Symptom-based integrated approach to the adult in primary care

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

2019/2020
In the stable patient start by addressing the patient’s general health.

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

- Respect for a patient’s concerns and choices
- Communication with a patient should be effective, courteous and empathic
- The delivery of follow-up care especially for patients with chronic conditions
- Ensuring continuity of care, where possible

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

APC 2019/2020 aligns with National Department of Health policies and clinical protocols:
- Standard Treatment Guidelines and Essential Medicine List for South Africa, Primary Healthcare Level, 2018 Edition
- Standard Treatment Guidelines and Essential Medicine List for South Africa, Adult Hospital Level, 2019 Edition (draft)
- 2019 ART Clinical Guidelines for the Management of HIV in Adults, Pregnancy, Adolescents, Children, Infants and Neonates, 2019
- Guideline for the Prevention of Mother-To-Child Transmission of communicable infections, 2019
- National Guidelines for the management of Viral Hepatitis, 2019
- National Department of Health HIV Testing Services Policy, 2016
- National Tuberculosis Management Guidelines, 2014
- Comprehensive STI clinical management guidelines. Review version for provincial dissemination and consultation meetings, May 2017
- National Contraception Clinical Guidelines, 2012 (including circular updates)
- Cervical cancer prevention and control policy, 2017
- South African guidelines for the prevention of Malaria, 2019
- Guidelines for the treatment of Malaria in South Africa, 2018
- Adherence guidelines for HIV, TB and NCDs. Policy and service delivery guidelines for linkage to care, adherence to treatment and retention in care, 2016
- Revised rifampicin-resistant TB (RR-TB) section reflects the latest policy changes.
- Revised mental health section including management of aggressive patient, abnormal thoughts/behaviour and depression.
- New palliative care section including support for the dying patient.
- New pages: How to collect a good sputum specimen for TB testing; Pallor or anaemia; Gums/teeth symptoms; Menstrual symptoms; Scalp problems; Hair loss; Tobacco smoking; Support the patient to make a change

How to use APC?
APC is designed to reflect the process of conducting a clinical consultation with an adult patient in primary care:
- It is divided into three main sections: Address the patient’s general health, Symptoms and Chronic Conditions.
- In the stable patient start by addressing the patient’s general health then address the patient’s symptom/s and/or chronic conditions.
- In the patient presenting with one or more symptoms, start by identifying the patient’s main symptom. Use the Symptoms contents page to find the relevant symptom page in the clinical tool. Decide if the patient needs urgent attention (indicated in the red box) and if not, follow the algorithm to either a management plan or to consider a chronic condition in the chronic condition section of the clinical tool.
- In the patient known with a chronic condition, use the Chronic Conditions contents page to find that condition in the clinical tool. Go to the colour-coded Routine Care pages for that condition to manage the patient’s chronic condition using the Assess, Advise and Treat’ framework.
- Arrows refer you to another page in the clinical tool.
- The return arrow () indicates that you need to consult another page once you have completed the current page. We suggest you make a note of additional pages to consult.
- The direct arrow () guides you to leave the current page and continue on another page.
- The assessment tables on the Routine Care pages are arranged in 3 tones to reflect those aspects of the history, examination and investigations to consider.
- All medications have been colour coded in either orange, blue or purple to indicate prescriber level for that particular indication and at that dose.
- Orange-highlighted medications may be prescribed by a doctor or a nurse according to his/her scope of practice.
- Purple-highlighted medications are doctor-initiated medications. This means a doctor needs to start the medication and a nurse can continue it according to his/her scope of practice.
- Blue-highlighted medications are doctor prescribed medications. This means that these medications may only be prescribed by a doctor.
- Refer to the Health for All health promotion tool when you see the icon below.

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

The information contained in this document should not be considered a substitute for such professional judgment when treating patients using this information. The content of this document has been developed for, and is intended for use by, health care professionals working in primary care in low and middle income countries. This information is provided on an “as is” basis without any representations, conditions, guarantees or warranties regarding accuracy, relevance, usefulness or fitness for purpose. Any statements made to the contrary are void. Where you use this content you shall be fully responsible for your interpretation of it. To the fullest extent permitted by law, the University of Cape Town Lung Institute (Pty) Ltd shall not be held liable or be responsible for any aspect of healthcare administered in reliance upon, or with the aid of, this information or any other use of this information. Users of the content are strongly advised to consult a variety of sources and use their own professional judgment when treating patients using this information. The content of this document has been developed for, and is intended for use by, health care professionals working in primary care in low and middle income countries. This information is provided on an “as is” basis without any representations, conditions, guarantees or warranties regarding accuracy, relevance, usefulness or fitness for purpose. Any statements made to the contrary are void. Where you use this content you shall be fully responsible for your interpretation of it. To the fullest extent permitted by law, the University of Cape Town Lung Institute (Pty) Ltd shall not be held liable or be responsible for any aspect of healthcare administered in reliance upon, or with the aid of, this information or any other use of this information. Users of the content are strongly advised to consult a variety of sources and use their own professional judgment when treating patients using this information. The content of this document has been developed for, and is intended for use by, health care professionals working in primary care in low and middle income countries. This information is provided on an “as is” basis without any representations, conditions, guarantees or warranties regarding accuracy, relevance, usefulness or fitness for purpose. Any statements made to the contrary are void. Where you use this content you shall be fully responsible for your interpretation of it. To the fullest extent permitted by law, the University of Cape Town Lung Institute (Pty) Ltd shall not be held liable or be responsible for any aspect of healthcare administered in reliance upon, or with the aid of, this information or any other use of this information. Users of the content are strongly advised to consult a variety of sources and use their own professional judgment when treating patients using this information. The content of this document has been developed for, and is intended for use by, health care professionals working in primary care in low and middle income countries. This information is provided on an “as is” basis without any representations, conditions, guarantees or warranties regarding accuracy, relevance, usefulness or fitness for purpose. Any statements made to the contrary are void. Where you use this content you shall be fully responsible for your interpretation of it. To the fullest extent permitted by law, the University of Cape Town Lung Institute (Pty) Ltd shall not be held liable or be responsible for any aspect of healthcare administered in reliance upon, or with the aid of, this information or any other use of this information. Users of the content are strongly advised to consult a variety of sources and use their own professional judgment when treating patients using this information.
## GLOSSARY

<table>
<thead>
<tr>
<th>A</th>
<th>ABC</th>
<th>abacavir</th>
<th>ADR</th>
<th>adverse drug reaction</th>
<th>AHR</th>
<th>abacavir hypersensitivity reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALP</td>
<td>alkaline phosphatase</td>
<td>ALT</td>
<td>alanine aminotransferase</td>
<td>ART</td>
<td>antiretroviral therapy</td>
<td>ATVr</td>
</tr>
<tr>
<td>AZT</td>
<td>zidovudine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>BAL</td>
<td>balanitis/balanoposthitis</td>
<td>BMI</td>
<td>body mass index</td>
<td>BP</td>
<td>blood pressure measured in millimeters of mercury (mmHg)</td>
</tr>
<tr>
<td>C</td>
<td>CCMDD</td>
<td>central chronic medicine dispensing and delivery</td>
<td>CD4</td>
<td>CD4 count of the lymphocytes with a CD4 surface marker</td>
<td>CNS</td>
<td>central nervous system</td>
</tr>
<tr>
<td>D</td>
<td>DBP</td>
<td>diastolic blood pressure</td>
<td>DMPA</td>
<td>depot medroxyprogesterone acetate</td>
<td>DS-TB</td>
<td>drug-sensitive tuberculosis</td>
</tr>
<tr>
<td>E</td>
<td>ECG</td>
<td>electrocardiogram</td>
<td>EDD</td>
<td>estimated date of delivery</td>
<td>EFV</td>
<td>efavirenz</td>
</tr>
<tr>
<td>F</td>
<td>FBC</td>
<td>full blood count</td>
<td>FT4</td>
<td>free thyroxine</td>
<td>FTA</td>
<td>fluorescent treponemal antibody</td>
</tr>
<tr>
<td>G</td>
<td>GCS</td>
<td>Glasgow Coma Scale</td>
<td>GUS</td>
<td>genital ulcer syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Hb</td>
<td>haemoglobin</td>
<td>HbA1c</td>
<td>glycated haemoglobin</td>
<td>HBsAb</td>
<td>hepatitis B surface antibody</td>
</tr>
<tr>
<td>I</td>
<td>IM</td>
<td>intramuscular</td>
<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
<td>INH</td>
<td>isoniazid</td>
</tr>
<tr>
<td>L</td>
<td>LAM</td>
<td>lipoarabinomannan (urine TB test)</td>
<td>LAP</td>
<td>lower abdominal pain</td>
<td>LLETZ</td>
<td>large loop excision of the transformation zone</td>
</tr>
<tr>
<td>M</td>
<td>MCS</td>
<td>microscopy, culture and sensitivity</td>
<td>MCV</td>
<td>mean cell volume</td>
<td>MHCA</td>
<td>mental health care act</td>
</tr>
<tr>
<td>N</td>
<td>NCAC</td>
<td>national clinical advisory committee</td>
<td>NDoH</td>
<td>National Department of Health</td>
<td>NSAIDs</td>
<td>non-steroidal anti-inflammatory drugs</td>
</tr>
<tr>
<td>P</td>
<td>PCAC</td>
<td>provincial clinical advisory committee</td>
<td>PCR</td>
<td>polymerase chain reaction</td>
<td>PEFR</td>
<td>peak expiratory flow rate</td>
</tr>
<tr>
<td>R</td>
<td>RF</td>
<td>rheumatoid factor</td>
<td>RDT-Tp</td>
<td>rapid diagnostic test for treponema pallidum</td>
<td>Respiratory rate</td>
<td>measured in breaths per minute</td>
</tr>
<tr>
<td>S</td>
<td>SAMF</td>
<td>South African Medicines Formulary</td>
<td>SBP</td>
<td>systolic blood pressure</td>
<td>SFH</td>
<td>symphysis-fundal height</td>
</tr>
<tr>
<td>T</td>
<td>TB</td>
<td>tuberculosis</td>
<td>TBSA</td>
<td>total body surface area</td>
<td>Td</td>
<td>tetanus and diphtheria vaccine</td>
</tr>
<tr>
<td>U</td>
<td>UTI</td>
<td>urinary tract infection</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>V</td>
<td>VDS</td>
<td>vaginal discharge syndrome</td>
<td>VL</td>
<td>viral load</td>
<td></td>
<td></td>
</tr>
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<td>SYMPTOMS</td>
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**PRESCRIBE RATIONALLY**

### Assess the patient needing a prescription

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<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Confirm the patient’s diagnosis, that the medication is necessary and that its benefits outweigh the risks.</td>
</tr>
<tr>
<td>Other conditions</td>
<td>If necessary adjust the dose (e.g. simvastatin, hydrochlorothiazide in liver disease; tenofovir in kidney disease) or change medication (e.g. avoid ibuprofen in hypertension, asthma).</td>
</tr>
<tr>
<td>Other medications</td>
<td>Check all medication (prescribed, over-the-counter, herbal) is necessary and for possible interactions especially if on hormonal contraceptive or treatment for TB, HIV, epilepsy.</td>
</tr>
<tr>
<td>Allergies</td>
<td>If known allergy or previous bad reaction to medication, record in patient’s notes and discuss alternative with doctor.</td>
</tr>
<tr>
<td>Age</td>
<td>If &gt; 65 years consider lowering the dose or frequency of medication. Discuss with doctor if patient on amitriptyline, theophylline, ibuprofen, amlodipine or fluoxetine or is using &gt; 5 medications.</td>
</tr>
<tr>
<td>Pregnant/breastfeeding</td>
<td>If pregnant or breastfeeding check if the medication is safe. Ensure patient receives routine antenatal care. 141.</td>
</tr>
</tbody>
</table>

Response to treatment

- If the patient’s condition does not improve, first exclude poor adherence, then consider changing the treatment or an alternative diagnosis.
- Check for side effects and report reactions to the medication. Fax adverse drug reaction (ADR) form to (012) 395 8468 or (021) 448 6181. Or scan and email form to adr@health.gov.za.

Advertise the patient needing a prescription

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

### Treat the patient needing a prescription

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

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1. Adverse drug reaction report forms available from clinic pharmacy or may be accessed via website: www.sahpra.org.za.
INITIAL ASSESSMENT OF THE PATIENT

Give urgent attention to the patient with any of:

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

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

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

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

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

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

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

**Patient is pregnant**

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

**Check at booking visit:**

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

**Check at every visit:**

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

**Patient has hypertension**

- BP
- At first visit also check height to calculate BMI

**Check at every visit:**

- BP
- Fingerprick glucose (only if unwell or not yet stable on medications)
- Urine dipstick only if fingerprick glucose ≥ 11.1
- At first visit also check height to calculate BMI

**Patient has diabetes**

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

**Check at every visit:**

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

**Check once a year:**

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

---

1BMI = weight (kg) ÷ height (m) ÷ height (m).
### ADDRESS THE PATIENT’S GENERAL HEALTH

**Assess the patient’s general health at every visit.**

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages.</td>
</tr>
<tr>
<td>TB</td>
<td>Every visit</td>
<td>If cough ≥ 2 weeks, weight loss, night sweats or fever, exclude TB.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>• Assess patient’s contraceptive needs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If HIV positive and planning pregnancy, advise patient to use contraception until viral load lower is suppressed.</td>
</tr>
<tr>
<td>Sexual health</td>
<td>Every visit</td>
<td>• Ask about genital symptoms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ask about risky sexual behaviour.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>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.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any.</td>
</tr>
<tr>
<td>Smoking</td>
<td>Every visit</td>
<td>If patient smokes, encourage to stop.</td>
</tr>
<tr>
<td>Older person risk</td>
<td>If &gt; 65 years: at every visit</td>
<td>• If patient has a change in function, check for symptoms suggesting a cause: fever, urinary symptoms, confusion, early onset CVD.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Consider using lower medication doses (give full doses of antibiotics and ART). Avoid unnecessary medications. Discuss with doctor if patient on diazepam, amitriptyline, theophylline, codeine, ibuprofen, amlodipine or fluoxetine.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If memory problems and disorientation for at least 6 months, consider dementia.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>If ≥ 40 years or ≥ 2 risk factors</td>
<td>• Assess CVD risk at first visit, then depending on risk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk factors: smoking, BMI &gt; 25, waist circumference &gt; 80cm (woman) or 94cm (man), hypertension, diabetes, cholesterol &gt; 5.2, parent/sibling with early onset CVD (man &lt; 55 years or woman &lt; 65 years).</td>
</tr>
<tr>
<td>BP</td>
<td>First visit, then depending on result</td>
<td>Check BP: if ≥ 140/90. If pregnant and BP ≥ 140/90.</td>
</tr>
<tr>
<td>Weight (BMI)</td>
<td>Yearly</td>
<td>• BMI = weight (kg) / height (m) / height (m).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If BMI &gt; 25, refer for nutritional support.</td>
</tr>
<tr>
<td>Diabetes risk</td>
<td>At first visit if:</td>
<td>• If not known diabetic, check glucose.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If status unknown: If sexually active: 6-12 monthly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If pregnant: every antenatal visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If breastfeeding: 3 monthly</td>
</tr>
<tr>
<td>HIV</td>
<td>• If status unknown: If sexually active: 6-12 monthly.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If pregnant: every antenatal visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If breastfeeding: 3 monthly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Test for HIV.</td>
</tr>
<tr>
<td>Cervical screen (if woman)</td>
<td>When needed</td>
<td>• HIV negative: do 3 routine cervical screens in a lifetime from age 30, with a 10-year interval between each screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• HIV positive: do routine cervical screen every 3 years from time of HIV diagnosis, regardless of age.</td>
</tr>
<tr>
<td>Breast check (if woman)</td>
<td>• First visit</td>
<td>• Check for lumps in breasts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If on hormone therapy, refer for mammogram at initiation if available.</td>
</tr>
</tbody>
</table>

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

---

1. Viral load < 50. 2. One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. 3. Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.
Advising 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 the patient that not all tests, treatments and procedures help prevent or treat disease. Some provide little or no benefit and may even cause harm (like doing x-rays or giving antibiotics unnecessarily).
- Advise the woman to do monthly breast self-examinations and to return if any lump/s found.
- Help the patient to choose lifestyle changes to improve and maintain his/her general health. Support the patient to change.

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

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

Stress
- Assess and manage stress.

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

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

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

Treat preventively to maintain the patient’s general health

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

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

*One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
Give urgent attention to the emergency patient:

Does the patient respond to voice or physical stimulation?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Call for help and an automated external defibrillator (AED) or defibrillator.</td>
<td>• Feel for carotid pulse for maximum of 10 seconds.</td>
</tr>
</tbody>
</table>

Pulse felt

Check breathing:

<table>
<thead>
<tr>
<th>No pulse felt or unsure</th>
<th>Start CPR → 11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient breathing well</td>
<td>Patient gasping or not breathing</td>
</tr>
<tr>
<td>• Check airway clear.</td>
<td>• Give 1 breath with bag valve mask attached to oxygen every 6 seconds.</td>
</tr>
<tr>
<td>• Recheck pulse every 2 minutes. If no pulse, start CPR → 11.</td>
<td>• Recheck pulse every 2 minutes. If no pulse, start CPR → 11.</td>
</tr>
</tbody>
</table>

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

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

Breathing
• If difficulty breathing or oxygen saturation < 94%, give face mask oxygen.
• If respiratory rate < 9 or blue lips/tongue, connect bag valve mask to oxygen and slowly deliver each breath with the patient.
• Intubate if using bag valve mask and still difficulty breathing, oxygen saturation < 94% or blue lips/tongue.
• If sudden breathlessness, more resonant/decreased breath sounds/pain on 1 side, deviated trachea: tension pneumothorax likely:
  - Insert large bore cannula above 3rd rib in mid-clavicular line.
  - Arrange urgent chest tube.

Circulation
• Establish IV access.
• If BP < 90/60, pulse ≥ 100 or heavy bleeding, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. If known heart problem or severe infection suspected, give instead sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
• Stop bleeding: apply pressure and elevate limb. If bleeding still severe, apply tourniquet above injury.

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

<table>
<thead>
<tr>
<th>Best motor response</th>
<th>Best verbal response</th>
<th>Eye opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Obey s commands</td>
<td>5 Orientated</td>
<td>4 Spontaneous</td>
</tr>
<tr>
<td>5 Localises to pain</td>
<td>4 Confused</td>
<td>3 To voice</td>
</tr>
<tr>
<td>4 Withdrawing from pain</td>
<td>Inappropriate words</td>
<td>2 To pain</td>
</tr>
<tr>
<td>3 Abnormal flexion to pain</td>
<td>Incomprehensible sounds</td>
<td>1 None</td>
</tr>
<tr>
<td>2 Extends to pain</td>
<td>1 None</td>
<td>1 None</td>
</tr>
<tr>
<td>1 None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Manage further and refer urgently:
• While awaiting transport, continue to assess and manage airway, breathing, circulation and level of consciousness.
• If injured → 14, if fitting/just had fit → 15, if decreased consciousness → 12, if burns → 17, if bite/sting → 18, if fever → 20, if rash → 58, if anaphylaxis → 16.
• If other symptom, manage as on symptom page.
In the patient with no pulse, record the time and start chest compressions:

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

**Ventricular fibrillation (VF)**

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

**Pulseless ventricular tachycardia (pVT)**

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

**Asystole**

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

**Any other rhythm:**

- Pulseless electrical activity (PEA)
- Other rhythm:
  - Feel for carotid pulse for up to 10 seconds.
  - No pulse felt
  - Unsure
  - Pulse felt
  - PEA
  - **Stop CPR and check breathing → 10.**

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

**VF**

- Immediately restart CPR, starting with compressions.
- Give adrenaline\(^1\) 1mL (1:1000 solution) IV, followed by 5mL sterile water or sodium chloride 0.9%. Repeat adrenaline every 2 cycles (every 3-5 minutes).

**pVT**

- After every 2 minutes of CPR, pause compressions, recheck heart rhythm and manage as above.

While giving continuous CPR:

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

Decide when to stop CPR:

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

How to give chest compressions

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

---

\(^1\)Adrenaline is also known as epinephrine.
DECREASED CONSCIOUSNESS

Give urgent attention to the patient with decreased consciousness:

- First assess and manage airway, breathing, circulation and level of consciousness ≥10.
- Identify all injuries and look for cause: undress patient and assess front and back. If injured, use log-roll to turn. Then cover and keep warm.
- If fits, injuries or burns, also manage on symptom pages.
- If sudden decreased consciousness and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, abdominal pain, vomiting or exposure to possible allergen¹, check for anaphylaxis ≥16.
- Check glucose, temperature and pupils:

<table>
<thead>
<tr>
<th>Glucose</th>
<th>Temperature</th>
<th>Pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 3 or unable to measure</td>
<td>≥ 35°C</td>
<td>Illegal drug use and/or respiratory rate &lt; 12</td>
</tr>
<tr>
<td>≥ 11.1</td>
<td>&lt; 38°C</td>
<td>Excessive secretions or muscle twitching</td>
</tr>
<tr>
<td>≥ 11.1</td>
<td>≥ 38°C</td>
<td>Opioid overdose likely</td>
</tr>
<tr>
<td>≥ 11.1</td>
<td>≥ 38°C</td>
<td>Organophosphate poisoning likely</td>
</tr>
<tr>
<td>≥ 11.1</td>
<td>≥ 38°C</td>
<td>Stimulant or other drug overdose likely</td>
</tr>
</tbody>
</table>

- Give sodium chloride 0.9% 15-20mL/kg IV over the first hour, then 10mL/kg/hour thereafter.
- Stop if breathing worsens.
- If known diabetes and referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)².
- Give sodium chloride 0.9% 15-20mL/kg IV over the first hour, then 10mL/kg/hour thereafter.
- Stop if breathing worsens.
- If known diabetes and referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)².
- Give dextrose 10%² 5mL/kg IV. If known alcohol user, give thiamine 100mg IM/IV before dextrose.
- Recheck glucose after 15 minutes: if still < 3, give further dextrose 10%² 2mL/kg IV.
- Once glucose ≥ 3, continue dextrose 5% 1L IV 6 hourly.
- Give sodium chloride 0.9% 15-20mL/kg IV over the first hour, then 10mL/kg/hour thereafter.
- Stop if breathing worsens.
- If known diabetes and referral delay > 2 hours: give short-acting insulin 0.1 unit/kg IM (not IV)².
- Give dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution.
- Avoid IV insulin as it may cause low potassium and heart dysrhythmia. Avoid using an insulin needle to give IM insulin.
- Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.
- Test for malaria with rapid diagnostic test if available, and parasite slide microscopy.
- To give IM quinine: first calculate volume of sodium chloride 0.9% in mL: weight x 20 = 100. Then add this volume of sodium chloride 0.9% to quinine 20mg/kg and inject half the volume into each thigh.
- Give naloxone IM only if IV not possible.
- If temperature > 40°C:
  - Remove clothing.
  - Use fan and water spray to cool patient.
  - Apply ice-packs to axillae, groin and neck.
- If fits, injuries or burns, also manage on symptom pages.
- If sudden decreased consciousness and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, abdominal pain, vomiting or exposure to possible allergen¹, check for anaphylaxis ≥16.

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

**If known diabetes → 112.**

Interpret and manage random fingerprick glucose:

**Glucose < 3**

Patient has hypoglycaemia.

- **Give urgent attention**
  - **Is patient alert?**
    - **Yes**
      - Give glucose 5mL/kg orally.
      - If unable to take orally, give instead glucose or dextrose 10% 5mL/kg via nasogastric tube (NGT).
      - Check glucose after 15 minutes:
        - **≥ 3**
          - Give further glucose or dextrose 10% 2mL/kg orally via NGT and discuss/refer.
        - **< 3**
          - Look for cause. Return to symptom page.
    - **No**
      - Check glucose after 15 minutes:
        - **≥ 3**
          - Give glucose 10% 2mL/kg IV.
          - Then give dextrose 5% 1L IV 6 hourly.
          - Refer.
        - **< 3**
          - Give dextrose 10% 2mL/kg IV.
          - If decreased consciousness → 12.
          - If fits → 15.
          - Check glucose after 15 minutes:
            - **≥ 3**
              - No ketones
            - **< 3**
              - Yes

- **Check if patient needs urgent attention:**
  - Decreased consciousness → 12
  - Chest pain → 33
  - Fits → 15
  - Drowsiness
  - Confusion

- **Check fasting plasma glucose after an 8-hour overnight fast.**
  - **< 6.1**
    - Patient has impaired fasting glucose.
    - Repeat fasting plasma glucose after 1 week.
  - **6.1-6.9**
    - Patient has impaired fasting glucose.
    - Repeat fasting plasma glucose after 1 week.
  - **≥ 7**
    - Repeat fasting plasma glucose 1 week later.

- **Assess CVD risk → 110.**

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

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3 Three teaspoons sugar (15g) in 1 cup (200mL) water. If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution. 4 BMI = weight (kg) ÷ height (m) ÷ height (m). 5 Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. 6 Thirst, dry mouth, poor skin turgor, BP < 90/60, pulse ≥ 100. 7 Avoid IV insulin as may cause low potassium and heart dysrhythmia. Monitoring needed.
THE INJURED PATIENT

**Give urgent attention to the injured patient:**
- First assess and manage airway, breathing, circulation and level of consciousness.  
- 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.

**Approach to the injured patient not needing urgent attention:**
- Refer same day if pregnant, known bleeding disorder, on anticoagulant, involved in high-speed collision, ejected from or hit by vehicle or fell > 3 metres. If assault or abuse. 
- If open wound, give tetanus toxoid 0.5mL IM if none in past 5 years.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any.

---

### Wound
- **Give sodium chloride 0.9% 1L IV hourly for 2 hours, then 500mL hourly. Aim for urine output > 200mL/hour. Stop if breathing worsens.**
- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.

### Wound and any of:
- Poor perfusion (cold, pale, numb, no pulse) below injury
- Excessive or pulsatile bleeding
- Penetrating wound to head/neck/chest/abdomen
- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.

### Fracture
- **Apply direct pressure to stop bleeding. Remove foreign material, loose/dead skin. Wash well with chlorhexidine 0.05% aqueous solution under running water for 5 minutes. Apply povidone iodine 10% solution if dirty.**
- If if sutured needed: inject lidocaine 1% or 2% 3mg/kg around wound to numb area. Apply non-adherent dressing for 24 hours.
- Avoid suturing if > 12 hours (body), > 24 hours (head/neck), remaining foreign material, infected, gunshot or deep puncture.
- If not suitable for suturing: pack wound with saline-soaked gauze and give cephalexin 500mg 6 hourly for 5 days.
- Review in 2 days. Suture if needed and no infection unless gunshot/deep puncture (irrigate and dress every 2 days instead).
- Give paracetamol 1g 6 hourly as needed for up to 5 days. Advise patient to return if signs of infection (red, warm, painful, swollen, foul-smell or pus).
- Remove sutures after 5 days (face), 4 days (neck), 10 days (leg) or 7 days (rest of body).
- Refer if unable to close wound easily, weakness/numbness below injury or cosmetic concerns.

### Fracture and any of:
- Poor perfusion (cold, pale, numb, no pulse) below fracture
- Increasing pain, muscle tightness, numbness in limb
- Suspected femur, pelvis or spine fracture
- If poor perfusion, weakness/numbness below fracture: gently re-align into normal position.
- If open fracture: remove foreign material, irrigate with sodium chloride 0.9% and cover with saline-soaked gauze.
- Give ceftriaxone 1g IV/IM.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

### Fracture and any of:
- Weak/numb below fracture
- Open fracture
- ≥ 2 rib fractures
- Severe deformity

---

### Head injury
- **Give urgent attention to the injured patient:**
- 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.
- **Give** tetanus toxoid.
- If headache, dizziness or mental fogginess, refer urgently. While awaiting transport, check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes.
- If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 94% or drop in GCS, reassess airway, breathing, circulation, level of consciousness.

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

### Head injury and any of:
- Give sodium chloride 0.9% (not dextrose) over 60 minutes.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- Give ceftriaxone 1g IV/IM.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

---

### Approach to the injured patient not needing urgent attention:
- Refer urgently. While awaiting transport, check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes.
- If BP < 90/60, pulse > 100 or < 50, respiratory rate > 20 or < 9, oxygen saturation < 94% or drop in GCS, reassess airway, breathing, circulation, level of consciousness.

### Wound
- Apply direct pressure to stop bleeding. Remove foreign material, loose/dead skin. Wash well with chlorhexidine 0.05% aqueous solution under running water for 5 minutes. Apply povidone iodine 10% solution if dirty.
- If if sutured needed: inject lidocaine 1% or 2% 3mg/kg around wound to numb area. Apply non-adherent dressing for 24 hours.
- Avoid suturing if > 12 hours (body), > 24 hours (head/neck), remaining foreign material, infected, gunshot or deep puncture.
- If not suitable for suturing: pack wound with saline-soaked gauze and give cephalexin 500mg 6 hourly for 5 days.
- Review in 2 days. Suture if needed and no infection unless gunshot/deep puncture (irrigate and dress every 2 days instead).
- Give paracetamol 1g 6 hourly as needed for up to 5 days. Advise patient to return if signs of infection (red, warm, painful, swollen, foul-smell or pus).
- Remove sutures after 5 days (face), 4 days (neck), 10 days (leg) or 7 days (rest of body).
- Refer if unable to close wound easily, weakness/numbness below injury or cosmetic concerns.

### Wound and any of:
- Poor perfusion (cold, pale, numb, no pulse) below injury
- Excessive or pulsatile bleeding
- Penetrating wound to head/neck/chest/abdomen
- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.

### Fracture
- Splint limb to immobilise joint above and below fracture.
- Give paracetamol 1g 6 hourly and add ibuprofen 400mg 8 hourly with food for up to 5 days if needed.
- Do x-ray and refer to doctor same day.

### Fracture and any of:
- Weak/numb below fracture
- Open fracture
- ≥ 2 rib fractures
- Severe deformity

### Head injury
- Observe for 2 hours before discharging.
- If mild headache, dizziness or mental fogginess, refer urgently. While awaiting transport, check BP, pulse, respiratory rate, oxygen saturation and GCS every 15 minutes.
- If excessive or pulsatile bleeding, apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- Give ceftriaxone 1g IV/IM.
- Splint limb to immobilise joint above and below fracture.
- If pelvic fracture, tie sheet tightly around hips to immobilise.

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

---

1Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 3mL IV over 3 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60. 2Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. 3IV phenytoin can cause low blood pressure and heart dysrhythmia: maximum infusion rate is 50mg/minute; monitor ECG and BP. If IV phenytoin unavailable, give face mask oxygen and refer urgently. *One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. To calculate volume to inject, use 0.15mL/kg of lidocaine 2% and 0.3mL/kg of lidocaine 1%.

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Appendix
- Drugs and fluids: dilutions, dosages and administration.
- Precautions and contraindications.
- Equipment and supplies.
- Referral guidelines.

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14
SEIZURES/FITS

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

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

Approach to the patient who is not fitting now

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

Refer patient same day if any of:

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

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

Is the patient known with epilepsy?

Yes

Give routine epilepsy care ➔ 131.

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

No

Yes

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

Stroke or TIA likely ➔ 118.

No

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

Common faint likely ➔ 24.

If diagnosis uncertain, refer.

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

**Give urgent attention to the patient with possible anaphylaxis:**

<table>
<thead>
<tr>
<th>In the few hours before symptoms started, was patient exposed to any medication, food(^1) or insect bite/sting which has caused anaphylaxis before?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>In the few hours before symptoms started, was patient exposed to any medication, food(^1) or insect bite/sting?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Is there sudden onset of ≥ 2 of: 1) Generalised itch/rash or face/tongue swelling 2) Difficulty breathing 3) BP &lt; 90/60 or dizziness/collapse 4) Abdominal pain or vomiting</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Treat for anaphylaxis.</td>
</tr>
</tbody>
</table>

**Manage anaphylaxis and refer urgently:**
- Give immediately adrenaline\(^2\) 0.5mL (1:1000 solution) IM into mid outer thigh. Repeat every 5 minutes if needed.
- Raise legs and give 100% face mask oxygen.
- Give sodium chloride 0.9% 1-2L IV rapidly regardless of BP. Then, if BP < 90/60, also give sodium chloride 0.9% 500mL IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If persistent wheeze or difficulty breathing despite adrenaline\(^2\), also give 1mL salbutamol 0.5% solution and 2mL ipratropium bromide solution in 4mL sodium chloride 0.9% via nebuliser every 20 minutes for 3 doses. If needed, assess and further manage airway.\(^{27}\)
- Give hydrocortisone 200mg IM/slow IV immediately and promethazine 50mg IM/slow IV.

### Assess the patient with previous anaphylaxis

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

### Advise the patient with previous anaphylaxis

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

\(^1\)Common foods causing anaphylaxis include peanuts, tree nuts, egg, milk and fish.  
\(^2\)Adrenaline is also known as epinephrine.
Calculate the percentage total body surface area (% TBSA) burnt using the figure below.

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

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

**Management:**

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

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

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

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

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

- Snake bite (even if bite marks not seen)
- If sudden generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain or vomiting, check for anaphylaxis.  
- Weakness, drooping eyelids, difficulty swallowing and speaking, double vision
- Animal/human bite with any of: multiple bites, deep/large wound, loss of tissue, involving joint/bone, temperature ≥ 38°C or pus
- BP < 90/60
- Excessive or pulsatile bleeding

**Management:**

- **If snake bite:**
  - Keep patient calm and still. Remove jewellery and immobilise bitten limb.
  - Clean bite with chlorhexidine 0.05% solution. Avoid applying tourniquet or sucking out venom.
  - Discuss with local poison helpline 155.
- **If excessive or pulsatile bleeding,** apply direct pressure and elevate limb. If bleeding severe and persists, apply tourniquet above injury.
- **If BP < 90/60,** give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- Remove loose/dead skin. Clean wound with chlorhexidine 0.05% or povidone iodine 10% solution and irrigate under running water for 10 minutes. Avoid suturing the wound.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.
- Refer urgently.

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

**Human or animal bite/s**

- Remove loose/dead skin. Clean wound with chlorhexidine 0.05% or povidone iodine 10% solution and irrigate under running water for 10 minutes.
- Avoid suturing puncture wounds.
- If animal bite, consider rabies post-exposure prophylaxis:
  - If bite/scratch with visible blood, licking of eyes/mouth/broken skin by a dog, cat, mongoose, jackal, cattle or goat; or any contact with a bat:
    - Inject rabies immunoglobulin 20IU/kg at the site of the bite and
    - Inject rabies vaccine 1 ampoule IM into deltoid muscle (not buttoc). Repeat vaccine on days 3, 7 and 14 (if impaired immunity¹, also give a 5th dose on day 28).
  - If scratch with no visible blood, give rabies vaccine only as above.
  - If rabies immunoglobulin or vaccine unavailable, refer. If unsure, contact rabies hotline for advice. 155.
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If bite punctured the skin with visible bleeding, bite to hand or from human or bat: give amoxicillin/clavulanic acid 875/125mg 12 hourly for 5 days. If severe penicillin allergy², give instead azithromycin 500mg daily for 3 days and metronidazole 400mg 8 hourly for 5 days.
- If human bite, severe enough to cause bleeding, also assess need for hepatitis B post-exposure prophylaxis (PEP). 78. Risk of HIV transmission through biting is negligible and HIV PEP not needed.
- If bite infected and no response to antibiotics within 48 hours, refer.
- Give tetanus toxoid 0.5mL IM if none in past 5 years.

**Insect/spider/scorpion bite or sting**

- Remove stinger. Clean wound with soap and water. Apply ice pack for pain/swelling.
- If severe pain, redness, swelling or itch:
  - Give chlorphenamine 4mg 8 hourly for up to 5 days.
  - Apply calamine lotion as needed.
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
- If spider bite, advise patient to return if signs of infection (skin red, warm, painful) and give flucloxacillin 500mg 6 hourly for 5 days. If severe penicillin allergy², give instead azithromycin 500mg daily for 3 days.
- If very painful scorpion sting, inject lignocaine 2% 2mL around site.

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¹Known with HIV, diabetes or cancer, pregnant or receiving chemotherapy or corticosteroids. ²History of angioedema, anaphylaxis or urticaria.
**WEIGHT LOSS**

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

### STEP 1. Check for TB, HIV and diabetes

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

#### Test for HIV
- Test for HIV, \( \geq 95 \). If HIV positive, give routine care, \( \geq 96 \).

#### Check for diabetes
- Check glucose, \( \geq 13 \).

### STEP 2. Then ask about symptoms of common cancers

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

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

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

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

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

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

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

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

Give urgent attention to the patient with a fever and any of:
- Fits or just had a fit
- Decreased consciousness
- Neck stiffness, drowsy/confused or purple/red rash, meningitis likely
- Respiratory rate > 30 or difficulty breathing
- BP < 90/60
- Tender in right lower abdomen, appendicitis likely
- Severe abdominal or back pain
- Jaundice
- Easy bleeding or bruising

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

Approach to the patient with a fever not needing urgent attention
- If on abacavir, check for abacavir hypersensitivity reaction (AHR).
- Has patient been in a malaria area in past 3 months?

Malaria test positive

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

Malaria test negative

Consider other cause of fever:

Does patient have a tick bite (small dark brown/black scab) or tick present?

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

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

Malaria test negative

No

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

Give urgent attention to the patient with lump/swelling in groin and any of:
- Lump in groin that gets bigger when standing/coughing/passing stool and any of: severe pain, vomiting, no stools or flatus/wind for past 24 hours, or lump cannot be reduced: incarcerated/strangulated inguinal hernia likely
- Pulsating lump: aneurysm likely
Refer urgently.

Approach to the patient with lump/swelling in neck, axilla or groin not needing urgent attention:
- If lump is in the skin → 58.
- If lump is beneath the skin, first exclude thyroid mass and hernia:
  - Lump in neck that moves up when patient swallows, thyroid mass likely: check TSH and refer same week for further investigation.
  - Lump in groin that gets bigger when standing/coughing/passing stool, inguinal hernia likely: refer.
- If none of the above, a lump in neck, axilla or groin is likely an enlarged lymph node (lymphadenopathy). If unsure, refer.

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

Generalised lymphadenopathy

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

Axilla
- Check arms, breasts, chest, upper abdomen and back.
- If lump in breast → 36.

Groin
Is the groin lymph node hot and tender?

