer for assessment for possible abdominal aortic aneurysm.
Glucose	At diagnosis, then yearly	Check glucose ⮌85. If known diabetes ⮌86.
Random total cholesterol	At diagnosis, then yearly	• If total cholesterol > 8mmol/L, refer to specialist. • Start simvastatin regardless of cholesterol level. If repeat cholesterol > 5mmol/L on treatment, discuss with specialist.

Advise the patient with peripheral vascular disease

- Help the patient to manage his/her CVD risk ⮌84.
- 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 tobacco ⮌100. Support patient to change ⮌122.
- Advise patient that physical activity is an important part of treatment. It increases the blood supply to the legs and may significantly improve symptoms.
- If patient is < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment ⮌83.

Treat the patient with peripheral vascular disease

- Advise brisk exercise for 30 minutes at least 3 times a week (preferably daily). Advise patient to pause and rest whenever claudication develops.
- Give simvastatin[1] 40mg daily at night for life, regardless of cholesterol level. Avoid in pregnancy, liver disease.
- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.

- Refer to specialist at diagnosis (start medications and exercise while waiting for appointment) and if pain interferes with activities of daily living after 3 months of medication and exercise.
- **Review 3 monthly until stable (coping with activities of daily living and able to work), then 6 monthly.**

[1]Avoid simvastatin if patient on lopinavir/ritonavir or atazanavir/ritonavir, discuss with specialist.

Epilepsy: routine care

- If the patient is fitting →13 to control the fit. If the patient is not known with epilepsy and has had a fit →13 to assess and manage further.
- **Epilepsy is a doctor diagnosis** in the patient who has had at least 2 definite fits with no identifiable cause. If new fits after meningitis, stroke or head trauma; or focal seizures, discuss with specialist.

Assess the patient with epilepsy

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
Fit frequency	Every visit	Review fit diary. Assess if fits prevent patient from leading a normal lifestyle.
Adherence	Every visit, if fits occur	Assess attendance and pill counts. If still fitting on treatment consider doing drug level.
Side effects	Every visit	Side effects (see below) may explain poor adherence. Weigh up side effects with fit control or consider changing medication.
Other medication	At diagnosis, if fits occur	Check if patient is on other medication like TB treatment, ART or contraceptive. See below for interactions and discuss with doctor if needed.
Alcohol/drug use	• At diagnosis • If fits occur or adherence poor	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 ⮌101.
Family planning	Every visit	• If patient is pregnant or planning pregnancy, refer to specialist. • Assess contraception needs ⮌108. Avoid oral contraceptive and subdermal implant if on phenytion[2].
Drug level	Only if needed	Check drug level if unsure about adherence, patient uncontrolled on maximum dose of anti-convulsant medication or signs of toxicity (see below).

Advise the patient with epilepsy

- Educate about epilepsy and need for adherence to treatment. Advise patient to keep a fit diary to record frequency of fits.
- Refer to support group and help patient to get a medical bracelet ⮌123.
- Advise avoiding lack of sleep, alcohol/drug use, dehydration and flashing lights. These may trigger a fit.
- Advise avoiding dangers like heights, fires, swimming alone, cycling on busy roads, operating machinery. Avoid driving until fit free for 1 year.
- Advise patient there are many medications that interfere with anti-convulsant treatment (see below) and to discuss with doctor when starting any new medication.
- Advise patient to use reliable contraception and to seek advice if planning a pregnancy.

Treat the patient with epilepsy

- A single medication is best. Giving 2 anti-convulsant medications together is a specialist decision.
- If still fitting on treatment, increase dose as below if patient is adherent, there is no alcohol/drug use and no interactions with other medications.
- If still fitting after 1 month on maximum dose or side effects intolerable, start new medication and increase as below until fit free. Then taper off old medication over 1 month. If unsure, discuss.

Medication	Dose	Note
Valproic acid	Start 600mg daily in 2 divided doses. Increase daily dose by 200mg every 3 days to maintenance dose of 1-2 g daily in divided doses. Maximum dose: 2.5g daily.	Avoid if liver problem, pregnant or a woman of childbearing age unless on reliable contraception. Use as first choice in patient on ART. Side effects: drowsiness, dizziness, weight gain, temporary hair loss. Drug interactions: zidovudine, aspirin.
Phenytoin	Start 150mg daily. If needed, increase gradually every week to maintenance dose of 300mg daily or in divided doses. Maximum dose: 600mg daily.	Avoid in pregnancy. Side effects: coarse facial features, facial hair (avoid in women if possible), drowsiness, large gums. Toxicity: balance problem, double vision, slurred speech. Drug interactions: TB treatment, ART, furosemide, fluoxetine, fluconazole, theophylline, oral and subdermal contraceptive.

- If fit free review 3 monthly. Doctor to review monthly the patient who is uncontrolled until improves. If still uncontrolled after trying 2 medications for 1 month each, refer.
- Consider stopping treatment if no fits for 2 years. Reduce dose gradually over 2 months.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]Advise patient to use condoms consistently or offer switch to IUD or injectable contraceptive.

Admit the mentally ill patient

Assess the mentally ill patient first on appropriate symptom or chronic condition pages.

Approach to the mentally ill patient in need of hospital admission:

- Before sedating the patient (if needed) fully inform patient in his/her own language about reasons for admission and treatment.
- Assess if the patient can give informed consent: the patient understands that s/he is ill, is needing treatment and can communicate his/her choice to receive treatment:

Yes

Does patient agree to admission?

Yes

Admit the patient voluntarily

No

Does patient meet *all* of the following?

- Severe mental illness or suicidal *and*
- Needs treatment in a hospital *and*
- Danger of harm to self, others, own reputation, financial interest or property

No

Manage as an outpatient.

Yes

- Escort must make an application for admission of patient.
- Two mental health practitioners must independently assess patient for admission.

The 2 assessments recommend admission.

The 2 assessments disagree.

Third mental health practitioner must independently assess patient for admission.

Third assessment recommends admission.

Third assessment does not recommend admission.

Admit patient.

Manage as outpatient.

No

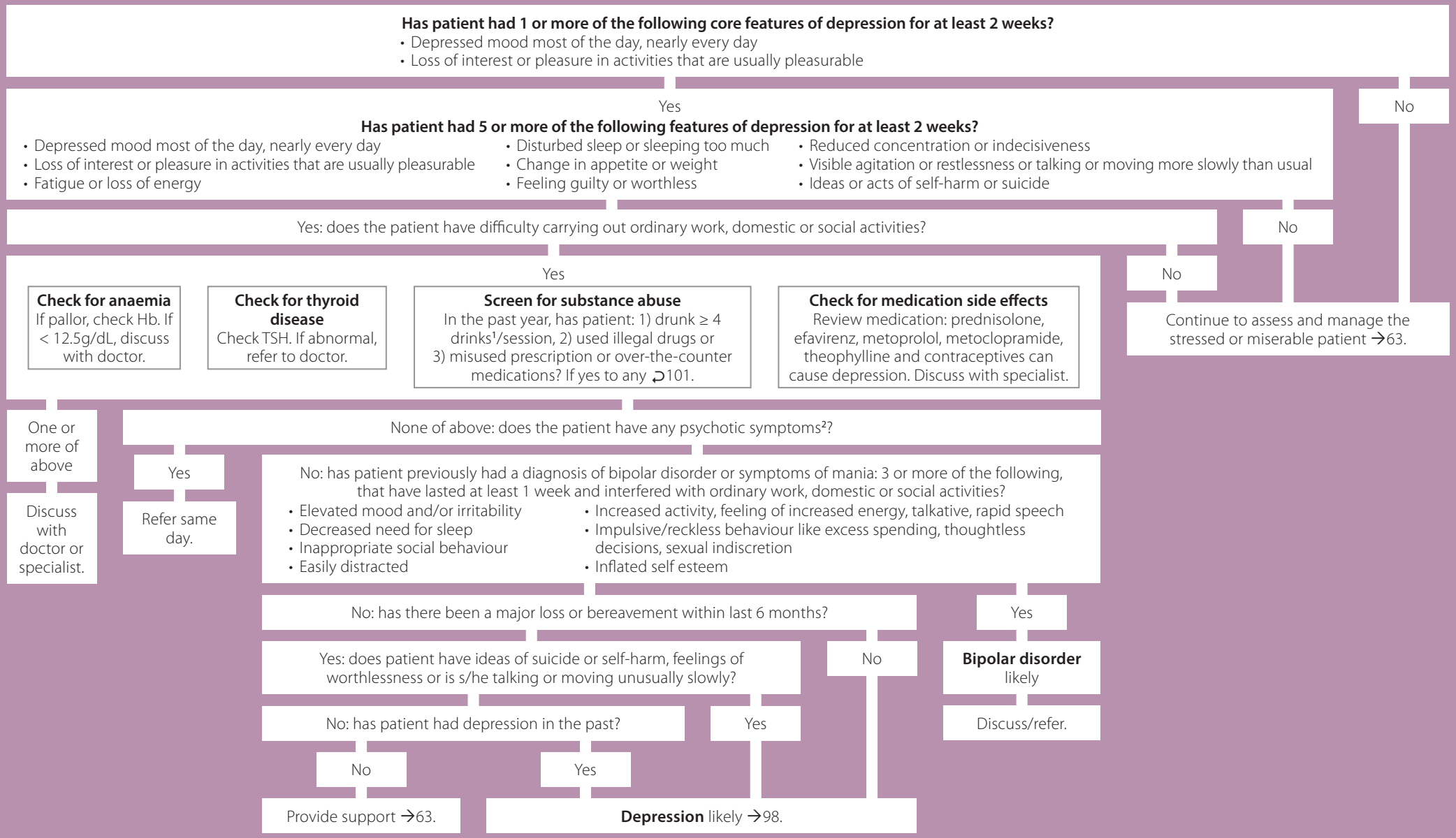
Does patient oppose admission?

Yes

No

- Record everything clearly in patient notes and referral letter.
- A staff member must accompany the patient to hospital.
- Request police assistance if the patient is too dangerous to be transferred in a staffed vehicle or is likely to abscond.

Depression: diagnosis



[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 ⮌60.
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) or is repeated sudden fear with physical symptoms and no obvious cause (panic), discuss/refer. • Has patient ever had a bad experience that is causing nightmares, flashbacks, avoidance of people/situations, jumpiness or a feeling of detachment? If yes ⮌64.
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** ⮌104.
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 ⮌101.
Side effects	Every visit	Ask about side effects of antidepressant medication ⮌99.
Stressors	Every visit	Help identify the domestic, social and work factors contributing to depression or anxiety. If patient is being abused ⮌64. If recently bereaved ⮌63.
Family planning	Every visit	• Discuss patient's contraception needs ⮌108. • If 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.