Yes: treat for bubo:
- First assess and advise the patient → 41.
- Give azithromycin 1g weekly for 3 weeks.
- If fluctuant lymph node, aspirate pus through healthy skin in sterile manner every 3 days as needed.
- If pain, give ibuprofen¹ 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: Bubo.
- Review in 14 days: if no better, refer.

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

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

Is the lump in neck, axilla or groin well or unwell?

Well
- Generalised lymphadenopathy or
- Unwell or
- Lymph node/s getting bigger quickly
- Refer same week.

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

How to aspirate lymph node for TB microscopy and cytology:

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

¹Avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure, kidney disease.
WEAKNESS OR TIREDNESS

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

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

Management:
- If dehydrated, give oral rehydration solution (ORS) and observe. If unable to drink or BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. If IV rehydration needed or no better with oral rehydration after 2 hours, refer.
- If glucose < 3 or ≥ 11.1 or if diabetes and glucose < 4 → 112.
- If worsening weakness of leg/s, refer urgently.

Approach to patient with tiredness not needing urgent attention:

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

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

  **Check medications**
  - If on abacavir or zidovudine, check for urgent side effects, → 102.
  - Chlorphenamine, enalapril, amlodipine, floxetine, amitriptyline, metoclopamide, sodium valproate, phenytoin and spironolactone can cause weakness or tiredness. Discuss with doctor.

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

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

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

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

If persistent tiredness and no obvious cause, refer.

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One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
**PALLOR AND ANAEMIA**

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

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

- Hb < 6
- Pulse ≥ 100
- Respiratory rate ≥ 30
- BP < 90/60
- Dizzy/faint
- Swollen legs
- Jaundice
- Chest pain or palpitations
- Black1 or bloody stools
- Widespread/easy bruising
- Purple/red rash that does not disappear with pressure

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

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

- Test for HIV → 95 and TB → 81.
- Exclude pregnancy. If pregnant, give routine antenatal care → 138.
- If fever now or in past 3 days, and in a malaria area in past 3 months, arrange same day malaria test2. If positive, malaria likely → 20.
- If not pregnant, send full blood count (FBC) and manage further according to mean cell volume (MCV)³ result:

<table>
<thead>
<tr>
<th>MCV³</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Iron deficiency anaemia likely</td>
</tr>
<tr>
<td>High</td>
<td>Macrocytic anaemia likely</td>
</tr>
</tbody>
</table>

#### Iron deficiency anaemia likely

- Is patient a man or a woman who no longer has periods?

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

- No
  - Review medication: if on zidovudine or anticonvulsants, discuss with doctor.
  - Give folate 5mg daily until Hb normal.
  - Repeat Hb monthly on treatment: if Hb decreases or if no better after 4 weeks, refer.

#### Systemic disease or chronic condition likely

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

#### Macrocytic anaemia likely

- Patient postpartum or known to misuse alcohol³?

- Yes
  - Refer to investigate for vitamin B12 deficiency.

- No

---

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

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

- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA → 118.
- Decreased consciousness → 12
- Fit → 15
- Chest pain → 33
- Difficulty breathing → 34
- Glucose < 3 (or < 4 if diabetes) → 13
- If sudden collapse and any of: generalised itch/rash, face/tongue swelling, wheeze, difficulty breathing, abdominal pain, vomiting or exposure to possible allergen¹, check for anaphylaxis → 16.
- Recent injury
- Systolic BP < 90
- Pulse < 50 or irregular
- Palpitations
- Family history of collapse or sudden death
- Abnormal ECG
- Known heart problem
- Collapse with exercise
- Vomited blood or blood in stool
- Pregnant or missed/overdue period with abdominal pain and vaginal bleeding
- Severe back or abdominal pain

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

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

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

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

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

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

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

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

If none of the above, look for and manage likely cause: if vision problems → 27, joint problems → 253, foot problems → 57, leg problems → 56, dementia → 130.
- Refer if patient > 65 years with possible heart disease, patient collapses/falls repeatedly or cause for collapse/falls is uncertain.

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

Give urgent attention to the patient with dizziness and any of:
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA \( \rightarrow 118 \).
- BP < 90/60
- Pulse < 50 or irregular
- Glucose < 3 (or < 4 if diabetes) \( \rightarrow 13 \)
- Chest pain \( \rightarrow 33 \)

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

Approach to the patient with dizziness not needing urgent attention:
- Ask about ear symptoms. If present \( \rightarrow 29 \). If hearing loss, refer same week.
- Ask about fainting/collapse attacks. If present, do ECG. If ECG abnormal, refer same day.
- Screen for alcohol/drug use: in the past year, has patient: 1) drunk ≥ 4 drinks\(^1\)/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any \( \rightarrow 124 \).
- Review medication: antidepressants, hypertension and epilepsy treatment, furosemide and efavirenz can cause dizziness. Discuss with doctor.
- Check Hb: if < 12 (woman) or < 13 (man), anaemia likely \( \rightarrow 23 \).
- Check BP: if ≥ 140/90 \( \rightarrow 114 \). Measure BP after lying for 5 minutes and repeat after standing for 3 minutes. Does systolic BP drop by ≥ 20 or diastolic BP drop by ≥ 10?
- 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.

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

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

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

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

---

\(^1\)One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
**HEADACHE**

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

- Decreased consciousness \(\rightarrow 12\)
- BP \(\geq 180/130\) and not pregnant \(\rightarrow 114\)
- Pregnant or 1 week postpartum, and BP \(\geq 140/90 \rightarrow 138\)
- Sudden weakness/numbness of face/arm/leg or speech problem \(\rightarrow 118\)
- New vision problems or eye pain \(\rightarrow 27\)

Manage and refer urgently:

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

---

### Approach to the patient with headache not needing urgent attention

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

No: does patient have fever and body pain?

<table>
<thead>
<tr>
<th>Sinusitis likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Give paracetamol 1g 6 hourly as needed for up to 5 days.</td>
</tr>
<tr>
<td>• Give sodium chloride 0.9% nasal drops as needed.</td>
</tr>
<tr>
<td>• Give oxymetazoline 0.05% 2 drops in each nostril 8 hourly for up to 5 days. Advise against overuse which may worsen blocked nose.</td>
</tr>
<tr>
<td>• If symptoms (\geq 10) days, fever (\geq 38^\circ C), purulent nasal discharge, facial pain or symptoms worsen after initial improvement, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy, give instead azithromycin 500mg daily for 3 days.</td>
</tr>
<tr>
<td>• If recurrent, test for HIV (\rightarrow 95).</td>
</tr>
<tr>
<td>• If tooth infection or swelling over sinus/around eye, refer same day.</td>
</tr>
</tbody>
</table>

Yes: headache likely

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

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

### Pain over cheeks, before and after IV ceftriaxone.

#### Cough

- No: does patient have fever and body pain?

<table>
<thead>
<tr>
<th>No: does patient get recurrent headaches that are throbbing, disabling with nausea or light/noise sensitivity, that resolve completely within 72 hours?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes: migraine likely</td>
</tr>
<tr>
<td>• Give immediately and then as needed paracetamol 1g 6 hourly or ibuprofen (\rightarrow 400)mg 8 hourly with food for up to 5 days.</td>
</tr>
<tr>
<td>• If nausea, also give metoclopramide 10mg 8 hourly up to 3 doses.</td>
</tr>
<tr>
<td>• Advise to recognise and treat migraine early, rest in dark, quiet room.</td>
</tr>
<tr>
<td>• Advise regular meals, keep hydrated, regular exercise, good sleep hygiene.</td>
</tr>
<tr>
<td>• Keep a headache diary to identify triggers like lack of sleep, hunger, stress, caffeine, chocolate, cheese. Avoid if possible.</td>
</tr>
<tr>
<td>• Avoid oestrogen-containing contraceptives (\rightarrow 136).</td>
</tr>
<tr>
<td>• If (\geq 2) attacks/month, refer/discuss for medication to prevent migraines.</td>
</tr>
</tbody>
</table>

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

- Advise to use analgesia when necessary. Overuse may cause headaches. If using analgesia \(\geq 2\) days/week for \(\geq 3\) months, advise to reduce amount used. Headache should improve within 2 months.

---

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

Eyes discharging or watery. Is there a prominent itch?

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

No

Yes

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

Viral conjunctivitis likely
- Help to identify and advise to avoid triggers\(^2\).
- Apply cold compresses.
- Give oxymetazoline 0.025% eye drops 1-2 drops in each eye 6 hourly up to 7 days. If no better, give instead anti-allergy eye drops (e.g. sodium cromoglycate 2% 1 drop 6 hourly) for 1-3 months or long-term.
- If recurrent nose problem, exclude allergic rhinitis.\(^3\). If recurrent skin problem, exclude urticaria and eczema.\(^3\). If recurrent cough or wheeze, exclude asthma.\(^3\) 106.
- If no better after 2 weeks, refer.
- If very sensitive to light, corneal ulcer or poor vision, refer urgently.

Bacterial conjunctivitis likely
- Wipe eyes gently from inside to outside with clean cotton wool soaked in sodium chloride 0.9% until pus clears.
- Give chloramphenicol 1% ointment 6 hourly in each eye for 7 days.
- Refer to eye OPD if:
  - Lump no better with warm compresses.
  - Eyelashes touching cornea.
  - Eyelids bent in/out.

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

Approach to patient with eye/vision symptoms needing urgent attention

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

- One painful red eye
- Sudden loss or change in vision (including blurred or reduced vision)
- Shingles involving eye or nose
- Penetrating injury
- Eyelid laceration
- Penetrating or metallic foreign body
- Chemical burn
- Corneal ulcer
- Hazy cornea
- Sudden drooping of eyelid

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

\(^2\)Do not mix Ringer's lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. \(^3\)Common triggers include pollens, household pets, house dust mite, cockroaches and moulds.
### FACE SYMPTOMS

**Give urgent attention to the patient with face symptoms and any of:**
- If new sudden asymmetric weakness or numbness of face (with no/minimal forehead involvement), arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA
- If sudden face/tongue swelling and any of: difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen, check for anaphylaxis.
- Painful red facial swelling and temperature ≥ 38°C: facial cellulitis likely
- New swelling of face and blood/protein in urine: kidney disease likely

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

### Approach to patient with face symptoms not needing urgent attention

<table>
<thead>
<tr>
<th>Face pain</th>
<th>Sinusitis likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain on one side of face</td>
<td>Give paracetamol 1g 4-6 hourly as needed.</td>
</tr>
<tr>
<td>Previous shingles on same side of face</td>
<td>Give amitriptyline* 25mg at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.</td>
</tr>
<tr>
<td>Recurrent intense, superficial, stabbing pain</td>
<td>Give paracetamol 1g 4-6 hourly as needed.</td>
</tr>
<tr>
<td>Post-herpetic neuralgia likely</td>
<td>If recurrent, test for HIV.</td>
</tr>
<tr>
<td>Trigeminal neuralgia likely</td>
<td>Refer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Swelling of face</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painless swelling of one/both sides of face</td>
</tr>
<tr>
<td>Swelling of face</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sudden progressive weakness of one side of face and unable to wrinkle forehead or close eye. May have impaired taste or dry eye.</th>
<th>Bell’s palsy likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give prednisone as soon as possible (within 48 hours of onset): give 60mg daily for 7 days. If no better after 10 days, refer.</td>
<td>If on enalapril: stop enalapril, never restart and educate patient to avoid it in future.</td>
</tr>
<tr>
<td>Protect eye: - Advise patient not to rub eye. - Keep eye moist with drops. - Cover eye with transparent eye shield during the day, if available. - Tape eyelid closed at night.</td>
<td>Give chlorphenamine 4mg or promethazine 25-50mg IM immediately. Observe closely until resolved: if airway obstruction, assess and manage airway.</td>
</tr>
<tr>
<td>Refer same day if: - Otitis media - Change in hearing - Recent head injury - Damage to cornea - Unsue of diagnosis</td>
<td>10 and manage for anaphylaxis.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angioedema likely</th>
<th>If not on enalapril, give chlorphenamine 4mg or promethazine 25-50mg IM immediately. Observe closely until resolved: if airway obstruction, assess and manage airway.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If recurrent, give azithromycin 500mg daily for 3 days.</td>
<td>Help to identify and advise to avoid triggers*.</td>
</tr>
<tr>
<td>If symptoms ≥ 10 days, fever ≥ 38°C, purulent nasal discharge, face pain or symptoms worsen after initial improvement of common cold, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy, give instead azithromycin 500mg daily for 3 days.</td>
<td>If swelling not resolving or no obvious cause, refer same day.</td>
</tr>
<tr>
<td>If recurrent for HIV</td>
<td>Record in patient’s notes.</td>
</tr>
<tr>
<td>If poor response, refer.</td>
<td>Advise patient to return urgently if difficulty breathing or symptoms worsen.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mumps likely</th>
<th>If symptoms ≥ 10 days, fever ≥ 38°C, purulent nasal discharge, face pain or symptoms worsen after initial improvement of common cold, give amoxicillin 500mg 8 hourly for 5 days.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give paracetamol 1g 4-6 hourly as needed for up to 5 days.</td>
<td>Advise patient s/he can return to work after 5 days.</td>
</tr>
<tr>
<td>Advise patient to receive vaccination.</td>
<td>Refer if: - Neck stiffness - Painful scrotal swelling - Loss of hearing - Abdominal pain</td>
</tr>
</tbody>
</table>

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

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

### Itchy ear
- Redness, swelling and/or pus in ear canal

### Discharge from ear
- Symptoms ≥ 2 weeks, hole in eardrum

### Painful ear
- If ear also itchy, consider otitis externa (see adjacent).
- Able to view eardrum?
- Any of:
  - Pain > 2 days
  - Pain that wakes patient at night
  - Temperature ≥ 38°C in past 2 days

#### Yes
- If normal looking ear, **referred pain** likely, check mouth and face:
  - If gum or tooth problem → 32.
- If painful swelling of one/both sides of face, **mumps** likely → 28.
- If pain in temporomandibular joint, check for joint problem → 53.
- If red bulging eardrum, **acute otitis media** likely:
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
  - If no better in 2 days, advise to return: treat for **acute otitis media**.
- Any of:
  - Give **amoxicillin** 1.5g 12 hourly for 5 days. If patient has had amoxicillin in last 30 days: give instead **amoxicillin/clavulanic acid** 875/125mg 12 hourly for 5 days.
  - If discharge, clean ear¹ and avoid getting it wet.
  - If recurrent episodes, test for HIV ⁴ and TB ⁸¹.
  - If no response to treatment after 3 days, refer.

#### No
- If normal looking ear, refer instead if:
  - Sudden onset
  - Yellow/white likely, check mouth and face:
    - If eye pain, stop and refer/
    - If temperature ≥ 38°C in past 2 days
  - Pain > 2 days
  - Pain that wakes patient at night
  - Temperature ≥ 38°C in past 2 days

### Difficulty hearing or tinnitus
- If on amikacin, discuss with TB doctor.
- If itchy/painful ear or discharge from ear, see adjacent column/s.
- Look in ear for foreign body and wax:
  - **Foreign body**
  - **Wax**
  - Normal looking ear

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

1. Cleaning the ear (dry mopping): roll a piece of clean soft tissue into a wick. Carefully insert wick into ear with twisting action. Remove wick and replace with clean dry wick. Repeat until wick is dry when removed. Never leave wick or other object inside ear. The ear can only heal if dry.
2. If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead **azithromycin** 500mg daily for 3 days.

---

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

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

**Acute otitis media likely**
- Give **paracetamol** 1g 6 hourly as needed for up to 5 days.
- Give **amoxicillin** 1.5g 12 hourly for 5 days. If patient has had amoxicillin in last 30 days: give instead **amoxicillin/clavulanic acid** 875/125mg 12 hourly for 5 days.
- If discharge, clean ear¹ and avoid getting it wet.
- If recurrent episodes, test for HIV ⁴ and TB ⁸¹.
- If no response to treatment after 3 days, refer.
- Refer same day if:
  - Painful swelling behind ear, **mastoiditis** likely
  - Neck stiffness

---

¹: Cleaning the ear (dry mopping): roll a piece of clean soft tissue into a wick. Carefully insert wick into ear with twisting action. Remove wick and replace with clean dry wick. Repeat until wick is dry when removed. Never leave wick or other object inside ear. The ear can only heal if dry.
²: If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead **azithromycin** 500mg daily for 3 days.
## NOSE SYMPTOMS

### Give urgent attention to the patient with nose symptoms and:

- Head injury with clear watery discharge from nose → 14.
- Refer urgently.

### Approach to the patient with nose symptoms not needing urgent attention

Manage according to nose symptom/s:

**Blocked/runny nose or persistent snoring**
- Ask about duration and associated symptoms:
  - Sinusitis likely
    - Give paracetamol 1g 6 hourly as needed for up to 5 days.
    - Give sodium chloride 0.9% nose drops as needed.
    - Give oxymetazoline 0.05% 2 drops in each nostril 8 hourly as needed for a maximum of 5 days. Advise against overuse which may worsen blocked nose.
    - If symptoms ≥ 10 days, fever ≥ 38°C, purulent discharge, face pain or symptoms worsen after initial improvement, give amoxicillin 500mg 8 hourly for 5 days.
      - Severe penicillin allergy, give instead azithromycin 500mg daily for 3 days.
      - If recurrent, test for HIV → 29.
      - If poor response to antibiotic, refer.
      - Refer same day if:
        - Tooth infection
        - Swelling over sinus or around eye
        - Neck stiffness
  - Allergic rhinitis likely
    - Help to identify and advise to avoid triggers.
    - Give fluticasone nasal spray 100mcg (1 spray) in each nostril twice a day.
    - Advise patient to aim nozzle outwards and upwards and avoid sniffing vigorously.
    - Give chlorphenamine 4mg 6-8 hourly as needed for up to 5 days only when symptoms worsen (side effect is sedation).
    - If nose very blocked at night, give oxymetazoline 0.05% 2 drops in each nostril at night for a maximum of 5 days.
    - If recurrent eye problem, exclude allergic conjunctivitis → 27.
    - If recurrent skin problem, exclude urticaria and eczema → 28.
    - If recurrent cough or wheeze, exclude asthma → 106.
    - Review after 3 months: if symptoms still not controlled despite good adherence to nasal spray, add cetirizine 10mg at night.
    - If symptoms severe and persist despite treatment, refer.
  - Obstructive sleep apnoea likely
    - If overweight, → 110.
    - Refer if:
      - Enlarged tonsils
      - Stops breathing, chokes or gasps while sleeping.

**Persistent snoring or poor sleep**
- Firmly pinch nostrils together for 10 minutes with patient sitting and leaning forward.
- Check BP:
  - If < 90/60, give sodium chloride 0.9% 1L IV rapidly. Continue 1L 6 hourly. Stop if breathing worsens.
  - If ≥ 140/90 → 114.

**Bleeding nose**
- If still bleeding, advise to return next day to remove BIPP gauze.
- If bleeding stops, advise to avoid nose-picking and contact sport if recurrent bleeds.
- If patient on aspirin or warfarin, doctor to review medication and if on warfarin, check INR.
- If previous history of anaphylaxis, urticaria or angioedema.
- Common triggers include pollens, household pets, house dust mite, cockroaches and moulds.
- If on lopinavir/ritonavir or atazanavir/ritonavir, avoid fluticasone, discuss/refer instead.

---

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

Give urgent attention to the patient with mouth/throat symptoms and any of:
- Red swelling blocking airway
- Unable to open mouth
- Unable to swallow at all
- If sudden face/tongue swelling and any of: wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen¹, check for anaphylaxis 16.

Refer urgently.

Approach to the patient with mouth/throat symptoms not needing urgent attention
- If on abacavir, check for abacavir hypersensitivity reaction (AHR) 102. If swelling of lips 28. If gum or tooth problem 32.
- If tuberculosis, check for tuberculosis 78.
- If patient has a life-limiting illness, also consider giving palliative care 23.
- If on inhaled corticosteroids, advise to rinse mouth with salt water after use.
- If very itchy, contact dermatitis likely. Identify and remove irritant.
- If on antipsychotics and dry mouth. Discuss with doctor.
- If patient also has oral candida, treat as in adjacent column.
- If on inhaled corticosteroids, advise to rinse mouth after use.
- If swelling of lips, apply petroleum jelly to blisters on lips.
- If runny or blocked nose, 30.
- If patient has a life-limiting illness, also consider giving palliative care 23.
- If severe or no better after 1 week of treatment, refer.

Refer urgently.

Approach to the patient with mouth/throat symptoms requiring urgent attention
- Red, cracked corners of mouth
- Ulcer/s with central white patch
- Painful ulcer/s with central white patch
- Painful blisters on lips/mouth
- Oral candida likely
- Viral pharyngitis
- Bacterial pharyngitis/tonsillitis likely
- Herpes simplex likely
- Aphthous ulcer/s likely
- If thirst, urinary frequency, weight loss, exclude diabetes 13.
- If on abacavir, check for abacavir hypersensitivity reaction (AHR) 102. If swelling of lips 28. If gum or tooth problem 32.
- If tuberculosis, check for tuberculosis 78.
- If patient has a life-limiting illness, also consider giving palliative care 23.
- If severe or no better after 1 week of treatment, refer.
- If patient also has oral candida, treat as in adjacent column.
- If on inhaled corticosteroids, advise to rinse mouth after use.
- If very itchy, contact dermatitis likely. Identify and remove irritant.
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- If patient also has oral candida, treat as in adjacent column.
- If on inhaled corticosteroids, advise to rinse mouth after use.
- If swelling of lips, apply petroleum jelly to blisters on lips.
- If runny or blocked nose, 30.
- If patient has a life-limiting illness, also consider giving palliative care 23.
- If severe or no better after 1 week of treatment, refer.

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

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

Health for All 137
**GUM/TEETH SYMPTOMS**

Give urgent attention to the patient with gum/teeth symptoms and any of:
- Temperature ≥ 38°C and swelling of face/jaw/next to tooth
- Unable to eat or drink
- Tooth pain that is felt without touching tooth/gum or that wakes patient at night

Refer urgently.

Approach to the patient with gum/teeth symptoms not needing urgent attention:
- Is there tooth pain, red or bleeding/enlarged gums?
- Look in mouth: lift lips to look at teeth and gums:
  1. Mix ½ teaspoon salt in ½ cup lukewarm water.
  2. Advise no alcohol until 24 hours after last dose of metronidazole.

Advise the patient with gum/teeth symptoms to care for his/her mouth:
- Advise a healthy diet.
- Advise to brush and floss teeth twice a day.
- If dentures, advise to clean thoroughly every day. If poorly fitting dentures or discomfort, refer to dentist.
- Ask about smoking and alcohol/drug use. If patient smokes, encourage to stop. If alcohol/drug use.

$^{1}$Mix ½ teaspoon salt in ½ cup lukewarm water. $^{2}$Advise no alcohol until 24 hours after last dose of metronidazole.
CHEST PAIN

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

- Respiratory rate ≥ 30 or difficulty breathing
- BP ≥ 180/130 or < 90/60
- Pulse irregular, > 100 or < 50
- Severe pain
- New pain or discomfort in centre or left side of chest
- Pain radiates to neck, jaw, shoulder/s or arm/s
- Nausea or vomiting
- Pallor or sweating
- Known with ischaemic heart disease
- At risk of heart attack (diabetes, smoker, hypertension, high cholesterol, known CVD risk > 20%, family history)

Do an ECG.

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

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

- No
- Yes

Manage and refer urgently:

- If oxygen saturation < 94%, oxygen saturation not available, respiratory rate ≥ 30 or difficulty breathing, give face mask oxygen.
- If sudden breathlessness, more resonant/decreased breath sounds/pain on one side, deviated trachea: tension pneumothorax likely:
  - Doctor to insert large bore cannula above 3rd rib in mid-clavicular line and arrange urgent chest tube.
  - If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
  - If BP > 180/130, give single dose amlodipine 10mg orally.
  - If temperature ≥ 38°C, give ceftriaxone 1g IV/IM to cover for possible severe pneumonia/lung infection.

Ischaemic heart disease likely → 119.

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

- If recurrent episodes of central chest pain, brought on by exertion and relieved by rest, ischaemic heart disease likely → 119.
- If cough, fever or pain on breathing deeply, → 34.
- Ask about site of pain and associated symptoms:

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

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

Tender at costochondral junction, no fever or cough

- Musculoskeletal problem likely
  - Give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
  - If pain persists > 4 weeks, refer.

Burning pain on one side of body with or without rash

- Herpes zoster (shingles) likely → 59.

If diagnosis uncertain, refer same week.

Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. Avoid if on atazanavir/ritonavir. Discuss with specialist.
**COUGH OR DIFFICULTY BREATHING**

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

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

**Manage and refer urgently:**

- Give 40% face mask oxygen (if known COPD give 24-28% face mask oxygen).
- If rapid deep breathing, check glucose: if ≥ 11.1 \( \rightarrow \) 13.
- Check temperature: if ≥ 38ºC, *severe pneumonia* likely. Give *ceftriaxone* 1g IV/IM.
- If *tension pneumothorax* likely: insert large bore cannula above 3rd rib in mid-clavicular line. Arrange urgent chest tube.
- If BP < 90/60, give *sodium chloride 0.9%* 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

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

- Test for HIV \( \rightarrow \) 95. If on abacavir, check for abacavir hypersensitivity reaction (AHR) \( \rightarrow \) 102.
- If patient smokes, encourage to stop \( \rightarrow \) 123.
- Ask about duration and recurrence of cough or difficulty breathing:
  - One episode < 2 weeks
    - **Is patient coughing sputum?**
      - **Yes:** If known COPD and sputum increased or colour changed to yellow/green, give antibiotics \( \rightarrow \) 108. Otherwise reassure antibiotics are not necessary. Advise to return same day if symptoms worsen or fever develops.
      - **No:** Common cold/Influenza (flu) likely \( \rightarrow \) 30.
    - **No:** Acute bronchitis likely
      - If known COPD and sputum increased or colour changed to yellow/green, give antibiotics \( \rightarrow \) 108. Otherwise reassure antibiotics are not necessary. Advise to return same day if symptoms worsen or fever develops.
      - Yes: pneumoniain likely
        - Confirm on chest x-ray or with crackles/bronchial breathing on auscultation.
        - Exclude TB \( \rightarrow \) 81.
        - If poor adherence likely access to urgent care difficult, refer.
        - Any of: HIV, heart/heart/liver/kidney disease, diabetes or alcohol misuse?
      - Yes: give *amoxicillin/clavulanic acid* \( \rightarrow \) 2875/125mg 12 hourly for 5 days.
      - No: give *amoxicillin* 1g 8 hourly for 5 days.
    - Review after 2 days: if no better, refer. Advise to return same day if symptoms worsen.

- ≥ 2 weeks or recurrent episodes
  - **Yes:** pneumonia likely
    - Confirm on chest x-ray or with crackles/bronchial breathing on auscultation.
    - Exclude TB \( \rightarrow \) 81.
    - If poor adherence likely access to urgent care difficult, refer.
    - Any of: HIV, heart/heart/liver/kidney disease, diabetes or alcohol misuse?
    - Yes: pneumonia likely
      - Confirm on chest x-ray or with crackles/bronchial breathing on auscultation.
      - Exclude TB \( \rightarrow \) 81.
      - If poor adherence likely access to urgent care difficult, refer.
      - Any of: HIV, heart/heart/liver/kidney disease, diabetes or alcohol misuse?
    - No: common cold/Influenza (flu) likely \( \rightarrow \) 30.
    - Recent upper respiratory tract infection, no difficulty breathing
    - Smoker or recently stopped smoking
    - Blockage/runny nose or persistent snoring
    - HIV with CD4 < 200 and dry cough, worsening breathlessness on exertion.
    - Pneumocystis pneumonia (PJP) likely
      - Doctor to confirm on chest x-ray.
      - Give *co-trimoxazole* according to weight, 6 hourly for 3 weeks.
      - Give HIV routine care and ensure CPT \( \rightarrow \) 96 started.
      - Refer same day if:
        - Doctor or x-ray unavailable
        - Atypical x-ray or unsure
        - Patient is taking co-trimoxazole prophylaxis and is adherent.
    - Post-infectious cough likely
      - Reassure cough should resolve on its own.
      - Advise to return if cough persists > 8 weeks.
    - Smoker or recently stopped smoking
    - Blockage/runny nose or persistent snoring
    - Common cold/Influenza (flu) likely \( \rightarrow \) 30.
    - Recent upper respiratory tract infection, no difficulty breathing
    - Smoker or recently stopped smoking

**If diagnosis uncertain or poor response to treatment, refer.**

1. Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with *sodium chloride 0.9%* before and after IV ceftriaxone.
2. If penicillin allergy, give instead *moxifloxacin* 400mg daily for 5 days. If < 40kg, give 160/800mg; if 40-56kg, give 240/1200mg, if ≥ 56 kg, give 320/1600mg.
3. *Co-trimoxazole Preventive Therapy (CPT).*
If sudden wheeze/tight chest and any of: generalised itch/rash, face/tongue swelling, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen, check for anaphylaxis.

If difficulty breathing worse on lying flat and leg swelling, heart failure likely.

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

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

No

Mild or moderate

- Give inhaled salbutamol via spacer 400-800mcg (4-8 puffs) or nebulise 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9%, with oxygen at flow rate of 8L/minute. If no better, repeat salbutamol every 20 minutes during first hour.
- If known asthma or COPD, give prednisone 40mg orally.
- Monitor response regularly:
  - Improving or no change after 1 hour of treatment: Check respiratory rate. Can patient talk normally?
  - Unable to talk normally or has respiratory rate ≥ 20
  - Refer urgently.
  - While awaiting transport:
    - Give 40% face mask oxygen (if known COPD, give 24-28% face mask oxygen) while preparing nebuliser and between nebulisations/doses.
    - Nebulise 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9% with oxygen at flow rate of 8L/minute, every 20 minutes (or continuously if needed). If nebuliser unavailable, give instead inhaled salbutamol via spacer 400-800mcg (4-8 puffs) every 20 minutes.
    - If not already given, give single dose prednisone 40mg orally. If unable to take oral medication, give single dose hydrocortisone 100mg IM/slow IV.
    - If poor response to salbutamol, add 2mL (0.5mg) ipratropium bromide solution to salbutamol nebuliser every 20 minutes for 3 doses only. If nebuliser unavailable, add instead inhaled ipratropium bromide via spacer 80-160 mcg (2-4 puffs), every 20 minutes as needed for up to 3 hours.

Yes

Severe

- If known asthma or COPD, give prednisone 40mg orally.
- Monitor response regularly:
  - Improving or no change after 1 hour of treatment: Check respiratory rate. Can patient talk normally?
  - Unable to talk normally or has respiratory rate ≥ 20
  - Refer urgently.
  - While awaiting transport:
    - Give 40% face mask oxygen (if known COPD, give 24-28% face mask oxygen) while preparing nebuliser and between nebulisations/doses.
    - Nebulise 1mL salbutamol 0.5% solution in 4mL sodium chloride 0.9% with oxygen at flow rate of 8L/minute, every 20 minutes (or continuously if needed). If nebuliser unavailable, give instead inhaled salbutamol via spacer 400-800mcg (4-8 puffs) every 20 minutes.
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- If first episode of wheeze/tight chest, assess for asthma and COPD. If asthma, give routine care: if asthma, give prednisone 40mg orally. If COPD, give routine care: if COPD, give prednisone 40mg orally.
# BREAST SYMPTOMS

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

### Breast lump/s
- Any of: patient > 30 years, family history of breast cancer, irregular fixed lump, skin/nipple changes, nipple discharge or axillary lymph node?
  - Yes: Refer same week.
  - No: Re-examine breast on day 7 of menstrual cycle. If lump persists, refer same week.

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

### Nipple discharge
- Refer same week if any of: Blood-stained
  - One-sided discharge
  - Patient ≥ 50 years
  - Male
  - Skin/nipple changes
  - Breast/axillary lump
  - If pregnant, reassure and give antenatal care 140.
- Review medication: antipsychotics, antidepressants, oral contraceptive and metoclopramide can cause nipple discharge. Discuss with doctor.
  - If cause uncertain, refer.
  - Advise to return if symptoms change/worsen.
  - Re-examine breast on day 7 of menstrual cycle.
  - If lump persists, refer same week.

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

## Fibrocystic change likely
- Pain usually occurs before period and improves with period.
- Reassure this is common and advise a well-fitting bra.
- If pain, give paracetamol 1g 6 hourly as needed with food for up to 5 days.
- May be a side effect of hormonal contraception. If no better after 3 months on contraception, change method 136.
- Advise to return if symptoms change/worsen.

## Approach to the patient with a breast symptom who is breastfeeding

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

### Painful breast/s without lump
- Temperature ≥ 38°C or body pain?
  - Yes: mastitis likely
    - Give flucloxacinil 500mg 6 hourly for 5 days and paracetamol 1g 6 hourly as needed for up to 5 days.
    - Advise warm compresses.
    - If no better after 2 days or breast lump (abscess) develops, refer.

### Painful breast/s with lump
- Temperature ≥ 38°C or body pain?
  - Yes: Breast abscess likely
    - Advise frequent breastfeeds, warm compresses and to gently massage breast.
    - Advise to return if fever/body pain develops or if breast lump persists: consider other causes and discuss/refer.
  - No: Engorgement likely
    - Advise frequent breastfeeds and express milk from breast.
    - Advise to return if fever/body pain develops or if breast lump persists: consider other causes and discuss/refer.

### Breast abscess likely
- Advise to return if fever/body pain develops or if breast lump persists: consider other causes and discuss/refer.

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

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1 BMI = weight (kg) ÷ height (m) ÷ height (m).
2 Heat-treat milk to rid it of HIV and bacteria: place breastmilk in sterilized glass jar. Close lid and place in pot. Fill pot with water 2cm above milk and heat water. Remove jar when water is rapidly boiling.
3 If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily for 3 days.
ABDOMINAL PAIN

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

- Pain in right lower abdomen with nausea/vomiting/fever: appendicitis likely
- Guarding, rigidity or rebound tenderness: peritonitis likely
- Severe pain in right upper abdomen with nausea/fever/loss of appetite: cholecystitis likely
- Sudden severe upper abdominal pain spreading to back with nausea/vomiting: pancreatitis likely
- No stools or flatus/wind for past 24 hours
- If sudden abdominal pain and any of: generalised itch/rash, face/tongue swelling, difficulty breathing, BP < 90/60, dizziness/collapse or exposure to possible allergen; check for anaphylaxis.

Manage and refer urgently:

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

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

1. If cramping abdominal pain with recent onset vomiting, diarrhoea, loss of appetite, body pain or fever: gastroenteritis likely. Give single dose ceftriaxone 250mg IM* and metronidazole* 400mg orally and refer same day.
2. If on ART, check for urgent side effects.
3. If urinary symptoms (burning/frequency/urgency) or leucocytes/nitrites/blood on dipstick: urinary tract infection likely.
4. Does patient have epigastric pain which is worse with eating, hunger or lying down/bending forward?
5. Is pain in the lower abdomen and is patient a woman?
6. If missed period or abnormal vaginal bleeding, check pregnancy test: if positive, refer urgently same day.
7. If no better or diagnosis uncertain, discuss/refer.

Approach to the patient with abdominal pain and possible appendicitis:

1. Assess and advise patient.
3. Ask about abnormal vaginal discharge and do bimanual palpation to check for pain on moving cervix:
   - Abnormal vaginal discharge or pain on moving the cervix
   - No abnormal discharge and no pain on moving the cervix

Treat for lower abdominal pain (LAP) syndrome:

1. If temperature ≥ 38°C, pulse > 100 or BP < 90/60: give IV fluids as above: ceftriaxone 1g IV/IM and metronidazole* 400mg orally and refer same day.
2. If recurrent pain/discomfort and ≥ 2 of: pain relieved with passing stool, abdominal distension, change in stool frequency/appearance, mucous in stool, irritable bowel syndrome (IBS) likely. Refer to doctor to confirm diagnosis and dietitian for dietary advice.
3. If constipated: refer. If diarrhoea: refer.

If no better or diagnosis uncertain, discuss/refer.

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

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

- Headache
- Chest pain
- Neck stiffness, drowsy/confused or purple/red rash: meningitis likely
- Guarding, rigidity or rebound tenderness: peritonitis likely
- Sudden severe upper abdominal pain spreading to back: pancreatitis likely
- BP < 90/60

**Manage and refer urgently:**

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

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

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

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

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gastroenteritis</strong> likely</td>
<td></td>
</tr>
<tr>
<td>If nausea/vomiting, give metoclopramide 10mg 8 hourly as needed for up to 5 days.</td>
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<tr>
<td>Give oral hydration solution.</td>
<td></td>
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<tr>
<td>If diarrhoea, give loperamide 4mg initially, then 2mg after each loose stool if needed, up to 12mg/day.</td>
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<tr>
<td>If abdominal cramps are distressing, give hyoscine butylbromide 10mg 6 hourly for up to 3 days if needed.</td>
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<tr>
<td>Advise patient to drink lots of fluids, eat small frequent meals as able and avoid fatty food.</td>
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<tr>
<td>Advise patient to return if symptoms worsen, vomiting &gt; 3 days or not tolerating oral fluids.</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dyspepsia (heartburn)</strong> likely</td>
<td></td>
</tr>
<tr>
<td>Advise to stop NSAIDS (e.g. ibuprofen/aspirin), quit smoking, limit alcohol, caffeine, spicy food, fizzy drinks, late night meals.</td>
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</tr>
<tr>
<td>If waist circumference &gt; 80cm (woman) or 94cm (man), assess CVD risk.</td>
<td></td>
</tr>
<tr>
<td>Give lansoprazole 30mg daily for 14 days.</td>
<td></td>
</tr>
<tr>
<td>Refer same week if any of: no better after 7 days treatment, symptoms return, painful/difficulty swallowing, persistent vomiting, blood in vomit or stool (occult blood positive), abdominal mass, weight loss, Hb &lt; 12 (woman) or &lt; 13 (man), new pain and &gt; 50 years, or family history of stomach/oesophageal cancer.</td>
<td></td>
</tr>
</tbody>
</table>

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

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**DIARRHOEA**

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

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

**Approach to the patient with diarrhoea not needing urgent attention**

<table>
<thead>
<tr>
<th>Diarrhoea ≤ 2 weeks</th>
<th>Diarrhoea &gt; 2 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Is there blood in the stool?</strong></td>
<td><strong>Has patient been in cholera outbreak area in past week?</strong></td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

**Cholera** likely  
- Usually large volumes of rice water stool!  
- Give ORS, advise at least 250mL after each stool, more may be needed. If severe disease2 suspected, also give single dose ciprofloxacin3 1g.  
- Notify and send stool specimen for Vibrio cholerae.  
- Advise to return if worsening, unable to drink enough, or becomes drowsy.