Advise the patient with depression and/or generalised anxiety

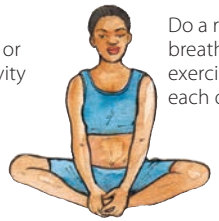
- Explain that depression is a very common illness and can happen to anybody. It does not mean that a person is lazy or weak. A person with depression cannot control his/her symptoms.
- Explain that thoughts of self-harm and suicide are common. Advise patient that if s/he has these thoughts, s/he should not act, but tell a trusted person and return for help immediately.
- Educate the patient that anti-depressants can take 4-6 weeks to start working. Explain that there may be some side effects, but these usually resolve in the first few days.
- Emphasise the importance of adherence even if feeling well. Advise patient that s/he will likely be on treatment for at least 9 months and it is not addictive. Advise not to stop treatment abruptly.
- Help the patient to choose strategies to get help and cope:

Get enough sleep
If patient has difficulty sleeping ⮌65.

Encourage patient to take time to relax:

Spend time with supportive friends or family.

Find a creative or fun activity to do.



Do a relaxing breathing exercise each day.

Get active
Regular exercise may help.

Access support
Link patient with helpline or support group ⮌123.

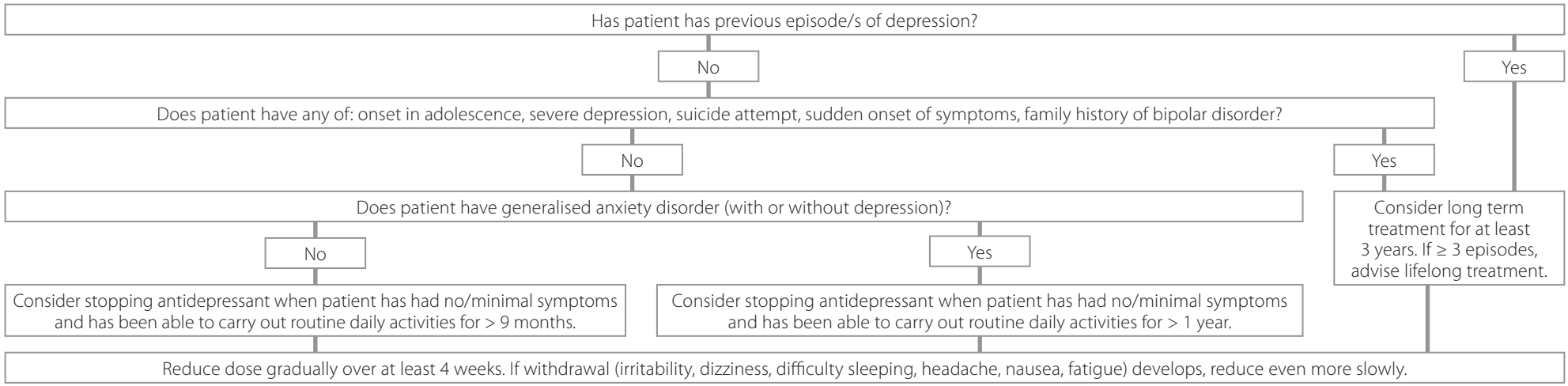
[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Treat the patient with depression and/or generalised anxiety

- Refer patient for counselling, ideally psychological inventions like cognitive behavioural therapy or interpersonal therapy if available, and to social worker and/or helpline/support group ⮌123.
- Discuss benefits of anti-depressants for depression and generalised anxiety disorder. Respect the patient's decision if s/he declines antidepressants.
- If generalised anxiety disorder or features of anxiety[1] when starting antidepressant, consider diazepam 2-5mg daily as needed, for up to 10 days. Avoid if patient is known to use substances.
- Continue antidepressant for at least 9 months. Increase dose as needed according to response:

Medication	Dose	Note	Side effects
Fluoxetine	• Start 20mg alternate days for 1 week then increase to 20mg daily in the morning. • If partial or no response after 4 weeks, increase by 20mg every 2 weeks, up to 60mg/day.	Discuss with specialist if patient has epilepsy, liver or kidney disease. Monitor glucose more often in diabetes.	Changes in appetite and weight, headache, restlessness, difficulty sleeping, nausea, diarrhoea, sexual problems
Amitriptyline	Start 25mg at night. Increase by 25mg every 5 days, up to 150mg/day (or 100mg/day if > 65 years).	Use if fluoxetine contraindicated. Avoid if suicidal thoughts (can be fatal in overdose), heart disease, urinary retention, glaucoma, epilepsy.	Dry mouth, constipation, difficulty urinating, blurred vision, sedation

Plan when to stop antidepressant



Review 2 weekly, even if not on antidepressants, until symptoms get better, then monthly. If no better after 8 weeks, refer.

[1]Patient has felt nervous, anxious or panicky or been unable to stop worrying or thinking too much over the past month.

Tobacco smoking

Assess the patient who smokes tobacco

Assess	When to assess	Note
Symptoms	Every visit	• Ask about symptoms that might suggest cancer: cough/difficulty breathing ⮌27, urinary symptoms ⮌42 or weight loss ⮌14. • Ask about chest pain ⮌26, leg pain ⮌47, new sudden onset of any of: asymmetric weakness of face, arm or leg; numbness, difficulty speaking or visual disturbance ⮌21. • Manage other symptoms as on symptom pages.
Use	Every visit	• Ask about number of cigarettes/day, activities associated with smoking and previous attempts at stopping. • If recently stopped, ask about challenges and give advice below.
Stressors	Every visit	Help identify the domestic, social and work factors contributing to smoking tobacco. Assess and manage stress ⮌63.
COPD	At diagnosis	If difficulty breathing when walking fast/up a hill, consider COPD ⮌79. If known COPD ⮌82
CVD risk	At diagnosis	Assess and manage CVD risk ⮌83

Advise the patient who smokes tobacco

- Ask if patient is willing to discuss tobacco smoking. For tips on how to communicate effectively ⮌121.
- Advise patient that stopping tobacco smoking is the most important action s/he can take to improve health, quality of life and increase life expectancy.
- Educate patient that nicotine is a very addictive substance and stopping can be difficult, resulting in withdrawal symptoms (see below). Nicotine replacement may help reduce these symptoms.
- Advise that most smokers make several attempts to stop before they are successful.

If patient is not ready to stop in the next month:

- Discuss risks to patient (worsening asthma, infertility, heart attack, stroke, COPD, cancer) to spouse (lung cancer, heart disease) and to children (low birth weight, asthma, respiratory infections).
- Help the patient identify benefits of stopping tobacco smoking like saving money, improved health, taste, sense of smell and appearance and being a positive role model for children.
- Help the patient identify barriers to stopping tobacco smoking and possible solutions.
- Ask if patient is ready to stop smoking tobacco in the next month. If not ready to stop, encourage patient to return, use helpline ⮌123 or support group when ready to stop.

If patient is ready to stop in the next month or recently stopped:

- Help the patient plan: set date to stop within 2 weeks, seek support from family and friends, support group or helpline ⮌123, avoid/manage situations associated with smoking and remove cigarettes, matches, and ashtrays.
- Help manage cravings: set a time limit before giving in, advise to delay as long as possible, take a deep breath and blow out slowly (repeat 10 times).
- Educate about nicotine withdrawal symptoms: increased appetite, mood changes, difficulty sleeping/concentrating, irritability, anxiety, restlessness. These should improve after 2 weeks.

Treat the patient who smokes tobacco and is ready to stop

- Give the above advice to stop smoking. Also give medication. Offer referral for counselling especially if previous depression or alcohol abuse.
- Help patient to choose medication based on preferences, side-effects and previous use. Avoid if pregnant or breastfeeding but stress the importance of stopping for baby's health.

Medication	Dose	Note
Nicotine gum	Start 4mg piece (if > 20 cigarettes/day) or 2mg piece (if ≤ 20 cigarettes/day) 2 hourly or as needed then gradually decrease after 6 weeks. Maximum 24 pieces/day. Use for 12 weeks.	• Use whenever urge to smoke tobacco. Chew slowly until nicotine taste appears, then keep inside cheek until taste disappears then chew again. Repeat for 30 minutes then discard (not swallow). Avoid food/drink other than water for 15 minutes before and during use. • Avoid if uncontrolled heart disease, recent heart attack. Side effects: mouth irritation, jaw soreness, heartburn, nausea, hiccups.
Nicotine patch	Start 21mg daily (if >10 cigarettes/day) or 14mg daily (if ≤ 10 cigarettes/day) for 6 weeks. Decrease by 7 mg every 2 weeks. Use for 8-10 weeks.	• Apply new patch same time daily. Apply immediately after removing adhesive strip to clean, dry, hairless, intact skin. Rotate patch site (trunk, upper arm). • Avoid if uncontrolled heart disease, recent heart attack, skin disease. Side effects: skin irritation, difficulty sleeping, vivid dreams.

Review patient weekly for 1 month, then monthly for 3 months, then after 6 months. If attempt to stop is unsuccessful, doctor to consider extending treatment duration.
Stop medication after 4 weeks if patient continues to smoke tobacco.

Alcohol/drug use

Assess the patient who uses any drugs or drinks alcohol in way that that puts him/her at risk of harm/dependence. This may be binge drinking or daily drinking. If patient smokes tobacco ⮌100.

Assess the patient with unhealthy alcohol use or *any* drug use

Assess	Note
Symptoms	• If recently reduced/stopped use and is restless, agitated, difficulty sleeping, confused, anxious, hallucinating, sweating, tremors, headache or nausea/vomiting, treat for likely **withdrawal** ⮌62. • If aggressive/violent or disruptive behaviour ⮌61. • If patient has suicidal thoughts or plans ⮌60.
Unhealthy/ harmful use	• If drinks > 14 drinks[1]/week or ≥ 4 drinks[1]/session, this increases the risk of harm and dependence. • Use is **harmful** if it has caused physical (like injuries, liver disease, stomach ulcer), mental (like depression), social (relationship, legal or financial) harm or risky sexual 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 the domestic, social and work factors contributing to alcohol/drug use. Ask about reasons for his/her substance use. If patient is being abused ⮌64.
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 ⮌97.

Advise the patient with unhealthy alcohol use or any drug use

- Assess and manage stress ⮌63.
- 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 ⮌123. 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 ⮌122.

Unhealthy alcohol use without dependence
- If pregnant, harmful drinking, previous dependence or contraindication (like liver damage, mental illness), advise to stop alcohol completely. Avoid drinking places and keeping alcohol at home.
- If none of above and patient chooses to continue alcohol, advise low-risk use: ≤ 2 drinks[1]/day and avoid alcohol at least 2 days/week.

Any drug use without dependence
- Advise to stop using illegal or misusing prescription drugs completely.
- If patient chooses to continue, advise to reduce harm: avoid injections or use sterile injection technique, test regularly for HIV and hepatitis.

Alcohol/drug dependence
- Advise that alcohol/drugs need to be stopped slowly. If stopped suddenly, withdrawal effects can be harmful.
- Detoxification (below) will safely wean the body from alcohol or drug/s.

Doctor to treat the patient with alcohol/drug dependence with the help of a 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 (like codeine) or > 1 drug.
- Doctor can do outpatient detoxification if none of the above. Ensure patient has a close relative/friend to act as carer during programme.

Substance	**Detoxification programme -** write out programme for patient and chosen carer. Stop if patient resumes alcohol/drug use.
Alcohol (start only if no alcohol in past 8 hours)	• Give thiamine 100mg orally daily for duration of detoxification programme. • Give diazepam orally: Day 1: 10mg 6 hourly. Day 2-3: 5-10mg 8 hourly. Day 4: 5mg 12 hourly. Then taper to stop over days 5 and 6 if needed.
Cannabis/stimulant drug	If needed, treat anxiety, restlessness, irritability or difficulty sleeping with diazepam orally: Day 1: 5mg 8 hourly. Day 2: 5mg 12 hourly. Day 3: 5mg at night.
Benzodiazepines	• Avoid suddenly stopping benzodiazepines. Reduce dose very gradually, withdrawal may take months. • Replace benzodiazepine patient is taking with equivalent dose of diazepam. If unsure of equivalent dose, discuss with specialist. Decrease diazepam by 5-10mg each week until 40mg daily, then decrease by 2.5-5mg each week.

If harmful use, review in 1 month then as needed. If on detoxification programme, review daily until stable. Advise to return immediately if any problems.

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

Schizophrenia: diagnosis and routine care

- **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 ⮌61. - Varying levels of consciousness over hours/days or temperature ≥ 38°C, **delirium** likely ⮌62. - Patient has interrupted treatment: restart intramuscular treatment ⮌103 and explore reasons for poor adherence (like side effects, substance abuse). - 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 ⮌60. 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 ⮌64.
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 ⮌101.
Family planning	Every visit	Discuss patient's contraception needs ⮌108. If patient is pregnant, planning pregnancy or breastfeeding, refer to specialist.
Medication	Every visit	• Ask about treatment side effects ⮌103. • Ask about adherence. If non-adherent, restart medication at same dose, explore reasons for stopping treatment and refer for community care worker support. • Discuss with specialist if patient is on medication that might cause acute psychosis, like prednisolone, efavirenz, moxifloxacin and terizidone.
Weight (BMI)	Every visit	• BMI = weight (kg) ÷ height (m) ÷ height (m). • If gaining weight, assess and manage CVD risk ⮌83 and discuss with specialist about possible alternative schizophrenia treatment.
Glucose	• At diagnosis, then yearly • Also 4 monthly if gaining weight	Check glucose ⮌85.
Random total cholesterol	At diagnosis, then 2 yearly	• If cholesterol ≥ 8, refer. • If cholesterol < 8 but increasing, discuss with specialist about possible alternative schizophrenia treatment.
HIV	At diagnosis or if status unknown	Test for HIV ⮌73. If HIV positive, avoid efavirenz, discuss treatment with specialist.
Syphilis	At diagnosis	If positive, treat ⮌39 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 with schizophrenia 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.
- 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.
- Emphasize importance of treatment adherence and to return immediately if symptoms of psychosis return/worsen.
- Refer for community care worker support.
- Refer patient and carer to support group and cognitive behavioural therapy if available. Arrange support for the carer and refer for therapy if available.

Treat the patient with schizophrenia

- Give medication as in the table below. Use lowest effective dose. Give one medication at a time. Allow 6 weeks on typical effective dose before considering medication ineffective.
- If repeated adherence problems, consider changing from oral to long-acting intramuscular medication.
- If unsure or more than typical effective dose needed, discuss with specialist.

Medication	Starting dose	Typical effective dose	Note
Risperidone	1mg orally 12 hourly	4-6mg/day	Use as first line treatment.
Haloperidol	0.5mg orally 12 hourly	5-20mg/day	Increase dose daily to 8 hourly and by 0.5mg/dose until psychosis symptoms resolve.
Chlorpromazine	25mg orally 8 hourly	75-300 mg/day	If sedation is a problem, give up to 75mg/day as a single dose at night once symptoms controlled.
Fluphenazine decanoate	12.5mg deep IM injection every 2-4 weeks	12.5-50mg every 2-4 weeks	Discuss with specialist how to taper oral medication before starting.

Look for and manage schizophrenia treatment side effects

Urinary retention	Stop treatment and refer same day.
Blurred vision	Refer same day.
Painful muscle spasms (acute dystonic reaction)	Usually within 2 days of starting medication. Give biperiden 2mg IM. If needed, repeat after 30 minutes, up to 4 doses in 24 hours. Refer same day.

Extra-pyramidal side effects	Abnormal involuntary movements	Stop treatment and discuss/refer same day.
	Slow movements, tremor or rigidity	May occur after weeks or months on treatment, discuss/refer.
	Muscle restlessness	Stop treatment and discuss/refer same day.

Breast enlargement, nipple discharge	Discuss with specialist whether to change medication.
Amenorrhoea	Discuss with specialist whether to change medication.
Dizziness/fainting on standing	Usually when starting/increasing dose. Usually self-limiting over hours to days. Advise patient to stand up slowly.
Dry mouth/eyes	Usually self-limiting.
Constipation	Usually self-limiting. Advise high fibre diet and adequate fluid intake.

- Review the patient with schizophrenia 3 monthly once stable. Advise patient to return immediately if symptoms of psychosis.
- If restarting treatment after patient has interrupted treatment, review after 2 weeks, sooner if symptoms worsen.

Dementia: diagnosis and routine care

- **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 ⮌60. • If sudden deterioration in behaviour ⮌62. • If hallucinations (seeing or hearing things), delusions (unusual/bizarre beliefs), agitation or wandering, discuss/refer to mental health practitioner. • Manage other symptoms as on symptom pages.
Side effects	If on treatment	If abnormal movements or muscle restlessness, stop treatment and discuss/refer same day. If painful muscle spasms, manage below.
Vision/hearing problems	Every visit	Refer to optometry/audiology services for testing and proper devices.
Nutritional status	Every visit	Ask about food and fluid intake. If BMI < 18.5 arrange nutritional support. BMI = weight (kg) ÷ height (m) ÷ height (m).
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌83. • If CVD risk < 10% with CVD risk factors or 10-20%, reassess after 1 year; if > 20% reassess after 6 months.
Palliative care	Every visit	If any of: bed-bound, unable to walk and dress alone, incontinence, unable to talk meaningfully or do activities of daily living, also give palliative care ⮌118.
HIV	At diagnosis or if status unknown	• Test for HIV ⮌73. If HIV positive, give routine care ⮌74. If new HIV diagnosis with dementia, discuss with specialist. • If HIV positive, test for coordination problems: with non-dominant hand as quickly as possible (allow patient to practice twice): open and close the first 2 fingers widely. On a flat surface, clench a fist, then place palm down, then on the side of the 5th digit.
Syphilis	At diagnosis	If positive, treat ⮌39 and refer.
Thyroid function	At diagnosis	Check TSH. If abnormal, refer.

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, support group ⮌123. 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

- HIV-associated dementia often responds well to ART ⮌74.
- If psychotic symptoms, night-time disturbance, wandering or persistent aggression or anxiety, discuss with specialist about starting risperidone[1] 0.25mg orally 12 hourly or haloperidol[1] 0.5mg orally 12 hourly. If painful muscle spasms develop: give biperiden 2mg IM. If needed, repeat after 30 minutes, up to 4 doses in 24 hours and refer same day. If > 65 years, avoid benzodiazepines (lorazepam, diazepam, midazolam).

Review the patient with dementia every 6 months.

[1]Avoid if Parkinson's disease.

Chronic arthritis: diagnosis and routine care

- If patient has episodes of joint pain and swelling that completely resolve in between, consider **gout** →106.
- The patient with chronic arthritis has had continuous joint pain for at least 6 weeks. Distinguish mechanical osteoarthritis from inflammatory rheumatoid arthritis:

Osteoarthritis likely if:
- Affects joints only.
- Weight-bearing joints and possibly hands and feet
- Joints may be swollen but not warm.
- Stiffness on waking lasts less than 30 minutes.
- Pain is worse with activity and gets better with rest.

Inflammatory arthritis likely if:
- May be systemic: weight loss, fatigue, poor appetite, muscle wasting.
- Hands and feet are mainly involved.
- Joints are swollen and warm.
- Stiffness on waking lasts more than 30 minutes.
- Pain and stiffness get better with activity.

If inflammatory arthritis likely or uncertain of diagnosis, refer for specialist assessment.

Assess the patient with chronic arthritis

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
Activities of daily living	Every visit	Ask if patient can walk as well as before, can cope with buttons and use knife and fork properly.
Sleep	Every visit	If patient has difficulty sleeping ⮌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 ⮌97.
Joints	Every visit	Look for warmth, tenderness and limitation in range of movement of joints.
BMI	At diagnosis	BMI = weight (kg) ÷ height (m) ÷ height (m). BMI > 25 puts stress on weight-bearing joints. Assess CVD risk ⮌83.
CRP/Rheumatoid factor (RF)	If inflammatory arthritis likely or unsure	If CRP raised or RF positive, refer to specialist as inflammatory arthritis is more likely.
HIV	At diagnosis	Test for HIV ⮌73.

Advise the patient with chronic arthritis
- If BMI > 25 advise to reduce weight to decrease stress on weight-bearing joints like knees and feet. Help the patient to manage his/her CVD risk ⮌84.
- Encourage the patient to be as active as possible, but to rest with acute flare-ups.
- Refer patient and carer for education about chronic arthritis, to available support group or helpline ⮌123.
- Ensure the patient using disease modifying medication knows to have regular blood monitoring depending on the prescribed medications from the specialist clinic.

Treat the patient with chronic arthritis
- If rheumatoid arthritis or difficulty with activities of daily living, refer to physiotherapist or occupational therapist.
- Give paracetamol 1g 6 hourly as needed. If no response and inflammation is present in the patient with osteoarthritis, give ibuprofen[1] 400mg 6 hourly with food only as needed for up to 1 month.
- Rheumatoid arthritis must be treated early with disease modifying anti-rheumatic medication to control symptoms, preserve function, and minimise further damage.
- If specialist unavailable within 1 month and inflammatory arthritis likely, doctor to start prednisolone 7.5mg daily and ibuprofen[1] 400mg 6 hourly as needed with food.

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.

Gout: diagnosis and routine care

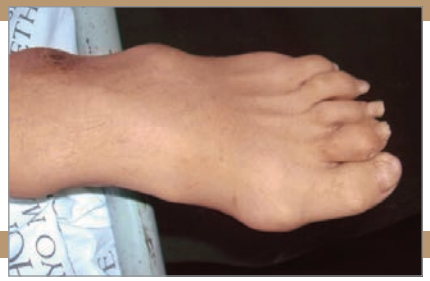
- An acute gout attack tends to affect a single joint, most commonly the big toe or knee. There is a sudden onset of severe pain, redness and swelling. It resolves completely, usually within days.
- Chronic tophaceous gout tends to asymmetrically affect > 1 joint and may not be very painful. Deposits can be seen or felt at the joints and there is incomplete recovery.