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

**HIV positive**  
- Give routine HIV care95.  
- Lopinavir/ritonavir can cause ongoing loose stools.  
- Review symptoms and stool result in 1 week.

**HIV negative or unknown**  
- Treat for giardiasis give metronidazole2 2g daily for 3 days.

**Gastroenteritis** likely  
- Give co-trimoxazole 320/1600mg (4 tablets) 12 hourly for 10 days.  
- Give loperamide 2mg as needed up to 8mg/day.

**Isospora belli**  
- Review stool result:  
  - Stool negative  
  - Stool positive  
  - Treat accordingly to result.

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

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

**Advice to increase fluid intake. Advise frequent handwashing, with soap and water, before preparing food/after going to toilet. Wash all surfaces/equipment used in food preparation. Wash and peel all fruit and vegetables. Use only safe/disinfected water for preparing food/drinks/ice. Cook food thoroughly, avoid raw/uncooked food, especially meat and shellfish.**

**If repeated episodes of diarrhoea and no access to clean water, refer to health promotion officer/social worker.**

**If > 65 years, bed-bound or receiving palliative care, check for solid immobile bulk of stool in rectum. If present, impaction likely: gently remove stool using lubrication. If unsuccessful, refer.**

**If patient has a life-limiting illness, also consider giving routine palliative care →148.**

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

Give urgent attention to the patient with constipation and:
• No stools or flatus/wind in the past 24 hours with abdominal pain/distension
Refer same day.

Approach to the patient with constipation not needing urgent attention:
• Review diet, fluid intake and medication (amitriptyline, schizophrenia treatment, codeine and morphine can cause constipation: discuss with doctor). Ask about regular use of enemas or laxatives.
• Exclude pregnancy. If pregnant, advise that constipation is common during pregnancy. Give routine antenatal care ≥140 and give advice as below.
• If weakness/tiredness, weight gain, low mood, dry skin or cold intolerance, check TSH. If abnormal, refer to doctor.
• If patient is bed-bound or has a life-limiting illness, also consider giving palliative care ≥148.
• If > 65 years, bed-bound or receiving palliative care, check for solid immobile bulk of stool in rectum. If present, impaction likely: gently remove stool using lubrication. If unsuccessful, refer.
• Advise a high fibre diet (vegetables, fruit, coarse mielie meal, bran and cooked dried prunes), adequate fluid intake and at least 30 minutes moderate exercise (e.g. brisk walking) most days of the week.
• If no better with diet and exercise, give sennosides A and B 13.5mg at night or lactulose 10-20 mL once or twice daily.
• If no response after 1 week of laxative use, or if recent change in bowel habits, weight loss, blood in stool or occult blood positive, or cause uncertain, refer.

ANAL SYMPTOMS

Give urgent attention to the patient with anal symptoms and any of:
• Extremely painful lump on anus
• Unable to pass stool because of anal symptoms
Refer same day.

Approach to the patient with anal symptoms not needing urgent attention
If patient has anal sex, also ask about genital symptoms ≥41. Then examine anal area to look for cause:

Crack/s
- If constipated, also advise and treat as above.
- Apply bismuth subgallate compound ointment 6-12 hourly or lidocaine 2% cream before and after each bowel action.

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

Ulcer/s
- Treat as for genital ulcer ≥41.

Perianal wart/s
- Treat as for genital wart/s ≥41.

Red/raw skin
- Advise good hygiene.
- Look for contact cause. If diarrhoea ≥39.
- Wash with aqueous cream, avoid soap.
- Apply zinc and castor oil ointment to raw areas. If severe itching, also apply hydrocortisone 1% cream twice a day for 5 days.
- If no better with treatment, refer.

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

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

<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Ask about genital discharge, rash, itch, lumps, ulcers and lower abdominal pain and manage as below. Manage other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Sexual health</td>
<td>Ask about risky sexual behaviour (patient or partner has new or multiple partner/s or uses condoms unreliably) and sexual orientation. If sexual problems, →50.</td>
</tr>
<tr>
<td>Abuse</td>
<td>Ask about sexual assault. If yes →77.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Assess patient’s contraceptive needs →136 and discuss infertility. Exclude pregnancy. If pregnant →138.</td>
</tr>
</tbody>
</table>
| Examination     | • Woman: examine abdomen for masses, look for discharge, ulcers, rash, lumps. Do bimanual palpation to check for pain on moving cervix/pelvic masses and speculum examination for cervical abnormalities.  
                   • Man: look for genital discharge, ulcers, rash, lumps, pubic lice or scrotal swelling, tenderness or masses. |
| HIV             | Test for HIV. →95. If HIV positive, give routine care. →396.         |
| Syphilis        | • Check syphilis serology if: sexually assaulted, pregnant (booking visit and around 32 weeks), secondary/tertiary syphilis suspected or atypical/fleshy/wet genital warts. If syphilis positive. →45.  
                   • Repeat RPR at 6 months in all treated with doxycycline/amoxicillin/probenecid. If pregnant, repeat syphilis test routinely around 32 weeks or after 3 months if RPR+.  
                   • Advise no alcohol until 24 hours after last dose of metronidazole.  
                   • If severe penicillin allergy, discuss/refer. |
| Cervical screen | Do a cervical screen if needed →47. If abnormal vaginal discharge, delay routine cervical screen until treated →43. If discharge persists, do cervical screen. If cervix looks abnormal/suspicious of cancer, refer same week. |

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

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

Treat the patient with genital symptoms

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

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

<table>
<thead>
<tr>
<th>Notification code</th>
<th>Treat the asymptomatic partner/s below. If partner has other STI symptoms and signs, manage as per relevant STI algorithm found on pages listed above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDS or LAP</td>
<td>Give partner single dose ceftriaxone 250mg IM³ and azithromycin 1g orally and metronidazole² 2g. If severe penicillin allergy, omit ceftriaxone and increase azithromycin to 2g.</td>
</tr>
<tr>
<td>MUS or SSW</td>
<td>Give partner single dose ceftriaxone 250mg IM³ and azithromycin 1g orally. If severe penicillin allergy, omit ceftriaxone and increase azithromycin to 2g.</td>
</tr>
<tr>
<td>GUS (no discharge)</td>
<td>Give partner doxycycline 100mg 12 hourly for 14 days. If partner pregnant, give instead single dose benzathine benzylpenicillin 2.4MU IM³.</td>
</tr>
<tr>
<td>GUS with VDS</td>
<td>Give partner single dose ceftriaxone 250mg IM³ and azithromycin 1g orally. If severe penicillin allergy, omit ceftriaxone and increase azithromycin to 2g.</td>
</tr>
<tr>
<td>GUS with MUS</td>
<td>Give partner single dose ceftriaxone 250mg IM³ and azithromycin 1g orally. If severe penicillin allergy, omit ceftriaxone and increase azithromycin to 2g.</td>
</tr>
<tr>
<td>RPR+</td>
<td>Test partner for syphilis: if positive, →45. If negative, give partner doxycycline 100mg 12 hourly for 14 days. If partner pregnant, give instead single dose benzathine benzylpenicillin 2.4MU IM³.</td>
</tr>
<tr>
<td>Bubo</td>
<td>Give partner single dose azithromycin 1g.</td>
</tr>
</tbody>
</table>

¹Secondary syphilis: 6-8 weeks after ulcer, generalised rash (includes palms/soles), flu-like symptoms, flat wart-like genital lesions, mouth ulcers, patchy hair loss. Tertiary syphilis: many years later; affects skin, bone, heart, nervous system.  
²Advise no alcohol until 24 hours after last dose of metronidazole.  
³Dissolve ceftriaxone 250mg in 0.9ml lidocaine 1% without epinephrine (adrenaline).  
⁴History of anaphylaxis, urticaria or angioedema.  
⁵Dissolve benzathine benzylpenicillin 2.4MU in 6ml lidocaine 1% without epinephrine (adrenaline). If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly and probenecid 500mg 8 hourly for 14 days. If severe penicillin allergy, discuss/refer.
GENITAL SYMPTOMS IN A MAN

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

Management:
- If likely torsion of testicle or priapism: refer urgently.
- If paraphimosis likely:
  - If glans blue/black: refer urgently.
  - If not, attempt manual reduction: wrap glans in gauze and apply increasing pressure for 10-15 minutes until foreskin can be replaced over glans. If unsuccessful, refer urgently.

Approach to the man with genital symptoms not needing urgent attention
- First assess and advise the man with genital symptoms ➔ 41.
- If burning/frequency/urgency of urine and no urethral discharge ➔ 51.

Urethral discharge or dysuria/burning urine
- Testicular cancer likely ➔ Refer.
- Treat for balanitis/ balanoposthitis (BAL):
  - Advise patient to wash daily with water, avoid soap. Retract foreskin while washing, then dry fully.
  - Give clotrimazole cream 12 hourly for 7 days.
  - Check urine dipstick for glucose. If glucose present, check for diabetes ➔ 13.
  - If partner has vaginal discharge syndrome (VDS), add single dose metronidazole 2g.
  - Give partner notification slip/s with code: BAL.
  - Advise patient to return in 7 days if symptoms persist: ceftriaxone treatment failure likely. Refer within 7 days.

Scrotal swelling or pain
- Treat for scrotal swelling (SSW):
  - Give single dose ceftriaxone 250mg IM1 and
  - Give single dose azithromycin 1g.
  - If severe penicillin allergy2, omit ceftriaxone and increase azithromycin to 2g.
  - If partner has vaginal discharge syndrome (VDS), add single dose metronidazole3 2g.
  - Give partner notification slip/s with code: SSW.
  - If severe, give ibuprofen 400mg 8 hourly with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
  - Review after 7 days or earlier if needed: if no better, refer.

Pain with/without swelling or discharge
- Treat for male urethritis syndrome (MUS):
  - Give single dose ceftriaxone 250mg IM1 and
  - Give single dose azithromycin 1g.
  - If severe penicillin allergy2, omit ceftriaxone and increase azithromycin to 2g.
  - If partner has vaginal discharge syndrome (VDS), add single dose metronidazole3 2g.
  - Give partner notification slip/s with code: MUS.
  - Advise patient to return in 7 days if symptoms persist: ceftriaxone treatment failure likely. Refer within 7 days.

Painless lump
- Testicular cancer likely ➔ Refer.

Painful, itchy or foul-smelling glans, difficulty retracting foreskin
- If unable to retract foreskin, refer.

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

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

### Approach to a woman with an abnormal vaginal discharge

**Has patient been sexually active in the last 3 months?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>Ask about lower abdominal pain and do bimanual palpation to check for pain on moving cervix:</td>
<td>Is discharge itchy or curd-like or are vulva inflamed (red, swollen or painful)?</td>
</tr>
<tr>
<td>Is there lower abdominal pain or pain on moving cervix?</td>
<td>No</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Yes**

- Treat for **cervicitis**:
  - Give single dose **ceftriaxone**¹ 250mg IM² and **azithromycin** 1g and **metronidazole**³ 2g.
  - Give partner notification slip/s with code: VDS.
  - If discharge itchy or curd-like or vulva inflamed (red, swollen or painful), also treat for **vaginal candidiasis** (see adjacent).
  - Advise to return if no better after 7 days.

**Manage and refer urgently:**

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

**Give urgent attention if any of:**

- Recent pregnancy
- Pregnant or missed/overdue period
- Abnormal vaginal bleeding
- Abdominal mass
- Peritonitis (guarding, rigidity, rebound)

**Treat for **bacterial vaginosis**:**

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

<table>
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<tr>
<th>Yes</th>
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<tbody>
<tr>
<td>Is there lower abdominal pain or pain on moving cervix?</td>
<td>Vaginal candidiasis likely</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Yes**

- Give single dose **clotrimazole**¹ vaginal pessary 500mg inserted at night or **clotrimazole**² vaginal cream, inserted with applicator, 12 hourly for 7 days.
- If skin of vulva inflamed or itchy, also give **clotrimazole**³ topical cream, apply 12 hourly for 7 days.

**Treat for **cervicitis**:**

- Give single dose **ceftriaxone**¹ 1g IV and **azithromycin** 1g.
- Give partner notification slip/s with code: VDS.

**If no better after 7 days,**

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

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<tr>
<td>Is there lower abdominal pain or pain on moving cervix?</td>
<td>Is there red/swollen cervix or discharge from cervix?</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Yes**

- Give single dose **ceftriaxone**¹ 250mg IM² and **azithromycin** 1g and **metronidazole**³ 2g.

**If no better after 7 days,**

- Give **metronidazole**³ 400mg 12 hourly for 7 days.

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

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

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**Approach to the patient not needing urgent attention**

- Pain on moving cervix
- No pain on moving cervix: check urine dipstick:

| Leucocytes and nitrites negative | Leucocytes or nitrites positive |

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

- Give single dose **ceftriaxone**¹ 250mg IM² and **azithromycin** 1g and **metronidazole**³ 400mg 12 hourly for 7 days. For pain, give **ibuprofen**³ 400mg 8 hourly with food for up to 5 days.
- Give partner notification slip/s with code: LAP.
- Advise to return if no better within 3 days or urgently if worse: refer. Otherwise, review in 7 days.

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**Give urgent attention if any of:**

- Recent pregnancy
- Temperature ≥ 38°C
- Abdominal mass
- Peritonitis (guarding, rigidity, rebound)

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**Give metronidazole³** 400mg 12 hourly for 7 days.

**Advise to return if no better after 7 days: refer.**
First assess and advise the patient with genital ulcer/s. 41. The patient may have a blister, sore or an ulcer.

**Treat for genital ulcer syndrome (GUS)**

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

First treat for *herpes*:

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

If patient sexually active in the past 3 months, also treat for *genital ulcer syndrome (GUS)* below:

**Does patient have a vaginal/urethral discharge?**

- **Yes**: Treat for *GUS* with VDS/MUS
  - Give single dose ceftriaxone 250mg IM² and azithromycin 1g orally.
  - If severe penicillin allergy³, omit ceftriaxone, increase azithromycin to 2g and give doxycycline 100mg 12 hourly for 14 days. If pregnant/breastfeeding, refer instead.
  - Advise to return in 6 months for RPR: if positive 45.
  - If patient or partner has vaginal discharge syndrome (VDS), also give single dose metronidazole 4 2g orally.
  - Give partner notification slip/s with code: GUS + VDS/MUS.

- **No**
  - **Yes**: Give single dose benzathine benzylpenicillin 2.4MU IM¹.
  - If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 14 days. Advise to return in 6 months for RPR: if positive 45.
  - Give partner notification slip/s with code: GUS.

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

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

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

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¹For benzathine benzylpenicillin 2.4MU injection: dissolve benzathine benzylpenicillin 2.4MU in 6mL lidocaine 1% without epinephrine (adrenaline) and give half the volume into each buttock.

²For ceftriaxone 250mg IM injection: dissolve 250mg in 0.9mL lidocaine 1% without epinephrine (adrenaline).

³History of anaphylaxis, urticaria or angioedema.

⁴Advise no alcohol until 24 hours after last dose of metronidazole.
## Approach to the patient with a positive syphilis result

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

### TPAb non-reactive

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

### TPAb reactive

- **RPR non-reactive**
  - Treat for syphilis: decide what treatment to give.

### Man or non-pregnant woman

- Is previous RPR result available?
  - 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)

- Does patient have a genital ulcer or signs of secondary syphilis?
  - Yes
    - Treat for late syphilis
      - Give benzathine benzylpenicillin 2.4MU IM² weekly for 3 weeks. If benzathine benzylpenicillin unavailable, give instead amoxicillin 1g 8 hourly and probenecid 250mg 8 hourly for 28 days.
      - If severe penicillin allergy, refer to confirm diagnosis and for possible penicillin desensitisation.
      - Repeat RPR 3 months after completing treatment: if RPR reactive, discuss/refer.
      - Give partner notification slip/s with code: RPR+.

- No
    - Treat for early syphilis
      - Give single dose benzathine benzylpenicillin 2.4MU IM². If penicillin allergy, or benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 14 days and repeat RPR in 6 months.
      - Give partner notification slip/s with code: RPR+.

- Yes
  - Is there a negative RPR from the last 2 years?
    - Yes
      - No further treatment needed.
      - If partner/s not treated in the past, give partner notification slip/s with code: RPR+.
    - No
      - Treat for late syphilis
        - Give benzathine benzylpenicillin 2.4MU IM² weekly for 3 weeks. If penicillin allergy, or benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 30 days and repeat RPR in 6 months.
        - Give partner notification slip/s with code: RPR+.

- No
  - Treat for late syphilis
    - Give benzathine benzylpenicillin 2.4MU IM² weekly for 3 weeks. If benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 30 days and repeat RPR in 6 months.
    - Give partner notification slip/s with code: RPR+.

### Pregnant woman

- Is previous RPR result available?
  - 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)

- Treat for late syphilis
  - Give benzathine benzylpenicillin 2.4MU IM² weekly for 3 weeks. If benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 30 days and repeat RPR in 6 months.
  - Give partner notification slip/s with code: RPR+.

- No
  - Treat for early syphilis
    - Give benzathine benzylpenicillin 2.4MU IM². If penicillin allergy, or benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 14 days and repeat RPR in 6 months.
    - Give partner notification slip/s with code: RPR+.

- Does newborn have any signs of congenital syphilis: rash (red/blue spots or bruising especially on soles and palms), jaundice, pallor, distended abdomen, swelling, low birth weight, runny nose, respiratory distress, hypoglycaemia?
  - Yes
    - Repeat RPR 3 months after completing treatment: if RPR reactive, discuss/refer.
    - Give partner notification slip/s with code: RPR+.
  - No
    - Treat for late syphilis
      - Give benzathine benzylpenicillin 2.4MU IM² weekly for 3 weeks. If benzathine benzylpenicillin unavailable, give instead doxycycline 100mg 12 hourly for 30 days and repeat RPR in 6 months.
      - Give partner notification slip/s with code: RPR+.

### Manage the newborn of the RPR positive mother:

- Did mother complete 3 doses of IM injections at least 1 month before she delivered?
  - Yes
    - Refer same day.
  - No
    - No treatment needed.
    - Give single dose benzathine benzylpenicillin 50 000units/kg IM, into outer thigh, and refer.

---

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

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

Lumps or warts

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

Genital warts likely
- If warts atypical/fleshy/wet, test for syphilis. If positive, 45.
- Arrange a cervical screen for patient/partner if needed 47.
- Offer to arrange medical male circumcision for patient/partner.
- If available, protect surrounding skin with petroleum jelly and apply podophyllin 20% tincture of benzoin1 to warts (avoid applying internally/self-medication). Wash off after 3 hours. Repeat weekly until lesions resolve completely.
- Reassure that most warts resolve spontaneously within 2 years.
- Refer if:
  - Warts > 10mm
  - Numerous lesions
  - Warts inside vagina, involving cervix or urethra
  - Pregnant with large warts
  - Bleeding or infected warts

Papules with central dent

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

Papules with central dent

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

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

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

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

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- If warts atypical/fleshy/wet, test for syphilis. If positive, 45.
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If scratch marks infected (pus/red/swollen/crusts), also treat for likely impetigo 67.

Itchy rash in pubic area

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

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

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

Avoid in pregnancy and breastfeeding.

1
**CERVICAL SCREENING**

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

### Decide when the patient needs a cervical screen

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

### Assess the patient needing a cervical screen

<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Manage symptoms as on symptom pages. If abnormal vaginal discharge, if abnormal vaginal bleeding. If routine cervical screen, delay until after treatment.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Assess patient’s contraceptive needs. If pregnant, do cervical screen safely up to 20 weeks gestation.</td>
</tr>
<tr>
<td>Examination</td>
<td>Do bimanual palpation to check for pain on moving cervix and pelvic masses. If pain on moving cervix, treat for lower abdominal pain (LAP) syndrome. Do speculum examination to look for abnormalities of cervix. If any lesion/mass/polyp/erosion/ulcer/sore, avoid cervical screening and instead refer same week for colposcopy/biopsy.</td>
</tr>
<tr>
<td>HIV</td>
<td>Test for HIV. If HIV positive, give routine HIV care. Repeat cervical screening 3 yearly.</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) DNA test</td>
<td>If liquid-based cytology (LBC) available, also request HPV DNA test on same specimen.</td>
</tr>
</tbody>
</table>

### Advise the patient needing a cervical screen

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

### Manage the patient according to results:

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

<table>
<thead>
<tr>
<th>HPV DNA negative or not done</th>
<th><strong>Abnormal</strong></th>
</tr>
</thead>
</table>

**Cervical screen negative**

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

**Cervical screen positive**

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

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1. These tests are only available in designated pilot facilities.
**Approach to the patient with menstrual symptoms**

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

### Abnormal periods

- **Heavy/prolonged/irregular bleeding**
  - [49.]

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

- **No bleeding**

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

### No bleeding

- **Reassure little to no period can be normal.**
  - Reassure period should start again.
  - Advise to return if no period for > 6 months.

  **If no period > 6 months**
  - Look for and manage cause (like stress, excessive exercise, sudden weight loss, underweight).
  - If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.
  - If still no period after cause treated/resolved or unsure of cause, refer.

### Crampy lower abdominal or back pain during periods.

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

### Premenstrual syndrome (PMS)

- **Bloated/headache/tender breasts/tired/moody around time of periods**
  - Educate that PMS can start 2 weeks before period and should get better by end of period.
  - If low mood, stress or anxiety → 75.
  - If symptoms severe, consider oral contraceptive **ethinylestradiol/levonorgestrel** 30mcg/150mcg for 6 months → 136.

### Advise the patient with menstrual symptoms

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

Give urgent attention to the patient with vaginal bleeding and any of:
• Pregnant 138
• Recent delivery/miscarriage/termination of pregnancy 143
• BP < 90/60
• Hb < 6
• Pallor with pulse ≥ 100, respiratory rate ≥ 30, dizziness/faintness or chest pain

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

Approach to the patient with abnormal vaginal bleeding not needing urgent attention:
• Do a bimanual palpation for pelvic masses, a speculum examination to visualise cervix and a cervical screen if needed 147. If abnormal, refer.
• If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems. 147. If new bleeding occurs > 1 year after final period, refer within 2 weeks.
• If patient is not menopausal, determine the type of bleeding problem:
  - Heavy or prolonged periods
  - Irregular periods (cycle < 21 days or > 35 days)
  - Spotting between periods
  - Bleeding after sex

If pain during periods 48.

Heavy or prolonged periods
• If bleeding from elsewhere like easy bruising/purple rash/bleeding gums, arrange FBC and refer to doctor next day.
• If Hb < 12, treat for likely anaemia 23.
• Give COC: ethinylestradiol/levonorgestrel 30mcg/150mcg for 3 months 136. If pregnancy desired or COC contraindicated, discuss/refer.
• Give ibuprofen 400mg 8 hourly with food for 3 days.
• If on injectable contraceptive or subdermal implant: reassure that abnormal bleeding is common in first 3 months.
• If bleeding persists > 3 months, give COC or ibuprofen as above.
• Refer the patient:
  - If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.
  - Give COC: ethinylestradiol/levonorgestrel 30mcg/150mcg for 6 months 136. If pregnancy desired or COC contraindicated, discuss/refer.

Irregular periods (cycle < 21 days or > 35 days)
• If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.
• Give COC: ethinylestradiol/levonorgestrel 30mcg/150mcg for 6 months 136. If pregnancy desired or COC contraindicated, discuss/refer.

Spotting between periods
• Assess for STI 241.
• Check Hb: if Hb < 12, treat for likely anaemia 23.
• If on hormonal contraceptive, manage according to method:
  - Oral contraceptive:
    • Ensure correct use and reassure that spotting is common in first 3 months.
    • If > 24 hours diarrhoea/vomiting, advise to use condoms (continue for 7 days once diarrhoea/vomiting resolved).
    • If on ART, rifampicin, phenytoin or carbamazepine, change to copper IUCD or injectable 136.
    • If bleeding persists > 3 months:
      - If on progesterone-only pill and bleeding troublesome, change method 136.
      - Switch to COC containing lowest dose of ethinylestradiol (i.e. 30mcg). If bleeding persists, switch to cyproterone/ethinylestradiol 2mg/0.035mg daily or advise alternative method.
      - If no better after 3 cycles, discuss.
  - Injectable contraceptive or subdermal implant:
    • Reassure that spotting is common in first 3 months.
    • If bleeding troublesome, give combined oral contraceptive (COC) ethinylestradiol/levonorgestrel 30mcg/150mcg.
    • Duration depends on contraceptive method:
      - If subdermal implant, give for 20 days.
      - If on injectable, give for 14 days.
      - If COC contraindicated, give instead ibuprofen 400mg 8 hourly for 3 days.

If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.

Bleeding after sex
• Assess for STI 241.
• If assault or abuse 77.

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

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

<table>
<thead>
<tr>
<th>Problems getting or maintaining an erection</th>
<th>Painful ejaculation</th>
<th>Pain with sex (vaginal or anal)</th>
<th>Loss of libido</th>
</tr>
</thead>
</table>
| Does patient often wake with an erection in morning? | - If genital symptoms \(^\text{41}\).  
- If urinary symptoms \(^\text{51}\).  
- Review medication: antidepressants and schizophrenia treatment can cause painful ejaculation. Discuss with doctor.  
- If no cause found, refer. | - If anal symptoms \(^\text{40}\).  
- If urinary symptoms \(^\text{51}\).  
- Ask about vaginal dryness:  
  - If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping. If yes \(^\text{147}\).  
  - Review medication: oral contraceptive, antidepressants and hypertension treatment can cause vaginal dryness. Discuss with doctor.  
  - Advise patient to use lubricant during sex. Ensure it is condom-compatible, avoid using petroleum jelly with condoms.  
  - If low mood, stress or anxiety \(^\text{75}\).  
  - If sexual assault or abuse \(^\text{77}\). | - If stress or anxiety \(^\text{75}\).  
- Review medication: phenytoin, hydrochlorothiazide, spironolactone, chlorpromazine, risperidone, fluoxetine, amitriptyline and lopinavir/ritonavir can cause loss of libido. Discuss with doctor.  
- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either \(^\text{125}\).  
- Ask about relationship problems, anxiety/fear about sex, unwanted pregnancy, infertility and performance anxiety.  
- If woman > 40 years, ask about menopausal symptoms: hot flushes, night sweats, mood changes and difficulty sleeping. If yes \(^\text{147}\).  
- If sexual assault or abuse \(^\text{77}\).  
- Assess the patient’s contraceptive needs \(^\text{136}\).  
- Offer referral to counsellor. |
| Yes | No |

\(^\text{1}\) One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
**URINARY SYMPTOMS**

**Give urgent attention to the patient with urinary symptoms and any of:**
- Unable to pass urine with lower abdominal discomfort/distention
- Blood/protein in urine and new swelling of face/feet, BP ≥ 140/90 or passing little urine: kidney disease likely
- Blood in urine and sudden, severe, one-sided pain in flank or groin: kidney stone likely

**Manage and refer urgently:**
- If unable to pass urine, insert urinary catheter.
- If kidney disease likely: if pulse > 100 or respiratory rate ≥ 30, give face mask oxygen and furosemide 80mg slow IV, avoid IV fluids. If BP > 150/100, give amiodipine 5mg and furosemide 40mg orally.
- If kidney stone likely: give sodium chloride 0.9% 1L IV 6 hourly. If pain severe, give morphine 10mg IM or 3-10mg slow IV. For IV: dilute 10mg morphine with 9ml of sodium chloride 0.9%.
- If complicated pyelonephritis likely: send urine for MCS and give ceftriaxone 1g IV/IM. If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.

**If glucose, exclude diabetes**
- Not pregnant

If frequency, exclude pregnancy.

**If none of above, discuss/refer.**
- Send urine for MCS. Give ciprofloxacin 500mg 12 hourly for 7 days and paracetamol 1g 6 hourly. Advise to return if worse: refer.

**Approach to the patient with urinary symptoms not needing urgent attention**

**If flank pain with leucocytes/nitrites, uncomplicated pyelonephritis likely:** send urine MCS. Give ciprofloxacin 500mg 12 hourly for 7 days and paracetamol 1g 6 hourly. Advise to return if worse: refer.

**Give urgent attention to the patient with urinary symptoms and any of:**
- Burning/frequency/urgency or leucocytes/nitrites on dipstick
- Leucocytes/nitrites
- Blood/protein in urine
- Elevated urinalysis results
- Urine microscopy: bilharzia

**URINARY SYMPTOMS**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning/frequency/urgency or leucocytes/nitrites on dipstick</td>
<td>If leucocytes or nitrites: is patient pregnant, catheterised or has diabetes/urinary tract problem?</td>
</tr>
<tr>
<td>Simple UTI likely</td>
<td>Give nitrofurantoin 100mg 6 hourly for 5 days, or 7 days if pregnant.</td>
</tr>
<tr>
<td>Complicated UTI likely</td>
<td>Give ciprofloxacin 500mg 12 hourly for 7 days.</td>
</tr>
<tr>
<td>Urine frequency</td>
<td>If on anticoagulants, give single dose of aspirin 325mg or 500mg.</td>
</tr>
<tr>
<td>Urine urgency</td>
<td>Give ciprofloxacin 500mg 12 hourly for 7 days.</td>
</tr>
<tr>
<td>No leucocytes or nitrites</td>
<td>Give single dose of aspirin 325mg or 500mg.</td>
</tr>
<tr>
<td>Leucocytes/nitrites</td>
<td>Give furosemide 80mg slow IV, avoid IV fluids. If BP &gt; 150/100, give amiodipine 5mg and furosemide 40mg orally.</td>
</tr>
<tr>
<td>Severe hematuria</td>
<td>Give single dose of aspirin 325mg or 500mg.</td>
</tr>
<tr>
<td>Painful urination</td>
<td>Give single dose of aspirin 325mg or 500mg.</td>
</tr>
<tr>
<td>Dysuria</td>
<td>Give single dose of aspirin 325mg or 500mg.</td>
</tr>
</tbody>
</table>

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

**Flow problem**
- Leakage of urine
  - If on amitriptyline, doctor to review, otherwise refer.
- Poor stream or difficulty passing urine
  - If on amitriptyline, doctor to review, otherwise refer.

**Flow problem**
- Leakage of urine
  - If on amitriptyline, doctor to review, otherwise refer.
- Poor stream or difficulty passing urine
  - If on amitriptyline, doctor to review, otherwise refer.
A patient has body/general pain if his/her body aches all over or most of body is painful.

If pain localised to one area:
- If in back → 54,
- arm/hand → 55,
- leg → 56,
- foot → 57,
- neck → 55.

Screen for joint problem:
- Ask patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.
- Is patient able to do all actions comfortably?

If cough → 34.
If blocked/runny nose → 30.
If sore throat → 31.
If abdominal pain → 37.
If nausea or vomiting → 38.
If diarrhoea → 39.
If burning urine → 51.
If none of above:
- Is there recent onset body pain and headache/fever?

Approach to the patient with body/general pain
- If on abacavir or zidovudine, check for urgent side effects → 102.
- If fever now or in past 3 days, and in a malaria area in past 3 months, arrange same day malaria test. If positive, malaria likely → 20.
- If tick bite (small dark brown/black scab) or tick present, tick bite fever likely → 20.
- If unintentional weight loss of ≥ 5% of body weight in past 4 weeks → 19.
- Are there any of: cough, blocked/runny nose, sore throat, abdominal pain, nausea/vomiting, diarrhoea, burning urine, headache, fever?
- No → 53.
- Yes → 53.

Check joints: are joint/s warm, tender, swollen or have limited movement?
- No
- Yes → 53.

- Test for HIV → 95.
- If low mood, stress or anxiety → 75.
- Review patient’s medication. If on simvastatin and muscle pain/cramps and weakness, reduce simvastatin dose to 10mg daily or discuss with doctor/specialist.
- If patient has a life-limiting illness, also consider giving palliative care → 148.
- Ask about duration of pain:
  - < 4 weeks
  - ≥ 4 weeks

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

- Yes → 26.
- No → Discuss.

Influenza likely
- Advise on cough/sneeze hygiene and to wash hands regularly.
- Give paracetamol 1g 6 hourly as needed for up to 5 days. Advise to only use analgesia when necessary and avoid long term regular use.
- Check glucose → 13.
- Check Hb: if < 12 (woman) or < 13 (man) → 23.
- Check CRP, creatinine (eGFR). If weakness/tiredness, weight gain, low mood, dry skin, constipation or cold intolerance, also check TSH. Review in 2 weeks:
  - If blood results normal, consider fibromyalgia → 135.
  - If blood results abnormal, refer to doctor.
- Advise yearly influenza vaccination if > 65 years, pregnant, HIV, chronic heart/lung disease.

1Test for malaria with rapid diagnostic test if available, and parasite slide microscopy.
### JOINT SYMPTOMS

#### Approach to the patient with joint symptoms needing urgent attention
- Short history of single warm, swollen, extremely painful joint with limited range of movement, **septic arthritis** likely
- Injury in past 48 hours and severe pain/swelling or deformity, **fracture** likely → 14.

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

#### Approach to the patient with joint symptoms not needing urgent attention
- Check joints and ask patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.
- Is there any of: joint warm/tender/swollen or unable to do all actions comfortably?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint problem unlikely</td>
<td></td>
</tr>
<tr>
<td>• If body/general pain → 52.</td>
<td></td>
</tr>
<tr>
<td>• If back pain → 54.</td>
<td></td>
</tr>
<tr>
<td>• If neck pain → 55.</td>
<td></td>
</tr>
<tr>
<td>• If arm symptoms → 55.</td>
<td></td>
</tr>
<tr>
<td>• If leg symptoms → 56.</td>
<td></td>
</tr>
<tr>
<td>• If foot symptoms → 57.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has there been recent injury?</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask about duration of joint pain. Has joint pain lasted ≥ 6 weeks?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has patient had recent genital discharge or painless non-itchy skin rash?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic arthritis likely → 133.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any sudden onset of 1-3 warm, extremely painful, red, swollen joints (often big toe or knee)?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Give <strong>paracetamol</strong> 1g 6 hourly as needed for up to 5 days. If no response, give <strong>ibuprofen</strong> 400mg 8 hourly with food as needed for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure, kidney disease).</td>
<td></td>
</tr>
<tr>
<td>• Test for HIV → 95.</td>
<td></td>
</tr>
<tr>
<td>• Review after 1 month or sooner if joint pain worsens. If worsens, refer.</td>
<td></td>
</tr>
<tr>
<td>• While waiting for appointment, if pain in hands or feet, refer to occupational therapist and if pain in other joints, refer to physiotherapist.</td>
<td></td>
</tr>
</tbody>
</table>

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

---

**Gonococcal arthritis** likely
- Usually involves wrists, ankles, hands and feet.
- Refer/discuss same day.
- Treat patient’s partner/s as for cervicitis/male urethritis → 41.
**BACK PAIN**

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

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

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

Manage and refer urgently:

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

**Approach to patient with back pain not needing urgent attention**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclude TB</td>
<td></td>
</tr>
<tr>
<td>31 and</td>
<td></td>
</tr>
<tr>
<td>Doctor to do back x-ray and CRP</td>
<td></td>
</tr>
<tr>
<td>Discuss results with specialist/refer</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any of: &gt; 50 years, pain progressive or for &gt; 6 weeks, previous cancer or back surgery, osteoporosis, oral steroid use, HIV, IV drug use or deformity?</td>
<td></td>
</tr>
<tr>
<td>Any of: &lt; 40 years, sleep disturbed by pain, pain better with exercise, does not get better with rest?</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical back pain likely**

- Measure waist circumference: if > 80cm (woman) or 94cm (man), assess CVD risk, 110.
- If low mood, stress or anxiety, 75.
- Reassure patient that back pain is very common, normally not serious and will get better on its own.
- Advise patient to be as active as possible, continue to normal activity and avoid resting in bed.
- Advise patient that regular exercise may prevent recurrence of back pain.
- Give pain relief:
  - Give paracetamol 1g 6 hourly as needed for up to 5 days.
  - If poor response after 1 week, add ibuprofen 400mg 8 hourly with food for up to 5 days.
  - If still a poor response add tramadol 50mg 6 hourly for up to 5 days.
  - If pain persists > 2 weeks, or unable to cope with daily activities/work, refer for physiotherapy.
  - If pain persists > 6 weeks, refer to doctor. If bladder/bowel disturbance, numbness or weakness develops, refer urgently.

**Inflammatory back pain likely**

- Doctor to:
  - Check CRP and test for HIV, 95.
  - Give ibuprofen* 400mg 8 hourly with food for up to 5 days.
  - Do back x-ray.
  - Discuss results with specialist/refer.

*Exclude TB and Unsure

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1. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.

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54
**NECK PAIN**

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

Approach to the patient with neck pain not needing urgent attention

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

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Do cervical spine x-ray.</td>
<td>• Give paracetamol 1g 6 hourly or give ibuprofen² 400mg 8 hourly with food for up to 5 days.</td>
</tr>
<tr>
<td>• Check CRP.</td>
<td>• If no better after 5 days and no arm pain, refer for physiotherapy.</td>
</tr>
<tr>
<td>• Discuss with specialist.</td>
<td>• If no response after 6 weeks, arm pain, weakness/numbness develops or pain worsens, do cervical spine x-ray and refer.</td>
</tr>
</tbody>
</table>

**ARM OR HAND SYMPTOMS**

Screen for joint problem:
- Check joints and ask patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.
- If joint warm/tender/swollen or unable to do all actions comfortably, joint problem likely → 53.

Give urgent attention to the patient with arm or hand symptoms and any of:
- Arm pain with chest pain → 33.
- If recent injury and severe pain/swelling or deformity, fracture likely → 14.
- If new sudden onset of weakness of arm with/without difficulty speaking or visual disturbance: consider stroke or TIA → 118.

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

<table>
<thead>
<tr>
<th>Painful shoulder</th>
<th>Wrist/hand pain: intermittent, worse at night, relieved by shaking. May be numbness/tingling in 1st, 2nd and 3rd fingers or weakness of hand.</th>
<th>Elbow pain with or after elbow flexion/extension. May have decreased grip strength.</th>
<th>Pain at base of thumb worsened by thumb or wrist movement or catching/locking of finger</th>
</tr>
</thead>
</table>
| Referred pain likely Ask about neck pain (see above), cough/difficulty breathing → 34, chest pain → 33, abdominal pain → 37, pregnancy → 136. | Carpal tunnel syndrome likely Refer. | Tennis or golfer’s elbow likely
- Advise patient to apply ice to elbow and rest arm.
- Give ibuprofen² 400mg 8 hourly with food for 10 days.
- Refer for physiotherapy.
- If no better after 6 weeks or worsens, refer. | Tenosynovitis of hand/wrist likely
- Rest and splint joint.
- Give ibuprofen² 400mg 8 hourly with food for up to 5 days.
- If no better after 6 weeks or worsens, refer. |

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

Screen for joint problem:
- Check joints and ask patient to place hands behind head, then behind back. Bury nails in palm and open hand. Press palms together with elbows lifted. Walk. Sit and stand up with arms folded.
- If joint warm/tender/swollen or unable to do all actions comfortably, joint problem likely \(\rightarrow 53\).
- If the problem is only in the foot \(\rightarrow 57\).

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

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

Refer urgently.

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

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

| Pain in buttock radiating down back of lower leg | ✔️ |
| Muscle pain in legs or buttocks on exercise that is relieved by rest | ✗ |
| Irritation of sciatic nerve likely | ✗ |
- Give paracetamol 1g 6 hourly as needed for up to 5 days.
- Advise patient to be as active as possible, continue normal activity and avoid resting in bed.
- Advise patient to return and refer same day if:
  - Retention or incontinence of urine or stool
  - Numbness of buttocks, perineum or legs
  - Leg weakness
  - Difficulty walking
- If no better after 1 month, refer.

| Peripheral vascular disease likely \(\rightarrow 121\). | ✗ |

†BMI = weight (kg) ÷ height (m) ÷ height (m).

Heart failure likely \(\rightarrow 117\).

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

| Check skin: are there painful areas, ulcer/s, lump/s or changes in skin colour? | ✗ |
| Is there a groin lump/s? | ✗ |
- Yes
- 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 and problem seems to be specifically in the joint. [53.]

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

- Unable to bear weight following injury [14.]
- Sudden severe foot pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: acute limb ischaemia likely
- Muscle pain in legs or buttocks on exercise associated with foot pain at rest, ulcer or gangrene on foot: critical limb ischaemia likely.

Refer urgently.

### Approach to the patient with foot symptoms not needing urgent attention

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

<table>
<thead>
<tr>
<th>Generalised Foot Pain</th>
<th>Localised Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant burning pain, pins/needles or numbness of feet worse at night</td>
<td>Ensure that shoes fit properly.</td>
</tr>
</tbody>
</table>

**Peripheral neuropathy** likely

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

**Foot pain with muscle pain in legs or buttocks** likely [121.]

**Plantar fasciitis** likely

- Advise patient to avoid bare feet and to apply ice.
- If BMI [\( \geq 25 \)] assess CVD risk [110.]
- Give as needed: paracetamol 1g 6 hourly or ibuprofen 400mg 8 hourly with food for up to 5 days (avoid ibuprofen if peptic ulcer, asthma, hypertension, heart failure or kidney disease).
- Refer for physiotherapy.

**Peripheral vascular disease** likely

**Heel pain, worse on starting walking**

**Foot deformity**

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

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

- Skin: callus, corns, cracks, wet soft skin between toes [51, ulcers [66.
- Foot deformity: most commonly bunions (see above). If foot deformity, refer for specialist care.
- Sensation: light prick sensation abnormal after 2 attempts.
- Circulation: absent or reduced foot pulses.

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

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

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

---

1. Avoid if on bedaquiline. 2. BMI = weight (kg) ÷ height (m) ÷ height (m).
## SKIN SYMPTOMS

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

- If sudden generalised itch/rash or face/tongue swelling and any of: wheeze, difficulty breathing, BP < 90/60, dizziness/collapse, abdominal pain, vomiting or exposure to possible allergen¹, check for anaphylaxis ² 16.
- Purple/red rash with any of: neck stiffness, drowsy/confused, temperature ≥ 38°C, headache: meningococcal disease likely
- Diffuse rash appearing within 3 months of starting a new medication and any of the following, serious drug reaction likely:
  - BP < 90/60
  - Temperature ≥ 38°C
  - Abdominal pain
  - Vomiting or diarrhoea
  - Involves mouth, eyes or genitals
  - Blisters, peeling or raw areas
  - Jaundice

**Management:**

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

### Approach to the patient with skin symptoms not needing urgent attention

Manage according to skin symptom/s:

<table>
<thead>
<tr>
<th>Pain</th>
<th>Itch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash</td>
<td>No rash</td>
</tr>
<tr>
<td>Generalised, non-itchy rash</td>
<td>Generalised, non-itchy rash</td>
</tr>
<tr>
<td>Localised</td>
<td>Localised</td>
</tr>
</tbody>
</table>

- ⁵⁹
- ⁶³
- ⁶⁵
- ⁶⁶
- ⁶⁷
- ⁶⁸
- ⁶⁹

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

¹Common allergens include medication, food or insect bite/sting within the past few hours. ²Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.
Red, warm, painful lump which may be fluctuant in the centre. May discharge pus.

**Boil/abscess** likely
- If fluctuant, arrange incision and drainage.
- Give **paracetamol** 1g 6 hourly as needed for up to 5 days.
- If multiple lesions, lesion on face, extensive surrounding infection, temperature ≥ 38°C, HIV or diabetes, give antibiotics:
  - Give **flucloxacillin** 500mg 6 hourly or **cephalexin** 500mg 6 hourly for 5 days.
  - If severe penicillin allergy, give instead **azithromycin** 500mg daily for 3 days.
- Advise to wash with soap and water, keep nails short and avoid sharing clothing or towels.
- If recurrent boils or abscesses, test for **HIV** and **diabetes**.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Confused
  - Hand, face or scalp involvement
  - Extensive infection
  - Blisters or grey/black skin
  - Poorly controlled diabetes
  - Recurrent infections with underlying problem (like lymphoedema)
  - Poor response to antibiotics

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

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

**Erysipelas** likely
- Test for **HIV**.
- Advise to keep lesions clean and dry.
- If < 72 hours since rash started or if immunity impaired with fresh vesicles, give aciclovir 800mg 5 times a day (4 hourly missing the middle of the night dose) for 7 days.
- For pain:
  - Give **paracetamol** 1g 4-6 hourly as needed.
  - If needed, add **tramadol** 50mg 6 hourly.
  - If poor response or pain persists after rash has healed, give **amitriptyline** 25mg at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.
  - If still poor response, refer.
- If infected (skin red, warm, swollen):
  - Give **flucloxacillin** 500mg 6 hourly or **cephalexin** 500mg 6 hourly for 5 days.
  - If severe penicillin allergy, give instead **azithromycin** 500mg daily for 3 days.
  - Give **paracetamol** 1g 6 hourly as needed for up to 5 days.
- If limb affected, advise to keep elevated.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Confused
  - Hand, face or scalp involvement
  - Extensive infection
  - Blisters or grey/black skin
  - Poorly controlled diabetes
  - Recurrent infections with underlying problem (like lymphoedema)
  - Poor response to antibiotics

Painful blisters in a band along one side

**Herpes zoster (shingles)** likely
- Test for HIV.
- Advise to keep lesions clean and dry.
- If < 72 hours since rash started or if immunity impaired with fresh vesicles, give aciclovir 800mg 5 times a day (4 hourly missing the middle of the night dose) for 7 days.
- For pain:
  - Give **paracetamol** 1g 4-6 hourly as needed.
  - If needed, add **tramadol** 50mg 6 hourly.
  - If poor response or pain persists after rash has healed, give **amitriptyline** 25mg at night. If no response, increase by 25mg every 2 weeks, up to 75mg if needed.
  - If still poor response, refer.
- If infected (skin red, warm, swollen):
  - Give **flucloxacillin** 500mg 6 hourly or **cephalexin** 500mg 6 hourly for 5 days.
  - If severe penicillin allergy, give instead **azithromycin** 500mg daily for 3 days.
  - Give **paracetamol** 1g 6 hourly as needed for up to 5 days.
- If limb affected, advise to keep elevated.
- Refer same day if:
  - BP < 90/60
  - Pulse > 100
  - Confused
  - Hand, face or scalp involvement
  - Extensive infection
  - Blisters or grey/black skin
  - Poorly controlled diabetes
  - Recurrent infections with underlying problem (like lymphoedema)
  - Poor response to antibiotics

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

Check if the patient needs urgent attention ➔ 58.

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

If no response to treatment, discuss/refer.

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

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

Hyperpigmented, itchy bumps on limbs, trunk or face

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

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

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

Eczema likely
- Advise that eczema is a chronic condition with episodes of acute exacerbations.
- Advise to avoid triggers such as soap, detergents, heat, fabrics that cause itch, overheating at night.
- If low mood, stress or anxiety ➔ 75.
- Wash with aqueous cream instead of soap.
- Moisturise skin with emulsifying ointment twice a day and immediately after bathing.
- Apply hydrocortisone 1% cream twice a day for 7 days (apply sparingly to face, avoid eyes).
- If poor response to hydrocortisone or severe eczema, apply instead betamethasone 0.1% ointment once a day for 7 days (avoid face and neck). If good response, reduce to once a day for 3 days, then stop.
- For itch, give cetirizine 10mg daily.
- If oozing, pus or yellow crusts, treat for infection:
  - Give flucloxacillin 500mg 6 hourly or cepalexin 500mg 6 hourly for 5 days.
  - If severe penicillin allergy1, give instead azithromycin 500mg daily for 3 days.
- Refer if:
  - No better after 2 weeks
  - Extensive involvement
  - Painful pustules

Urticaria likely
- Help to identify and advise to avoid triggers.
- Apply calamine lotion as needed.
- If recurrent eye problem, exclude allergic conjunctivitis ➔ 27.
- If recurrent nose problem, exclude allergic rhinitis ➔ 30.
- If recurrent cough or wheeze, exclude asthma ➔ 106.
- For itch, give cetirizine 10mg daily.
- If yellow crusts, also treat for likely impetigo ➔ 67.

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

Drug reaction likely ➔ 64.
**LOCALISED ITCHY RASH**

**Check if the patient needs urgent attention**: 58.

- If rash on scalp, 569.
- If very itchy, small red bumps and burrows in webspaces of fingers, axillae, waist or genitals, **scabies** likely → 60.
- If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely → 60.

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

**Yes**

- If patches of dry, scaly, itchy skin on wrists, ankles, inside elbows or behind knees, **eczema** likely

**No**: check site of rash.

**Head/face, trunk or limbs**

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

**Feet**

- **Tinea corporis (ringworm)** likely
  - Apply **aqueous cream** 3 times a day.
  - For itch:
    - Give **chlorphenamine** 4mg at night.
    - If itch no better or severe daytime itch, give instead **certizine** 10mg daily.

- **Tinea pedis (athlete’s foot)** likely
  - Advise to keep skin clean, to dry well and avoid sharing towels, clothes, combs and hair brushes.
  - If on feet, encourage open shoes and avoid socks of synthetic material.
  - If extensive or recurrent, test for HIV and diabetes 13.
  - If involves nails, 71.
  - If extensive or no better after 1 month, refer.

**Psoriasis** likely

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

**Insect bites** likely

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

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

**Pityriasis rosea** likely

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

**If diagnosis uncertain, discuss/refer.**
**ITCH WITH NO RASH**

**Check if the patient needs urgent attention.**

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

**Is the skin very dry?**

- Yes
  - **Dry skin (xeroderma) likely**
  - **Medication side-effect likely**
    - Continue the medication only if still necessary.
    - Advise to return if rash develops or itch persists.
  - Advise to:
    - Avoid hot baths, wool/itchy fabrics and scratching as these may worsen itch.
    - Wash with **aqueous cream** instead of soap.
    - Moisturise skin with **emulsifying ointment** twice a day.
    - Avoid scrubbing the skin and washing more than once a day. Gently pat skin dry.
    - Keep nails short.
    - If severe itch, give **chlorphenamine** 4mg at night, or up to 8 hourly for up to 5 days.
    - If known with a life-limiting illness, consider giving palliative care → 148.
    - If no better, discuss/refer.

- No

**Did the patient start any new medications in the weeks before the itch started?**

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

- No

**If diagnosis uncertain, discuss/refer.**
GENERALISED NON-ITCHY RASH

Check if the patient needs urgent attention 58.

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

Syphilis positive

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

Treat for early syphilis →45.

HIV positive

Give routine HIV care →96.

Syphilis and HIV negative

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

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

- No

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

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

- No

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

- Yes
  - Consider drug rash →64.

- No

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

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

- HIV can be transmitted 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 with a drug rash and any of:

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

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

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

- Refer to doctor if available.
  - If on ART:
    - If on abacavir, check for abacavir hypersensitivity reaction (AHR) \(^{102}\).
    - If on nevirapine, doctor to switch ART \(^{101}\).
    - If on first-line TB medication\(^1\) or TPT, continue.
  - If on co-trimoxazole prophylaxis\(^2\), stop it until rash resolved. If rash resolves, discuss with doctor about re-starting co-trimoxazole or changing instead to dapsone 100mg daily.
  - If on any other medications, discuss with doctor whether to stop or change them.
  - If itch, give chlorphenamine 4mg at night, or up to 8 hourly for up to 5 days.
  - Check ALT. Review patient and result within 24 hours:
    - Patient unwell or ALT ≥ 120
      - Give urgent attention \(\rightarrow 58\).
      - Continue medications and review daily until improving.
      - Advise to return urgently if rash worsens or markers of severity occur.
      - Repeat ALT in 1 week. Review patient and result within 24 hours.
    - Patient well and ALT < 120
      - Advise to return if rash persists ≥ 2 weeks: discuss/refer.

\(^{1}\)First-line TB medications include isoniazid (INH), rifampicin (RIF) and pyrazinamide (PZA) and ethambutol (ETH).  
\(^{2}\)If on co-trimoxazole treatment for pneumocystis pneumonia (PJP), toxoplasmosis or Isospora belli diarrhoea, discuss with specialist.
**SKIN LUMP/S**

**Refer same week the patient with a mole that:**
- Is irregular in shape or colour
- Changed in size, shape or colour
- Differs from surrounding moles
- Is > 6mm wide
- Bleeds easily
- Itches

If painful, firm, red, warm lump which softens in the centre to discharge pus, **boil/abscess** likely → 59.

<table>
<thead>
<tr>
<th>Round, raised papules with rough surfaces</th>
<th>Small, skin-coloured pearly bumps with central dimples</th>
<th>Painless, purple/brown lumps on skin</th>
<th>Smooth, well defined lump beneath skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>© University of Cape Town</td>
<td>© University of Cape Town</td>
<td>© BMJ Best Practice</td>
<td>© University of Cape Town</td>
</tr>
</tbody>
</table>

**Warts likely**
- Usually on hands, knees or elbows but can occur anywhere.
- Plantar warts on the soles of the feet are thick and hard with black dot/s.
- Reassure that warts often resolve spontaneously.
- If treatment desired:
  - Soften wart/s by soaking in warm water for 5 minutes at night and scrub gently with clean nail file.
  - After drying well, apply salicylic acid 15-30% to wart and cover with plaster.
  - Repeat every night and continue for a week after wart has come off.
- If extensive warts, refer.

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

**Kaposi's sarcoma** likely
- Lesions vary from isolated lumps to large ulcerating tumours.
- May also appear in mouth and on genitals.
- Test for HIV → 95
- Refer for biopsy to confirm diagnosis and for further management.

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

**Lipoma** likely
- Usually found on trunk or upper limb.
- Reassure lump will not become cancer and usually does not need removal.
- Refer if:
  - > 3cm
  - Causing pain or discomfort
  - Getting bigger
  - Firm or deep beneath skin
  - New lump that persists > 1 month
  - Intolerable

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

If diagnosis uncertain, refer.

---

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

Check if the patient needs urgent attention  58.

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

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is ulcer on the leg or foot?</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>• If genital ulcer  41.</td>
<td>• If elsewhere on body and no obvious cause like trauma, refer to exclude skin cancer.</td>
</tr>
</tbody>
</table>

Is ulcer on the leg or foot?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check leg and foot pulses and if patient has muscle pain in legs or buttocks on exercise.</td>
<td></td>
</tr>
<tr>
<td>Pulses normal and no muscle pain in legs or buttocks on exercise</td>
<td></td>
</tr>
<tr>
<td>Is there red/brown darkening of skin around ulcer, spidery veins?</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Does patient have diabetes? If unknown  13.

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diabetic ulcer likely</td>
<td>• Venous stasis ulcer likely</td>
</tr>
<tr>
<td>• Avoid pressure/weight-bearing on ulcer.</td>
<td>• Refer for specialist assessment.</td>
</tr>
<tr>
<td>• Give foot care advice  57.</td>
<td>• Encourage exercise.</td>
</tr>
<tr>
<td>• Clean ulcer with sodium chloride 0.9% solution and apply paraffin gauze dressing.</td>
<td>• Avoid pressure on ulcer.</td>
</tr>
<tr>
<td>• If infected (skin red, warm, painful), give amoxicillin/clavulanic acid(^1) 875/125mg 12 hourly for 10 days.</td>
<td>• Give foot care advice  57.</td>
</tr>
<tr>
<td>• Give diabetes routine care  112.</td>
<td>• Advise elevating leg when possible and to avoid prolonged standing.</td>
</tr>
<tr>
<td>• Refer if - Fever - Pus or extensive infection - Ulcer &gt; 2cm - Tendon or bone visible - No better after 1 month.</td>
<td>• Clean ulcer with sodium chloride 0.9% solution and apply paraffin gauze dressing.</td>
</tr>
<tr>
<td></td>
<td>• Apply compression bandage from foot to knee.</td>
</tr>
<tr>
<td></td>
<td>• Assess CVD risk  110.</td>
</tr>
<tr>
<td></td>
<td>• Refer if: - No better after 1 month - Foot ulcer or atypical looking ulcer - Persistently infected or foul-smelling.</td>
</tr>
</tbody>
</table>

Peripheral vascular disease (PVD) likely

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

Pressure ulcer/sore likely

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

\(^1\)If penicillin allergy, discuss with doctor.
CRUSTS OR FLAKY SKIN

Check if the patient needs urgent attention ➔58.

Are there crusts or flaky skin?

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

**Impetigo likely**
- Advise to avoid close contact with others and sharing of towels, and to keep nails short.
- Advise patient and household contacts to wash with soap and water twice a day.
- Apply **povidone iodine 5% cream or povidone iodine 10% ointment** to lesions 8 hourly.
- Give **flucloxacillin 500mg 6 hourly or cephalaxin 500mg 6 hourly** for 5 days. If severe penicillin allergy¹, give instead **azithromycin 500mg daily** for 3 days.
- If not completely resolved, repeat antibiotic course.
- **Histories of angioedema, anaphylaxis or urticaria.**

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

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

**Eczema likely**
- Advise that eczema is a chronic condition with episodes of acute exacerbations.
- Advise to avoid triggers such as soap, detergents, heat, fabrics that cause itch, overheating at night.
- If low mood, stress or anxiety ➔75.
- Wash with **aquéous cream** instead of soap.
- Moisturise skin with **emulsifying ointment** twice a day and immediately after bathing.
- Use **hydrocortisone 1% cream** twice a day for 7 days (apply sparingly to face, avoid eyes). If good response, reduce to once a day for 3 days, then stop.
- If poor response to hydrocortisone or severe eczema, apply instead **betamethasone 0.1% ointment** once a day for 7 days (avoid face and neck). If good response, reduce to once a day for 3 days, then stop.
- For itch, give **cetirizine** 10mg daily.
- If oozing, pus or yellow crusts, treat for infection:
  - Give **flucloxacillin 500mg 6 hourly or cephalaxin 500mg 6 hourly** for 5 days.
  - If severe penicillin allergy¹, give instead **azithromycin 500mg daily** for 3 days.
- Refer if:
  - No better after 2 weeks
  - Extensive involvement
  - Painful pustules

References:

¹History of angioedema, anaphylaxis or urticaria.
### Changes in Skin Colour

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

<table>
<thead>
<tr>
<th>Yellow skin</th>
<th>Dark patches</th>
<th>Light patches</th>
<th>Absence of colour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Jaundice likely

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

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

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

**Hepatitis A IgM positive**
- Notify.
- Advise strict handwashing practises, especially before handling food and after using toilet. Avoid alcohol and paracetamol whilst ill.
- Check HBsAg results ≥ 105.
- If nausea/vomiting and unable to tolerate fluids, refer.

**Hepatitis A IgM negative**

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

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

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

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

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

### If diagnosis uncertain, discuss/refer.

---

*One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. 2If on atazanavir ≥ 102.*
# SCALP SYMPTOMS

## Itch without rash

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Likely Cause</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| Severe itch with lice or white eggs. May have small red bites on back of neck. | Lice | **Apply permethrin 5% lotion to towel-dried or dry hair:**  
- Using normal comb, comb into hair to ensure whole scalp is covered and hair is saturated.  
- Then using fine lice comb, remove lice and eggs from hair in sections, combing away from scalp.  
- Rinse lice comb in hot water in white bowel or wipe on white tissue between strokes to identify black lice.  
- Rinse off after 10 minutes.  
- Use weekly until better, then every second week. |
| Fine, white flakes on hair and clothing | Dandruff | **Apply selenium sulphide 2.5% suspension:**  
- Lather on scalp.  
- Rinse off after 10 minutes.  
- Use weekly until better, then every second week. |
| Red/pink patches with fine greasy scales. May also occur between eyebrows, in nose folds, behind ears. Usually itchy. | Seborrhoeic dermatitis | **If extensive, test for HIV.**  
- **Apply selenium sulphide 2.5% suspension:**  
  - Lather on scalp.  
  - Rinse off after 10 minutes.  
  - Use weekly until better, then every second week.  
- **Apply hydrocortisone 1% cream twice a day.** Once improved, apply instead **betamethasone 0.1% ointment twice a day.**  
  - If poor response or severe, apply instead **betamethasone 0.1%** ointment once a day for 7 days (avoid face).  
  - If no response within 3 months, refer. |

## Rash with or without itch

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Likely Cause</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| Red/pink patches covered with silvery scale. Often on knees, elbows, lower back, scalp. May have pitted nails. | Psoriasis | **Refer to specialist to confirm diagnosis.**  
- While waiting for appointment:  
  - **Moisturise skin with emulsifying ointment twice a day.**  
  - If poor response or severe, apply instead **betamethasone 0.1%** ointment once a day for 7 days (avoid face).  
  - If no response within 3 months, refer. |
| Well-defined, raised plaques | Contact dermatitis | **Identify and advise patient to avoid cause.**  
- **Moisturise skin with emulsifying ointment twice a day.**  
- **Apply betamethasone 0.1% ointment twice a day.**  
  - If pus or yellow crusts, treat for infection:  
    - **Give flucloxacillin 500mg 6 hourly or cephalaxin 500mg 6 hourly 5 days.**  
    - If severe penicillin allergy¹, give instead **azithromycin 500mg daily for 3 days.**  
    - If no better, refer. |

## If diagnosis uncertain, discuss/refer.

¹History of angioedema, anaphylaxis or urticaria.
HAIR LOSS

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

Yes

Is hair loss patchy or generalised?

Patchy

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

Yes

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

Yes

No

Are patches well-defined with healthy underlying scalp?

Yes

No:

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

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

Yes

No

Female pattern hair loss likely

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

If causing patient distress, refer for counselling.

If diagnosis uncertain, discuss/refer.
**NAIL SYMPTOMS**

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

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

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

**Fungal infection** likely
- Test for HIV ⑨5 and diabetes ⑩3.
- Fungal nail infection is difficult to treat.
- If very distressing to patient, refer.

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

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

**Haematoma** likely
- Reassure patient.
- Treat if injury < 2 days old and painful:
  - Clean nail with povidone iodine 10% solution.
  - Hold finger secure and gently twist a large bore needle into nail over centre of haematoma. Stop when blood drains through hole.
  - Cover with sterile gauze dressing.

**Blue/brown/black discolouration of nail**
- Psoriasis may discolour nails. If psoriasis on skin ⑥1.
- Review medication: fluconazole, ibuprofen, lamivudine, phenytoin and zidovudine can cause discolouration of nails. Discuss with doctor.
- Refer same week to exclude melanoma (picture above) if:
  - New dark spot on 1 nail which is getting bigger quickly and no recent trauma
  - Discolouration extends into nail folds
  - Band on nail that is:
    - > 4mm wide
    - Getting darker or bigger
    - Has blurred edges
  - Nail is damaged

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

**Disfigured nail with swollen nail bed and loss of cuticle**

**White/yellow disfigured or crumbling nails**

**Transverse dents in nails (Beau's lines)**

**Has there been recent trauma to nail?**

- Yes
- No

①History of angioedema, anaphylaxis or urticaria.
**SELF-HARM OR SUICIDE**

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

Has patient attempted self-harm or suicide?

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

- **No**
  - Avoid leaving patient alone. Remove any possible means of self-harm (firearms, knives, pills).
  - If aggressive or violent, ensure safety: assess patient with other staff, use security personnel or police if needed. Sedate only if necessary.
  - Refer urgently: while awaiting transport, monitor closely. If patient refuses admission, consider involuntary admission.

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

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

**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.

- Discharge into care of family, if possible. Review patient at least weekly for 2 months: involve a counsellor, psychiatric nurse/psychologist or social worker if possible.
- If self-harm or suicide risk is still low follow up monthly. If thoughts or attempts of self-harm or suicide recur, reassess suicide risk above.

1 If able, give this charcoal mixture via nasogastric tube if the airway is protected and patient co-operative.
2 Give naloxone IM only if IV not possible.
Give urgent attention to the aggressive/disruptive patient with any of:

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

Management:
- Ensure the safety of yourself, the patient and those around you: ensure security personnel present, call police if needed. They should disarm patient if s/he has a weapon. Assess in a safe room with other staff. Ensure exit is not blocked.
- Try to verbally calm the patient:
  - Avoid direct eye contact, sudden movements and approaching patient from behind. Stand at least two arm's lengths away.
  - Use an honest, non-threatening manner. Avoid talking down to the patient, arguing or commanding him/her to calm down. Use a friendly gesture like offering a cool drink or food.
  - Listen to patient, identify his/her feelings and desires and offer choices. Take all threats seriously.
- Consider involuntary admission if signs of mental illness and refuses treatment or admission and a danger to self, others, own reputation or financial interest/property.  
- Restrain and/or sedate only if needed: imminent harm to self/others, disruption of important treatment, damage to environment, verbal attempts to calm patient failed.
  - If possible, before sedation: assess and manage possible causes of abnormal thoughts or behaviour.
  - If restraints used, check restraint sites every 30 minutes.

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

Yes
- Give buccal\(^1\) midazolam 7.5-15mg or diazepam 5mg orally.
- Assess response after 30 minutes:

No

Patient calm

Patient still aggressive/disruptive after 30 minutes

Decide which medication to use according to likely cause:

<table>
<thead>
<tr>
<th>Exact cause unknown</th>
<th>Alcohol/drug withdrawal</th>
<th>Stimulant drug intoxication</th>
<th>Alcohol intoxication</th>
<th>Psychosis(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give midazolam 7.5-15mg IM.</td>
<td></td>
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</tr>
</tbody>
</table>

Assess response after 30 minutes:

<table>
<thead>
<tr>
<th>Patient calm</th>
<th>Partial response only. Repeat same dose of IM medication used above.</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If midazolam used above, give haloperidol 5mg (2mg if &gt; 65 years) IM and promethazine 25mg IM.</td>
<td>If haloperidol/promethazine used above, give midazolam 7.5-15mg IM.</td>
</tr>
</tbody>
</table>

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

Refer the mentally ill aggressive patient same day to hospital:\(^1\): document history, and time and dose of medication given. If emergency admission needed without patient consent, fill in MHCA 01 form. If restraints used, complete MHCA 48 form.

---

\(^1\)Buccal: use IV formulation of midazolam, use syringe to draw up correct dose, remove needle and give midazolam between the cheek and gum.

\(^2\)Psychosis likely if patient not aware s/he is acting abnormally and has ≥ 1 of: Hallucinations (seeing/ hearing things); Delusions (unusual/ bizarre beliefs); Disorganised speech or behaviour. If delay in transport: try to move patient to most calm/quiet area and enlist help of a family member to monitor patient.
ABNORMAL THOUGHTS OR BEHAVIOUR

Give urgent attention to the patient with abnormal thoughts or behaviour and any of:

- **Sudden** onset of abnormal thoughts or behaviour
- **Recent** onset of abnormal thoughts or behaviour

**Management:**
- If just had a fit → 15.
- If aggressive/disruptive → 73.
- If new sudden asymmetric weakness or numbness of face/arm/leg, difficulty speaking or visual disturbance: consider stroke or TIA → 118.
- If recent head injury → 14.
- If suicidal thoughts or plans → 72.
- If difficulty breathing, respiratory rate > 30, oxygen saturation < 94% or oxygen saturation machine not available, give face mask oxygen.
- Check glucose: if < 3 or ≥ 11.1, give oral rehydration solution. If unable to drink or BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If HIV positive with recent positive cryptococcal antigen test, refer for urgent lumbar puncture (LP).
- If ADHD, Mania, Psychosis, intoxication, withdrawal or poisoning and manage before referral:
  - Varying levels of consciousness over hours/days and temperature ≥ 38°C
  - Abnormally happy, energetic, talkative, irritable or reckless
  - Lack of insight with ≥ 1 of:
    - Hallucinations (seeing/hearing things)
    - Delusions (unusual/bizarre beliefs)
    - Disorganised speech or behaviour
  - Dilated pupils, restlessness, paranoia, nausea, sweating or pulse ≥ 100, BP ≥ 140/90
  - Altered mental status
  - Smells of alcohol, slurred speech, incoordination, unsteady gait
  - Known alcohol/drug user who has stopped/reduced intake with tremor, sweating, nausea, severe restlessness/agitation or hallucinations
  - Exposed via ingestion/inhalation/absorption of medication/unknown substance
  - Poisoning likely
    - Discuss urgently with specialist or local poison helpline → 155.

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

**Approach to the patient with abnormal thoughts or behaviour not needing urgent attention:**
- If for at least 6 months ≥ 1 of: memory problems, disorientation, language difficulty, less able to cope with daily activities and work/social function: consider dementia → 130.
- If unsure of diagnosis, refer for further assessment.

1 Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone.
LOW MOOD, STRESS OR ANXIETY

Assess the patient with low mood, stress or anxiety. If patient known with depression, rather give routine depression care \( \rightarrow \) 126.

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

Advises the patient with low mood, stress or anxiety

- Encourage patient to question negative thinking and be realistic if s/he often predicts the worst, generalises, exaggerates problem, inappropriately takes the blame, takes things personally.
- Help the patient to choose strategies to get help and cope:
  - **Get enough sleep**  
    - If patient has difficulty sleeping, give advice \( \rightarrow \) 76.
  - **Encourage patient to take time to relax:**  
    - Find a creative or fun activity to do.
    - Do a relaxing breathing exercise each day.
  - **Get active**  
    - Regular exercise might help.
  - **Spend time with supportive friends or family.**
  - **If stressors identified, discuss possible solutions.** If needed, refer to available counsellor, psychiatric nurse/psychologist or social worker.
  - **Deal with bereavement issues if patient or family member has a life-limiting illness or if patient is recently bereaved:**  
    - Acknowledge grief reactions: denial, disbelief, confusion, shock, sadness, bargaining, yearning, anger, humiliation, despair, guilt and acceptance.
    - Allow patient/family to share sorrow and talk of memories, the meaning of the patient’s life or religious beliefs. Suggest connecting with a spiritual counsellor as appropriate.
    - Identify worrying issues (e.g. child care, will and funeral arrangements) and who can give practical support with these before and after the patient dies.
  - **For tips on how to communicate effectively** \( \rightarrow \) 153.

Offer to review the patient in 1 month.

\( ^1 \)One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
DIFFICULTY SLEEPING

Assess the patient with difficulty sleeping

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

Exclude medical problems:
- Ask about pain, difficulty breathing, urinary problems. See relevant symptom pages. If persistent snoring, refer to doctor for further assessment.
- If patient has a chronic condition, give routine care.
- If pulse ≥ 100, weight loss, palpitations, tremor, dislike of hot weather or thyroid enlargement, check TSH. If abnormal, refer to doctor.

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

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

Screen for possible stressors and mental health problem:
- If stress or anxiety, refer.
- 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, refer.
- 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, refer.
- If abnormal thoughts or behaviour, refer.
- 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.

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

Advise the patient with difficulty sleeping

- Encourage patient to adopt sensible sleep habits. These often help to resolve a sleep problem without the use of sedatives.
  - Get regular exercise.
  - Avoid caffeine (coffee, tea, sweetened fizzy drinks), alcohol and smoking for several hours before bedtime.
  - Avoid day-time napping.
  - Encourage routine: get up at the same time each day (even if tired) and go to bed the same time every evening.
  - Allow time to unwind/relax before bed.
  - Use bed only for sleeping and sex. Spend only 6-8 hours a night in bed.
  - Once in bed, avoid clock-watching. If not asleep after 20 minutes, do a low energy activity (read a book, walk around house). Once tired, return to bed.
  - Keep a sleep diary. Review this at each visit.
  - Review the patient regularly. A good relationship between practitioner and patient can help.

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

1One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
**TRAUMATISED/ABUSED PATIENT**

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

**Management of recent rape/sexual assault:**
- Arrange same day doctor assessment, ideally at a designated facility for management of rape and sexual assault. Complete required forms and registers.
- If severe vaginal or anal bleeding, refer urgently.
- Prevent HIV and hepatitis.
- Prevent STIs: give single dose each of ceftriaxone 250mg IM, azithromycin 1g orally and metronidazole 2g orally. If severe penicillin allergy, omit ceftriaxone and increase azithromycin dose to 2g orally.
- Prevent pregnancy: do pregnancy test. If pregnant, refer. If not pregnant, not on reliable contraception and ≤ 5 days since rape, give emergency contraception:
  - Give single dose levonorgestrel 1.5mg orally. If patient vomits < 2 hours after taking, repeat dose or insert a copper IUCD instead.
- Also assess and support the patient as below.

### Assess the traumatised/abused patient

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages. Ask about genital symptoms even if no recent rape or sexual assault. 141.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>Assess patient’s contraceptive needs. 136. If pregnant 138.</td>
</tr>
<tr>
<td>Mental health</td>
<td>Every visit</td>
<td>- If stress or anxiety 75.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either 125.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- If patient has ever had an experience so horrible that s/he has had ≥ 3 of the following for &gt; 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.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any 124.</td>
</tr>
<tr>
<td>Social</td>
<td>Every visit</td>
<td>If immediate risk of being harmed and in need of shelter, refer/discuss with social worker same day.</td>
</tr>
<tr>
<td>HIV</td>
<td>First visit</td>
<td>Test for HIV 95.</td>
</tr>
<tr>
<td>Syphilis (if sexual assault)</td>
<td>First visit</td>
<td>If positive 45.</td>
</tr>
</tbody>
</table>

### 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 pressuring the patient. Clearly record patient’s story in his/her own words. Include nature of assault and, if possible, identity of the perpetrator.
- Ask if patient has specific needs/concerns and link with support structures. Refer to available trauma counsellor/psychiatric nurse/psychologist/social worker/helpline 155.
- Refer to police Victim Empowerment office or family violence NGOs for assistance.
- Encourage patient to file a J88 form and to report case to police. Encourage patient to apply for protection order at local magistrate’s court. Respect patient’s wishes if s/he declines to do so.

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

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

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

**Give urgent attention to the patient exposed to infectious fluid:**

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

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

**Yes**

**STEP 1. Give patient immediate attention:**

- If broken skin, clean area immediately with soap and water.
- If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water.

**STEP 2. Assess patient’s need for HIV PEP:**

<table>
<thead>
<tr>
<th>Patient known HIV positive</th>
<th>Patient HIV negative or unknown: give first dose of HIV PEP (as below), obtain consent and do HIV rapid test 95.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td>One positive and one negative</td>
</tr>
<tr>
<td></td>
<td>Patient refuses HIV rapid test</td>
</tr>
</tbody>
</table>

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

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

**STEP 3. Take blood from patient:**

- Send blood for HIV ELISA (unless patient known HIV positive). If giving TDF, also do creatinine (eGFR). If giving AZT, also do FBC + differential count.
- Also send baseline bloods for hepatitis:
  - Send patient’s blood for HBsAb titre (unless occupational exposure with documented HBsAb titre ≥ 10).

**STEP 4. Take blood from source, if possible:**

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

**STEP 5. Give hepatitis B PEP if needed:**

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

**STEP 6. Give hepatitis B PEP if needed:**

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

### REVIEW THE PATIENT ON POST-EXPOSURE PROPHYLAXIS (PEP)

**Review patient within 3 days, at 2 weeks, 6 weeks and 4 months.**

- Check adherence and ask about side effects from HIV PEP. \(\text{\textbullet} \) 102. Advise patient of side effects and to return promptly if they occur. Advise patient to use condoms for 4 months until results confirmed.

- If sexual assault. \(\text{\textbullet} \) 77. If case of human bite: repeat only HBsAg (at 4 months) from table below, use HBsAbs results to continue to give only hepatitis B prophylaxis below.