Assess the patient with gout

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages.
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 ↩101.
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, red, swollen joints (often big toe or knee). • Recognise chronic tophaceous gout: deposits appear as painless yellow hard irregular lumps around the joints (picture).
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ↩83. If < 10% with CVD risk factors or 10-20% reassess after 1 year, if > 20% reassess after 6 months. • If BMI < 18.5 or patient < 40 years, refer within 1 month to exclude possible cancer cause for gout.
eGFR	At diagnosis, then 6 monthly	If eGFR < 60mL/minute/1.73m², discuss with specialist.
Urate	• At diagnosis • On allopurinol	• Wait at least 2 weeks after an acute gout attack before checking urate level. • If on allopurinol, repeat monthly and adjust allopurinol dose until urate level < 6mg/dL, then repeat 6 monthly.

Advise the patient with gout

- Help the patient to manage his/her CVD risk ↩84.
- 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[2] 800mg 8 hourly with food until better, then 400mg 8 hourly until 1 day after symptoms completely resolved (usually 5-7 days). If pain no better/worsens, discuss with specialist.
- If peptic ulcer, asthma, hypertension, heart failure or kidney disease, give instead prednisolone 40mg daily, decrease by 10mg every 3rd day until stopped. If unsure, discuss with specialist.
- If patient is already using allopurinol, avoid stopping it during an acute attack.

Treat the patient with chronic tophaceous gout:

- Patient needs allopurinol if: > 3 attacks per year, chronic tophaceous gout, kidney stones/kidney disease caused by gout.
- Wait at least 3 weeks after an acute gout attack before starting allopurinol.
- Give allopurinol 100mg daily. Use smallest dose to keep urate < 6mg/dL: increase monthly by 100mg, maintenance usually 300mg daily; maximum 800mg in divided doses.

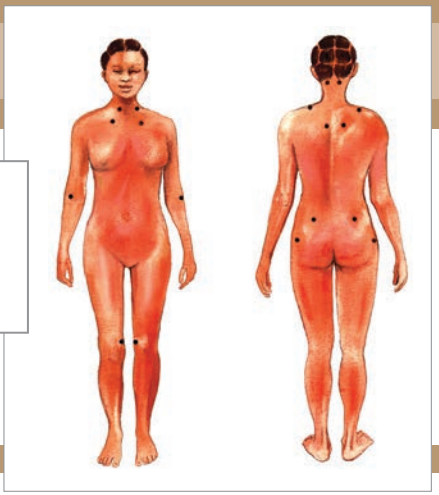
If no response to treatment or uncertain of diagnosis, refer to specialist.

[1]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. [2]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

Fibromyalgia: diagnosis and routine care

- Consider fibromyalgia if the patient has had general body pain above and below the waist, affecting both sides of the body for more than 3 months associated with at least 11 of 18 tender points (see picture) on palpation.
- Fibromyalgia diagnosis more likely if any of: woman, family history, fatigue, reduced ability to think and remember clearly, mood or sleep disturbances.
- Check for other causes of general body pain:
  - If weight loss ⮌14.
  - 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 →44.
  - Check CRP, Hb, TSH and test for HIV ⮌73.
- **A doctor must make or confirm the diagnosis of fibromyalgia.** Consider another diagnosis and refer if joint problem, HIV positive, blood results abnormal or uncertain of diagnosis.

Press tender points with the pressure that would blanch a fingernail. Compare with a control site on forehead.



Assess the patient with fibromyalgia

Assess	When to assess	Note
Symptoms	Every visit	• Manage symptoms as on symptom pages. Ask patient to identify the 3 symptoms that bother her/him most and focus on these. • Avoid dismissing all symptoms as fibromyalgia: exclude treatable and serious illness. If unsure, refer.
Sleep	Every visit	If patient has difficulty sleeping ⮌65.
Stressors	Every visit	Help identify psychosocial stressors that may exacerbate symptoms. Assess and manage stress ⮌63.
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 ⮌97.
Chronic arthritis	Every visit	If patient also has chronic arthritis, give routine care ⮌105.

Advise the patient with fibromyalgia

- The cause is unknown but may be a result of generalised hypersensitivity of the nervous system, so patient feels more pain than others, despite normal muscles and joints.
- The patient may also have irritable bowel syndrome, tension-headache, chronic fatigue syndrome, interstitial cystitis, sleep disturbances or depression.
- Explain that treatments may help (patients will have good days and bad days), fibromyalgia does not get worse over time and is not life-threatening, but there is no cure:
  - Advise the patient against overuse of painkillers (e.g. paracetamol and ibuprofen) as they are often not helpful for fibromyalgia and may have unwanted side effects.
  - Advise patient to keep as active as possible: start with 5 minutes of gentle walking every day and build up by 1 minute a day until able to walk or run for 30 minutes at least 3 times per week.
  - Encourage good sleep habits ⮌65.
  - Refer to available support group and helpline ⮌123.
  - If no better with a combination of education, exercise and medication, refer for cognitive behavioural therapy if available.

Treat the patient with fibromyalgia

- If no better with education and exercise, give amitriptyline 10mg at bedtime. Increase by 5mg every 2 weeks until improvement (maximum dose 75mg).
- If still symptomatic after 3 months, combine amitriptyline 25mg at bedtime with fluoxetine 20mg in the morning.

A supportive relationship with the same health practitioner can contain frequent visits for multiple problems. Review patient 6 monthly once stable.

Contraception

Give emergency contraception if patient had unprotected sex in past 5 days and does not want pregnancy:

- Give as soon as possible: single dose levonorgestrel 1.5mg orally.
  - If patient taking ART (or post-exposure prophylaxis), rifampicin or phenytoin, offer copper intrauterine device instead or increase single dose levonorgestrel to 3mg.
  - If patient vomits < 2 hours after taking levonorgestrel, repeat the dose or offer copper intrauterine device instead.
  - Offer to start contraceptive at same visit (if intrauterine device not chosen). Use condoms or abstain for next 7 days and check pregnancy test in 3 weeks.
- If patient chooses, insert emergency copper intrauterine device instead.
- Consider need for HIV and hepatitis B post-exposure prophylaxis ↩67.

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 ↩34. If sexual problems ↩41. • If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ↩117. If menopausal, decide how long to continue contraceptive ↩117. • Manage other symptoms as on symptom pages.
Adherence	Every visit	• If already on contraceptive, ask about concerns and satisfaction with method. • If patient has missed injections or pills, manage ↩109.
Side effects	Every visit	If already on contraceptive, ask about side effects of method ↩109.
Safe sex	Every visit	Ask about risky sexual behaviour: patient or regular partner has new or multiple partner/s, uses condoms unreliably or has risky alcohol/drug use ↩101
Other medication	Every visit	If on ART, TB or epilepsy treatment, check method is suitable ↩109. If not suitable, choose/change to IUD or injectable.
Vaginal bleeding	Every visit	If abnormal vaginal bleeding: if already on contraceptive, see method to manage ↩109. If not yet on contraceptive ↩40.
Weight (BMI)	First visit, then yearly	BMI = weight (kg) ÷ height (m) ÷ height (m). If BMI > 25 assess and manage CVD risk ↩83.
BP	First visit, every visit on pill or injectable	• Check BP ↩88. • If known hypertension or BP ≥ 140/90, avoid/change from combined oral contraceptive. If BP ≥ 160/100, also avoid/change from injectable.
Breast check	First visit, then yearly	Check for lumps in breasts ↩29 and axillae ↩16.
Pregnancy	Every visit	• Before starting contraception, exclude pregnancy[1]. If pregnant →110. • If pregnancy suspected (significant nausea/breast tenderness or if patient using IUD/combined oral contraceptive misses period), check pregnancy test. If pregnant →110.
HIV	Every visit	Test for HIV ↩73.
Cervical screen	When needed	• If HIV negative: screen 5 yearly from age 30. • If HIV positive: screen at HIV diagnosis (regardless of age) then 3 yearly. • If abnormal ↩38.

Advise the patient starting and using contraception

- Educate patient to use contraceptive reliably. Advise to discuss concerns/problems with method and find an alternative, rather than just stopping it and risking unwanted pregnancy.
- Advise patient on pill or implant to tell clinician if starting ART, TB or epilepsy treatment as these may interfere with pill or implant effectiveness.
- If on combined oral contraceptive pill and ≥ 72 hours diarrhoea/vomiting, advise to use condoms or abstain (continue for 7 days once resolved).
- Demonstrate and give male/female condoms. Recommend dual contraception: one method of contraception *plus* condoms to protect from STIs and HIV.
- Encourage patient to have 1 partner at a time and if HIV negative to test for HIV between partners. Advise partner/s to be tested for HIV.
- Educate about the availability of emergency contraception (see above) and termination of pregnancy ↩111 to prevent unwanted pregnancy.

[1]If after day 7 of cycle and patient has had unprotected sex since last period, advise patient to abstain or use condoms until next period. Start contraception when period starts. If period delayed, do pregnancy test.

Treat the patient starting and using contraception

If already using contraceptive and patient satisfied with method, check method is still suitable. If starting or changing contraceptive, help patient to choose method:

Method	Help patient to choose method	Instructions for use	Side effects
Intrauterine device (**IUD**) • Copper IUD (Cu-IUD)	• Effective for 10 years. • Fertility returns on removal. • Avoid if current STI, unexplained vaginal bleeding, abnormal cervix/uterus.	• If inserted after day 12 of cycle, exclude pregnancy first. • Can be inserted within 48 hours of delivery. • Must be inserted/removed by trained staff.	• Heavy or painful periods: reassure usually improve within 3-6 months. To assess and manage ⮌40. If excessive bleeding occurs after insertion or if tired and Hb < 12g/dL, refer. • Irritation of partner's penis during sex: cut IUD strings shorter.
Subdermal implant • Etonogestrel (one-rod: 3 years)	• Lasts for 3 years. • Fertility returns on removal. • Avoid if unexplained vaginal bleeding, previous breast cancer or active liver disease. • Use with caution[1] if on ART, rifampicin or phenytoin.	• Plastic rod just under skin of upper arm. • If inserted after day 5 of cycle, use condoms or abstain for 7 days. • Must be inserted/removed by trained staff.	• Amenorrhoea: reassure that this is common. • Abnormal bleeding: common. To assess and manage ⮌40. • Acne: change to combined oral contraceptive or non-hormonal method. • Headaches: if severe, change to non-hormonal method. • Weight gain (less with progesterone-only pill) • Moodiness: reassure that this should resolve. In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either, consider changing method and ⮌97.
Progestogen injection • Medroxyprogesterone acetate (DMPA) IM 150mg 12 weekly or • Norethisterone enanthate (NET-EN) IM 200mg 8 weekly	• 8 or 12 weekly injection • Fertility can be delayed for up to 1 year after last injection. • Avoid if unexplained vaginal bleeding, previous breast cancer, BP ≥ 160/100, ischaemic heart disease, previous stroke, active liver disease or diabetic complications.	• If started after day 5 of cycle, use condoms or abstain for 7 days. • No need to adjust dosing interval for ART, TB or epilepsy treatment.	
Progestogen-only pill (**POP**) • Levonorgestrel 30mcg	• Must be motivated to take pill reliably every day. • Fertility returns once pill is stopped. • Avoid both if previous breast cancer, active liver disease or on rifampicin or phenytoin. • Use both with caution[2] if on ART. • Also avoid COC if smoker ≥ 35 years, migraines and ≥ 35 years or visual disturbances, postpartum[3], BP ≥ 140/90, hypertension, CVD risk > 10%, current or previous deep vein thrombosis/pulmonary embolus, previous stroke, ischaemic heart disease or diabetic complications.	• Must be taken every day at the same time (no more than 3 hours late). • If started after day 5 of cycle, use condoms or abstain for 2 days.	
Combined oral contraceptive (**COC**) • Ethinylestradiol/ levonorgestrel 30/150mcg		• Must be taken every day at the same time. • If started after day 5 of cycle, use condoms or abstain for 7 days. • If ≥ 72 hours diarrhoea/vomiting, advise to use condoms or abstain (continue for 7 days once resolved).	• Abnormal bleeding: common in first 3 months. To assess and manage ⮌40. • Breast tenderness, nausea: reassure usually resolve within 3 months. • Headaches: if migraines and ≥ 35 years or visual disturbances, change to non-hormonal method. • Moodiness: reassure that this should resolve. In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either, consider changing method and ⮌97.
Sterilisation • Tubal ligation/vasectomy	• Permanent contraception • Surgical procedure	• Refer for assessment. • Written informed consent is needed.	Wound pain, infection or bleeding: refer.

Manage the patient who has missed injections or pills

Late injection
- If ≤ 2 weeks (NET-EN) or ≤ 4 weeks (DMPA) late: give the injection.
- If > 2 weeks (NET-EN) or > 4 weeks (DMPA) late:
  - Exclude pregnancy. If pregnant →110.
  - If not pregnant: give injection and use condoms or abstain for 7 days. If unprotected sex in past 5 days, also offer emergency contraception ⮌108.

Missed progestogen-only pill (> 3 hours late)
- Take pill as soon as remembered, continue pack and use condoms or abstain for 2 days.
- If unprotected sex in past 5 days, also offer emergency contraception ⮌108.

Missed combined oral contraceptive (> 24 hours late)
- 1 or 2 active pills missed: take 1 pill immediately and take next pill at usual time.
- ≥ 3 active pills missed: take 1 pill immediately and take next pill at usual time. Use condoms or abstain for 7 days:
  - If pills missed in last 7 active pills of pack: omit inactive pills and start next active pill.
  - If pills missed in first 7 active pills of pack and patient has had unprotected sex in past 5 days: also offer emergency contraception ⮌108.

Follow up the patient on combined oral contraceptive pill after 3 months, then yearly. Follow up patient with IUD 6 weeks after insertion to check strings.

[1]The subdermal implant may be less effective on ART, rifampicin and phenytoin. Advise patient to use condoms as well. [2]The oral contraceptive may be less effective on ART. Advise patient to use condoms as well. [3]Avoid COC for 6 weeks after delivery and for 6 months if breastfeeding.

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

- Fitting or just had a fit
- BP ≥ 140/90 *and* persistent headache/blurred vision/abdominal pain: treat as **severe pre-eclampsia**
- BP ≥ 160/110 *and* ≥ 1+ proteinuria: treat as **severe pre-eclampsia**
- BP ≥ 160/110 *without* proteinuria: treat as **severe hypertension**
- Temperature ≥ 38°C and headache, weakness, back pain, abdominal pain
- Difficulty breathing
- Swollen painful calf
- Vaginal bleeding
- Decreased/absent fetal movements ⮌112
- Painful contractions < 37 weeks: **preterm labour** likely
- Sudden gush of clear or pale fluid from vagina with no contractions: **prelabour rupture of membranes** (**PROM**) likely

Management:

- If difficulty breathing, give face mask oxygen and refer urgently.
- If BP < 90/60, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If temperature ≥ 38°C, give ampicillin[1] 2g IV/IM and gentamicin 80mg IM and refer urgently.

Fitting or just had a fit

- If < 20 weeks →13.
- 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. Also give 5g IM mixed with 1mL of lidocaine 2% in each buttock, and then 5g IM 4 hourly.
- Continue 1L sodium chloride 0.9% IV 12 hourly.
- Insert urethral catheter and record urine output every hour.
- Stop magnesium sulphate if urine output < 100mL in 4 hours or respiratory rate < 16[2] or knee reflexes disappear.
- If fit recurs or does not respond, discuss.

Severe pre-eclampsia

- If BP ≥ 160/110, give hydralazine 5mg IV over 4 minutes. Also give 200mL sodium chloride 0.9% IV. If BP still ≥ 150/100, repeat hydralazine 5mg every 30 minutes to a total maximum of 20mg.
- Refer urgently.

Severe hypertension

- If BP ≥ 160/110, give hydralazine 5mg IV over 4 minutes. Also give 200mL sodium chloride 0.9% IV. If BP still ≥ 150/100, repeat hydralazine 5mg every 30 minutes to a total maximum of 20mg.
- Refer urgently.

Vaginal bleeding

Early pregnancy < 24 weeks[3]

Cervical os open/dilated or products of conception in cervical os/vagina?

No

Threatened or complete miscarriage likely

Refer same day to exclude ectopic pregnancy.

Yes

Incomplete or inevitable miscarriage likely

- Remove products of conception digitally if possible.
- If bleeding heavy (pad soaked in < 5 minutes):
  - Give IV fluids as above.
  - Give single dose misoprostol 800mcg intravaginally.
- If pain, give paracetamol 1g 6 hourly.
- Refer same day.

If temperature ≥ 38°C, pulse ≥ 100 or smelly vaginal discharge, give ampicillin[1] 2g IV/IM and gentamicin 80mg IM.

Late pregnancy ≥ 24 weeks[3]

- Avoid digital vaginal examination.
- Give IV fluids as above.
- Refer urgently.

If rhesus negative, give anti-D immunoglobulin 250mcg IM.

Preterm labour

- **If < 24 weeks:** refer.
- **If 24-34 weeks:**
  - Give dexamethasone 6mg IM, record time given in referral letter.
  - Give nifedipine 30mg orally, then 10mg 4 hourly until transferred.
  - Check BP every 30 minutes. If BP < 90/60, give IV fluids as above.
- **If > 34 weeks:** allow labour to continue.
- Refer urgently.

Prelabour rupture of membranes (PROM)

- Confirm amniotic fluid with sterile speculum: litmus turns blue.
- Avoid digital vaginal examination.
- If chorioamnionitis[4]:
  - Give ampicillin[1] 2g IV/IM and gentamicin 80mg IM.
  - Refer urgently.
- If no chorioamnionitis[4]:
  - If ≥ 37 weeks: if not in active labour 8 hours after PROM, refer urgently.
  - If < 37 weeks: give erythromycin 250mg 6 hourly. If 24-34 weeks, also give dexamethasone 6mg IM, record time given in referral letter. Refer same day.

Give routine antenatal care to the pregnant patient not needing urgent attention →111.

[1]If penicillin allergy, discuss with doctor. [2]If respiratory rate < 16, give calcium gluconate 10% 1g IV slowly over 10 minutes. [3]If gestation not known, manage as late pregnancy if uterus palpable above umbilicus. [4]Temperature ≥ 38°C, painful abdomen or smelly amniotic fluid.

Approach to the newly diagnosed pregnant patient not needing urgent attention.

Does the patient want the pregnancy?

No or unsure

- Discuss the options around continuing with pregnancy, choosing adoption or termination of pregnancy (TOP). Refer to social worker.
- Determine gestational age by dates and on examination. If unable to determine gestational age, refer for ultrasound.

Patient requests a TOP.

< 20 weeks
- < 12 weeks: book for an on-demand TOP < 12 weeks.
- ≥ 12 weeks: book for assessment for TOP as soon as possible < 20 weeks.
- Discuss future contraception ↩108.

≥ 20 weeks
- TOP is not an option.
- Discuss possibility of adoption.
- Give routine antenatal care.

Patient decides to continue with pregnancy.

Yes

Identify the pregnant patient who needs referral level antenatal care
- Current medical problems: diabetes, heart/kidney disease, asthma, epilepsy, on TB treatment, alcohol/drug abuse, hypertension
- Current pregnancy problems: rhesus negative with antibodies, multiple pregnancy, < 14 years old, vaginal bleeding or pelvic mass
- Previous pregnancy problems: stillbirth or neonatal loss, ≥ 3 consecutive miscarriages, birth weight < 2500g or > 4500g, admission for hypertension or pre-eclampsia, congenital abnormality
- Previous reproductive tract surgery (including caesarean section)

If not needing referral level antenatal care, give routine antenatal care in primary care facility →112.

Routine antenatal care

Assess the pregnant patient at booking visit and then around 20 weeks, 26 weeks, 30 weeks, 34 weeks, 36 weeks, 38 weeks and 40 weeks.

Assess	When to assess	Note
Symptoms	Every visit	Manage symptoms as on symptom pages. Check if patient needs urgent attention ⮌110.
Estimated delivery date	Booking visit	Plot on antenatal card. If patient ≥ 41 weeks, confirm EDD and refer for fetal evaluation and possible induction of labour.
Fetal movements	Every visit from 20 weeks	If decreased or absent fetal movements, patient to lie on side and record movements on kick chart. If < 10 movements in 2 hours, refer for further assessment.
Mental health	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 ⮌97. • Any alcohol or drug use is risky for the baby. 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 ⮌101.
BMI[2]	Booking visit	• BMI < 18.5: exclude TB, check weight at every visit, refer for nutritional support. • BMI > 30: refer to high risk clinic and dietician. Patient to deliver at hospital.
Abdominal examination	Every visit	• If mass other than uterus in abdomen or pelvis, refer for assessment. • Plot symphysis-fundal height on antenatal card: measurement in centimetres is roughly gestational age in weeks. If > 3cm discrepancy, refer. • If breech or non-cephalic presentation at 37 weeks, refer to high risk clinic.
Vaginal discharge	Every visit	• If abnormal discharge, treat for STI ⮌34. • If sudden gush of clear or pale fluid with no contractions: prelabour rupture of membranes likely ⮌110. If small amounts of clear/pale fluid, refer. Avoid digital examination.
BP (BP is normal if < 140/90)	Every visit	• If BP ≥ 140/90, repeat after 1 hour lying on left side. If 2nd BP normal, repeat after 2 days. If 2nd BP still raised, check urine dipstick for protein: - No proteinuria: start methyldopa 250mg 12 hourly and discuss with specialist same day. Advise to return immediately if headache, blurred vision, abdominal pain. - If BP ≥ 140/90 and ≥ 1+ proteinuria, refer to hospital. If BP ≥ 140/90 and symptoms or BP ≥ 160/110, manage →110.
Arrange ultrasound	Booking visit	Book ultrasound for 18-22 weeks.
Urine dipstick: test clean, midstream urine	Every visit	• If dipstick normal with dysuria (burning urine) or if leucocytes or nitrites present, treat for complicated urinary tract infection ⮌42. • If proteinuria, check BP: - BP ≥ 160/110, manage as severe pre-eclampsia →110. - BP < 140/90 and ≥ 2+ proteinuria, refer to high risk clinic to exclude kidney disease. If BP < 140/90 and < 2+ proteinuria, reassess at next antenatal visit. • If glucose in the urine, do a diabetes screen.
Diabetes screen	• 26 weeks • If high risk[3]: also at booking visit	• At 26 weeks, do oral glucose tolerance test[4]: if fasting glucose ≥ 5.1 mmol/L, after 1-hour ≥ 10.0mmol/L or 2-hour ≥ 8.5mmol/L, refer to high risk clinic. • If high risk at booking visit, check blood glucose ⮌85. If diabetes, refer to high risk clinic.
Haemoglobin (Hb)	Booking visit, 30 weeks, if pale	• If Hb < 7g/dL or pallor with respiratory rate > 30, dizziness/faintness or chest pain, refer to hospital same day. • If Hb 7-11g/dL, treat ⮌113 and reassess at next antenatal visit.
Rapid rhesus	Booking visit	If rhesus negative, refer to high risk clinic. Give anti-D immunoglobulin 250mcg IM at 28 weeks and immediately after delivery. Also give if miscarriage, ectopic or abdominal trauma.
Syphilis	Booking visit, 30 weeks	If positive ⮌39.
HIV	Booking visit, at 30 weeks if negative	• Test for HIV ⮌73. If patient refuses, offer test at each visit, even in early labour. • If HIV positive give routine care ⮌74 and start ART same week ⮌113.
HIV viral load	On ART: 6 months, 12 months, then yearly	• If viral load 50-1000copies/mL, give increased adherence support and refer/discuss with an experienced ART doctor. • If viral load > 1000copies/mL for 1st time, give increased adherence support ⮌76 and repeat viral load within 3 months. • If viral load > 1000copies/mL for 2nd time, patient has virological failure: doctor to change to 2nd line ART. If already on 2nd line ART, 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]BMI = weight (kg) ÷ height (m) ÷ height (m). [3]High risk of gestational diabetes if any of: previous gestational diabetes, glucose in urine, family history of diabetes, BMI > 30 or previous large baby > 4.5kg. [4]Oral glucose tolerance test: take fasting blood glucose specimen after overnight fast. Give oral glucose 75g in 250mL water to drink within 5 minutes. Take blood glucose specimen 1 hour and 2 hours later.