- Check bloods according to table and review results as below:

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV rapid test</td>
<td>If exposed refused at 1st visit: at 3 days</td>
<td>Encourage to test for HIV. (\text{\textbullet} ) 95. If still refuses, avoid giving further HIV PEP</td>
</tr>
<tr>
<td>HIV ELISA</td>
<td>If negative: at 6 weeks, 4 months</td>
<td>If positive: (\text{\textbullet} ) 105.</td>
</tr>
<tr>
<td>Hepatitis B surface antigen (HBsAg)</td>
<td>At 4 months</td>
<td>If positive: (\text{\textbullet} ) 105.</td>
</tr>
<tr>
<td>Hepatitis C antibody (if occupational exposure)</td>
<td>Do only if source hepatitis C antibody positive: first visit</td>
<td>If positive, refer. If negative, do hepatitis C PCR at 6 weeks.</td>
</tr>
<tr>
<td>Hepatitis C PCR (if occupational exposure)</td>
<td>If exposed hepatitis C antibody negative and source positive: at 6 weeks</td>
<td>If positive, refer.</td>
</tr>
<tr>
<td>Syphilis (if sexual exposure)</td>
<td>Do only if source syphilis positive/unknown: first visit, 4 months</td>
<td>If positive: (\text{\textbullet} ) 45.</td>
</tr>
<tr>
<td>Creatinine (eGFR)</td>
<td>If on TDF: at 2 weeks</td>
<td>If eGFR (\leq) 50, stop TDF/3TC (or TDF/FTC), give instead \textbf{AZT/3TC} 300/150mg 12 hourly and check FBC differential count.</td>
</tr>
<tr>
<td>Full blood count</td>
<td>If on AZT: at 2 weeks</td>
<td>If Hb (\leq) 8 or neutrophils (\leq) 1.0, discuss with HIV hotline. (\text{\textbullet} ) 155 or specialist.</td>
</tr>
</tbody>
</table>

**Source blood results (if done)**

- Check source HBsAg result:
  - Source HBsAg positive or unknown
    - Give exposed patient/health worker \textbf{hepatitis B immunoglobulin}! 500IU IM and, if not already given, 1st dose of \textbf{hepatitis B vaccine} 1mL IM.
    - \(\text{\textbullet} \) At 1 month: give exposed patient/health worker 2nd dose of \textbf{hepatitis B vaccine} 1mL IM.
    - \(\text{\textbullet} \) At 2 months: give exposed patient/health worker 3rd dose of \textbf{hepatitis B vaccine} 1mL IM.
  - Source HBsAg negative
    - If not already given, give exposed patient/health worker 1st dose of \textbf{hepatitis B vaccine} 1mL IM.
    - \(\text{\textbullet} \) At 1 month: give exposed patient/health worker 2nd dose of \textbf{hepatitis B vaccine} 1mL IM.
    - \(\text{\textbullet} \) At 6 months: give exposed patient/health worker 3rd dose of \textbf{hepatitis B vaccine} 1mL IM.

**AZT** – zidovudine; \(\text{\textbullet} \) **FTC** – emtricitabine; \(\text{\textbullet} \) **TDF** – tenofovir; \(\text{\textbullet} \) **3TC** – lamivudine.

---

\(1\) If giving both hepatitis B vaccine and immunoglobulin, give at different sites. If immunoglobulin not available, refer to secondary care, ideally within 24-72 hours after exposure (within 7 days). \(2\) If health worker, repeat HBsAb titre 1-2 months after the last vaccine dose to ensure HBsAb \(\geq\) 10.
HOW TO COLLECT A GOOD SPUTUM SPECIMEN FOR TB TESTING

Aim to collect sputum in the early morning if possible. This improves the chance of an accurate result. However, avoid missing the opportunity to collect sputum anytime during a consultation.

• Explain that a good quality sputum specimen is important to make an accurate diagnosis of TB.
• Advise to avoid putting saliva or nasal secretions into specimen jar. Sputum is the secretion that comes from deep within the lungs and a forceful cough is needed to bring it up for collection.
• If directly observing sputum sample collection, health worker to use mask (N95 respirator) in well ventilated area. Stand behind patient and check air stream (fan, air conditioner) is coming from behind back to avoid exposure when patient coughs.
• Explain how to collect a good sputum specimen.

1. Ensure collection area is well ventilated and private.
2. Use a designated sputum collection area if available.
3. Rinse mouth with water to remove food, mouth wash or medication.
4. Breathe in and out deeply two times.
5. Have an open specimen jar ready.
6. Keep the jar sterile (clean), avoid touching inside it.
7. On the third breath, give a strong cough.
8. Cough 5-10mL (1-2 teaspoons) sputum into the jar.
9. You may need several coughs to get at least 5mL.
10. Avoid putting saliva/nasal secretions into jar.
11. Replace lid and screw on tightly to prevent leaking.
12. Give to health worker.
13. Wash your hands after sputum collection.

Prepare specimen for transport to the laboratory:
• Check specimen is adequate: at least 5mL (1 teaspoon) and is sputum and not saliva or nasal secretions.
• Ensure lid is closed tightly. Place barcode label horizontally on specimen jar (not vertically) so that it is clearly visible and can be scanned easily in laboratory.
• Complete request form.
• If room temperature > 25°C or transport delayed > 24 hours, store in refrigerator (2-8°C). Keep cool but do not freeze.
• Wash hands after handling specimen.
• Advise patient to return for results in 2 days.

If less than 5mL (1 teaspoon) sputum, specimen will not be processed as may produce false-positive result.
TUBERCULOSIS (TB): DIAGNOSIS

Check for TB if: cough ≥ 2 weeks (any duration if HIV), unexplained weight loss > 1.5kg in a month, drenching night sweats or fever ≥ 2 weeks.

Give urgent attention to the patient with suspected TB and any of:
- Respiratory rate ≥ 30
- Breathless at rest or while talking
- Prominent use of breathing muscles
- Coughs up ≥ 1 tablespoon of fresh blood
- Drowsy/confused
- Neck stiffness
- Coughs up ≥ 1 tablespoon of fresh blood
- Persistent vomiting
- New weakness of arm/leg

Manage and refer urgently:
- If breathing difficulty, give face mask oxygen and ceftriaxone 1g IV/IM to treat for suspected severe pneumonia.
- If able, send 1 sputum for Xpert MTB/RIF.

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

<table>
<thead>
<tr>
<th>Test sputum</th>
<th>Test blood</th>
<th>Test urine, if needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send 1 sputum for Xpert MTB/RIF: demonstrate how to give sputum sample.</td>
<td>Test for HIV.</td>
<td>If HIV positive and CD4 ≤ 100, do rapid urine LAM test:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If LAM positive, diagnose TB and start TB treatment same day.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If LAM negative, wait for sputum results.</td>
</tr>
</tbody>
</table>
If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give **azithromycin** 500mg daily for 3 days instead.

**Culture positive (MTB confirmed)**
- Sensitive to rifampicin and INH
  - **Diagnose DS-TB**
  - Start DS-TB treatment ➔ 83.
- Resistant to INH only
  - **Diagnose INH mono-resistant TB**
  - Start treatment ➔ 84.
- Resistant to rifampicin
  - **Diagnose RR-TB**
  - Start or refer to start RR-TB treatment ➔ 88.

**Culture pending**
- Follow-up every 1-2 weeks until culture result confirmed.
- Advise to return if symptoms worsen.

**Culture negative**
- If TB symptoms resolved, advise to return if symptoms recur.
- If TB symptoms persist, refer.

---

**Diagnose TB on chest x-ray.**
- Give routine DS-TB care and start treatment same day ➔ 83.
- If pleural effusion, aspirate fluid and send 2 samples:
  - If clear: request TB culture, LPA, ADA and cell count.
  - If pus: request Xpert MTB/RIF and TB MC&S. Refer patient same day.

**Doctor review**
Doctor to review patient, check chest x-ray and if CD4 ≤ 100, do rapid urine LAM test:

- **Upper lobe cavitation**
- **Any lung opacification can be TB in HIV positive patient**
- **Pleural effusion**
  - If bilateral, refer.
- **Intrathoracic lymphadenopathy**
- **Miliary TB**
- **Pericardial effusion**
  - Confirm on ultrasound.

**Chest x-ray similar to any of above**
- **Diagnose TB**
  - Start treatment day ➔ 83.

**LAM positive**
- Look for other cause of cough ➔ 34, weight loss ➔ 19 or fever ➔ 20.
- Look for extrapolmonary TB:
  - If abdominal pain, swelling or diarrhoea, refer for abdominal ultrasound.
  - If headache, refer for CT scan/lumbar puncture.
  - If back pain, arrange spinal x-ray or refer.
  - If lymph node ≥ 2cm, aspirate lymph node for TB microscopy and cytology ➔ 21.
- Follow up TB culture and LPA results as above.

**LAM negative or not done**
- Look for other cause of cough ➔ 34, weight loss ➔ 19 or fever ➔ 20.
- Look for extrapolmonary TB:
  - If abdominal pain, swelling or diarrhoea, refer for abdominal ultrasound.
  - If headache, refer for CT scan/lumbar puncture.
  - If back pain, arrange spinal x-ray or refer.
  - If lymph node ≥ 2cm, aspirate lymph node for TB microscopy and cytology ➔ 21.
- Follow up TB culture and LPA results as above.

---

3If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give **azithromycin** 500mg daily for 3 days instead.
**Assess the patient with DS-TB**

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>At diagnosis</td>
<td>Ensure patient record completed and captured in electronic TB register (TB Module in TIER).</td>
</tr>
</tbody>
</table>
| Symptoms          | Every visit    | • If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention \(\rightarrow\) 81.  
  • Expect gradual improvement on TB treatment. If symptoms worsen or do not get better, refer to doctor. |
| Adherence         | Every visit    | Request patient brings all medication to each visit. Check adherence on the TB card. Manage the patient who interrupts TB treatment \(\rightarrow\) 86. |
| Side effects      | Every visit    | Ask about side effects of treatment \(\rightarrow\) 85. |
| Close contacts    | At diagnosis   | Advise that all household members visit the clinic for TB screening/prevention. |
| Family planning   | Every visit    | • Encourage patient to avoid pregnancy during treatment, assess patient’s contraceptive needs \(\rightarrow\) 136. If pregnant \(\rightarrow\) 138.  
  • Avoid oral contraceptive and subdermal implant\(^1\) on TB treatment, use instead injectable or IUCD plus condoms. No need to change interval between injectable. |
| Depression        | Every visit    | In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either \(\rightarrow\) 125. |
| Alcohol/drug use  | At diagnosis; if poor adherence | In the past year, has patient: 1) drunk ≥ 4 drinks\(^2\)/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any \(\rightarrow\) 124.  
• If pregnant \(\rightarrow\) 138. Avoid oral contraceptive and subdermal implant\(^1\) on TB treatment, use instead injectable or IUCD plus condoms. No need to change interval between injectable. |
| Palliative care   | If deteriorating | If not responding to treatment or severe shortness of breath at rest, also give palliative care \(\rightarrow\) 148. |
| Weight (BMI)       | Every visit    | • Expect weight gain on treatment and adjust TB treatment dose \(\rightarrow\) 85. If losing weight, refer to doctor same week.  
  • \(\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)} \times \text{height (m)}}\). If < 18.5, refer for nutritional support. |
| Chest x-ray       | If needed      | Do if poor response to treatment (ongoing symptoms, poor weight gain). Do same day if patient deteriorates or coughs up ≥ 1 tablespoon of blood. |
| Glucose           | At diagnosis   | If known diabetes, assess glucose control more often and monitor for drug interactions: rifampicin decreases efficacy of glimepiride/glibenclamide \(\rightarrow\) 112. If not known with diabetes, check glucose \(\rightarrow\) 13. |
| HIV               | If > 6 months since last test | Test for HIV \(\rightarrow\) 95. If HIV positive, give routine HIV care and ART \(\rightarrow\) 96. If on lopinavir/ritonavir, doctor to double dose gradually \(\rightarrow\) 86.  
• If patient already has subdermal implant, advise additional non-hormonal method (copper IUCD or condoms) until 4 weeks after completing TB treatment. \(\rightarrow\) 2 One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. |
| Xpert MTB/RIF result | At diagnosis | Register patient as MTB detected, RIF sensitive/ RIF resistant, MTB not detected, Trace. |
| TB microscopy (smea\(^3\)) | If Xpert positive: at diagnosis | Register as smear negative or smear positive depending on result. |
| Week 7: only if smear positive PTB at diagnosis/registration | • Use week 7 smear result to decide if regimen should change \(\rightarrow\) 85.  
  • If week 7 smear positive, manage as per positive week 7 smear algorithm \(\rightarrow\) 86. |
| Week 23: only if smear positive PTB at diagnosis | Use week 23 smear result to decide treatment outcome \(\rightarrow\) 87. |
| TB culture and LPA result | If sent during diagnostic workup | • If both TB culture and Xpert MTB/RIF negative at diagnosis, discuss with experienced TB doctor or specialist.  
  • If MTB (Mycobacterium tuberculosis) on culture, check LPA result:  
    - If sensitive to rifampicin and INH, continue treatment.  
    - If resistant to INH only, diagnose INH mono-resistant TB and give routine care \(\rightarrow\) 84.  
    - If resistant to rifampicin, diagnose rifampicin-resistant TB (RR-TB) and give routine care \(\rightarrow\) 87.  
  • If culture contaminated, repeat. If culture shows NTM (Nontuberculous mycobacteria), continue treatment, repeat culture and refer to doctor. |
| Treatment outcome | At completion of TB treatment | Decide on treatment outcome \(\rightarrow\) 87. |

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\(^1\) If patient already has subdermal implant, advise additional non-hormonal method (copper IUCD or condoms) until 4 weeks after completing TB treatment.  
\(^2\) One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.  
\(^3\) Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.
# INH MONO-RESISTANT TB: ROUTINE CARE

Assess the patient with INH mono-resistant TB

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>At diagnosis</td>
<td>Ensure patient is registered in the DS-TB register.</td>
</tr>
</tbody>
</table>
| Symptoms             | Every visit             | • If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention → 81.  
  • Expect gradual improvement on TB treatment. If symptoms worsen or do not get better, refer to doctor. |
| Adherence            | Every visit             | Request patient brings all medication to each visit. Check adherence on the TB card. Manage the patient who interrupts TB treatment → 86. |
| Side effects         | Every visit             | Ask about side effects of treatment.                                                                                               |
| Close contacts       | At diagnosis            | Advise that all household members visit the clinic for TB screening/prevention.                                                     |
| Family planning      | Every visit             | • Encourage patient to avoid pregnancy during treatment, assess patient’s contraceptive needs → 136. If pregnant → 138.  
  • Avoid oral contraceptive and subdermal implant¹ on TB treatment, use instead injectable or IUCD plus condoms. No need to change interval between injectable. |
| Depression           | Every visit             | In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either → 125. |
| Alcohol/drug use     | At diagnosis; if poor adherence | In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any → 124. |
| Palliative care      | If deteriorating        | If not responding to treatment or severe shortness of breath at rest, also give palliative care → 148.                              |
| Weight (BMI)         | Every visit             | • Expect weight gain on treatment and adjust TB treatment dose → 85. If losing weight, refer to doctor.  
  • BMI = weight (kg) ÷ height (m) ÷ height (m). If < 18.5, refer for nutritional support. |
| Chest x-ray          | If needed               | Do if poor response to treatment (ongoing symptoms, poor weight gain) Do same day if patient deteriorates or coughs ≥ 1 tablespoon of blood. |
| Glucose              | At diagnosis            | If known diabetes, assess glucose control more often and monitor for drug interactions: rifampicin decreases efficacy of glimepiride/glibenclamide → 112. If not known with diabetes, check glucose → 113. |
| HIV                  | If > 6 months since last test | Test for HIV → 95. If HIV positive, give routine HIV care and ART → 96. If on lopinavir/ritonavir, doctor to double dose gradually → 86. |
| TB microscopy (smear) and culture³ | At diagnosis          | Register as smear negative or smear positive depending on result.  
  Monthly                                                               | • If still culture positive at 3 months, request LPA on that same positive specimen.  
  • If still culture positive at 4 months, discuss with specialist or refer to drug-resistant TB unit.  
  • If negative smear/culture becomes positive, request LPA on that same positive specimen. |
| LPA                  | • At diagnosis          | • If resistant to INH only; if still culture positive at 4 months, discuss with specialist or refer to drug-resistant TB unit.  
  • If resistant to rifampicin, diagnose rifampicin-resistant TB (RR-TB) and give routine care → 88. |
| Treatment outcome    | At completion of TB treatment | Decide on treatment outcome → 87.                                                                                                    |

Advise and treat the patient with INH mono-resistant TB → 85.

¹If patient already has subdermal implant, advise additional non-hormonal method (copper IUCD or condoms) until 4 weeks after completing TB treatment. ²One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. ³Make every effort to obtain sputum. If difficulty, try in early morning or arrange for induced sputum.
Advise the patient with DS-TB or INH mono-resistant TB

- Arrange TB counselling and refer for community or workplace adherence support.
- Educate about TB treatment side effects  and advise to return promptly should they occur.
- Educate about infection control: adequate ventilation/open windows, cough/sneeze into upper sleeve or elbow, not hands. Wash hands with soap regularly.
- If patient smear positive, advise to stay home from work for the first 2 weeks of treatment.
- Alert to the risks of smoking and alcohol/drugs and support patient to change.
- Give enhanced adherence support to the patient with poor adherence:
  - Educate on the importance of adherence and the risks of resistance.
  - Ask about alcohol/drug use, stress/anxiety/depression and side effects.
  - Refer for support: adherence counsellor, support group, treatment partner, community health worker.

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

- If drug-sensitive TB (DS-TB):
  - Treat the patient (whether a new or retreatment case) 7 days a week for 6 months:
    - Give intensive phase rifampicin/isoniazid/pyrazinamide/ethambutol (RHZE) for 2 months. Prolong for 1 month if 7 week smear positive.
    - If TB meningitis, TB bones/joints or miliary TB, extend treatment to 9 months (2 months RHZE/7 months RH) or as guided by a specialist.

- If INH mono-resistant TB:
  - Give/continue rifampicin/isoniazid/pyrazinamide/ethambutol (RHZE) and add levofloxacin 7 days a week until TB treatment completed (see table).
  - If inhA mutation only, consider giving additional isoniazid (up to total of 10mg/kg/day). If unsure, present to NCAC.
  - Give pyridoxine 25mg daily until TB treatment completed.

- Decide treatment duration:

<table>
<thead>
<tr>
<th>Pulmonary TB</th>
<th>Extrapulmonary TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>INH mono-resistant TB</td>
<td></td>
</tr>
<tr>
<td>DS-TB</td>
<td></td>
</tr>
<tr>
<td>Hilar lymphadenopathy</td>
<td>TB meningitis</td>
</tr>
<tr>
<td>TB lymphadenitis</td>
<td>TB spine/bone/joint</td>
</tr>
<tr>
<td>Pleural effusion</td>
<td>TB pus collection</td>
</tr>
<tr>
<td>Give a total of 6 months TB treatment.</td>
<td>Give total of 6 months TB treatment.</td>
</tr>
<tr>
<td>Give a total of 9 months treatment as guided by specialist.</td>
<td></td>
</tr>
</tbody>
</table>

- If HIV positive: check if ART needs to be adjusted.

Review the patient monthly. Advise to return sooner if worsening or side effects develop.
Treat the patient with TB1 and HIV

• If already on TB treatment and starting ART: avoid dolutegravir and give instead efavirenz. Switch to dolutegravir-based regimen once TB treatment complete and viral load suppressed.
• If already on dolutegravir-based ART regimen: double dolutegravir (DTG) dose to 50mg 12 hourly2. Continue this dose until 2 weeks after TB treatment completed.
• Avoid atazanavir with rifampicin. If already on atazanavir, refer to next level of care.
• If on lopinavir/ritonavir, double lopinavir/ritonavir dose gradually:
  - After 1 week of TB treatment, increase lopinavir/ritonavir to 600/150mg (3 tablets) 12 hourly for 1 week.
  - Then increase lopinavir/ritonavir to 800/200mg (4 tablets) 12 hourly. Continue this dose until 2 weeks after TB treatment completed.
  - Monitor for liver problem (jaundice, abdominal pain, vomiting) and check ALT monthly. If symptomatic with ALT > 120, or asymptomatic with ALT ≥ 200, refer.
• Avoid starting nevirapine with DS-TB treatment. If already on nevirapine, discuss/refer to switch ART regimen.

Look for and manage TB treatment side effects

<table>
<thead>
<tr>
<th>Side effect</th>
<th>Likely cause</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaundice</td>
<td>Most TB medications</td>
<td>Stop all medications and refer to hospital same day.</td>
</tr>
</tbody>
</table>
| Nausea, vomiting, abdominal pain | Most TB medications | • Check ALT and review result within 24 hours:
  - If ALT > 120, stop all medications and refer to hospital same day.
  - If ALT 50-120, assess for possible causes, consider interrupting treatment and repeat ALT within 1 week. If unsure, discuss/refer.
  - If nausea/vomiting: advise to take treatment at night. If significant nausea/vomiting, give metoclopramide 10mg 30 minutes before TB medication. |
| Skin rash/itch       | Most TB medications           | Assess and manage.                                                          |
| Seizures             | Levofoxacin                   | Manage seizure 15 and refer to hospital same day.                           |
| Psychosis            | Levofoxacin                   | Manage psychosis, 74 and discuss/refer to hospital same day.                |
| Change in vision     | Ethambutol                    | Stop ethambutol and refer to eye specialist same day.                      |
| Joint pain           | Pyrazinamide, levofoxacin     | Give ibuprofen 400mg 8 hourly as needed with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease). |
| Orange urine         | Rifampicin                    | Reassure this is normal while taking rifampicin.                           |
| Pain/numbness of feet | Isoniazid                     | Peripheral neuropathy likely.                                               |

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

• Look for explanation for result: if poor adherence, give enhanced adherence support 85, alcohol/drug use 124, stress 75 or treatment side effects 86.
• Send 1 sputum for LPA and continue intensive phase treatment for a month. Review LPA result in 1 week:

<table>
<thead>
<tr>
<th>Sensitive to rifampicin and INH</th>
<th>Resistant to INH only</th>
<th>Resistant to rifampicin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smear positive</td>
<td>Smear negative</td>
<td>Diagnose INH mono-resistant TB</td>
</tr>
<tr>
<td>Refer to hospital.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
  - Change to continuation phase at end of week 12.
  - Continue treatment for a total of 6 months.
  - Diagnose RR-TB
  - Stop DS-TB treatment:
  - If resistant to rifampicin only, give outcome of “rifampicin mono-resistant TB” in DS-TB register.
  - If resistant to rifampicin and INH, give outcome of “multidrug-resistant TB” in DS-TB register.
  - Give routine RR-TB care and start treatment same day 88.
  - Register in drug-resistant TB register.
  - If RR-TB care not available, refer to drug-resistant TB unit.

1This includes drug-sensitive TB (DS-TB) and INH-monoresistant TB. 2If on fixed dose combination, tenofvir/ lamivudine/dolutegravir (TLD): continue this and add dolutegravir 50mg 12 hours after TLD dose.
Manage the patient who interrupts DS-TB treatment

- Look for explanation for treatment interruption and give enhanced adherence support. If alcohol/drug use, stress, or treatment side effects.
- Manage according to duration of interruption:

<table>
<thead>
<tr>
<th>Duration</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interrupted for &lt; 1 month</td>
<td>Send 1 sputum for Xpert MTB/RIF. Continue DS-TB treatment and review result after 2 days:</td>
</tr>
<tr>
<td></td>
<td>Xpert MTB/RIF negative</td>
</tr>
<tr>
<td></td>
<td>Rifampicin sensitive</td>
</tr>
<tr>
<td></td>
<td>Stop DS-TB treatment</td>
</tr>
<tr>
<td></td>
<td>Continue DS-TB treatment</td>
</tr>
<tr>
<td></td>
<td>Extend treatment phase by the number of weeks missed.</td>
</tr>
<tr>
<td>Interrupted for 1-2 months</td>
<td>Send 1 sputum for Xpert MTB/RIF. Continue DS-TB treatment and review result after 2 days:</td>
</tr>
<tr>
<td></td>
<td>Xpert MTB/RIF positive</td>
</tr>
<tr>
<td></td>
<td>Rifampicin sensitive</td>
</tr>
<tr>
<td></td>
<td>Stop DS-TB treatment</td>
</tr>
<tr>
<td>Interrupted for ≥ 2 months</td>
<td>• Do not restart DS-TB treatment.</td>
</tr>
<tr>
<td></td>
<td>• Discharge patient as treatment default.</td>
</tr>
<tr>
<td></td>
<td>• Send 1 sputum for Xpert MTB/RIF and review result after 2 days:</td>
</tr>
<tr>
<td></td>
<td>Rifampicin resistant</td>
</tr>
<tr>
<td></td>
<td>Rifampicin sensitive</td>
</tr>
<tr>
<td></td>
<td>Restart full course of DS-TB treatment.</td>
</tr>
</tbody>
</table>

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

Once TB treatment complete, decide on treatment outcome

Drug sensitive TB (DS-TB)
- Pulmonary TB

Was TB diagnosed on either Xpert MTB/RIF or culture?
- Yes
  - Smear positive at diagnosis
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear negative at diagnosis
  - • Stop treatment and register as treatment completed.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to rifampicin
  - Diagnose RR-TB.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

INH mono-resistant TB
- Pulmonary TB

- Xpert MTB/RIF positive
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Xpert MTB/RIF negative
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

Extrapulmonary TB
- Pulmonary TB

- Smear negative at week 23
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Restart DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

Once TB treatment complete, decide on treatment outcome

Drug sensitive TB (DS-TB)
- Pulmonary TB

Was TB diagnosed on either Xpert MTB/RIF or culture?
- Yes
  - Smear positive at diagnosis
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear negative at diagnosis
  - • Stop treatment and register as treatment completed.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

INH mono-resistant TB
- Pulmonary TB

- Xpert MTB/RIF positive
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Xpert MTB/RIF negative
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

Extrapulmonary TB
- Pulmonary TB

- Smear negative at week 23
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Restart DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

Once TB treatment complete, decide on treatment outcome

Drug sensitive TB (DS-TB)
- Pulmonary TB

Was TB diagnosed on either Xpert MTB/RIF or culture?
- Yes
  - Smear positive at diagnosis
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear negative at diagnosis
  - • Stop treatment and register as treatment completed.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.

INH mono-resistant TB
- Pulmonary TB

- Xpert MTB/RIF positive
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Xpert MTB/RIF negative
  - Rifampicin sensitive

- Rifampicin resistant
  - Stop DS-TB treatment.

- Smear negative at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 7 (or week 11)
  - Stop treatment and register as treatment completed.

- Smear positive at week 11
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- Smear positive at week 23
  - • Stop treatment and register as treatment failure.
  - • Send 1 sputum specimen for LPA. Decide on further treatment according to results:
  - Sensitive to rifampicin and INH
  - Resistant to INH only
  - Diagnose INH mono-resistant TB.
  - Re-start DS-TB treatment and register as re-treatment after failure.

- TB diagnosed on chest x-ray or other by other means (clinically diagnosed TB)
  - Is patient well and has s/he gained weight?
    - Yes
      - Stop treatment and register as treatment completed.
    - No
      - Refer for further investigations.
RIFAMPICIN-RESISTANT TB (RR-TB): ROUTINE CARE

• RR-TB refers to TB that is resistant to rifampicin, with or without resistance to other TB medications. If patient has INH mono-resistant TB →84.
• If RR-TB care not available, refer to closest drug-resistant TB unit.

Assess the patient with RR-TB

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>Every visit</td>
<td>Enter patient’s details at diagnosis. Update register with latest sputum results at every visit.</td>
</tr>
</tbody>
</table>
| Symptoms       | Every visit    | • If respiratory rate ≥ 30, breathless at rest or while talking, prominent use of breathing muscles, drowsy/confused, coughs up ≥ 1 tablespoon fresh blood, neck stiffness, persistent vomiting or new weakness of arm/leg, give urgent attention →81. If persistent episodes of coughing blood, consider referral for surgical review.  
• Expect gradual improvement. If not improving, assess adherence, other chronic conditions and review LPA and DST results.  
• If still no improvement at 4 months, request 1st and 2nd line LPA and extended phenotypic DST and present to NCAC1 to advise on rescue regimen. |
| Adherence      | Every visit    | Check patient is attending clinic daily for treatment (or on appointment day if receiving supply of medications). |
| Side effects   | Every visit    | • Ask about side effects of treatment. 94. Manage promptly as side effects are common cause of treatment interruption.  
• If intolerance to any medication, present to PCAC/NCAC for medication substitution. Email or fax adverse drug reaction (ADR) form to npc@health.gov.za or 086 241 2473. |
| Close contacts | At diagnosis   | • Ask if any close contacts5 with RR-TB. If yes, check contact’s LPA and DST results to help decide patient’s RR-TB treatment regimen.  
• Advise that all household members visit the clinic for TB screening/prevention. |
| Family planning| Every visit    | • Advise to avoid pregnancy during treatment, assess patient’s contraceptive needs. 136. If on injectable contraceptive, no need to change interval between doses.  
• If pregnant, 138 and present to NCAC. Avoid delaying treatment, start while awaiting response. |
| Depression     | Every visit    | In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either, 125. |
| Alcohol/drug use| At diagnosis, 4 months | In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, 124. |
| Palliative care | If deteriorating | If patient breathless at rest, unable to walk unaided or failing treatment, also consider giving palliative care, 148. |
| Weight (BMI)   | Every visit    | Expect weight gain on treatment and adjust treatment doses. If losing weight on treatment, discuss with specialist/refer. If BMI < 18.5, refer for nutritional support. |
| BP             | At diagnosis   | If known hypertension 115. If not, check BP: if ≥ 140/90, 114. |

Check routine tests according to table and review results →89:

<table>
<thead>
<tr>
<th>At diagnosis</th>
<th>At 2 weeks</th>
<th>At 4 weeks and then monthly</th>
<th>At 3 months</th>
<th>At 6 months</th>
<th>At 12 months</th>
<th>Other</th>
</tr>
</thead>
</table>
| • 1 sputum for DR-TB reflex DST testing (smear, culture, 1st and 2nd line LPA, phenotypic DST)  
• ECG, chest x-ray  
• Vision (Snellen chart)  
• Pregnancy test  
• HIV, 95, fingerprick glucose  
• FBC, differential count, ALT, creatinine, potassium, magnesium, TSH  
• If HIV: CD4, viral load | • If on linezolid: FBC, differential count  
• If on bedaquiline, clofazimine, moxifloxacin or delamanid: ECG  
• If on linezolid: FBC, differential count, vision (Snellen chart)  
• If on amikacin: audiometry, creatinine, potassium, magnesium | • HIV, 95  
• If on ethionamide or PAS: TSH  
• HIV, 95  
• If HIV: CD4, viral load  
• If HIV: CD4, viral load | • Chest x-ray  
• If HIV: CD4, viral load  
• If HIV: CD4, viral load | • If on amikacin: baseline audiometry (hearing test)  
• Once bedaquiline stopped: ECG 3 monthly  
• If HIV: viral load 6 monthly  
• If on ethionamide or PAS: TSH 3 monthly  
• If unwell: chest x-ray, ALT, Creat, K+, Mg |

Review results →89.

1National Clinical Advisory Committee. 2Provincial Clinical Advisory Committee. 3A patient has a close RR-TB contact if in the past year s/he has either lived with or had regular contact with someone who has RR-TB confirmed on Xpert MTB/RIF or culture. 4One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. 5BMI = weight (kg) ÷ height (m) ÷ height (m).
<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB microscopy (smear) and culture</td>
<td>If month 4 smear/culture positive or smear/culture becomes positive after being negative: assess adherence, review all previous sputum results and request 1st and 2nd line LPA and extended phenotypic DST on latest culture positive specimen. Present to NCAC as soon as possible to advise on rescue regimen. Consider referral for surgical assessment.</td>
</tr>
</tbody>
</table>
| LPA and DST results (drug susceptibility)                            | • 1st and 2nd line LPA will be done when reflex DST testing is requested at diagnosis:  
  - If LPA is sensitive to INH, INH phenotypic DST will be automatically tested by laboratory.  
  - If LPA is sensitive to fluoroquinolones, fluoroquinoline phenotypic DST will be automatically tested by laboratory.  
  - If LPA is resistant to fluoroquinolones or injectables or both inhA and katG mutations present, 2nd line phenotypic DST will be automatically tested by laboratory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Chest x-ray                                                          | If chest x-ray worse despite treatment, discuss with specialist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ECG                                                                  | Calculate QTcF: if QTcF < 450ms, continue treatment. If QTcF ≥ 450ms, check for medications that prolong QT interval and discuss with experienced TB doctor or specialist same day.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Audiometry (hearing test)                                            | If on amikacin and any changes to hearing, stop amikacin and discuss possible medication substitutions with PCAC/NCAC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Vision                                                               | If any change in visual acuity, stop linezolid and ethambutol and refer to eye specialist same day. Discuss possible medication substitutions with PCAC/NCAC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pregnancy test                                                       | If pregnant: present to NCAC. Avoid delaying treatment, start while awaiting response.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Glucose                                                              | If known diabetes, assess glucose control more often. If not known with diabetes, check glucose.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| HIV                                                                  | If HIV positive, give routine care and start ART.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| FBC and differential count                                           | If Hb < 8, neutrophils < 0.75 or platelets < 50, stop linezolid and discuss with PCAC/NCAC or refer for admission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ALT                                                                  | • If ALT ≥ 200 or jaundice, stop all medications and refer same day.  
  • If ALT 50-199:  
    - if symptoms (nausea/vomiting/abdominal pain), stop medications and consider for symptoms. If ALT 120-199, also repeat ALT weekly until < 120.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Creatinine (eGFR)                                                    | If eGFR ≤ 50, avoid amikacin. If on amikacin, stop amikacin and discuss possible medication substitutions with PCAC/NCAC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Potassium                                                            | • If potassium ≤ 2.3, refer same day.  
  • If potassium 2.4-3.5, do ECG:  
    - if any arrhythmia on ECG or if patient has muscle weakness, refer same day.  
    - if neither, give potassium chloride 2 tablets 12 hourly and repeat potassium within 1 week. Manage again according to result.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Magnesium                                                            | If magnesium < 0.7, give magnesium chloride 500-1000mg orally 12 hourly for 1 month. If < 0.4, refer for IV magnesium.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| TSH (thyroid function)                                               | If TSH raised, check FT4. If FT4 low, hypothyroidism likely:  
  • Give levothyroxine 100mcg daily and repeat TSH and FT4 after 2 months, unless:  
    - If ≥ 60 years: give instead levothyroxine 50mcg daily and repeat TSH and FT4 after 1 month.  
    - If known ischaemic heart disease: give instead levothyroxine 25mcg daily and repeat TSH and FT4 after 1 month.  
  • If repeat FT4 still low, increase levothyroxine by 25mcg every 4 weeks until FT4 within normal range.  
  • Once RR-TB treatment completed, continue levothyroxine for 2-3 months, then wean while continuing to monitor TSH and FT4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CD4                                                                  | Interpret results.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Viral load                                                           | • If VL < 50, continue ART.  
  • If VL ≥ 50, discuss with experienced TB doctor or specialist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

1QTcF is QT interval corrected for heart rate: online calculator (Fiedlerica's formula) can be accessed via [https://www.mdcalc.com/corrected-qt-interval-qtc](https://www.mdcalc.com/corrected-qt-interval-qtc) or calculate manually: QTcF = QT/60/Heart rate.  
2Medications that may prolong QT interval include: anti-arrhythmics (e.g amiodarone), psychotropics (e.g haloperidol), macrolide antibiotics (e.g erythromycin, azithromycin, clarithromycin), fluoroquinolone antibiotics (e.g ciprofloxacin, levofloxacin, moxifloxacin) and antifungal drugs (e.g fluconazole, ketoconazole).  
3Continue other medications while awaiting response from PCAC/NCAC.  

Continue to advise and treat the patient with RR-TB → 90.
### Advise the patient with RR-TB

- Provide RR-TB counselling and arrange community health worker home visit. Refer to support group if available.
- Explain that duration of treatment will depend on previous treatment, site of disease and extent of drug resistance. Duration may need to extended depending on response to treatment.
- Educate the importance of adherence and dangers of further resistance. Educate about treatment side effects, and advise to return promptly should they occur.
- Educate about infection control: cough hygiene, adequate ventilation/open windows, avoid close contact with children/those with HIV. Give surgical mask for use in poorly ventilated areas. Advise to avoid sharing a bedroom if possible.
- Advise that others living in the same household need to visit the clinic for TB screening/prevention.
- If pulmonary TB, advise to return to work only when culture conversion occurs.
- Alert to the risks of smoking and alcohol/drugs and support patient to change. If patient chooses to continue, advise safe alcohol use and to continue taking TB medication daily.

### Treat the patient with RR-TB

#### If not on RR-TB treatment:
- Start treatment using steps 1-3.
  - **Short** regimen is 9-11 months treatment (4-6 months intensive and 5 months continuation phase).
  - **Long** regimen is 18-20 months treatment (6-8 months intensive and 12 months continuation phase).
  - If unsure of initial regimen choice, discuss with PCAC/NCAC.

#### If on RR-TB treatment:
- Check outstanding LPA and DST results and adjust regimen using step 2.
- If patient has gained weight, check if medication doses need adjusting.
- Decide when to change intensive phase to continuation phase:
  - If on short regimen: decide at end of month 4.
  - If on long regimen: decide at end of month 6.

### Review the patient with RR-TB

- Assess patient at diagnosis, 2 weeks, 4 weeks and then monthly. Review sooner if not improving or any problems.
- Once RR-TB treatment complete, follow up 6 monthly (or earlier if any symptoms recur) for 2 years: at each visit check symptoms, do chest x-ray and send sputum for TB microscopy and culture.

### Decide when to stop RR-TB treatment

- If on short regimen: stop treatment 5 months after changing to continuation phase if patient well and cultures remain negative. If unwell or cultures become positive, present to NCAC.
- If on long regimen: stop treatment 12 months after changing to continuation phase if patient well and cultures remain negative. If unwell or cultures become positive, present to NCAC.

---

1. Culture conversion: 2 consecutive negative culture results one month apart.
2. If sample contaminated/inadequate/leaked or LPA results inconclusive, send another sample to laboratory.
How to start/adjust RR-TB treatment

STEP 1: If any of the following, refer to hospital for admission

- Respiratory rate > 20
- BMI < 18
- Suspected TB meningitis or brain tuberculoma
- Unable to walk unaided
- Unstable social circumstances
- Difficulty with adherence
- Patient requests admission
- Infection control challenges at home
- BMI < 18
- Suspected TB meningitis or brain tuberculoma
- Unable to walk unaided
- Unstable social circumstances
- Difficulty with adherence
- Patient requests admission
- Infection control challenges at home

STEP 2: If starting treatment as outpatient or hospital admission not possible, decide which RR-TB regimen to give

- Hb < 8
- Complicated EPTB
- Previous RR-TB treatment for > 1 month
- Extensive bilateral cavitations on chest x-ray
- Both inhA and KatG mutations on LPA
- A close contact with both inhA and KatG mutations
- A close contact with resistance to FLQ, injectables, BDQ, LZD or CFZ
- A close contact failing treatment

Review LPA and phenotypic DST results:
- Does patient have any of:
  - Resistance to FLQ, injectable, BDQ, LZD or CFZ
  - Both inhA and KatG mutations on LPA

- If discordance or heteroresistance: continue same regimen and discuss with laboratory and PCAC/NCAC.
- Does patient have any of:
  - Resistance to FLQ, injectable, BDQ, LZD or CFZ
  - Both inhA and KatG mutations on LPA

Start short regimen.