Advise the pregnant patient

- Advise to stop smoking, drinking alcohol, using drugs and/or misusing medications. Support patient to change ⮌122. Advise patient not to take medications unless prescribed by clinician.
- Advise patient to avoid potentially harmful foods: unpasteurised milk, soft cheeses, raw or undercooked meat, poultry, raw eggs and shellfish. Advise to cut down on caffeine.
- Discuss safe sex. Advise patient to use condoms throughout pregnancy and have only 1 partner at a time.
- Ensure patient knows the signs of a pregnancy emergency ⮌110 and of early labour.
- Discuss contraception following delivery ⮌108.
- Give patient advice to avoid mosquito-transmitted diseases:
  - Avoid travel to Zika/dengue/malaria areas.
  - If in Zika/dengue/malaria area:
    - Use insect repellent and cover exposed skin with long-sleeved shirt/pants and hat.
    - Stay and sleep in screened or air-conditioned room if possible.
    - Sleep under insecticide dipped net.
- If HIV, help the patient decide on feeding choice depending on preference, social/family support, availability and affordability of formula and access to safe clean water.
- Regardless of HIV status, encourage exclusive breastfeeding for 6 months: only breast milk (no formula, water, cereal) and if HIV-exposed, nevirapine and co-trimoxazole prophylaxis.
- Refer for support if mental health risk: previous depression/anxiety or family history, < 20 years, unwanted pregnancy, poor social/family support, no/unsupportive partner, violence at home, difficult life event in last year, undisclosed HIV.

Treat the pregnant patient

- Give iron/folic acid 60mg/400mcg daily. Avoid tea/coffee 2 hours after taking tablet. If Hb ≤ 11g/dL, give iron/folic acid 60mg/400mcg 12 hourly for 3 months and reassess.
- If pregnant during winter, give influenza vaccine.
- Check if tetanus, diphtheria and pertussis immunisations are up to date (3 doses of tetanus/diphtheria in the past):
  - If up to date, give 1 dose of tetanus, diphtheria, acellular pertussis (Tdap) vaccine at 27-36 weeks gestation.
  - If not up to date/unknown, give 3 doses tetanus and diphtheria (Td) vaccine: immediately, then after 1 and then 6 months. Ensure 1 dose also contains acellular pertussis (Tdap), ideally at 27-36 weeks.
- Manage the risk of pre-eclampsia if first pregnancy, hypertension, diabetes, kidney disease, twin pregnancy, BMI > 30, previous pre-eclampsia or family history, < 18 years or > 35 years, > 10 years since last pregnancy:
  - Give elemental calcium 1.5g daily (at different time from iron[1]) from 20 weeks.
  - Give aspirin 75mg daily from 14 weeks. Discontinue 10 days before estimated date of delivery.
- Prevent malaria in a malaria area if not on co-trimoxazole: give sulfadoxine pyrimethamine (500/25mg) 3 tablets at each antenatal visit at least 1 month apart, from 14 weeks.
- Give the HIV positive patient:
  - If stage 3 or 4 or CD4 ≤ 350cells/mm³, give co-trimoxazole 160/800mg daily.
  - If on ART, continue. If on efavirenz, no need to change regimen.
  - If not on ART, start ART same week ⮌78.

Treat the HIV positive patient in labour

- If HIV positive on ART, continue ART throughout delivery and breastfeeding.
- If newly diagnosed HIV positive or known HIV positive and not on ART, start ART ⮌78.
- Ensure mother gets routine HIV care after delivery ⮌74.

Treat the HIV-exposed baby immediately after birth

- Give the baby born to an HIV positive mother a dose of nevirapine syrup (10mg/mL) as soon as possible after birth according to weight: < 2.0kg: 0.2mL/kg; 2.0 - 2.5kg: 1mL; ≥ 2.5kg: 1.5mL.
- Decide how long to continue nevirapine syrup in baby ⮌116.

Give postnatal care to mother and baby ⮌114.

[1]Calcium can interfere with iron absorption.

Routine postnatal care

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

- Heavy bleeding (soaks pad in < 5 minutes): **postpartum haemorrhage** likely
- Fitting or just had a fit up to 1 week postpartum →110.
- BP ≥ 140/90 *and* persistent headache/blurred vision/abdominal pain: treat as **severe pre-eclampsia** →110.
- Feeling unwell and temperature > 38°C
- BP < 90/60
- Pulse ≥ 100
- Tear extending to anus or rectum
- Pallor with respiratory rate > 30, dizziness/faintness or chest pain
- Pallor with Hb < 7g/dL

Management:

- If BP < 90/60 or bleeding with pulse ≥ 100, give sodium chloride 0.9% 250mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If **postpartum haemorrhage** likely:
  - Massage uterus and empty bladder (with catheter if needed).
  - Give oxytocin 10IU IM, then 20IU in 1L sodium chloride 0.9% at 200mL/hr IV.
  - Ensure placenta is delivered. If controlled cord traction fails, try manual delivery and give ampicillin[1] 2g IV/IM.
  - If uterus still soft after this, give ergometrine[2] 0.2mg IM/IV or misoprostol 400mcg sublingual and continue massaging uterus.
  - If still bleeding heavily, apply bimanual[3] or external aortic compression[4] or non-pneumatic anti-shock garments (if available) during transfer.
- If feeling unwell and temperature > 38°C: give clindamycin 150mg IM/IV and gentamicin 80mg IM.
- Refer urgently.

Assess the mother and her baby 3 days, 10 days, and 6 weeks after delivery

Assess	When to assess	Note
Symptoms	Every visit	• Manage mother's symptoms as on symptom pages. Manage baby's symptoms with IMCI guide. • Ask about urinary incontinence (leaking or dribbling urine). If still present at 6 weeks, treat for flow problem ⮌42.
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 ⮌97.
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 ⮌101.
Family planning	Every visit	Assess patient's contraception needs ⮌108.
Baby feeding	Every visit	• If breastfeeding: check for breast problems ⮌29. Check that baby latches well and is not mixed feeding. • If formula feeding: ensure correct mixing of formula and water and that it is affordable, feasible, acceptable, safe and sustainable.
Baby	Every visit	Assess and manage the baby according to the IMCI guide. Ensure baby received immunisations at birth and ensure baby is immunised at 6 week visit.
Abdomen and perineum	Every visit	• If perineal or abdominal wound: check healing and, if needed, remove sutures at 10 day visit. • If painful abdomen, smelly discharge or poorly contracted uterus: check temperature and discuss same day.
BP	Every visit	Check BP. If BP ≥ 140/90, recheck after 1 hour rest. If BP still ≥ 140/90 ⮌88, unless ≤ 1 week postpartum: discuss with doctor ⮌110.

Continue to assess the mother and her baby →115.

[1]If penicillin allergy, discuss with doctor. [2]Avoid if eclampsia, pre-eclampsia or known hypertension. [3]Bimanual compression: insert clenched fist into vagina, back of hand directed posteriorly, knuckles in anterior fornix. Place other hand on abdomen behind uterus and squeeze uterus firmly between hands. [4]External aortic compression: press down with fist just above umbilicus until femoral pulse not felt. [5]One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.

Assess	When to assess	Note
HIV test in mother	• If not done • At 6 weeks • If breastfeeding: 3 monthly	• Test for HIV ⮌73. If HIV positive, give routine care ⮌74. If not on ART, start ART ⮌77. • If mother tests HIV positive, do HIV PCR on baby same day and start post-exposure prophylaxis in baby while waiting for PCR result ⮌116.
HIV test in HIV-exposed baby	• 6 weeks • 9 months if previous test negative • 18 months if previous test negative	• Decide which HIV test to do: - If < 9 months, do PCR. If positive, start ART and confirm result with 2nd PCR. - If 9 - 17 months, do rapid test. If positive, do PCR. If PCR positive, start ART and confirm result with 2nd PCR. - If ≥ 18 months ⮌73. • If mother diagnosed with HIV while breastfeeding or baby unwell, do HIV test same day.
Haemoglobin (Hb)	If pale	If Hb < 7g/dL, refer same day. If Hb 7-11g/dL, treat as below.
Syphilis	If not done	Test mother for syphilis: if positive, treat mother and baby ⮌39.
Cervical screen	At 6 weeks if needed	• If HIV negative: screen 5 yearly from age 30. • If HIV positive: screen at HIV diagnosis (regardless of age) then 3 yearly. • If abnormal ⮌38.

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, smelly vaginal discharge, red/smelly/oozing wound, fever, dizziness, severe headache, blurred vision, severe abdominal pain, severe calf pain or baby unwell.
- Give feeding advice:
  - Regardless of HIV status, encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, nevirapine/zidovudine and co-trimoxazole prophylaxis.
  - Refer to an infant feeding support group.
  - If patient chooses to formula feed, ensure it is affordable, feasible, acceptable, safe and sustainable. Check formula is correctly prepared. Discourage mixed feeding before age 6 months.
  - From 6 months, introduce food while continuing with feeding choice.
  - If mother HIV positive, continue breastfeeding until 1 year if mother on ART and until at least 2 years if baby diagnosed HIV positive.
  - If mother HIV negative: continue to breastfeed until at least 2 years. Explain importance of regular HIV testing while breastfeeding.
- If mother HIV positive: ensure mother knows how to give nevirapine and zidovudine syrup correctly.
- Advise that mother and baby sleep under an insecticide dipped bed net if in a malaria area.

Treat the mother

- Continue iron/folic acid 60mg/400mcg daily for 3 months. If Hb 7-11g/dL, give iron/folic acid 60mg/400mcg 12 hourly for 3 months and reassess. Check antenatal rapid rhesus result: if rhesus negative, confirm anti-D immunoglobulin was given at delivery. If not given, give anti-D immunoglobulin 250mcg IM.
- Check tetanus, diphtheria and pertussis immunisations are up to date (3 doses of tetanus/diphtheria including 1 dose acellular pertussis). If not, give missed doses of tetanus and diphtheria (Td) vaccine, immediately, 1 and then 6 months apart. If never received tetanus, diphtheria, acellular pertussis (Tdap), ensure 1 dose also contains acellular pertussis (Tdap).
- If painful perineal or abdominal wound, give paracetamol 1g 6 hourly as needed for up to 5 days.
- If HIV positive and not on ART, start ART ⮌77. If mother is already on ART, continue.

Treat the HIV-exposed baby

Decide on choice and duration of PMTCT regimen →116.

Prevention of mother-to-child transmission (PMTCT) of HIV

Approach to the HIV-exposed baby (mother is known with HIV[1])
Start post-exposure prophylaxis as soon as possible within 6 hours of birth:

- Mother on ART
  - Did mother initially test HIV negative and then became HIV positive during this pregnancy?
    - No
      - Was mother on ART for ≥ 4 weeks before delivery?
        - Yes
          - Was a viral load done in last 4 weeks of pregnancy?
            - No → **Low risk of HIV transmission** → Give nevirapine daily for 6 weeks (see table).
            - Yes
              - Viral load ≤ 1000 copies/mL → **Low risk of HIV transmission** → Give nevirapine daily for 6 weeks (see table).
              - Viral load > 1000 copies/mL
                - Manage mother further ⮌76
        - No → **High risk of HIV transmission**
    - Yes → **High risk of HIV transmission**
- Mother not on ART
  - Start ART in mother same day ⮌77.
  - **High risk of HIV transmission**

High risk of HIV transmission

- Formula feeding
  - Give zidovudine 12 hourly for 6 weeks (see table) *and* nevirapine daily for 6 weeks (see table).
- Breastfeeding
  - Give zidovudine 12 hourly for 6 weeks (see table) *and* nevirapine daily for 12 weeks (see table)
  - If baby > 12 months and mother is able to provide safe and adequate diet, advise to stop breastfeeding.

Treat the HIV-exposed baby

- Give PMTCT: nevirapine with/without zidovudine depending on transmission risk. Dose according to weight and age (see table). If ≤ 35 weeks gestation, discuss dose.
- Start co-trimoxazole at 6 weeks of age. Dose according to weight (see table). Stop if HIV negative 6 weeks after last breastfeed.

Nevirapine syrup (10mg/mL)

Birth weight (born > 35 weeks)	Age	Dose
< 2.0kg	Birth up to 6 weeks	0.2mL/kg daily
2.0-2.49kg	Birth up to 6 weeks	1mL daily
≥ 2.5kg	Birth up to 6 weeks	1.5mL daily
-	6 weeks to 12 weeks	2mL daily

Zidovudine syrup (10mg/mL)

Birth weight (born > 35 weeks)	Age	Dose
< 2.0kg	Birth up to 6 weeks	0.4mL/kg /dose 12 hourly
2.0-2.49kg	Birth up to 6 weeks	1mL 12 hourly
≥ 2.5kg	Birth up to 6 weeks	1.5mL 12 hourly
-	6 weeks to 12 weeks	6mL 12 hourly

Co-trimoxazole syrup (40/200mg/5mL)

Weight	Dose
3.0-5.9kg	2.5mL daily
6.0-13.9kg	5mL daily

[1]If mother's HIV status is unknown and mother not available, do rapid HIV test on baby. If positive, send HIV PCR test and manage as high risk above. If negative, there is no need for PMTCT.

Menopause

- Exclude pregnancy before diagnosing menopause. If pregnant →110.
- Menopause is no menstruation for at least 12 months in a row. Most women have menopausal symptoms and irregular periods during perimenopause.
- If woman is < 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 ⮌65 and sexual problems ⮌41. • If night sweats, ask about other TB symptoms: if cough ≥ 2 weeks, weight loss or fever, exclude TB ⮌68. • Manage other symptoms as on symptom pages.
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 ⮌97.
Thyroid function	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.
Vaginal bleeding	Every visit	If bleeding between periods, after sex or after being period-free for 1 year, refer within 2 weeks.
CVD risk	At diagnosis, then depending on risk	• Assess CVD risk ⮌83. • If < 10% with CVD risk factors or 10-20% reassess after 1 year, if > 20% reassess after 6 months.
BP	3 monthly on hormone therapy	Check BP ⮌88. If known hypertension ⮌89.
Osteoporosis risk	At diagnosis	Refer for possible treatment if high osteoporosis risk: < 60 years with loss of > 3cm in height and fractures of hip/wrist/spine; previous non-traumatic fractures; corticosteroid treatment > 3 months; onset of menopause < 45 years; BMI < 18.5; > 2 alcoholic drinks/day; smoker; low physical activity.
Family planning	At diagnosis	• If on combined oestrogen/progestogen pill or progestogen injection, change to non-hormonal method or progestogen only pill or subdermal implant when ≥ 50 years. • If on non-hormonal method, continue for 2 years after last period if < 50 years and for 1 year after last period if ≥ 50 years. • If on progestogen only pill or subdermal implant, continue until 55 years, or if still menstruating, until 1 year after last period.
Breast check	• At diagnosis • Yearly on hormone therapy	If any lumps found in breasts or axillae, refer same week to breast clinic.
Cervical screen	When needed	If HIV negative, screen 5 yearly from age 30. If HIV positive, screen at HIV diagnosis (regardless of age) then 3 yearly. If abnormal ⮌38.

Advise the menopausal patient

- To cope with the hot flushes, advise patient to dress in layers and to decrease alcohol, avoid spicy foods, hot drinks and warm environments.
- Help patient to manage CVD risk if present ⮌84.
- If patient is having mood changes or not coping as well as in the past, refer to counsellor, support group or helpline ⮌123.
- Educate the patient about the risks, contraindications and benefits of hormone therapy and that it can be used to treat menopausal symptoms for up to 4 years. Long term use can increase risk of breast cancer, deep vein thrombosis (DVT) and cardiovascular disease.

Treat the menopausal patient

- If menopausal symptoms interfere with daily function, treat with hormone therapy:
  - Avoid if abnormal vaginal bleeding, cancer of uterus/breast, previous DVT or pulmonary embolism, recent heart attack, uncontrolled hypertension or liver disease.
  - Give **oestradiol** 0.5-1mg daily *or* **conjugated oestrogens** 0.3mg daily *and* **medroxyprogesterone** oral 2.5mg daily (if patient has had uterus removed, give oestradiol or conjugated oestrogens only).
  - Adjust dose to control menopausal symptoms with minimal side effects.
  - If unable to take hormone therapy refer for non-hormonal treatment.
- Treat vaginal dryness and pain with sex with lubricants (avoid petroleum jelly with condoms). If no better with hormone therapy or hormone therapy contraindicated, refer.
- Review 6 monthly once on hormone therapy. Try decreasing dose/stopping if symptoms are controlled. If ≥ 4 years of hormone therapy or after the age of 60, stop treatment. If still symptomatic, discuss with specialist.

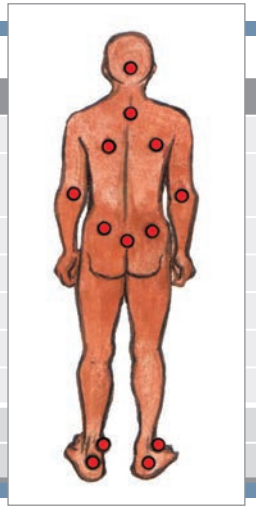
Life-limiting illness: routine palliative care

A patient can be given curative and palliative care at the same time. A doctor should confirm the patient with a life-limiting illness's need for palliative care:

- Would you be surprised if the patient died within the next 2 years? If the answer is no then the patient needs palliative care *and/or*
- Patient with advanced disease chooses palliative care only and refuses curative care *and/or*
- Patient with advanced disease not responding to treatment: heart failure, COPD, kidney failure, cancer, dementia, HIV, TB.

Assess the patient needing palliative care

Assess	Note
Symptoms	Manage on symptom pages: constipation, nausea/vomiting, difficulty swallowing, difficulty breathing/cough, sore mouth, weight loss, incontinence, vaginal discharge.
Pain	• Does pain limit activity or disturb sleep? Is medication helping? Grading the pain 1-10 may help the patient to decide if s/he needs to start or increase pain medication. • If new or sudden pain, temperature ≥ 38˚C, tender swelling, redness or pus, also treat on symptom page. If no better or uncertain of cause, discuss.
Sleep	If patient has difficulty sleeping ⮌65.
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 ⮌97.
Side effects	Manage side effects on symptom pages. Nausea, confusion and sleepiness on morphine usually resolve after a few days.
Carer	Ask how the carer is coping and what support s/he needs.
Chronic care	Assess ongoing need for chronic care in discussion with patient and health care team.
Mouth	Check oral hygiene and look for dry mouth, ulcers and oral candida ⮌25.
Bed sores	If patient is bedridden, check common areas for damaged skin (change of colour) and bedsores (see picture). If patient has bedsore ⮌57.



Advise the patient needing palliative care and his/her carer

- Explain about the condition and prognosis. Explaining what is happening relieves fear and anxiety. Deal with bereavement issues ⮌63.
- Support the patient to give as much self care as possible. Refer patient and carer to available palliative carer, support group, counsellor, spiritual counsellor.
- Prevent bedsores if bedridden: wash and dry skin daily. Keep linen dry. Move (lift, avoid dragging) patient every 1-2 hours if unable to shift own weight. Look daily for skin colour changes (see picture).
- Prevent contractures if bedridden: at least twice a day, gently bend and straighten joints as far as they go. Avoid causing pain. Massage muscles.
- Prevent mouth disease: brush teeth and tongue regularly using toothpaste or dilute bicarbonate of soda. Rinse mouth with ½ teaspoon of salt in 1 cup of water after eating and at night.
- The patient's appetite will diminish as s/he gets sicker. Offer small meals frequently and allow the patient to choose what s/he wants to eat from what is available.
- Emphasize the importance of taking pain medication regularly (not as needed) and if using codeine/morphine to use a laxative daily to prevent constipation.
- Discuss with patient and carer advance-care plans and preferences. Document choices.