Review LPA and phenotypic DST results:
- If discordance or heteroresistance:
  - If INH susceptible on both LPA and phenotypic DST, reduce high dose INH to normal dose INH.
  - Otherwise continue/change to basic long regimen.

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

- If INH susceptible on both LPA and phenotypic DST, reduce high dose INH to normal dose INH.
- Otherwise continue/change to basic long regimen.

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

- If INH susceptible on both LPA and phenotypic DST, reduce high dose INH to normal dose INH.
- Otherwise continue/change to basic long regimen.

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

STEP 3: If on ART, adjust ART regimen

Check latest viral load result. If not done in past 3 months, repeat viral load.

Viral load < 50
- If on EFV, avoid giving with BDQ: switch EFV to DTG instead.
- If DTG not available, switch to LPVr instead.
- If on AZT, avoid giving with LZD: switch AZT to TDF or ABC instead.

Viral load 50 - 999
- Discuss with experienced doctor or PCAC/NCAC.

Viral load ≥ 1000
- If on EFV, avoid giving with BDQ: switch EFV to LPVr instead.
- If on LPVr, continue.
- If on AZT, avoid giving with LZD: switch AZT to TDF or ABC instead.

ABC – abacavir; AZT – zidovudine; BDQ – bedaquiline; CFZ – clofazimine; DTG – dolutegravir; EFV – efavirenz; FLQ – fluoroquinolone; LPVr – lopinavir/ritonavir; LZD – linezolid; TDF – tenofovir

1TB meningitis or brain tuberculoma/TB spine/bone/joint or miliary, pericardial, abdominal or urogenital TB. 2Discordance here refers to instance where Xpert result is rifampicin-resistant and LPA result is rifampicin-sensitive. 3Heteroresistance here refers to both rifampicin-susceptible and rifampicin-resistant strains of TB in the same sputum sample.
### Decide when to change intensive phase to continuation phase

#### If patient on short regimen:

At end of month 4, assess clinical condition and check sputum results:

<table>
<thead>
<tr>
<th>Month 4 smear negative</th>
<th>Month 4 smear positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinically improving</td>
<td>Clinically not improving</td>
</tr>
</tbody>
</table>

**Change to continuation phase for 5 months**
- Select medications according to regimen and dose according to weight.
- Ensure bedaquiline given for at least 6 months.
- If slow clinical response, extensive bilateral cavitations on chest x-ray or fluoroquinolone sensitivity not confirmed, consider extending bedaquiline to 9 months: present to PCAC/NCAC.

- Assess adherence and ask about alcohol/drug use, stress/anxiety/depression, and side effects.
- Optimise management of chronic conditions: if HIV, if diabetes, if hypertension.
- Review all previous sputum results. Request 1st and 2nd line LPA and extended phenotypic DST on latest culture positive specimen.
- Present to PCAC.
- Extend intensive phase to 6 months and bedaquiline to 9 months.

#### If patient on long regimen:

At end of month 6, assess clinical condition and check sputum results:

<table>
<thead>
<tr>
<th>Month 4 culture negative</th>
<th>Month 4 culture positive</th>
</tr>
</thead>
</table>

Are there any of:

- Slow clinical response
- Extensive bilateral cavitations on chest x-ray
- Fluoroquinolone sensitivity not confirmed

**Change to continuation phase for 12 months**
Select medications according to regimen and dose according to weight.

- Assess adherence and ask about alcohol/drug use, stress/anxiety/depression, and side effects.
- Optimise management of chronic conditions: if HIV, if diabetes, if hypertension.
- Consider extending intensive phase to 8 months and BDQ to 9 months: present to PCAC/NCAC.
- Consider possible treatment failure: present to PCAC/NCAC.

---

1. Slow clinical response: poor weight gain, ongoing TB symptoms, poor improvement on chest x-ray or delayed smear/culture conversion.
Select RR-TB medications according to chosen RR-TB regimen

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Intensive phase</th>
<th>Continuation phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short regimen</strong></td>
<td>• Bedaquiline (at least 6 months)</td>
<td>• Bedaquiline (for 6 months in total)</td>
</tr>
<tr>
<td></td>
<td>• Linezolid (2 months only)</td>
<td>• Pyrazinamide</td>
</tr>
<tr>
<td></td>
<td>• Levofloxacin</td>
<td>• Levofoxacin</td>
</tr>
<tr>
<td></td>
<td>• Clofazimine</td>
<td>• Ethambutol</td>
</tr>
</tbody>
</table>
| **Long regimen** | This long regimen is for uncomplicated cases as chosen in step 2.  
Avoid and discuss instead if any of:  
• Hb < 8  
• CNS disease (TB meningitis or brain tuberculoma)  
• Resistance to FLQ, BDQ, LZD or CFZ  
• A close contact with resistance to FLQ, BDQ, LZD or CFZ or failing treatment  
|                  | • Bedaquiline                                                                   | • Clofazimine                          |
|                  | • Linezolid                                                                     | • Levofloxacin                         |
|                  | • Levofloxacin                                                                  | • Clofazimine                          |
|                  | • Terizidone                                                                    | • Terizidone                           |

Dose RR-TB medications according to weight

<table>
<thead>
<tr>
<th>Medication</th>
<th>Daily dose</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30-35kg</td>
<td>36-45kg</td>
</tr>
</tbody>
</table>
| **Bedaquiline (BDQ)** | 400mg daily for first 2 weeks  
Then 200mg 3 days a week (Mon/Wed/Fri) | If previous cardiac ventricular arrhythmias, severe coronary artery disease, known or family history of prolonged QT syndrome, previous intolerance to bedaquiline, or on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.  |
| **Linezolid (LZD)** | 600mg  | 600mg  | 600mg | 600mg | Avoid starting if Hb < 8, neutrophils < 0.75 or platelets < 50: discuss instead with PCAC/NCAC.  |
| **Levofloxacin (LFX)** | 750mg  | 750mg  | 1000mg | 1000mg |  |
| **Clofazimine (CFZ)** | 100mg  | 100mg  | 100mg | 100mg | If on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.  |
| **Isoniazid**     | High dose (hdINH) | 450mg  | 450mg  | 600mg | 600mg | If phenotypic DST confirms sensitivity to INH, reduce to normal dose INH.  |
|                  | Normal dose (INH) | 200mg  | 300mg  | 300mg | 300mg |  |
| **Pyrazinamide (Z)** | 1000mg  | 1500mg  | 1500mg | 2000mg |  |
| **Ethambutol (E)** | 800mg  | 800mg  | 800mg | 1200mg | 1200mg |  |
| **Terizidone (TRD)** | 500mg  | 750mg  | 750mg | 750mg | If previous psychosis, avoid terizidone and present to PCAC/NCAC.  |
| **Delamanid (DLM)** | 100mg 12 hourly | 100mg 12 hourly | 100mg 12 hourly | 100mg 12 hourly |  |
| **PAS**           | 8g  | 8g | 8g | 8g |  |
| **Ethionamide (ETO)** | 500mg | 500mg | 750mg | 750mg |  |
| **Moxifloxacin (MFX)** | 400mg  | 400mg  | 400mg | 400mg | If on other QT-prolonging medications (anti-arrhythmics, tricyclic antidepressants and antipsychotics), discuss with PCAC/NCAC.  |
| **Amikacin (Am)** | 625mg  | 750mg  | 750-1000mg | 1000mg | Ensure audiometry (hearing test) done at baseline and then monthly.  |
| **Rifabutin**     | 300mg  | 300mg  | 300mg | 300mg | • Give for 6 months if heteroresistance confirmed by laboratory and approved by PCAC/NCAC.  
• If on lopinavir or atazanavir, reduce rifabutin dose to 150mg daily.  |

Note: manage the patient with RR-TB at a health facility that has reliable access to RR-TB medications and monitoring equipment available.

BDQ – bedaquiline; CFZ – clofazimine; FLQ – fluoroquinolone (e.g levofloxacin or moxifloxacin); LZD – linezolid.

<sup>1</sup>If phenotypic DST confirms sensitivity to INH, reduce to normal dose INH, 1 2Start other medications while awaiting response from PCAC/NCAC.
### Look for and manage RR-TB treatment side effects

<table>
<thead>
<tr>
<th>Side effect</th>
<th>TB medication likely to cause side effect</th>
<th>Management: consult latest NDoH guideline or discuss with PCAC/NCAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain, palpitations</td>
<td>Bedaquiline, clofazimine, delamanid, moxifloxacin</td>
<td>Do ECG and discuss with PCAC/NCAC same day.</td>
</tr>
<tr>
<td>Faintness</td>
<td>Bedaquiline, clofazimine, delamanid, moxifloxacin</td>
<td>Do ECG and discuss with PCAC/NCAC same day.</td>
</tr>
<tr>
<td>Dizziness</td>
<td>Bedaquiline, clofazimine, delamanid, moxifloxacin, amikacin</td>
<td>• Do ECG and discuss with PCAC/NCAC same day. &lt;br&gt;• If on amikacin, stop amikacin and present to PCAC/NCAC for medication substitution¹.</td>
</tr>
<tr>
<td>Jaundice</td>
<td>Most RR-TB medications</td>
<td>Stop all medications and refer same day.</td>
</tr>
<tr>
<td>Nausea, vomiting, abdominal pain</td>
<td>Most RR-TB medications</td>
<td>• Check ALT and review result within 24 hours: &lt;br&gt;  - If ALT ≥ 100U/L, stop all medications and refer same day. &lt;br&gt;  - If ALT 50-99U/L, doctor to assess for possible causes, consider interrupting treatment and repeat ALT within 1 week. If unsure, discuss with specialist. &lt;br&gt;  - If nausea/vomiting: &lt;br&gt;    • Reassure usually improves after a few weeks. &lt;br&gt;    • Advise to eat a non-fatty meal before taking medication. &lt;br&gt;    • If no better, give metoclopramide 10mg 30 minutes before RR-TB medication. &lt;br&gt;    • If still no better and on ethionamide, give ethionamide in divided doses.</td>
</tr>
<tr>
<td>Skin rash/itch</td>
<td>Most RR-TB medication</td>
<td>Assess and manage.</td>
</tr>
<tr>
<td>Seizures</td>
<td>Terizidone, levofloxacin, high dose INH</td>
<td>Manage seizure.</td>
</tr>
<tr>
<td>Psychosis</td>
<td>Terizidone, high dose INH, levofloxacin, ethionamide</td>
<td>Manage psychosis.</td>
</tr>
<tr>
<td>Change in vision</td>
<td>Change in visual acuity</td>
<td>• Stop linezolid and ethambutol and refer to eye specialist same day. &lt;br&gt; • Discuss possible medication substitution¹ with PCAC/NCAC.</td>
</tr>
<tr>
<td>Painful/red eyes, blurred vision, sensitive to light</td>
<td>Rifabutin</td>
<td>Stop rifabutin and refer to eye specialist same day.</td>
</tr>
<tr>
<td>Hearing loss/ringing in ears</td>
<td>Amikacin</td>
<td>Stop amikacin and discuss possible medication substitution¹ with PCAC/NCAC.</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>Ethionamide, PAS, delamanid, bedaquiline, linezolid</td>
<td>• Reassure usually improves and advise to increase fluid intake. &lt;br&gt; • Give loperamide 4mg initially, then 2mg after each loose stool, maximum 12mg/day. &lt;br&gt; • If severe and not resolving, discuss with PCAC/NCAC.</td>
</tr>
<tr>
<td>Joint pain</td>
<td>Pyrazinamide, levofloxacin, delamanid, bedaquiline</td>
<td>Give ibuprofen 400mg 8 hourly as needed with food for up to 5 days (avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease).</td>
</tr>
<tr>
<td>Pain/numbness of feet</td>
<td>Terizidone, high dose INH, linezolid</td>
<td>Peripheral neuropathy likely, discuss with PCAC/NCAC.</td>
</tr>
<tr>
<td>Headaches</td>
<td>Linezolid, delamanid, bedaquiline</td>
<td>• Give paracetamol 1g 6 hourly as needed for up to 5 days. &lt;br&gt; • Also consider other cause of headache.</td>
</tr>
<tr>
<td>Skin darkening</td>
<td>Clofazimine</td>
<td>Reassure will improve after treatment completed.</td>
</tr>
</tbody>
</table>

¹Continue other medications while awaiting response from PCAC/NCAC.
• Encourage patient and his/her partner/s to test for HIV.
  • If HIV self-screening test done, confirm results with routine tests below.

**Obtain informed consent**
• Educate patient about HIV and AIDS, methods of HIV transmission, risk factors, treatment and benefits of knowing one’s HIV status.
• Explain test procedure and that it is completely voluntary. Children < 12 years need parental/guardian consent.

**Test**
Do first rapid HIV test on fingerprick blood.

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Do a confirmatory rapid HIV test on fingerprick blood.

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Repeat both first and confirmatory rapid HIV tests above.

<table>
<thead>
<tr>
<th>Both tests positive</th>
<th>One positive and one negative&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Both tests negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELISA positive</td>
<td>ELISA negative</td>
<td>HIV test result negative</td>
</tr>
<tr>
<td>Laboratory will do repeat ELISA test on the same specimen.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Was patient at risk of HIV infection in past 6 weeks (new or multiple sexual partners and/or unprotected sex)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient has HIV.</td>
<td>Repeat HIV test after 6 weeks.</td>
</tr>
</tbody>
</table>

Patient does not have HIV.
• Patient does not have HIV.
• Encourage patient to remain negative and advise when to re-test:
  - If sexually active: 6-12 monthly
  - If pregnant: at every antenatal visit. If breastfeeding, retest 3 monthly.
• Offer referral for male circumcision to diminish risk of HIV infection.

Elisa results inconclusive
• HIV cannot be confirmed or excluded.
• Advise patient to repeat rapid HIV tests in 6 weeks.

Support
• Ensure patient understands test result and knows where and when to access further care.
• Encourage patient to follow safe sex practices. Demonstrate and give male/female condoms.

<sup>1</sup>Use a different rapid test for the confirmatory test. <sup>2</sup>If pregnant in labour, manage baby as high-risk until mother’s status confirmed.
### HIV: ROUTINE CARE

#### Assess the patient with HIV

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage patient’s symptoms as on symptom pages. If genital discharge/ulcer or partner has been treated for an STI in past 8 weeks, manage for STI. 1.41.</td>
</tr>
<tr>
<td>TB</td>
<td>Every visit</td>
<td>If cough, weight loss, night sweats or fever, exclude TB 2.81. Avoid starting ART until TB excluded.</td>
</tr>
<tr>
<td>Adherence</td>
<td>Every visit</td>
<td>Check record of attendance and adherence to medication. If poor adherence/attendance, give enhanced adherence support.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Every visit</td>
<td>• Ask about side effects from ART 2.102, TB preventive therapy (TPT) 2.98, co-trimoxazole preventive therapy (CPT) 2.98 and fluconazole 2.98.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If suspected adverse drug reaction, fill in adverse drug reaction form and submit to pharmacist or email or fax to <a href="mailto:npc@health.gov.za">npc@health.gov.za</a> or (012) 395 9506.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>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 2.125.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks1/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any 2.124.</td>
</tr>
<tr>
<td>Sexual health</td>
<td>Every visit</td>
<td>Ask about risky sexual behaviour (patient or partner has new or multiple partner/s or uses condoms unreliably) and sexual orientation. If sexual problems 2.50.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>• If woman of child bearing potential, ask about pregnancy: if missed period and not on contraception, do pregnancy test.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Assess patient’s contraceptive needs. Advise reliable contraception (condoms plus IUCD, subdermal implant, injectable or sterilisation) 2.136, especially if on DTG. 2.3.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If on efavirenz, avoid subdermal implant and oral contraceptive as less effective. Use instead IUCD or injectable and condoms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If on nevirapine or lopinavir/ritonavir, avoid oral contraceptive as less effective. Use instead IUCD, subdermal implant or injectable and condoms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If planning pregnancy: start folate 5mg daily and advise to defer pregnancy until virally suppressed. If on DTG, discuss risks and benefits of a switch to TEE if VL suppressed.</td>
</tr>
<tr>
<td>PMTCT</td>
<td>If pregnant/breastfeeding</td>
<td>If not on ART, start ART same day. If pregnant, give antenatal care 2.138.</td>
</tr>
<tr>
<td>Palliative care</td>
<td>If deteriorating</td>
<td>If failing 3rd line ART and deteriorating, also give palliative care 2.148.</td>
</tr>
<tr>
<td>Weight</td>
<td>Every visit</td>
<td>• At diagnosis, measure height and weight to calculate BMI: BMI = weight (kg) / height (m)². If fails to grow, refer for nutritional support.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If weight loss ≥ 5% of body weight in 4 weeks 2.19. If weight &lt; 40kg and on efavirenz, adjust dose 2.102.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If on dolutegravir, monitor for weight gain: encourage healthy lifestyle with regular exercise and healthy diet. If excessive weight gain, discuss.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis</td>
<td>Assess CVD risk 2.110. If CVD risk &gt; 20% or known CVD, avoid lopinavir/ritonavir, doctor to give instead atazanavir/ritonavir and switch simvastatin to atorvastatin 10mg daily.</td>
</tr>
<tr>
<td>Cervical screen</td>
<td>At diagnosis, then 3 yearly 2.47.</td>
<td></td>
</tr>
<tr>
<td>Stage</td>
<td>Every visit to check if stage has worsened</td>
<td>• Check weight, mouth, skin, previous and current problems. If not on ART, use most advanced stage even if recovered. If on ART, use stage done at this visit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use stage to decide when to start co-trimoxazole 2.98.</td>
</tr>
</tbody>
</table>

#### Stage 1

- No symptoms
- Persistent painless swollen glands

#### Stage 2

- Recurrent sinusitis, tonsillitis, otitis media, pharyngitis
- Papular pruritic eruption (PPE)
- Fungal nail infections
- Herpes zoster (shingles)
- Recurrent mouth ulcers
- Angular cheilitis
- Unexplained weight loss < 10% body weight
- Pulmonary TB within past year
- Oral candida
- Oral hairy leukoplakia
- Unexplained weight loss ≥ 10% body weight or BMI < 18.5
- Unexplained diarrhoea > 1 month
- Unexplained fever > 1 month
- Severe bacterial infections (pneumonia, meningitis)
- Unexplained anaemia < 8, neutropenia < 0.5 or chronic thrombocytopenia < 50
- Extrapulmonary TB within past year
- Weight loss ≥ 10% and diarrhoea or fever > 1 month
- Pneumocystis pneumonia (PJP)
- Recurrent severe bacterial pneumonia
- Herpes simplex of mouth or genital area > 1 month
- Oesophageal candida
- Kaposi’s sarcoma, lymphoma, invasive cervical cancer
- Cytomegalovirus infection
- Toxoplasmosis
- HIV-associated dementia, encephalopathy
- Cryptococcal disease (including meningitis)
- Cryptosporidium or Isospora belli diarrhoea

#### Stage 3

- Unexplained weight loss ≥ 5% of body weight in 4 weeks
- Unexplained diarrhoea > 1 month
- Unexplained fever > 1 month
- Severe bacterial infections (pneumonia, meningitis)
- Unexplained anaemia < 8, neutropenia < 0.5 or chronic thrombocytopenia < 50
- Extrapulmonary TB within past year
- Weight loss ≥ 10% and diarrhoea or fever > 1 month
- Pneumocystis pneumonia (PJP)
- Recurrent severe bacterial pneumonia
- Herpes simplex of mouth or genital area > 1 month
- Oesophageal candida
- Kaposi’s sarcoma, lymphoma, invasive cervical cancer
- Cytomegalovirus infection
- Toxoplasmosis
- HIV-associated dementia, encephalopathy
- Cryptococcal disease (including meningitis)
- Cryptosporidium or Isospora belli diarrhoea

#### Stage 4

- Unexplained weight loss ≥ 5% of body weight in 4 weeks
- Unexplained diarrhoea > 1 month
- Unexplained fever > 1 month
- Severe bacterial infections (pneumonia, meningitis)
- Unexplained anaemia < 8, neutropenia < 0.5 or chronic thrombocytopenia < 50
- Extrapulmonary TB within past year
- Weight loss ≥ 10% and diarrhoea or fever > 1 month
- Pneumocystis pneumonia (PJP)
- Recurrent severe bacterial pneumonia
- Herpes simplex of mouth or genital area > 1 month
- Oesophageal candida
- Kaposi’s sarcoma, lymphoma, invasive cervical cancer
- Cytomegalovirus infection
- Toxoplasmosis
- HIV-associated dementia, encephalopathy
- Cryptococcal disease (including meningitis)
- Cryptosporidium or Isospora belli diarrhoea

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1 One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. DTG (dolutegravir) is only for use once 2019 ART guidelines approved. 2Tenofovir/entecitabine/efavirenz (TDF/FTC/EFC). 3Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. 4Once on ART, the aim is for patient to be clinical stage 1.
### Check tests according to table and review results below:

<table>
<thead>
<tr>
<th>At diagnosis</th>
<th>Starting/changing ART</th>
<th>3 months on regimen</th>
<th>6 months on regimen</th>
<th>1 year on regimen</th>
<th>6 monthly</th>
<th>Yearly</th>
<th>Also</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Urine: dipstick and pregnancy test¹</td>
<td>· Starting TDF: creatinine</td>
<td>· TDF: creatinine</td>
<td>· Viral Load</td>
<td>· Not on ART, CD4</td>
<td>· Viral load</td>
<td>• Check viral load more often if pregnant, RR-TB, breastfeeding.</td>
<td></td>
</tr>
<tr>
<td>· Syphilis</td>
<td>· Changing from TDF: HBsAg if not already done</td>
<td>· AZT: FBC + differential count</td>
<td>· TDF: creatinine</td>
<td>• TDF: creatinine</td>
<td>• TDF: creatinine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>· HBsAg</td>
<td>· Starting AZT: FBC + differential count</td>
<td>· LPVr: cholesterol, triglycerides</td>
<td>· CD4</td>
<td>• CD4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>· CD4</td>
<td>· On TB treatment: ALT</td>
<td>· Restated ART: viral load</td>
<td>· only if previous CD4 &lt; 200</td>
<td>• RR-TB, rifampcin-resistant TB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>· Cryptococcal antigen² if CD4 &lt; 100</td>
<td>TDF – tenofovir</td>
<td>HBsAg – hepatitis B surface antigen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Urine dipstick
- If proteinuria, check creatinine (eGFR) if not already done. Interpret result below.
- If glucose in urine, check random finger prick glucose. 13.

### Urine pregnancy test
- If pregnancy test positive, give antenatal care, 138 and if not on ART, start same day.
- If pregnancy test negative, advise to use reliable contraception (IUCD, subdermal implant or sterilisation, plus condoms), especially if on dolutegravir.

### Syphilis
- If positive, 45.

### Hepatitis B (HBsAg)
- If HBsAg positive: check ART regimen contains TDF and 3TC/FTC. If switching ART regimens, avoid stopping tenofovir. If eGFR ≤ 50 or on amikacin, discuss with experienced ART doctor or HIV hotline. 155.
  - Also screen for hepatitis C: send blood for anti-HCV (EIA-antibody) or do rapid test, if available, using blood or saliva. If positive, refer.
  - If pregnant, manage the baby, 105.
- If HBsAg negative, give 3 doses of hepatitis B vaccine and check immune response. 105.

### Haemoglobin (Hb) (FBC + differential count)
- If Hb < 12 (woman) or < 13 (man), anaemia likely, 23.
- If Hb ≤ 8 or neutrophils ≤ 1.0: avoid zidovudine. If already on zidovudine, doctor to switch medication. 101. If difficulty breathing, chest pain or dizziness, refer same day.

### CD4
- Use CD4 to guide prophylaxis treatment, see table. 98.

### Cryptococcal antigen (CrAg)
- If CrAg positive and symptomatic (headache, confusion) or pregnant, refer urgently.
- If CrAg positive and asymptomatic and not previously treated: delay ART for 2 weeks and start fluconazole. 98. If already on ART, discuss with doctor or HIV hotline. 155.

### Creatinine (eGFR)
- If not pregnant, check eGFR result. If eGFR < 30, refer same day.
  - If baseline eGFR ≤ 50: if unwell, discuss with doctor. If well, avoid tenofovir and start/switch to abacavir instead. Calculate creatinine clearance (CrCl)³ to adjust doses of other medications. Check for proteinuria and repeat eGFR (CrCl) after 1 month. If repeat eGFR (CrCl) ≤ 50, refer to doctor to check BP, glucose, urine dipstick, send urine for protein/creatinine ratio and arrange kidney ultrasound.
  - If on tenofovir and eGFR ≤ 50, doctor to switch medication. 101.
- If pregnant and creatinine > 85, avoid tenofovir, use instead abacavir and refer to doctor to assess impaired kidney function.

### ALT (and total bilirubin, if done)
- If ALT > 200 or jaundice, stop all medications and discuss/refer same day.
- If ALT 120 - 199 (or total bilirubin > 40):
  - If symptoms (nausea/vomiting/abdominal pain), stop all medications and discuss/refer same day.
  - If on TB treatment and no symptoms, continue medications and monitor for symptoms. Also repeat ALT weekly until < 120.
- If ALT 50-120:
  - If symptoms (nausea/vomiting/abdominal pain), doctor to assess for possible causes, consider interrupting treatment/delaying ART and repeat ALT within 1 week. If unsure, discuss with specialist.
  - If on TB treatment and no symptoms, continue medications and monitor for symptoms.

### Cholesterol, triglycerides
- If CVD risk > 20% or known CVD, or total cholesterol/triglycerides raised, avoid lopinavir/ritonavir. Doctor to give atazanavir/ritonavir instead, repeat fasting cholesterol and triglycerides in 3 months, and if statin needed, avoid simvastatin and give instead atorvastatin 10mg daily. If fasting triglycerides ≥ 10 or random triglycerides ≥ 7.5, discuss/refer same day.

### Viral load (VL)
- If restarted ART: if VL < 1000, consider switch to DTG. 101. If VL ≥ 1000, give enhanced adherence support and repeat VL in 3 months: if repeat VL < 1000, consider switch to DTG. 101; if repeat VL ≥ 1000, avoid switching to DTG, manage unsuppressed VL. 104.
- If VL ≤ 50, consider switch to DTG. 101. Continue routine VL monitoring (see table above).
- If VL ≥ 50, manage unsuppressed viral load. 104.

Advice and treat the patient with HIV → 98.

¹Only if woman of child bearing potential has missed period and is not on contraception. ²Laboratory will usually automatically do this if CD4 < 100. ³Creatinine clearance = (140 – age) x weight (kg) ÷ serum creatinine (μmol/l). If woman x 0.85. ⁴If not already done, check HBsAg, and consider alcohol or drug-induced liver injury. ⁵Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.
Advising the patient with HIV

- Encourage disclosure to a supportive partner, family member or friend, and refer to a counsellor/support group. Advise patient’s partner’s children to be tested for HIV.
- Encourage safe sex even if partner has HIV or the patient is on ART. Advise correct and consistent use of condoms with all partners. Demonstrate and give male/female condoms.
- Explain that HIV is treatable but not curable and needs lifelong adherence to treatment to stay well and to prevent resistance.
- Explain the benefits of starting ART early, regardless of CD4 count or stage but especially if CD4 ≤ 200, stage 3 or 4, pregnant or breastfeeding.
- If patient chooses not to start ART, identify barriers, link to counselling and review blood results and ART readiness in 1 week.
- If remains unwilling to start, re-educate about importance of early treatment, refer to a wellness programme, and advise to return immediately if s/he becomes unwell.
- Give enhanced adherence support to the patient with poor adherence/attendance or an unsuppressed viral load:
  - Educate on the importance of adherence and dangers of resistance.
  - If ART interrupted, ask why: alcohol/drug use, stress, side effects.

What to give

- Restart ART
- Patient develops TB: if DS-TB or INH mono-resistant TB
  - Refer for support: adherence counsellor, support group, treatment buddy, community care worker.
- Start if cryptococcal antigen positive:
  - If ART interrupted, ask why: alcohol/drug use, stress, side effects.
- 0.5mL IM yearly if CD4 > 100.
- If patient chooses not to start ART, identify barriers, link to counselling and review blood results and ART readiness in 1 week.

Treat the patient with HIV

- If not on ART: start ART within 7 days, same day if possible. Give ART regardless of CD4 or stage, especially if CD4 ≤ 200, stage 3 or 4, pregnant or breastfeeding.
- If ART interrupted or pregnant and previous PMTCT: restart ART. Give enhanced adherence support above.
- If already on ART: continue treatment. Change ART or adjust doses if:
  - Dolutegravir available: continue current regimen until routine viral load (VL) due: consider switch to DTG according to VL results.
  - Virological failure, contraindication to current ART, abnormal blood result or intolerable side effect.
- Patient develops TB if DS-TB or INH mono-resistant TB:
  - Restart ART:
  - Give TB preventive therapy (TPT), co-trimoxazole preventive therapy (CPT) and fluconazole as needed:

<table>
<thead>
<tr>
<th>Medication</th>
<th>When to give/avoid</th>
<th>What to give</th>
<th>Side effects</th>
<th>When to stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB preventive therapy (TPT)</td>
<td>• Start TPT if not already had TPT and no current symptoms of TB. If pregnant, only start if CD4 ≤ 100. If CD4 &gt; 100, delay TPT until 6 weeks after delivery. If on DS-TB treatment, only offer TPT once successfully completed treatment. Avoid if TB symptoms, previous RR-TB, severe peripheral neuropathy, liver disease, alcohol misuse.</td>
<td>• Giveisoniazid: - If &lt; 50kg, give 200mg daily. - If ≥ 50kg, give 300mg daily. • Give pyridoxine 25mg daily.</td>
<td>• Peripheral neuropathy. • Rash. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours.</td>
<td>Stop after 12 months of TPT.</td>
</tr>
<tr>
<td>Co-trimoxazole preventive therapy (CPT)</td>
<td>Start if: - CD4 ≤ 200 - Stage 2, 3 or 4</td>
<td>• If CrCl &gt; 50, give co-trimoxazole 160/800mg daily. • If CrCl 10-50, give co-trimoxazole 120/600mg daily. • If CrCl &lt; 10, give co-trimoxazole 80/400mg daily.</td>
<td>• Nausea/vomiting. • Rash. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours.</td>
<td>Stop once CD4 &gt; 200, regardless of clinical stage.</td>
</tr>
<tr>
<td>Fluconazole</td>
<td>Start if cryptococcal antigen positive: - If symptomatic (headache, confusion) or pregnant, refer same day. • If asymptomatic, not pregnant and not previously treated, start fluconazole and delay ART for 2 weeks.</td>
<td>Give fluconazole 800mg daily for 2 weeks, then 400mg daily for 2 months, then 200mg daily to complete at least 1 year.</td>
<td>• Nausea/vomiting. • Hepatitis: if jaundice: refer same day. If nausea, vomiting, abdominal pain: check ALT and review result within 24 hours.</td>
<td>Stop after at least 1 year and two CD4 &gt; 200 at least 6 months apart and VL suppressed on ART.</td>
</tr>
</tbody>
</table>

Review the patient with HIV

- If starting, restarting or changing ART:
  - If pregnant/breastfeeding: review 1 week after starting ART, then monthly.
  - If not pregnant/breastfeeding: review monthly.
  - Advise to return before next appointment if deteriorates after starting ART: refer to doctor same day.
- Once on ART: review monthly until stable (viral load <50, normal ART blood results, is adherent and well), then 2 monthly. If > 1 year on ART and stable, refer for differentiated care.
- If declines ART: review patient 6 monthly.

---

1 Avoid doing additional, unnecessary VL testing. 2 Only for use once 2019 ART guidelines approved. 3 Options for differentiated care include adherence clubs, spaced and fast lane appointments and Central Chronic Medicine Dispensing and Delivery (CCMOD)
## Start or restart ART

### STEP 1. Choose what ART regimen to start or restart

#### Patient starting ART

Help patient to decide whether to use dolutegravir\(^1\) or not. \(\rightarrow 103.\)

S/he must understand risks/benefits.

Is patient known with kidney disease (eGFR ≤ 50)\(^2\)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient chooses to avoid DTG.</td>
<td>Patient chooses to use DTG.</td>
</tr>
</tbody>
</table>

Patient chooses to use DTG.

<table>
<thead>
<tr>
<th>Known with active psychiatric illness or on bedaquiline?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Choose TDF/3TC + DTG.</td>
</tr>
</tbody>
</table>

Patient chooses to avoid DTG.

<table>
<thead>
<tr>
<th>Known with active psychiatric illness or on bedaquiline?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Choose TDF/3TC + DTG.</td>
</tr>
</tbody>
</table>

### Patient re-starting ART after treatment interruption (or previous PMTCT)

Ask about: reason for stopping, side effects, previous medications, viral loads.

Is patient pregnant?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss risks/benefits of dolutegravir(^1) (\rightarrow 102.).</td>
<td>Choose regimen according to last VL result:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous VL &lt; 50</th>
<th>No results or VL ≥ 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend TDF/3TC/DTG(^3). If known with kidney disease or creatinine &gt; 85, use ABC instead of TDF.</td>
<td>Choose regimen according to last VL result:</td>
</tr>
</tbody>
</table>

| Recommend AZT/3TC + DTG\(^6\). If Hb ≤ 8, discuss instead. | Choose same ART regimen as before. Check VL at 3 months. |

Choose ABC – abacavir; AZT – zidovudine; DTG – dolutegravir; EFV – efavirenz; FTC – emtricitabine; LPVr – lopinavir/ritonavir; TDF – tenofovir; 3TC – lamivudine.

### STEP 2. Check other medications and change if needed:

especially review contraceptives, DS-TB treatment, simvastatin and epilepsy treatment.

### STEP 3. Take bloods according to chosen ART regimen \(\rightarrow 97.\)

Continue to STEP 4. Decide timeframe to start or restart ART \(\rightarrow 100.\)

---

\(^1\)Only for use once 2019 ART guidelines approved. \(^2\)If pregnant, use instead creatinine > 85. \(^3\)Also known as TLD. \(^4\)Also known as TEE. \(^5\)RR-TB: Rifampicin-Resistant TB. \(^6\)Ensure mother understands risks and benefits of DTG for future pregnancies.
STEP 4. Decide timeframe to start or restart ART

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

Is patient known with TB? 

- No
  - Does patient have cough, weight loss, night sweats, fever, chest pain or blood-stained sputum?
    - No
      - Is patient known with cryptococcal meningitis?
        - No
          - Is CD4 result available?
            - No
              - Any of: headache, jaundice, severely unwell?
                - Yes
                  - • Wait for blood results before starting ART.
                    - • If jaundice, also do ALT and total bilirubin.
                - No
                  - Is patient prepared and willing to start lifelong daily ART?
                    - Yes
                      - Explain risks of delaying ART.
                        - • Identify barriers, link to counselling and review blood results and ART readiness in 1 week.
                        - • If remains unwilling to start, re-educate about importance of early treatment and refer to wellness programme for 6 monthly review. Advise to return immediately if s/he becomes unwell.
                    - No
                      - Is patient pregnant/breastfeeding, stage 4 or is CD4 < 200?
                        - No
                          - Continue to STEP 5 to start/restart ART → 102.
                        - Yes
                          - Start ART after 8 weeks of TB treatment.
                            - • Start ART after 4-6 weeks of TB treatment.
                              - • If pregnant, consider starting ART after 4-6 weeks of TB treatment.
  - Yes
    - Known with TB meningitis or brain tuberculosis?
      - No
        - Does patient have any of:
          - • CD4 < 50
            - • Stage 4 HIV
              - • RR-TB
                - • Pregnant
                  - • Breastfeeding
                    - No
                      - Any of: headache, jaundice, severely unwell?
                        - Yes
                          - • Start ART after 4-6 weeks of meningitis treatment.
                            - • Exclude TB 
                              - • If not pregnant, plan to start ART within 1 week once TB excluded.
                              - • If pregnant with no danger signs², start ART same day and follow up TB results. If danger signs, avoid starting ART and discuss/refer same day.
                            - Possible cryptococcal meningitis; refer same day.
                        - No
                          - Start ART within 2 weeks of TB treatment.
                            - • Start ART after 8 weeks of meningitis treatment.
                              - • Explain risks of delaying ART.
                                - • Identify barriers, link to counselling and review blood results and ART readiness in 1 week.
                                - • If remains unwilling to start, re-educate about importance of early treatment and refer to wellness programme for 6 monthly review. Advise to return immediately if s/he becomes unwell.
                      - Explain risks of delaying ART.
                        - • Identify barriers, link to counselling and review blood results and ART readiness in 1 week.
                        - • If remains unwilling to start, re-educate about importance of early treatment and refer to wellness programme for 6 monthly review. Advise to return immediately if s/he becomes unwell.
      - Yes
        - Start ART same day and discuss/refer same day.
          - • Start ART after 4-8 weeks of TB treatment.
            - • If pregnant, consider starting ART after 4-6 weeks of TB treatment.

²If patient has TB and cryptococcal meningitis, discuss with experienced ART clinician about when to start ART. ¹Difficulty breathing, respiratory rate ≥ 30, temperature ≥ 38°C, pulse > 100, BP < 90/60, coughing up blood, confusion or agitation, weight loss > 5% or unable to walk unaided.
Change ART

Help patient to decide whether to use dolutegravir or not. 103. S/he must understand risks/benefits.

**STEP 1. Choose new ART regimen according to reason for change**

Patient has virological failure. (VL ≥ 1000 on two consecutive occasions or if on DTG or LPVr or ATVr, virological failure is VL ≥ 1000 on at least three occasions over the course of 2 years)

Check which ART patient is on:

- **Patient on EFV or NVP**
  - Change to 2nd line ART. Choose new regimen based on current ART:
    - **Currently on TDF**
      - Switch to TDF/3TC/DTG + AZT. If Hb ≤ 8 or on linezolid, discuss.
      - If patient chooses to avoid DTG, use instead AZT/3TC + LPVr.
      - If Hb ≤ 8 or on linezolid, discuss.
    - **Currently on ABC**
      - Switch to AZT/3TC + DTG. If patient chooses to avoid DTG, use instead AZT/3TC + LPVr.
      - If Hb ≤ 8 or on linezolid, discuss.