Treat the patient needing palliative care

Aim to have patient pain free at rest and alert as possible. If patient has any pain, start pain medication. If pain persists/increases, step up. If pain decreases, step down. Review 2 days after starting/changing.

Step	Medication	Start dose	Maximum dose	Note
1	Give paracetamol	1g 4-6 hourly	4g daily	If no codeine, combine paracetamol 4 hourly *and* aspirin 4 hourly, overlap so one is given every 2 hours.
	or aspirin	600mg 4 hourly	4g daily	Avoid if peptic ulcer, dyspepsia, bleeding problem, kidney or liver disease.
	or ibuprofen	400mg 6 hourly	2.4g daily	Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.
2	Add codeine	30mg 4 hourly	240mg daily	If no diarrhoea, give senna 15mg 12 hourly and docusate sodium 100mg orally 12 hourly as needed for constipation.
3	Stop codeine and add morphine (oral or rectal if unable to swallow).	5mg 4 hourly	None. If respiratory rate < 12, skip 1 dose, then halve dose.	• If starting morphine, give metoclopramide 10mg 8 hourly for 1 week. • If no diarrhoea, give senna 15mg 12 hourly and docusate sodium 100mg orally 12 hourly as needed for constipation. • If pain persists after initial 24 hours, increase dose by 1.5-2 times. **If no better after 2 days, discuss.**

Protect yourself from occupational infection

Give urgent attention to the health worker who has had a sharps injury or splash to eye, mouth, nose or broken skin with exposure to one or more of:

- Blood
- Blood-stained fluid/tissue
- Pleural/pericardial/peritoneal/amniotic/synovial/cerebrospinal fluid
- Vaginal secretions
- Semen
- Breast milk

Management:

- If broken skin, clean area immediately with soap and water.
- If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water or sodium chloride 0.9%.
- If health worker has had contact with viral haemorrhagic fever[1] suspect, discuss with specialist.
- Assess need for HIV and hepatitis B post-exposure prophylaxis ⮌66.

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 fluids.
- Dispose of sharps correctly in sharps bins.

Wear protective gear:

- Wear gloves when handling blood, body fluids, secretions or non-intact skin.
- Wear face mask if in contact with respiratory virus suspects (N95 respirator if TB suspect).
- Wear face mask with a visor or glasses if at risk of splashes.
- Wear personal protective equipment if in contact with viral haemorrhagic fever[1] suspects.

Get vaccinated:

- Get vaccinated against hepatitis B and yearly against influenza.

Know your HIV status:

- Test for HIV ⮌73. ART and IPT can decrease the risk of TB.
- If HIV positive, you are entitled to work in an area of the facility where exposure to TB is limited.

Protect your facility

Clean the facility:

- Clean frequently touched surfaces (door handles, telephones, keyboards) daily with soap and water.
- Disinfect surfaces contaminated with blood/secretions with 70% alcohol or chlorine-based disinfectant.

Ensure adequate ventilation:

- Leave windows and doors open when possible and use fans to increase air exchange.

Organise waiting areas:

- Prevent overcrowding in waiting areas.
- Fast track influenza and TB suspects.

Manage sharps safely:

- Ensure sharps bins are easily accessible and regularly replaced.

Manage infection control in the facility:

- Appoint an infection control officer for the facility to coordinate and monitor infection control policies.

Manage possible occupational exposure promptly

Reduce TB risk

Identify TB suspects promptly:

- The patient with cough ≥ 2 weeks is a TB suspect.
- Separate TB suspect from others in the facility.
- Educate about cough hygiene and give face mask/tissues to cover mouth/nose to protect others.

Diagnose TB rapidly:

- Fast track TB workup and start treatment as soon as diagnosed.

Protect yourself from TB:

- Wear an N95 respirator (not a face mask) if in contact with an infectious TB patient.

Reduce risk of respiratory viruses (including influenza)

- Wash hands with soap and water.
- Wear a face mask over mouth and nose during procedures on patient.
- Encourage patient to cover mouth/ nose with a tissue when coughing/sneezing, to dispose of used tissues correctly and to wash hands regularly with soap/water.
- Advise patient to avoid close contact with others.

[1]Suspect viral haemorrhagic fever in patient who lived in or travelled to an endemic area or had contact with confirmed viral haemorrhagic fever in past 21 days and has fever and ≥ 1 of: bloody diarrhoea, bleeding from gums, bleeding into skin, eyes.

Protect yourself from occupational stress

Experiencing pressure and demands at work is normal. However, if these demands exceed knowledge and skills and challenge your ability to cope, occupational stress can occur.

Give urgent attention to the health worker with occupational stress and one or more of:
- Alcohol or drug intoxication at work
- Aggressive or violent behaviour at work
- Inappropriate behaviour at work
- Suicidal thoughts or behaviour ⮌60
- Arrange assessment same day with mental health practitioner.

Adopt measures to diminish your risk of occupational stress

Protect yourself

Look after your health:
- Get enough sleep.
- Exercise, eat sensibly, minimise alcohol and don't smoke ⮌84.
- Get screened for chronic conditions.

Look after your chronic condition if you have one:
- Adhere to your treatment and your appointments.
- Don't diagnose and treat yourself.
- If you can, confide in a trusted colleague/manager.

Manage stress:
- Delegate tasks as appropriate, develop coping strategies.
- Talk to someone (friend, psychologist, mentor) or access helpline ⮌123.
- Do a relaxing breathing exercise each day.
- Find a creative or fun activity to do.
- Spend time with supportive friends or family.

Have healthy work habits:
- Manage your time sensibly.
- Take scheduled breaks.
- Remind yourself of your purpose as a clinician.
- Be sure you are clear about your role and responsibilities.

Protect your team

Decide on an approved way of behaving at work:
- Communicate effectively with your patients and colleagues ⮌121.
- 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 ⮌101.
- 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 ⮌97.

Recent distressing event
- Diagnosis of chronic condition
- Bereavement
- Needlestick injury
- Traumatic event

Poor attendance at work
- Frequent absenteeism

Marked decline in work performance
- Reduced concentration
- Fatigue

The health worker with any of the above may have substance abuse, stress, depression/anxiety or burnout and might 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.

Communicate effectively

- Communicating effectively with your patient during a consultation need not take much time or specialised skills.
- Try to use straightforward language and take into account your patient's culture and belief system.
- Integrate these four communication principles into every consultation:

Listen

Listening effectively helps to build an open and trusting relationship with the patient.

Do	The patient might feel:	Don't	The patient might feel:
• Give all your attention • Recognise non-verbal behaviour • Be honest, open and warm • Avoid distractions e.g. phones	• 'I can trust this person' • 'I feel respected and valued' • 'I feel hopeful' • 'I feel heard'	• Talk too much • Rush the consultation • Give unwanted advice • Interrupt	• 'I am not being listened to' • 'I feel disempowered' • 'I am not valued' • 'I cannot trust this person'

Discuss

Discussing a problem and its solution can help the overwhelmed patient to develop a manageable plan.

Do	The patient might feel:	Don't	The patient might feel:
• Use open ended questions • Offer information • Encourage patient to find solutions • Respect the patient's right to choose	• 'I choose what I want to deal with' • 'I can help myself" • 'I feel supported in my choice' • 'I can cope with my problems'	• Force your ideas onto the patient • Be a 'fix-it' specialist • Let the patient take on too many problems at once	• 'I am not respected' • 'I am unable to make my own decisions' • 'I am expected to change too fast'

Empathise

Empathy is the ability to imagine and share the patient's situation and feelings.

Do	The patient might feel:	Don't	The patient might feel:
• Listen for, and identify his/her feelings e.g. 'you sound very upset' • Allow the patient to express emotion • Be supportive	• 'I can get through this' • 'I can deal with my situation' • 'My health worker understands me' • 'I feel supported'	• Judge, criticise or blame the patient • Disagree or argue • Be uncomfortable with high levels of emotions and burden of the problems	• 'I am being judged' • 'I am too much to deal with' • 'I can't cope' • 'My health worker is unfeeling'

Summarise

Summarising what has been discussed helps to check the patient's understanding and to agree on a plan for a solution.

Do	The patient might feel:	Don't	The patient might feel:
• Get the patient to summarise • Agree on a plan • Offer to write a list of his/her options • Offer a follow-up appointment	• 'I can make changes in my life' • 'I have something to work on' • 'I feel supported' • 'I can come back when I need to'	• Direct the decisions • Be abrupt • Force a decision	• My health worker disapproves of my decisions' • 'I feel resentful' • 'I feel misunderstood'

Support the patient to make a change

Use the five-A's approach to help the patient make a change in behaviour to help avoid or lessen a health risk:

Ask the patient about the risks

- Identify with the patient the risk/s to his/her health.
- Ask what the patient already knows about these risks and how they will affect the patient's health.

Alert the patient to the facts

- Request permission to share more information on this risk.
- Use a neutral, non-judgemental manner. Avoid prescribing what the patient must do.
- Build on what the patient already knows or wants to know.
- Discuss results of tests or examination that indicate a risk.
- Link the risk to the patient's health problem.

Assess the patient's readiness to change

- Assess the patient's response about the information on his/her risk. 'What do you think/feel about what we have discussed?'
- Use the scale to help patient assess the importance of this issue for him/her. Also rate how confident s/he feels about making a change.

Not at all important or confident	1	2	3	4	5	6	7	8	9	10	Very important/very confident

- Ask the patient why s/he rated importance/confidence at this number and not lower. Ask what might help improve this rating.
- Summarise the patient's view. Ask how ready s/he feels to make a change at this time.

Assist the patient with change

If the patient is ready to change:

- Assist the patient to set a realistic change goal.
- Explore the factors that may help the patient to change or may make it difficult.
- Help the patient plan how s/he will fit the change into the routine of the day. Encourage patient to use strategies s/he used successfully in the past.

If the patient is not ready to change:

- Respect the patient's decision.
- Invite patient to identify the pros and cons of change.
- Acknowledge patient's concerns about change.
- Explore ways of overcoming the difficulties preventing change.
- Offer more information or support if the patient would like to consider the issue further.

Arrange support and follow up

- Offer referral to counselor and available support services (social worker, health promoter, community care worker, helpline →123).
- 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

Fill in local services and contact numbers for quick reference		
Helpline	**Services provided**	**Contact number/s**
General counselling		
Abuse		
Chronic condition		
Mental health		
Health worker		
Administration		
Other		

PACK Global Adult

About the Knowledge Translation Unit

The Knowledge Translation Unit is a health systems research unit in the University of Cape Town Lung Institute, committed to improving the quality of primary healthcare for underserved communities worldwide through practical tools, evidence-based implementation and engagement of health systems, their planners, providers and end-users.
www.knowledgetranslation.co.za

About the University of Cape Town Lung Institute

The University of Cape Town Lung Institute, established in 1998, is a company owned by the University of Cape Town that addresses priority health issues in society through education, research and service, with a special focus on lung health and Southern Africa.
www.lunginstitute.co.za

About the University of Cape Town

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