- **Patient on EFV or LPVr or ATVr**
  - Discuss with experienced ART doctor or HIV hotline 155. discuss if resistance testing needed and determine new ART regimen accordingly.

Patient has contraindication to current ART, abnormal blood result or intolerable side effect.

- **Check result of VL done in last 6 months**
  - If VL < 50: change problematic medication same day. Switch to a medication from the same section (see table) 102. If reason to avoid new medication, discuss with specialist.
  - If VL ≥ 50: discuss with experienced ART doctor or HIV hotline 155.

Dolutegravir2 available and patient, currently on EFV or NVP, chooses to use it.

Check result of VL done in last 6 months. If no VL in last 6 months: delay changing ART until routine annual VL is due. Avoid unnecessary VL tests.

**STEP 2. Check other medications and change if needed:** especially review contraceptives, DS-TB treatment, simvastatin and epilepsy treatment.

**STEP 3. Take bloods according to chosen ART regimen** 97.

**STEP 4. Decide timeframe to change ART:** if contraindication, side effect or changing to 2nd line while pregnant/breastfeeding, switch same day and review blood results as soon as available. Otherwise, wait for results.

**Continue to STEP 5. Change ART 102.**

101

ABC – abacavir; ATVr – atazanavir/ritonavir; AZT – zidovudine; DTG – dolutegravir; EFV – efavirenz; FTC – emtricitabine; LPVr – lopinavir/ritonavir; TDF – tenofovir; 3TC – lamivudine.

---

1 If no VL done in last 6 months: do VL at this visit, switch medication same day and check viral load result as soon as available. If viral load ≥ 1000, refer/discuss. 2 Only for use once 2019 ART guidelines approved.
**STEP 5. Start/change ART**

Give 3 antiretrovirals (1 from each of the 3 sections in the table below) according to previously chosen ART regimen and blood results, if available. Where possible, use fixed dose combination (FDC) tablets.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>When to avoid</th>
<th>Urgent side effects (stop antiretroviral and refer same day)</th>
<th>Short-term side effects that usually resolve. If persists ≥6 weeks, discuss/refer.</th>
<th>Long-term side effects</th>
</tr>
</thead>
</table>
| 1 Tenoforv (TDF) | • CrCl > 50: give 300mg daily  
• CrCl ≤ 50: avoid                        | • Kidney disease: eGFR < 60 or CrCl ≤ 50                                      | Kidney failure                                                                 | Nausea, vomiting                                                             | Darkening of palms and soles |
|                  |                                | • On amikacin                                                                 | • If CrCl 30-50 and well, refer to doctor.                               |                                                                                 |                        |
|                  |                                | • If pregnant: creatinine > 85                                                | • If CrCl 30-50 and unwell, refer same day.                              |                                                                                 |                        |
|                  |                                | • If CrCl ≤ 30, refer same day.                                               | • If CrCl ≤ 30, refer same day.                                           |                                                                                 |                        |
| Abacavir (ABC)   | • 300mg 12 hourly or 600mg daily  
• Give "alert card" found in packaging warning of Abacavir Hypersensitivity Reaction (AHR). | Previous AHR                                                                   | AHR likely if ≥ 2 of: 1) Fever 2) Rash 3) Fatigue/body pain 4) Nausea, vomiting, diarrhoea or abdominal pain 5) Sore throat, cough or difficulty breathing. |                                                                                 |                        |
| Zidovudine (AZT) | • Use only if TDF and ABC not suitable.                                      | • Hb < 7 (Hb < 7, if pregnant)                                               | Lactic acidosis²                                                              | Headache, nausea, muscle pain, fatigue (if Hb ≤ 8 doctor to switch antiretroviral) | Lipatrophy (fat loss in face, limbs and buttocks): switch to tenoforv or abacavir. |
|                  | • CrCl > 10: give 300mg 12 hourly.                                          | • Neutrophils ≤ 1.0                                                          | • Anaemia (pallor) with respiratory rate ≥ 30, dizziness/faintness or chest pain |                                                                                 |                        |
|                  | • CrCl < 10: give 300mg daily.                                               | • On linozolid                                                                | • Headache, nausea, diarrhoea                                                 |                                                                                 |                        |
|                  |                                | • If pregnant: creatinine > 85                                                | • Low mood                                                                   |                                                                                 |                        |
|                  |                                | • If CrCl < 30, refer same day.                                               | • On linezolid                                                              |                                                                                 |                        |
| 2 Lamivudine (3TC) | • CrCl > 50: give 150mg 12 hourly or 300mg daily.  
• CrCl 10-50: give 150mg daily.  
• CrCl < 10: give 50mg daily. | Uncommon                                                                       | Uncommon                                                                      | Uncommon                                                                      | Darkening of palms and soles |
| Emtricitabine (FTC) | 200mg daily.                      | Uncommon                                                                       | Uncommon                                                                      | Uncommon                                                                      |                        |
| 3 Dolutegravir (DTG)² | • 50mg daily.                     | ≥ 40kg: give 600mg daily.                                                       | Uncommon                                                                      | • Headache, nausea, diarrhoea                                                 | Weight gain: if BMI ≥ 30, consider switch to EFV. |
|                  | (Only for use once 2019 ART guidelines approved)                           | < 40kg: give 400mg daily.                                                      | • Planning pregnancy³                                                           | • Insomnia: advise to take treatment in the morning.                          |                        |
| Efavirenz (EFV)³ | • 50mg daily.                     | ≥ 40kg: give 600mg daily.                                                       | • First 6 weeks of pregnancy                                                 | • Rash ⁵⁸.                                                                     | Gynaecomastia (breast enlargement): switch to dolutegravir or lopinavir/ritonavir ³⁵¹. |
|                  | + if on carbamazepine starting rifampicin: add extra DTG 50mg single dose at night. | On bedaquiline                                                              | • If BMI ≥ 30, consider instead EFV.                                          | • Rash ⁵⁸.                                                                     |                        |
|                  | + If on rifampicin: already allergic to EFV or EFV rash.                     | • Rash ⁵⁸.                                                                     | • Rash ⁵⁸.                                                                     | • Rash ⁵⁸.                                                                     |                        |
| Nevirapine (NVP) | • NVP being discontinued; avoid starting.                                   | • Active psychiatric illness                                                  | • Jaundice                                                                    | • Jaundice                                                                     |                        |
|                  | • 200mg daily for 2 weeks⁴, then 200mg 12 hourly.                           | • On bedaquiline                                                              | • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⁹⁷. | • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⁹⁷. |                        |
|                  | • Avoid starting NVP, especially if CD4 > 250 (woman) or > 400 (man)       | • Active psychiatric illness                                                  | • Psychosis                                                                   | • Psychosis                                                                   |                        |
|                  | • On rifampicin                                                              | • Presence of rash                                                           | • Rash ⁵⁸.                                                                     | • Rash ⁵⁸.                                                                     |                        |
| Lopinavir/ritonavir (LPVr) | 400/100mg 12 hourly (with food)  
• If on rifampicin: double LPVr dose gradually ³⁸⁶. | Chronic diarrhoea                                                           | • Jaundice                                                                    | • Jaundice                                                                     |                        |
|                  | • Chronic diarrhoea                                                         | • On rifampicin                                                              | • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⁹⁷. | • Nausea/vomiting/abdominal pain: check ALT and review results within 24 hours ⁹⁷. |                        |
|                  | • Chronic diarrhoea                                                         | • CVD risk ≥ 20%                                                             | • Jaundice                                                                    | • Jaundice                                                                     |                        |
| Atazanavir/ritonavir (ATVr) | 300mg/100mg daily (with food)  
• On rifampicin.                           | • Atazanavir can cause jaundice without hepatitis.                           | • Rash ⁵⁸.                                                                     | • Rash ⁵⁸.                                                                     |                        |

---

¹Where possible use single fixed dose combination (FDC) tablet when giving TDF/3TC/DTG or TDF/FTC/EFV. ²Lactic acidosis likely if 2 or more of: fatigue/weakness, body pain, nausea/vomiting, diarrhoea, weight loss, loss of appetite, abdominal pain, difficulty breathing (more likely if rapid lactate ≥ 2.0). ³Planning pregnancy: start folic acid 5mg daily and advise to defer pregnancy until virally suppressed. If on DTG, discuss switch to TDF/3TC/EFV, also known as TEE, if VL suppressed. ⁴If switching from EFV to NVP, no need for 2 week lead-in dose: start with 12 hourly dosing. ⁵Atazanavir can cause jaundice without hepatitis. If well with no nausea/vomiting/abdominal pain, check ALT and review result within 24 hours. Discuss with specialist.
Decide with the patient when to use dolutegravir

Help patient to make an informed choice by explaining the risks and benefits of efavirenz and dolutegravir.

### Dolutegravir (DTG)
- DTG is well tolerated. Side effects include weight gain and insomnia.
- DTG suppresses HIV viral load\(^1\) faster than EFV.
- Safety in early pregnancy is not confirmed: possible increase in risk of neural tube defect (NTD). 3 in 1000 pregnancies (0.3%) will have an NTD. Baby’s neural tube is fully developed by 6 completed weeks of pregnancy and DTG is considered safe after this.
- DTG does not interact with contraceptives.
- DTG interacts with DS-TB treatment (rifampicin) but can still be used if DTG doses are increased.
- DTG does not interact with RR-TB treatment (bedaquiline).
- It is more difficult to develop resistance\(^3\) on DTG.

### Efavirenz (EFV)
- EFV commonly has side effects like dizziness, sleep disturbances and low mood.
- EFV suppresses viral load\(^1\) but may take longer than DTG.
- EFV is considered safer in early pregnancy: 1 in 1000 pregnancies (0.1%) will have an NTD\(^2\).
- EFV may interact with subdermal and oral contraceptives and these should be avoided if on EFV.
- EFV does not interact with DS-TB treatment and can be used without dose adjustments.
- EFV interacts with RR-TB treatment (bedaquiline) and needs to be switched to an alternative.
- If not taken correctly, it is easy to develop resistance\(^3\) to EFV.

#### Explain risk and benefits of DTG and EFV as in table above.

<table>
<thead>
<tr>
<th>Is patient currently on DS-TB treatment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Emphasize that DTG interacts with rifampicin (DS-TB treatment). DTG doses need to be increased to a twice daily dose, making adherence more difficult. Recommend that patient starts EFV and switches to DTG once TB treatment is complete and viral load is suppressed.</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is patient a woman of childbearing potential?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Is patient pregnant? If patient has missed period and is not on contraception, do a pregnancy test.</td>
</tr>
<tr>
<td>Pregnant</td>
</tr>
<tr>
<td>Baby’s neural tube is fully developed by 6 weeks of pregnancy. DTG is considered safe after this.</td>
</tr>
<tr>
<td>≤ 6 weeks pregnant</td>
</tr>
<tr>
<td>Recommend that patient starts EFV and switches to DTG if viral load, done at 3 months on ART, is suppressed.</td>
</tr>
<tr>
<td>≥ 7 weeks pregnant</td>
</tr>
<tr>
<td>Recommend reliable contraception after delivery.</td>
</tr>
<tr>
<td>Not pregnant</td>
</tr>
<tr>
<td>Patient does not wish to become pregnant in the near future.</td>
</tr>
<tr>
<td>Recommend patient starts DTG. Ensure woman understands risk of falling pregnant whilst on DTG. If woman wishes to fall pregnant in future, advise to start folate, ensure viral load suppressed(^4) and discuss risks/benefits of a switch to EFV.</td>
</tr>
<tr>
<td>≥ 7 weeks pregnant</td>
</tr>
<tr>
<td>Recommend that patient starts DTG.</td>
</tr>
<tr>
<td>Check patient understands benefits/risks. Allow patient to make an informed choice to use EFV or DTG. Clinician to document counselling and decision in patient’s file.</td>
</tr>
<tr>
<td>≤ 6 weeks pregnant</td>
</tr>
<tr>
<td>Recommend patient starts EFV.</td>
</tr>
<tr>
<td>≥ 7 weeks pregnant</td>
</tr>
</tbody>
</table>

---

\(^1\)A suppressed viral load means very low levels of HIV can be found in the blood. This stops HIV from damaging your immune system and keeps you healthy. It also means you are less infectious, and less likely to pass HIV on.  
\(^2\)A neural tube defect (NTD) means baby’s spine may not develop as it should, which causes a range of symptoms from minimal symptoms to weakness, loss of bladder control, or paralysis, depending on the abnormality.  
\(^3\)Resistance is when the HIV virus mutates or changes so that the medication, used to control HIV virus levels in the body, no longer works well.  
\(^4\)Viral load is a test that measures the number of HIV viruses in the body.
Manage the patient with an unsuppressed viral load (VL ≥ 50)

- If patient is pregnant or breastfeeding and has an unsuppressed VL ≥ 50, assess possible causes: check adherence and dosing and give enhanced adherence support. Encourage disclosure. If alcohol/drug use, if stress.
- Check for medication interactions and discuss with HIV hotline.
- Ask about and document recent infection/s or illness. Manage other symptoms as on symptoms pages.

**Repeat VL in 3 months:**

- VL < 50
  - Continue routine VL monitoring

- VL 50-999
  - Repeat VL in 6 months.

- VL ≥ 1000
  - Manage further according ART regimen.

**Patient on EFV or NVP**

- VL ≥ 1000 on two consecutive occasions?
  - No
    - Repeat VL in 3 months.
  - Yes
    - VL < 1000
      - Repeat VL in 3 months.
      - If VL < 50: monitor VL routinely.
      - If VL 50–999:
        - If on EFV or NVP, change to DTG. Where possible, use single fixed dose combination (FDC) tablet: replace FTC with 3TC to give one tablet containing TDF/3TC/DTG.
        - If unsure, discuss with experienced ART doctor or HIV hotline.
    - VL ≥ 1000
      - Virological failure likely
        - Switch to 2nd line ART.
        - Do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therapy (CPT).

**Patient on DTG or LPVr or ATVr**

- Has patient been on this regimen for ≥ 2 years?
  - No
    - Continue same ART with enhanced adherence support to complete at least 2 years on this regimen.
    - Continue to repeat VL 6 monthly.
  - Yes
    - Repeat VL in 3 months.
    - VL ≥ 1000 on at least three occasions over last 2 years
      - Virological failure likely
        - Discuss with experienced ART doctor/HIV hotline. Discuss if resistance testing needed and determine new ART regimen accordingly.
    - VL ≥ 1000 on one or two occasions over last 2 years
      - Any of:
        - CD4 count has dropped
        - New opportunistic infection/s
        - Been on DS-TB treatment without ART/dose adjustments
      - Continue enhanced adherence support and repeat VL in 6 months: discuss results with experienced ART doctor or HIV hotline.

- Also do CD4: if ≤ 200, consider restarting co-trimoxazole preventive therapy (CPT).

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*Rifampicin (part of DS-TB regimen) interacts with DTG, LPVr and ATVr. DTG and LPVr require increased doses ("boosting") during DS-TB treatment. Avoid ATVr and DS-TB treatment.*
HEPATITIS B (HBV)

Test for hepatitis B only if jaundiced (yellow skin/eyes), ALT raised, HIV positive starting ART or as part of post/pre-exposure prophylaxis (PEP/PrEP) workup.

- Send blood for hepatitis B surface antigen (HBsAg).
- If patient has yellow skin or eyes, jaundice likely, assess and manage.
- Also test for HIV and syphilis.

New/multiple sexual partners, unprotected sex, exposure through skin like tattoo, piercing, sharing needles/other sharps.

This includes student health care workers, clinic support staff (cleaners) and laboratory staff.

Manage the baby born to mother with hepatitis B infection

- Prevent mother-to-child transmission: baby will need hepatitis B immunoglobulin 0.5mL IM and hepatitis B vaccine 0.5mL IM within 12 hours of delivery.
- Continue hepatitis B immunisations for baby according to childhood immunisation schedule at 6, 10 and 14 weeks.
- Arrange follow up when baby is 9 months old: take blood from baby for HBsAg and hepatitis B surface antibodies (HBsAbs).
  - If HBsAg positive: baby has hepatitis B infection, refer.
  - If HBsAg negative and HBsAbs positive (HBsAb titre ≥ 10): baby has immunity against hepatitis B. Reassure parents, no further testing needed.
  - If HBsAg negative and HBsAbs negative (HBsAb titre <10): repeat hepatitis B vaccine 0.5mL IM at this visit and again in 1 month. Then repeat HBsAbs test 1 month later: if HBsAbs still negative, refer.

Patient has hepatitis B infection

- Notify.
- Educate that infection requires no specific treatment at this stage. Advise patient to return if jaundice develops.
- Educate that hepatitis B spreads via blood and sexual fluids. Advise patient to:
  - Reliably use condoms. Advise partners to test.
  - Avoid sharing toothbrushes, razors or needles.
  - Cover scratches or cuts and clean up blood spills with bleach detergent.
- If HIV positive:
  - Ensure patient on ART containing tenofovir (TDF) and lamivudine (3TC) or emtricitabine (FTC). If not, discuss with experienced ART clinician or HIV hotline.
  - Also screen for hepatitis C: send blood for anti-HCV (EIA-antibody) or do rapid test, if available, using blood or saliva.
  - If positive, refer.
- If patient is pregnant, manage the baby as below.
- Explain that hepatitis B infection can resolve by itself or become a chronic infection. Check HBsAg after 6 months.

Patient does not have Hepatitis B.

Is patient health worker, HIV positive, person who injects drugs (PWID), man who has sex with men (MSM) or sex worker?

No

Give 3 doses of hepatitis vaccine 1mL IM at 0, 1 month and 6 months.

Check immune response two months after last vaccine given. Send blood for HBsAbs:

- HBsAbs ≥ 10
  - Offer re-vaccination: give 3 doses of hepatitis vaccine 1mL IM, one month apart.
  - Repeat HBsAb two months after last vaccine given.
- HBsAbs < 10
  - Patient is immune due to previous hepatitis B vaccination. No further vaccination needed.

If high risk lifestyle advise to repeat HBsAg yearly.

Patient has chronic hepatitis B infection

- Educate that chronic hepatitis B infection can lead to liver disease. Advise to avoid/reduce alcohol intake.
- Test for HIV:
  - If HIV positive:
    - Explain that certain medications used in ART will treat hepatitis as well. These will lower the hepatitis viral levels so that risk of liver disease is lowered.
    - Ensure patient on ART containing tenofovir (TDF) and lamivudine (3TC) or emtricitabine (FTC). If not, discuss with experienced ART clinician or HIV hotline.
    - Also screen for hepatitis C: send blood for anti-HCV (EIA-antibody) or do rapid test, if available, using blood or saliva.
  - If HIV negative, refer for further tests and management of chronic hepatitis B infection.

Manage the baby born to mother with hepatitis B infection

- Prevent mother-to-child transmission: baby will need hepatitis B immunoglobulin 0.5mL IM and hepatitis B vaccine 0.5mL IM within 12 hours of delivery.
- Continue hepatitis B immunisations for baby according to childhood immunisation schedule at 6, 10 and 14 weeks.
- Arrange follow up when baby is 9 months old: take blood from baby for HBsAg and hepatitis B surface antibodies (HBsAbs).
  - If HBsAg positive: baby has hepatitis B infection, refer.
  - If HBsAg negative and HBsAbs positive (HBsAb titre ≥ 10): baby has immunity against hepatitis B. Reassure parents, no further testing needed.
  - If HBsAg negative and HBsAbs negative (HBsAb titre <10): repeat hepatitis B vaccine 0.5mL IM at this visit and again in 1 month. Then repeat HBsAbs test 1 month later: if HBsAbs still negative, refer.

New/multiple sexual partners, unprotected sex, exposure through skin like tattoo, piercing, sharing needles/other sharps. This includes student health care workers, clinic support staff (cleaners) and laboratory staff.
## Asthma and COPD: Diagnosis

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

### COPD likely if several of:
- Onset after 40 years of age
- Symptoms are persistent and worsen slowly over time
- Cough with sputum starts long before difficulty breathing
- History of heavy smoking or worked in dusty environment
- Previous diagnosis of TB
- Previous doctor diagnosis of COPD

Give routine COPD care \(\Rightarrow 109.\)

### Asthma likely if several of:
- Onset before 20 years of age
- Associated hayfever, allergic conjunctivitis or eczema, other allergies
- Intermittent symptoms with normal breathing in between
- Symptoms worse at night, early morning, with cold or stress
- Patient or family have a history of asthma
- PEFR\(^1\) response to inhaled beta-agonist (e.g. salbutamol) improves ≥ 20% (see below).

Give routine asthma care \(\Rightarrow 108.\)

Doctor to confirm diagnosis. If doctor not available, treat as asthma \(\Rightarrow 108.\) and refer to doctor within 1 month.

### How to measure peak expiratory flow rate (PEFR)

1. Move marker to bottom of numbered scale.
2. Stand up and take a full, deep breath.
3. Breathe out as hard and as fast as possible (keeping fingers clear of scale).
4. Read the result.

Repeat step 3 and 4 twice. Use the highest of the 3 readings.

### How to assess response to inhaled beta-agonist

**Calculate % PEFR response to inhaled beta-agonist to help diagnose asthma**

1. Measure ‘initial PEFR’. Use the highest reading of 3 results.
2. Give inhaled salbutamol 200mcg (2 puffs via a spacer) and wait for 15 minutes.
3. Repeat PEFR - this is the ‘repeat PEFR’
4. Calculate % PEFR response = \(\frac{\text{repeat PEFR} - \text{initial PEFR}}{\text{initial PEFR}} \times 100\)
5. If % PEFR response is ≥ 20%, asthma likely.

### Using inhalers and spacers

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

1. Shake inhaler and 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. Take 4 breaths keeping spacer in mouth.
   - Repeat step 3 and 4 for each puff, waiting at least 30 seconds between puffs.
   - Rinse mouth after using inhaled.
Calculate % of predicted PEFR to help provide routine asthma/COPD care

e.g. 60 year old man with asthma who is 188cm tall.

**Step 1**
Measure patient's PEFR. Use the highest of 3 results - this is the 'observed PEFR'.
e.g. his PEFR readings are: 450; 420; 400. Use 450 as the 'observed PEFR'.

**Step 2**
Plot the patient on the adjacent PEFR graph using height, sex and age.

**Step 3**
If patient a man, look at group of lines next to 'Men'.
If patient a woman, look at group of lines next to 'Women'.
e.g. this patient is a man, look at group of lines next to 'Men'.

**Step 4**
Identify the patient’s height and choose the coloured line closest to that height.
e.g. this patient’s height is 188cm, choose the red line.

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

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

**Step 7**
Calculate % of predicted PEFR:
observed PEFR ÷ predicted PEFR x 100

e.g. 450 ÷ 590 x 100 = 76%.

**Step 8**
Interpret result:
- If known asthma and PEFR is < 80% of predicted, asthma is not controlled.
- If known COPD and PEFR is 50-80% of predicted PEFR, COPD is moderate. If PEFR is < 50% of predicted PEFR, COPD is severe.
e.g. this patient whose PEFR is 76% of his predicted PEFR has asthma that is not controlled.

Adapted by Clement Clarke for use with EN13826 / EU scale peak flow meters from Nunn AJ Gregg I, Br Med J 1989;298:1068-70
### ASTHMA: ROUTINE CARE

Ensure that a doctor confirms the diagnosis of asthma within 1 month.

#### Assess the patient with asthma

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma symptoms</td>
<td>Every visit</td>
<td>• If wheeze, tight chest or difficulty breathing and no response to salbutamol inhaler, manage acute exacerbation. 35.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Any of the following indicate that the patient’s asthma is not controlled:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Daytime cough, difficulty breathing or wheeze &gt; 2 times a week</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Night-time cough, wheeze, tight chest or difficulty breathing &gt; once a month</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Limitation of daily activities due to asthma symptoms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If none of above then asthma is controlled.</td>
</tr>
<tr>
<td>Other symptoms</td>
<td>Every visit</td>
<td>• Manage symptoms as on symptom pages. Ask about and manage allergic rhinitis. 30 and dyspepsia. 37.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If using inhaled corticosteroid and white patches on cheeks/gums/tongue/palate, oral candida likely. 31.</td>
</tr>
<tr>
<td>Adherence and inhaler technique</td>
<td>Every visit</td>
<td>Check adherence and that patient is using inhaler and spacer correctly. 106.</td>
</tr>
<tr>
<td>Peak expiratory flow rate (PEFR)</td>
<td>At diagnosis, if symptoms worsening, if change to medication at last visit</td>
<td>Calculate % of predicted PEFR. 107. If &lt; 80%, asthma is not controlled.</td>
</tr>
</tbody>
</table>

#### Advise the patient with asthma

- Advise to avoid triggers that may worsen asthma/hayfever (e.g., animals, cigarette smoke, dust, chemicals, pollen, grass), aspirin/NSAIDs (e.g., ibuprofen) and beta-blockers (e.g., atenolol).
- If patient smokes, encourage to stop. 123.
- Ensure the patient understands medication: beta-agonist inhaler (salbutamol) relieves symptoms but does not control asthma. Inhaled corticosteroid (budesonide or fluticasone) prevents but does not relieve symptoms and it is the mainstay of treatment.
- Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of inhaled corticosteroid.

#### Treat the patient with asthma

- Give inhaled salbutamol 100-200mcg (1-2 puffs) 6-8 hourly, as needed. If exercise-related symptoms, advise patient to use salbutamol 200mcg (2 puffs) before exercise.
- Give influenza vaccine 0.5mL IM yearly.
- If acute exacerbation was managed at this visit:
  - Give prednisone 40mg daily for a total of 7 days.
  - Antibiotics are not routinely needed for acute exacerbations. Only give antibiotic if fever or thick yellow/green sputum: give amoxicillin 500mg 8 hourly for 5 days.
  - If > 2 courses of oral prednisone given in past 6 months or exacerbation occurs on maximum treatment, also refer to doctor.
- Manage further according to asthma control:
  - Before stepping up treatment, ensure adherent and using inhaler and spacer correctly. 106 and check patient is avoiding smoking, allergens and certain medications. 2
  - Give inhaled budesonide 200mcg 12 hourly. If already on it, increase dose to 400mcg 12 hourly.
  - If still not controlled, doctor to stop budesonide and give instead inhaled salmeterol/fluticasone 50/250mcg, 1 puff 12 hourly. If still not controlled after 3 months, refer.

#### If asthma controlled

- Review 3 monthly.
- If not controlled, review monthly.
- If acute exacerbation, review after 1 week.

### Health for All 116

1 If severe penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily for 3 days. 2 NSAIDS (aspirin/ibuprofen), beta blockers. 3 If on lopinavir/ritonavir or atazanavir/ritonavir, avoid budesonide and fluticasone, and discuss/refer instead.
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): ROUTINE CARE

Ensure that a doctor confirms the diagnosis of COPD within 1 month and refer for spirometry if available. Refer the patient with newly diagnosed COPD for community health worker support.

Assess the patient with COPD

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD symptoms</td>
<td>Every visit</td>
<td>• If patient has wheeze/tight chest and breathless at rest or while talking or respiratory rate ≥ 30, manage acute exacerbation. 35.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Assess disease severity: if patient can walk as fast as others of same age, COPD is mild. If not, COPD is moderate or severe.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Investigate for TB only if patient has other TB symptoms like weight loss, night sweats, blood-stained sputum. 88.</td>
</tr>
<tr>
<td>Other symptoms</td>
<td>Every visit</td>
<td>• Manage symptoms as on symptom pages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If using inhaled corticosteroid and white patches on cheeks/gums/tongue/palate, oral candida likely. 31.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If swelling in both legs, refer to doctor to consider heart failure.</td>
</tr>
<tr>
<td>Adherence and inhaler technique</td>
<td>Every visit</td>
<td>Check adherence and that patient can use inhaler and spacer correctly. 106. If not adherent, refer for community health worker support.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either. 125.</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Every visit</td>
<td>If severe COPD with breathlessness at rest, ≥ 3 hospital admissions for COPD in 1 year, heart failure or long term oxygen therapy needed, also give palliative care. 148.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis</td>
<td>The patient with COPD is at increased risk of cardiovascular disease. Assess CVD risk. 110.</td>
</tr>
<tr>
<td>Peak expiratory flow rate (PEFR)</td>
<td>At diagnosis</td>
<td>Calculate % of predicted PEFR. 107.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If 50-80%, COPD is moderate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If &lt; 50%, COPD is severe.</td>
</tr>
</tbody>
</table>

Advis e the patient with COPD

• If patient smokes, encourage to stop. 123. Stopping smoking is the mainstay of COPD care.
• Encourage the patient to take a walk daily and to increase activities of daily living like gardening, housework and using stairs instead of lifts.
• Help the patient to manage his/her CVD risk. 111.
• Inhaled corticosteroids can cause oral candida: advise patient to rinse and gargle after each dose of salmeterol/fluticasone.

Treat the patient with COPD

• Give influenza vaccine 0.5mL IM yearly.
• Give inhaled salbutamol 100-200mcg (1-2 puffs) 6-8 hourly, as needed.
• Before adjusting or starting treatment, ensure patient is adherent and knows how to use an inhaler and spacer correctly. 106.
• If patient has moderate or severe COPD and not controlled on salbutamol alone, decide instead which treatment to add:
  - If COPD diagnosis confirmed on spirometry and < 2 exacerbations in past year: add inhaled formoterol 12mcg, 1 puff 12 hourly.
  - If spirometry not done, ≥ 2 exacerbations in past year or no better with formoterol: add inhaled salmeterol/fluticasone 50/250mcg, 1 puff 12 hourly (stop formoterol if on it).
• If acute exacerbation was managed at this visit:
  - If patient received prednisone, continue prednisone 40mg daily for a total of 7 days.
  - If sputum increased or colour changed to yellow/green, give amoxicillin 500mg 8 hourly for 5 days. If severe penicillin allergy, give instead doxycycline 100mg 12 hourly for 5 days.

• If recent exacerbation, treatment adjustment, symptoms worse than usual or not coping as well as before, review monthly. Otherwise review 3-6 monthly.
• If no better with treatment after 3 months, discuss/refer.

1If on lopinavir/ritonavir or atazanavir/ritonavir, avoid fluticasone and discuss/refer instead. 2History of anaphylaxis, urticaria or angioedema.
CARDBIOVASCULAR DISEASE (CVD) RISK: DIAGNOSIS

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

### Step 1: Identify if the patient has established CVD:
- If patient has had previous heart attack, stroke or TIA or is known with angina (ischaemic heart disease) or peripheral vascular disease, manage as CVD ➔ 111.
- If current/recent chest pain, especially on exertion and relieved by rest, consider ischaemic heart disease ➔ 119.
- If current/recent leg pain, especially on walking and relieved by rest, consider peripheral vascular disease ➔ 121.
- If new sudden asymmetric weakness or numbness of face, arm or leg; difficulty speaking or visual disturbance: consider stroke or TIA ➔ 118.

### Step 2: Look for CVD risk factors:
- Ask about smoking: consider the patient who quit smoking in the past year a smoker for CVD risk assessment.
- Ask about family history: a parent or sibling with early onset CVD (man < 55 years or woman < 65 years) is a risk factor.
- Calculate Body Mass Index (BMI): weight (kg) ÷ height (m) ÷ height (m). A BMI > 25 is a risk factor.
- Measure waist circumference while standing or breathing out, midway between lowest rib and top of iliac crest. More than 80cm (woman) or 94cm (man) is a risk factor.
- Look for hypertension: check BP. If BP ≥ 140/90 and not known with hypertension ➔ 114.
- Look for diabetes: if not known with diabetes, check glucose ➔ 13.

### Step 3: Calculate the patient's CVD risk if no established CVD:
- If recent total and HDL cholesterol done, calculate 10-year CVD risk using cholesterol-based calculator (below) or use the tool function found in the EML Clinical Guide app.

#### Cholesterol-based CVD risk calculator

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Man</th>
<th>Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-39</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>40-44</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>45-49</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>50-54</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>55-59</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>60-64</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>65-69</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>70-74</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>75-79</td>
<td>15</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total cholesterol (mmol/L)</th>
<th>Man</th>
<th>Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 4.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4.1-5.19</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.2-6.19</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>&gt; 6.2-7.2</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HDL cholesterol (mmol/L)</th>
<th>Man</th>
<th>Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1.5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1.3-1.49</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td>1.2-1.29</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>0.9-1.19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&lt; 0.9</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systolic BP (mmHg)</th>
<th>Man</th>
<th>Woman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not on BP treatment</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>On BP treatment</td>
<td>-2</td>
<td>-2</td>
</tr>
</tbody>
</table>

- If CVD risk score < 11 (man), or < 13 (woman), then CVD risk is < 10%.
- If CVD risk score 11-14 (man), or 13-17 (woman), then CVD risk is 10-20%.
- If CVD risk score ≥ 15 (man), or ≥ 18 (woman), then CVD risk is > 20%.


### Step 4: Explain to the patient what his/her risk of heart attack or stroke might be over next 10 years:
- If CVD risk is < 10%, there is less than 1 in 10 chance that in the next 10 years, that s/he may have a heart attack/stroke.
- If CVD risk is 10-20%, there is 1 in 10 to 1 in 5 chance that in the next 10 years, that s/he may have a heart attack/stroke.
- If CVD risk is > 20%, there is more than 1 in 5 chance that in the next 10 years, that s/he may have a heart attack/stroke.

### Step 5: Use the patient’s CVD risk to decide treatment and frequency of follow-up:
- If CVD risk factor or a CVD risk ≥ 10%, manage the CVD risk ➔ 111. If CVD risk < 10% and no CVD risk factors, reassess CVD risk after 5 years.
# Cardiovascular Disease (CVD) Risk: Routine Care

## Assess the Patient with CVD Risk

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Ask about chest pain, difficulty breathing, leg pain, and symptoms of stroke/TIA.</td>
</tr>
<tr>
<td>Modifiable CVD risk factors</td>
<td>Every visit</td>
<td>Ask about smoking, diet, alcohol/drug misuse, stress, exercise, and activities of daily living. Manage as below.</td>
</tr>
<tr>
<td>BMI</td>
<td>At diagnosis, yearly or 3 monthly if trying to lose weight</td>
<td>BMI = weight (kg) ÷ height (m) ÷ height (m). Aim for &lt; 25.</td>
</tr>
<tr>
<td>Waist circumference</td>
<td>At diagnosis, yearly or 3 monthly if trying to lose weight</td>
<td>Measure while standing, on breathing out, midway between lowest rib and top of iliac crest. Aim for &lt; 80cm (woman) and &lt; 94cm (man).</td>
</tr>
<tr>
<td>BP</td>
<td>Every visit</td>
<td>If known hypertension, check BP if ≥ 140/90.</td>
</tr>
<tr>
<td>CVD risk (if no known CVD)</td>
<td>At diagnosis, then depending on risk</td>
<td>If CVD risk &gt; 20%, reassess after 6 months.</td>
</tr>
<tr>
<td>Diabetes risk</td>
<td>At diagnosis, then depending on result</td>
<td>If known diabetes, check glucose.</td>
</tr>
<tr>
<td>Random total cholesterol</td>
<td>If early onset CVD in patient/family: at diagnosis</td>
<td>• If early onset CVD in patient or family history of early onset CVD or familial hyperlipidaemia, check cholesterol. • If cholesterol &gt; 7.5, check TSH and refer to doctor.</td>
</tr>
</tbody>
</table>

## Advise the Patient with CVD Risk

- Discuss CVD risk: explore the patient’s understanding of CVD risk and the need for a change in lifestyle. Support the patient to change.  
- Invite patient to address 1 modifiable CVD risk factor at a time: help plan how to fit the lifestyle change into his/her day. Explore what might hinder or support this. Together set reasonable target/s for next visit. 
- Identify support to maintain lifestyle change: health education officer or dietician/nutritionist, friend, partner or relative to attend clinic visits, a healthy lifestyle group, helpline.  
- 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. 

## Screen for Alcohol/Drug Misuse

- Limit alcohol intake to ≤ 2 drinks/day and avoid alcohol on at least 2 days of the week.  
- In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, check TSH and refer to doctor. 

## Treat the Client with CVD Risk

- If known CVD: give simvastatin 40mg daily. If on amlodipine, give instead simvastatin 10mg daily. Avoid if pregnant or liver disease. 
- If no known CVD: if CVD risk > 20%, give simvastatin 10mg daily. Avoid if pregnant or liver disease. 

## Review the Patient with CVD Risk

- Review the patient with CVD risk ≤ 20% yearly. Review the patient with CVD risk >20% 6 monthly. If trying to lose weight, review 3 monthly.

---

1Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.  
2CVD that develops in a woman < 55 years or in a man < 65 years.  
3One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.  
4If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.
DIABETES: ROUTINE CARE

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

- Chest pain \( \Rightarrow 33 \)
- Fitting \( \Leftrightarrow 15 \)
- Decreased consciousness, drowsiness
- Confusion or unusual behaviour
- Weakness or dizziness
- Shaking
- Rapid deep breathing

Check random fingerprick glucose:

- Glucose < 4 with/without symptoms
- Glucose ≥ 11.1 with symptoms
- Glucose ≥ 11.1 without symptoms

Check urine for ketones.

- Ketones present
- No ketones

Give routine diabetes care below.

Assess the patient with diabetes not needing urgent attention:

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages. Ask about chest pain ( \Rightarrow 33 ) and leg pain ( \Rightarrow 56 ).</td>
</tr>
<tr>
<td>Depression</td>
<td>At diagnosis and if control poor</td>
<td>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 ( \Rightarrow 125 ).</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>At diagnosis and if control poor</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any ( \Rightarrow 124 ).</td>
</tr>
<tr>
<td>BP</td>
<td>Every visit</td>
<td>If known hypertension ( \Rightarrow 115 ). If not, check BP: if ≥ 140/90, ( \Rightarrow 111 ).</td>
</tr>
</tbody>
</table>
| BMI and waist circumference | • Weight: at every visit  
• BMI, waist circumference: at diagnosis | • BMI = weight (kg) / height (m) / height (m).  
• Aim for BMI ≤ 25 and waist circumference < 80cm (woman) or < 94cm (man). |
| Eyes            | At diagnosis, yearly and if visual problems | Check visual acuity and fundoscopy. If visual problems, cataracts or retinopathy, refer. |
| Feet            | At diagnosis, yearly and more often if problems | Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education \( \Rightarrow 57 \). |
| Family planning | Every visit    | Assess patient’s contraceptive needs \( \Rightarrow 136 \). If pregnant or planning pregnancy, refer for specialist care. |
| Glucose         | If adjusting glucose-lowering medication | If fasting glucose > 8 or non-fasting glucose taken 2 hours after eating > 10, step up treatment \( \Rightarrow 113 \). |
| HbA\(_1c\) (glucose control over past 3 months) | • Yearly if HbA\(_1c\) ≤ 8%  
• 3 months after treatment change | • If HbA\(_1c\) > 8%: diabetes controlled, continue same treatment for diabetes.  
• If HbA\(_1c\) > 8%: diabetes uncontrolled, if adherent, step up treatment \( \Rightarrow 113 \). If not adherent, give support and repeat HbA\(_1c\) after 3 months. |
| Urine dipstick  | At diagnosis and yearly | If protein, start enalapril if not already on it \( \Rightarrow 113 \).  
• If no protein and not on enalapril, send urine to lab for albumin/creatinine ratio. If ratio > 3, start enalapril \( \Rightarrow 113 \). |
| Creatinine (eGFR) | • At diagnosis, then yearly  
• If on enalapril: at baseline and 4 weeks\(^3\) | • Give age and sex on form. If eGFR < 60, discuss with doctor. If eGFR < 30, refer.  
• If creatinine increases by > 20%, stop enalapril and refer to doctor. |
| Potassium       | If on enalapril: at baseline, 4 weeks\(^3\), then yearly | If potassium > 5.0, avoid/stop enalapril and refer to doctor. |
| Lipids          | At diagnosis    | Check fasting total cholesterol, triglycerides, HDL/LDL. Assess CVD risk \( \Rightarrow 110 \). If total cholesterol > 7.5 or triglycerides > 10, refer/discuss. |

\(^3\)Three teaspoons sugar (15g) in 1 cup (200mL) water. \(^4\)If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water to make a dextrose 10% solution. \(^5\)Avoid IV insulin as it may cause low potassium and heart dysrhythmia. Avoid using an insulin needle to give IM insulin. \(^6\)One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. If eGFR < 60, repeat instead at 2 weeks.
Advising the patient with diabetes

- Help the patient to manage his/her CVD risk.
- Educate on foot care to prevent ulcers and amputation.
- Discuss diet: avoid white/brown sugar and honey, use artificial sweetener instead. Cut down on starch (rice, noodles, bread, potato, sweet potato, butternut, mielies, pap, samp).
- Explain importance of adherence and to eat regular meals. If newly diagnosed or poor adherence or attendance, refer for community care worker support.
- Ensure patient can recognise and manage hypoglycaemia (shaking, sweating, palpitations, weakness, hunger):
  - Drink milk with sugar or eat a sweet. Always carry something sweet. If not in clinic and fits, confusion or coma, rub sugar inside mouth and call ambulance. Go to clinic if illness (like diarrhoea).
  - Identify and manage the cause: increased exercise, missed meals, inappropriate dosing of glucose-lowering medications, alcohol, infections.
- If on/starting insulin, educate on how to use it:
  - Discuss injection technique and sites (abdomen, thighs, arms), store insulin in fridge/cool dark place, meal frequency, recognising hypoglycaemia/hyperglycaemia, sharps disposal at clinic.

Treat the patient with diabetes

- If known with CVD: give simvastatin² 40mg³ and aspirin daily. Avoid simvastatin if pregnant and avoid aspirin if peptic ulcer, dyspepsia, kidney disease. Avoid both if liver disease.
- If not known with CVD but CVD risk > 20%, eGFR < 60, known with diabetes > 10 years or age > 40 years, give simvastatin² 10mg daily. Avoid if pregnant or liver disease.
- If albuminuria/proteinuria, give enalapril⁴ 5mg 12 hourly, regardless of BP. If proteinuria persists and systolic BP > 100, increase up to 10mg 12 hourly, if tolerated.
- Give glucose-lowering medication using stepwise approach as in table below. Ensure patient is adherent before increasing treatment. If not adherent, refer for community care worker support.

<table>
<thead>
<tr>
<th>Step</th>
<th>Medication</th>
<th>Breakfast</th>
<th>Supper</th>
<th>Bed</th>
<th>Note</th>
</tr>
</thead>
</table>
| 1    | Metformin  | 500mg     | 500mg  | 500mg | Avoid if eGFR < 30, liver disease, uncontrolled heart failure, alcoholism.
|      |            | 500mg     | 850mg  | 850mg | Take with meals. If on dulotegravir or eGFR 30-60, halve dose, up to maximum of 500mg 12 hourly.
|      |            | 1g        | 1g     |      | May cause self-limiting nausea, abdominal cramps or diarrhoea. Advise patient not to stop treatment.
|      |            | 500mg     | 850mg  |      | Increase monthly if fasting glucose > 8 (or postprandial glucose > 10) or HbA₁c > 8%, and patient is adherent.
|      |            |           |        |      | If up to 2g needed daily, metformin may be given as 850mg 8 hourly instead of 1g twice daily.
|      |            |           |        |      | If after 3 months on maximum dose HbA₁c > 8%, move to step 2. |
| 2    | Add glimepiride or glibenclamide | 1mg | 2mg | 2.5mg | Continue metformin.
|      |            | 2mg       | 3mg    | 5mg  | Take glimepiride with breakfast. Take glibenclamide 30 minutes before breakfast. Avoid missing meals.
|      |            | 3mg       | 4mg    | 5mg  | Avoid in pregnancy, severe kidney (eGFR < 60) and liver disease, co-trimoxazole allergy. Avoid glibenclamide if > 65 years.
|      |            | 5mg       | 5mg    | 5mg  | Increase every 2 weeks if fasting glucose > 8 (or postprandial glucose > 10) or HbA₁c > 8%, and patient is adherent.
|      |            | 7.5mg     | 7.5mg  | 5mg  | If after 3 months on maximum dose HbA₁c > 8%, move to step 3. |
| 3    | Add basal insulin (intermediate or long acting) | Start at 10IU | If fasting glucose > 8, increase by 2-4 units each week. |      | Stop glimepiride/glibenclamide but continue metformin when starting insulin.
|      |            |           |        |      | Educate about insulin as above and issue meter. Patient to check fasting glucose on waking 3 times a week.
|      |            |           |        |      | If > 20IU needed or if patient having episodes of hypoglycaemia, discuss/refer to doctor. |
| 4    | Substitute with biphasic insulin | 0.2IU/kg | 0.2IU/kg + 4IU | 0.2IU/kg | Continue with metformin. Stop glimepiride/glibenclamide and basal insulin.
|      |            | 0.2IU/kg + 4IU | 0.2IU/kg | 0.2IU/kg | Start with 0.3 units/kg/day. Patient to give two-thirds of total daily insulin dose 30 minutes before breakfast and one-third of total daily insulin dose 30 minutes before supper.
|      |            | 0.2IU/kg + 8IU | 0.2IU/kg | 0.1IU/kg | Patient to check fasting glucose on waking 3 times a week. If ≥ 8 and patient adherent, increase morning dose by 4 units.
|      |            | 0.2IU/kg + 12IU | 0.1IU/kg | 0.1IU/kg | If still ≥ 8 after one week, increase evening dose by 4 units.
|      |            | etc        |        |      | Educate about insulin as above.
|      |            |           |        |      | If fasting glucose still ≥ 8 or HbA₁c > 8% after 3 months, discuss with specialist. |

Review the patient with diabetes 6 monthly once stable.

1Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA. 2If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily. 3If on amlodipine, reduce simvastatin dose to 10mg daily. 4Avoid in pregnancy, angioedema or renal artery stenosis. If not tolerating enalapril (e.g. persistent cough), refer to doctor to consider alternative. 5Two hours after eating.
HYPERTENSION: DIAGNOSIS

Check blood pressure (BP)

- Seat patient with back against chair and arm supported at heart level for 3-5 minutes.
- Use a larger cuff if mid-upper arm circumference is > 33cm.
- Record systolic BP (SBP) and diastolic BP (DBP): SBP is the first appearance of sound. DBP is the disappearance of sound.
- Take two readings 1-2 minutes apart. If readings differ by > 5mmHg, take a third reading to confirm. If electronic BP device shows raised BP, confirm BP manually.
- If patient is pregnant, interpret reading → 138.

Give urgent attention to the patient with BP ≥ 180/130 and any of:

- Visual disturbances
- Dizziness
- Confusion
- Headache
- Chest pain → 33.
- Difficulty breathing worse on lying flat or with leg swelling → 117.
- Sudden weakness on 1 or both sides, vision problems, dizziness, difficulty speaking or swallowing → 118.

Management:
- Give single dose amlodipine 10mg orally. Avoid short-acting nifedipine as it may drop the BP too quickly, causing a stroke.
- If dizzy or faint after treatment, lie patient down. If BP < 160/100, raise legs.
- Refer urgently.

Approach to the patient not needing urgent attention

<table>
<thead>
<tr>
<th>BP &lt; 140/90</th>
<th>BP 140/90 – 179/109</th>
<th>BP ≥ 180/110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Repeat BP on 2 further occasions at least 2 days apart (within 2 weeks if systolic BP ≥ 160).</strong></td>
<td><strong>Avoid diagnosing hypertension on one reading alone.</strong></td>
<td><strong>Repeat BP after patient has rested for 1 hour.</strong></td>
</tr>
<tr>
<td><strong>Avoid diagnosing hypertension on one reading alone.</strong></td>
<td></td>
<td><strong>Avoid diagnosing hypertension on one reading alone.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>BP &lt; 140/90</strong></td>
<td><strong>BP confirmed ≥ 180/110</strong></td>
</tr>
<tr>
<td><strong>Assess CVD risk → 110.</strong></td>
<td><strong>Check that patient does not need urgent attention above.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Decide on frequency of follow-up:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BP &lt; 120/80 and</strong></td>
<td><strong>BP 120/80 – 139/89 or</strong></td>
<td><strong>Diagnose hypertension</strong></td>
</tr>
<tr>
<td><strong>CVD risk &lt; 10% and</strong></td>
<td><strong>CVD risk ≥ 10% or</strong></td>
<td><strong>Give routine hypertension care → 115.</strong></td>
</tr>
<tr>
<td><strong>No CVD risk factors</strong></td>
<td><strong>Any CVD risk factors</strong></td>
<td></td>
</tr>
<tr>
<td>\footnote{CVD risk factors include age &gt; 55 (man) or &gt; 65 (woman), diabetes, waist circumference &gt; 80cm (woman) or 94cm (man).}</td>
<td>\footnote{CVD risk factors include age &gt; 55 (man) or &gt; 65 (woman), diabetes, waist circumference &gt; 80cm (woman) or 94cm (man).}</td>
<td></td>
</tr>
<tr>
<td>Check BP after 5 years.</td>
<td>Check BP after 1 year.</td>
<td>If &lt; 30 years, refer to exclude secondary cause of hypertension.</td>
</tr>
</tbody>
</table>
**HYPERTENSION: ROUTINE CARE**

### Assess the patient with hypertension

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages. Ask about symptoms of heart failure.</td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td>- Review medication that may raise BP: NSAIDs (e.g. ibuprofen), combined oral contraceptive and antidepressants. If on antidepressant, discuss with doctor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- If already on hypertension medication, assess adherence and ask about side effects.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>Assess patient’s contraceptive needs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, 124.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td></td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, 124.</td>
</tr>
<tr>
<td>BP control</td>
<td>Check 2 readings at every visit.</td>
<td>If BP &lt; 140/90 (&lt; 160/90 if ≥ 65 years), BP is controlled. continue current treatment and review every 6 months. If BP ≥ 140/90 (≥ 160/90 if ≥ 65 years), BP is not controlled. decide treatment below.</td>
</tr>
<tr>
<td>Weight, BMI, waist</td>
<td>Weight: at every visit.</td>
<td>BMI = weight (kg) ÷ height (m) ÷ height (m).</td>
</tr>
<tr>
<td></td>
<td>circumference: at diagnosis</td>
<td>BMI ≥ 25 and waist circumference &lt; 80cm (woman) or &lt; 94cm (man).</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis, then depending on risk</td>
<td>Assess CVD risk. 110.</td>
</tr>
<tr>
<td>Urine dipstick</td>
<td>At diagnosis, then yearly</td>
<td>If 1+ proteinuria on dipstick, check creatinine and eGFR. If glucose on dipstick, screen for diabetes.</td>
</tr>
<tr>
<td>Diabetes risk</td>
<td>Yearly and if glucose on urine dipstick</td>
<td>If known diabetes. 112. If not known with diabetes, check glucose.</td>
</tr>
<tr>
<td>Creatinine (eGFR)</td>
<td>If 1+ proteinuria on dipstick: at diagnosis, yearly.</td>
<td>If eGFR &lt; 60, discuss with doctor. If eGFR ≥ 60, refer.</td>
</tr>
<tr>
<td></td>
<td>If CVD, uncontrolled hypertension 10 years, eGFR &lt; 60: yearly</td>
<td>If creatinine increases by &gt; 20%, stop enalapril and refer to doctor.</td>
</tr>
<tr>
<td>Potassium</td>
<td>If on enalapril or eGFR &lt; 30: at diagnosis</td>
<td>If potassium &gt; 5.0, stop enalapril and spironolactone and refer to doctor.</td>
</tr>
<tr>
<td></td>
<td>If on spironolactone or eGFR &lt; 30: 6 monthly</td>
<td>If potassium &gt; 5.0, stop enalapril and spironolactone and refer to doctor.</td>
</tr>
</tbody>
</table>

### Advise the patient with hypertension

- Educate the patient that blood pressure changes slightly during the day and night: hypertension is when it stays high, above a certain level. S/he may not have any symptoms.
- Help patient to manage his/her CVD risk. 111.
- Emphasise salt restriction ≤ 1 teaspoon/day, regular physical exercise (150 minutes/week), weight reduction and smoking cessation. If patient smokes, encourage to stop. 123.
- Advise to avoid NSAIDs (e.g. ibuprofen) and combined oral contraceptive.
- Explain importance of adherence and that patient will need lifelong hypertension care to prevent stroke, heart disease, eye disease and kidney disease.
- If newly diagnosed, refer for community health worker support.
- Advise patient on hydrochlorothiazide with personal/family history of skin cancer to limit exposure to sunlight, use sunscreen, regularly check skin and report any new skin lesions.

---

1One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. 2Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.
**Treat the patient with hypertension**

- If known with CVD\(^1\): give simvastatin\(^2\) 40mg\(^3\) and aspirin daily. Avoid simvastatin if pregnant and avoid aspirin if peptic ulcer, dyspepsia, kidney disease. Avoid both if liver disease.
- If not known with CVD\(^1\) but CVD risk > 20%, give simvastatin\(^2\) 10mg daily. Avoid if pregnant or liver disease.
- If BP is **controlled**, continue current treatment step and review 6 monthly.
- If BP is **not controlled**, decide treatment for hypertension using algorithm and table below. If already on step 7, refer instead.

### Not yet on hypertension medication

<table>
<thead>
<tr>
<th>BP 140-159/90-99</th>
<th>BP 160-179/100-109</th>
<th>BP ≥ 180/110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Does patient have CVD(^1) or ≥1 CVD risk factor(^4)?</strong></td>
<td><strong>Start treatment with steps 1, 2 and 3 and review patient in 1 week.</strong></td>
<td><strong>Start treatment with steps 1, 2 and 3 and review patient in 1 week.</strong></td>
</tr>
<tr>
<td><strong>Start treatment with step 1.</strong></td>
<td><strong>Adherent</strong></td>
<td><strong>Add next treatment step.</strong></td>
</tr>
<tr>
<td><strong>Not adherent</strong></td>
<td><strong>Not adherent</strong></td>
<td><strong>Check patient is using medication correctly.</strong></td>
</tr>
<tr>
<td><strong>No</strong></td>
<td><strong>Yes</strong></td>
<td><strong>Discuss side effects.</strong></td>
</tr>
<tr>
<td><strong>Refer for community health worker support.</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Already on hypertension medication

<table>
<thead>
<tr>
<th>Step</th>
<th>Medication</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Address modifiable CVD risk factors.</td>
<td>Manage CVD risk. If BP not controlled after 3 months, add step 2.</td>
</tr>
</tbody>
</table>
| 2    | Add hydrochlorothiazide (HCTZ) 12.5mg daily. | • Avoid if pregnant, personal/family history of skin cancer, gout, severe liver disease or eGFR < 30.  
• If diabetes or heart failure, start enalapril first. If needed, add HCTZ as next step once on maximum dose of enalapril. |
| 3    | Add enalapril 10mg daily. | • Avoid if pregnant, eGFR < 30 or potassium ≥ 5.0.  
• Advise patient to stop enalapril immediately if swelling of tongue/lips/face develops, angioedema likely. |
| 4    | Increase enalapril to 20mg daily. | |
| 5    | Add amlodipine 5mg daily. | Avoid if untreated heart failure. If on simvastatin, reduce simvastatin dose to 10mg daily. |
| 6    | Increase amlodipine to 10mg daily. | |
| 7    | Add spironolactone 25mg daily and increase HCTZ to 25mg daily. | Only use spironolactone if potassium can be monitored. Avoid spironolactone if pregnant or eGFR < 30. |

- Review the patient monthly until BP controlled. Once controlled, review 6 monthly.
- If BP not controlled after 1 month on step 7, refer.

---

\(^1\)Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.  
\(^2\)If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.  
\(^3\)If on amlodipine, reduce simvastatin dose to 10mg daily.  
\(^4\)CVD risk factors include age > 55 (man) or > 65 (woman), diabetes, smoker, waist circumference > 80cm (woman) or > 94cm (man).
The patient with heart failure has leg swelling and difficulty breathing which worsens on lying down/with effort. **A doctor must confirm the diagnosis and refer the patient for specialist assessment.**

---

**Give urgent attention to the patient with heart failure and any of:**

- Chest pain → 33.
- Rapid worsening of symptoms
- Respiratory rate ≥ 30 or difficulty breathing
- BP < 90/60
- New wheeze

**Manage and refer urgently:**

- Sit patient up and if oxygen saturation < 94%, give face mask oxygen.
- If systolic BP > 90: give furosemide 40mg slowly IV. If no response after 30 minutes, give another 80mg IV. If good response, give 40mg IV over 2-4 hours.
- If systolic BP > 90: give sublingual isosorbide dinitrate 5mg even if there is no chest pain. Repeat once if pain relief needed. Repeat after 4 hours.
- If BP ≥ 180/130: give single dose enalapril 10mg orally.

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**Assess the patient with heart failure**

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages. If fainting/blackouts, refer same day.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>Assess patient’s contraceptive needs. If pregnant or planning pregnancy, refer for specialist care.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any → 124.</td>
</tr>
<tr>
<td>Weight</td>
<td>Every visit</td>
<td>Assess changes in fluid balance by comparing with weight when patient least symptomatic.</td>
</tr>
<tr>
<td>BP and pulse</td>
<td>Every visit</td>
<td>If known hypertension → 115. If not, check BP: if ≥ 140/90 → 114. If new irregular pulse, refer same day.</td>
</tr>
<tr>
<td>Palliative care</td>
<td>At diagnosis, if deteriorating</td>
<td>If disabling shortness of breath at rest on maximum treatment or ≥ 5 admissions in the past 6 months, also give palliative care → 148.</td>
</tr>
</tbody>
</table>
| Creatinine (eGFR) and potassium | At diagnosis, 6 monthly | • If starting/increasing dose of enalapril/spironolactone: also check at 2 weeks (if eGFR < 60) or 4 weeks (if eGFR ≥ 60).  
  - If creatinine increases by > 20%, eGFR < 30 or potassium > 5.0, stop enalapril/spironolactone and discuss with specialist. |
| Other blood tests             | At diagnosis   | Check Hb, TSH and if not known diabetes, check glucose → 13. If abnormal, discuss with specialist. Test for HIV → 95. |

---

**Advise the patient with heart failure**

- Advise to adhere to treatment even if asymptomatic. Advise regular exercise within limits of symptoms. Help the patient to manage his/her CVD risk → 111.
- Advise to restrict salt to < half a teaspoon/day and fluids to 1.5L/day (6 cups). If possible, advise to monitor weight daily. If s/he gains ≥ 2kg in 2 days, advise to return to clinic.

---

**Treat the patient with heart failure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Medication</th>
<th>Dose</th>
<th>Note</th>
</tr>
</thead>
</table>
| 1    | hydrochlorothiazide or furosemide and enalapril | 25-50mg daily | Use if mild heart failure and eGFR ≥ 60. Avoid in gout, liver disease. If diabetes, monitor glucose/HbA1c closely.  
  - Use if significant heart failure symptoms or eGFR < 60. Once improved, consider switch to hydrochlorothiazide if eGFR ≥ 60.  
  - If > 80mg needed, give half dose 12 hourly. Maximum 250mg/day. |
| 2    | carvedilol | 3.125mg 12 hourly. If tolerated, double dose every 2 weeks until symptoms improve, up to 25mg 12 hourly. | Avoid if pregnant, previous angioedema, aortic stenosis, hypertrophic obstructive cardiomyopathy, renal artery stenosis.  
  - Start once on optimal dose of enalapril. Avoidatenolol in heart failure.  
  - Avoid if severe fluid overload, BP < 90/60, asthma. Avoid or decrease dose if pulse < 60. |
| 3    | spironolactone | 25mg daily | Monitor potassium and kidney function. Avoid if eGFR < 30 or potassium > 5. Stop potassium supplements. |

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


**STROKE: ROUTINE CARE**

**Sudden onset** of one or more of the following suggests a stroke (or a transient ischaemic attack (TIA) if symptoms lasted < 24 hours and resolved completely):

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

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

- If oxygen saturation < 94% or respiratory rate ≥ 30, give face mask oxygen.
- Keep patient nil by mouth until swallowing is formally assessed.
- Check glucose: if < 3 (< 4 if diabetes), refer.
- Avoid treating BP ≥ 140/90 as this may worsen stroke.
- Decide where to refer the patient depending on when symptoms started:
  - If patient can reach hospital within 3 hours of onset of symptoms, refer urgently for thrombolysis (to specialist stroke unit if available).
  - If patient cannot reach hospital within 3 hours of onset of symptoms, refer same day and give single dose aspirin 300mg (avoid if on long-term anticoagulant or headache/neck stiffness) if fully conscious and can swallow.

Assess the patient with stroke/TIA

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Ask about symptoms of another stroke/TIA. Also ask about chest pain, leg pain.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>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.</td>
</tr>
<tr>
<td>Rehabilitation needs</td>
<td>Every visit</td>
<td>Refer to appropriate therapist: physiotherapy for mobility, physiotherapy/occupational therapy for self care, speech therapist for swallowing, coughing after eating, speaking and drooling.</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Every visit</td>
<td>If any of: severely disabled, worsening problems with speech or swallowing, also give palliative care.</td>
</tr>
<tr>
<td>BP</td>
<td>Every visit</td>
<td>If known hypertension. If not, check BP. If ≥ 140/90, refer. New hypertension, start treatment only 48 hours after a stroke.</td>
</tr>
<tr>
<td>Diabetes risk</td>
<td>At diagnosis and yearly</td>
<td>If known diabetes. If not known with diabetes, check glucose.</td>
</tr>
<tr>
<td>Fasting cholesterol and triglycerides</td>
<td>At diagnosis if not already done</td>
<td>If cholesterol &gt; 7.5 or triglycerides &gt; 10, check TSH and refer to doctor.</td>
</tr>
<tr>
<td>HIV</td>
<td>At diagnosis if status unknown</td>
<td>Test for HIV. If HIV, give routine care.</td>
</tr>
<tr>
<td>ECG</td>
<td>At diagnosis if not already done</td>
<td>If abnormal, discuss/refer.</td>
</tr>
</tbody>
</table>

Advertise the patient with stroke/TIA

- Educate the patient that stroke/TIA is a brain attack. Quick treatment of a minor stroke or TIA can reduce the risk of a major stroke.
- Help patient to manage cardiovascular disease risk. Refer patient to available helpline/s.
- If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment.
- Avoid oral contraceptives containing oestrogen. Advise other method such as copper IUCD, injectable, progestogen-only pill.
- If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution.
- If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.
- If on amlodipine, reduce simvastatin dose to 10mg daily.

Treat the patient with stroke/TIA

- Give aspirin 150mg daily for life. Avoid if < 30 years, haemorrhagic stroke, previous peptic ulcer, dyspepsia or on anticoagulant. If prosthetic heart valve, valvular heart disease or atrial fibrillation, refer for warfarin instead.
- Give simvastatin 40mg daily for life, regardless of cholesterol if patient had an ischaemic stroke.

---

1 If dextrose 10% unavailable: mix 1 part dextrose 50% to 4 parts water for injection to make dextrose 10% solution.
2 If HIV positive on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.
3 If on amlodipine, reduce simvastatin dose to 10mg daily.

---

**Health for All**

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**ISCHAEMIC HEART DISEASE (IHD): INITIAL ASSESSMENT**

<table>
<thead>
<tr>
<th><strong>Is patient known with ischaemic heart disease (or angina)?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong> Is current or previous chest pain/discomfort any of:</td>
</tr>
<tr>
<td>- Feels like pressure, heaviness or tightness in centre or left side of chest</td>
</tr>
<tr>
<td>- Spreads to jaw, neck, arm/s</td>
</tr>
<tr>
<td>- May be associated with nausea, vomiting, pallor or sweating</td>
</tr>
<tr>
<td><strong>Yes</strong> Is chest pain/discomfort:</td>
</tr>
<tr>
<td>- Brought on by exercise, effort or anxiety <em>and</em></td>
</tr>
<tr>
<td>- Relieved by rest <em>and</em></td>
</tr>
<tr>
<td>- Lasts &lt; 10 minutes</td>
</tr>
<tr>
<td><strong>No Chest pain different to above</strong></td>
</tr>
<tr>
<td><strong>Yes</strong> Stable angina likely</td>
</tr>
<tr>
<td>- A doctor must confirm the diagnosis.</td>
</tr>
<tr>
<td>- Give routine ischaemic heart disease care →33.</td>
</tr>
</tbody>
</table>

**Acute coronary syndrome (heart attack or unstable angina) likely**

- Do ECG¹ within first 10 minutes. While doing ECG, start management and discuss with doctor:
  - If oxygen saturation < 94% or oxygen saturation machine not available, or respiratory rate ≥ 30, give face mask oxygen.
  - Give single dose aspirin 150mg chewed.
  - Establish IV access.
  - If BP < 90/60, give sodium chloride 0.9% 500mL IV. Avoid if crackles on auscultation. Repeat BP: if still < 90/60, discuss.
  - If current chest pain and BP > 90/60 (if BP < 90/60, discuss):
    - Give isosorbide dinitrate sublingual 5mg every 5-10 minutes until pain relieved to a maximum of 15mg. Avoid if sildenafil or vardenafil within past 24 hours.
    - If pain severe, give morphine 5-10mg slow IV.²
  - Doctor to review ECG and assess for streptokinase as soon as possible:
    - Give streptokinase only if ECG shows ST elevation⁴ or left bundle branch block and if ≤ 6 hours since onset of chest pain.
    - Avoid if gastrointestinal bleed in last 3 months, peptic ulcer, stroke/TIA in past 6 months or previous haemorrhagic stroke, active bleeding or known bleeding disorder, streptokinase given in past year or known allergy to it, or recent major trauma, surgery or head injury.
    - Give streptokinase 1.5 million IU diluted in 100mL sodium chloride 0.9% IV over 30-60 minutes.
    - Monitor BP: if < 90/60, slow rate of infusion (avoid stopping it) and give fluids as above.
    - Refer urgently.

---

¹Chest pain caused by ischaemic heart disease. ²ECG may show ST segment depression or elevation, but a normal ECG does not exclude diagnosis of unstable angina or heart attack. ³Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Give diluted morphine 5mL IV over 5 minutes (1mL/minute). If needed, give another 1mL/min until pain improved, up to 10mL. Stop if BP drops < 90/60. ⁴ST elevation > 1mm in two or more contiguous limb leads or ST elevation > 2mm in two or more contiguous chest leads.
ISCHAEMIC HEART DISEASE: ROUTINE CARE

Assess the patient with ischaemic heart disease

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
</table>
| Symptoms    | Every visit    | • If recent episodes of chest pain/discomfort, assess ischaemic heart disease symptoms if not already done. 119.  
|             |                | • Ask about leg pain, 56 and symptoms of stroke/TIA. 118.            |
| Depression  | Every visit    | In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either. 125.  
| BP          | Every visit    | If known hypertension. 115. If not, check BP; if ≥ 140/90. 114.      |
| Diabetes risk | At diagnosis and yearly | If known diabetes. 112. If not known with diabetes, check glucose. 113. |

Advise the patient with ischaemic heart disease

• Help the patient to manage his/her CVD risk. 111.
• Patient can resume normal daily and sexual activity 1 month after heart attack if symptom free.
• Emphasize the importance of lifelong adherence to medication. Ensure patient knows how to use isosorbide dinitrate as below.
• Patient should avoid non-steroidal anti-inflammatory drugs (like ibuprofen), as they may precipitate chest pain.
• If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment.

Treat the patient with ischaemic heart disease

• Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.
• Give simvastatin 40mg daily. If on amlodipine, give instead simvastatin 10mg daily. Avoid if pregnant or liver disease.
• Give atenolol 50mg daily, even if no chest pain/discomfort. Avoid in asthma, COPD, heart failure, peripheral vascular disease.
• If patient has signs of heart failure (e.g. shortness of breath/swelling of legs) following a heart attack or unstable angina, give enalapril 2.5mg 12 hourly and increase slowly to 10mg 12 hourly. Avoid if pregnant, angioedema or renal artery stenosis.
• If patient has stable angina, treat using stepwise approach as in table below:
  - If chest pain/discomfort controlled, continue same medication and dose.
  - If still gets episodes of chest pain/discomfort, increase to maximum dose. If symptoms continue after this, add next step. Ensure patient is adherent before increasing medication.

<table>
<thead>
<tr>
<th>Step</th>
<th>Medication</th>
<th>Dose</th>
<th>Maximum dose</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Isosorbide dinitrate with chest pain and before exertion and Atenolol</td>
<td>5mg sublingual with angina</td>
<td>3 doses of 5mg with each episode of chest pain</td>
<td>If chest pain on exertion, rest and take 1st dose. If chest pain persists, take a further 2 doses 5 minutes apart. If no better 5 minutes after 3rd dose, patient must seek medical attention urgently.</td>
</tr>
<tr>
<td></td>
<td>50mg daily</td>
<td>100mg daily</td>
<td></td>
<td>Titrated to resting pulse rate of 60 beats/minute. Avoid if asthma, COPD, uncontrolled heart failure, peripheral vascular disease or if side effects (headache, cold hands/feet, impotence, tight chest, fatigue) are intolerable. Use amlodipine instead.</td>
</tr>
<tr>
<td>2</td>
<td>Add amlodipine</td>
<td>5mg in the morning</td>
<td>10mg daily</td>
<td>Avoid if heart failure, discuss with specialist. Reduce simvastatin dose to 10mg daily.</td>
</tr>
<tr>
<td>3</td>
<td>Add isosorbide mononitrate or isosorbide dinitrate</td>
<td>10mg at 8am and 2pm</td>
<td>30mg at 8am and 2pm</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>20mg at 8am and 2pm</td>
<td>30mg at 8am and 2pm</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

• If atenolol and amlodipine contra-indicated/not tolerated or chest pain/discomfort persists on full treatment, refer to specialist.
• Review monthly until symptoms controlled. Then review 3-6 monthly.

1 If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.
PERIPHERAL VASCULAR DISEASE (PVD)

- Peripheral vascular disease is characterised by claudication: muscle pain in legs or buttocks on exercise that is relieved by rest. Leg pulses are reduced and skin may be cool, shiny and hairless.
- Refer the patient newly diagnosed with peripheral vascular disease for specialist assessment.

**Give urgent attention to the patient with peripheral vascular disease and any of:**
- Sudden severe leg pain at rest with any of the following in the leg: numbness, weakness, pallor, no pulse: acute limb ischaemia likely
- Leg pain occurring at rest, ulcer or gangrene on leg: critical limb ischaemia likely
- Pulsatile mass in abdomen with abdominal/back pain or BP < 90/60: ruptured abdominal aortic aneurysm likely

**Management:**
- Acute limb ischaemia likely: refer urgently.
- Critical limb ischaemia likely: discuss same day urgency of referral with specialist.
- Ruptured abdominal aortic aneurysm likely: avoid giving IV fluids even if BP < 90/60 (raising blood pressure may worsen the rupture) and refer urgently.

**Assess the patient with peripheral vascular disease**

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
</table>
| Symptoms        | Every visit    | • Manage symptoms as on symptom pages. Ask about chest pain 119 and symptoms of stroke/TIA 118.  
• Document the walking distance before onset of claudication. |
| BP              | Every visit    | If known hypertension 115. If not, check BP: if ≥ 140/90 114.        |
| Legs and feet   | Every visit    | Check for pain, pulses, sensation, deformity, skin problems. For foot screen and foot care education 57. |
| Abdomen         | Every visit    | If a pulsatile mass felt, refer for assessment for possible abdominal aortic aneurysm. Refer urgently if abdominal/back pain or BP < 90/60. |
| Diabetes risk   | At diagnosis, then yearly | If known diabetes 112. If not known with diabetes, check glucose 13. |

**Advise the patient with peripheral vascular disease**

- Help the patient to manage his/her CVD risk 111.
- Advise the patient to keep legs warm and below heart level (especially at night), and to avoid decongestant medications that may constrict blood vessels.
- If patient smokes, encourage to stop 123.
- Advise patient that physical activity is an important part of treatment. It increases the blood supply to the legs and may significantly improve symptoms.
- If < 55 years (man) or < 65 years (woman), advise the first degree relatives (parents, siblings, children) to have CVD risk assessment 110.

**Treat the patient with peripheral vascular disease**

- Advise brisk exercise for 30 minutes at least 3 times a week (preferably daily). Advise patient to pause and rest whenever claudication develops.
- Give simvastatin\(^1\) 40mg\(^2\) daily regardless of cholesterol level. Avoid in pregnancy, liver disease.
- Give aspirin 150mg daily for life. Avoid if peptic ulcer, dyspepsia, kidney or liver disease.

- Refer to specialist at diagnosis (start medications and exercise while waiting for appointment) and if pain interferes with activities of daily living after 3 months of medication and exercise.
- Review 3 monthly until stable (coping with activities of daily living and able to work), then yearly.

\(^1\)If on lopinavir/ritonavir or atazanavir/ritonavir, avoid simvastatin, give instead atorvastatin 10mg daily.  
\(^2\)If on amlodipine, reduce simvastatin dose to 10mg daily.
# THE MENTALLY ILL PATIENT NEEDING TREATMENT OR ADMISSION

Give urgent attention if a delay in referral may lead to the patient’s mental illness causing any of:
- Death
- Irreversible health problem/s
- Patient inflicting serious harm to self or others
- Patient causing serious damage to or loss of property

Manage as an emergency and refer urgently with or without patient consent:
- If aggressive/disruptive, complete MHCA 48 form.
- If patient is not alert, fully conscious or physically stable, check for underlying causes.
- Complete a MHCA 01 form, Emergency care, treatment and rehabilitation or admission without consent, to admit for 24 hour assessment.
- If too dangerous for transfer in a staffed vehicle or likely to abscond, request police assistance. Police officer to complete MHCA 22 form.

## Approach to the mentally ill patient in need of hospital admission/treatment not needing emergency referral

<table>
<thead>
<tr>
<th>Patient able to give informed consent¹</th>
<th>Patient incapable of giving informed consent¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit or treat as Voluntary user.</td>
<td>Admit or treat as an Involuntary user under the Mental Health Care Act (MHCA).</td>
</tr>
</tbody>
</table>

Does patient require treatment/admission for a mental illness that may result in:
- Patient seriously harming self or others or
- Serious damage to his/her financial interests or reputation

- Escort² must complete MHCA 04 form. If escort unavailable, unwilling or incapable, then a health care provider³ can complete this form.
- MHCP⁴ to assess patient and complete one MHCA 05 form. Doctor to separately assess patient and complete a second MHCA 05 form.
  - If MHCP⁴/doctor not available, record clearly in patient notes/referral letter. Refer with MHCA 04 form, to nearest staffed facility.

The two MHCA 05 forms agree to admit or treat the patient under the Mental Health Care Act.

- Head of Health Establishment (HHE) to complete MHCA 07 form.
  - If admission (72 hour assessment) needed, send all forms with patient.
  - If too dangerous for transfer in a staffed vehicle or likely to abscond, request police assistance. Police officer to complete MHCA 22 form. If restraints used, also complete MHCA 48 form.
  - If outpatient treatment, send all forms to Mental Health Review Board.

The patient may present to primary care with authorisation/order by a Court or Mental Health Review Board to receive mental health care, treatment and rehabilitation on an outpatient basis: review patient and provide prescribed health intervention, regardless of patient consent. Record clearly in patient file. Report to Mental Health Review board as requested.

¹Informed consent means that patient understands that s/he is ill, needs treatment and can communicate his/her choice to receive treatment. ²Escort: if patient < 18 years old, this needs to be a parent or guardian; if patient ≥ 18 years old, escort can be spouse, next of kin, partner or associate. ³This can be any health care provider but needs to have observed patient’s behaviour and must not be one of the mental health care practitioners who complete either of the MHCA 05 forms. ⁴Mental Health Care Practitioner.
TOBACCO SMOKING

Assess the patient who smokes tobacco currently or recently stopped

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• Ask about symptoms that might suggest cancer: cough/difficulty breathing, difficulty swallowing, urinary symptoms or weight loss. Ask about symptoms of cardiovascular disease: chest pain, leg pain, new sudden onset of any of: asymmetric weakness of face, arm or leg; numbness, difficulty speaking or visual disturbance. Manage other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>Every visit</td>
<td>• Ask about number of cigarettes per day and what activities patient does while smoking. If recently stopped, praise patient and encourage to avoid re-starting: reinforce advice about risks, benefits, distraction techniques and support helpline/groups available. Ask about previous attempt at stopping: review what helped and why attempt failed, address reason for relapse before another quit attempt.</td>
</tr>
<tr>
<td>Stressors</td>
<td>Every visit</td>
<td>Help identify the domestic, social and work factors contributing to smoking tobacco. If low mood, stress or anxiety, identify and manage.</td>
</tr>
<tr>
<td>COPD</td>
<td>At diagnosis</td>
<td>If difficulty breathing when walking fast/up a hill, consider COPD. If known COPD, assess CVD risk.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis</td>
<td>Assess CVD risk.</td>
</tr>
</tbody>
</table>

Advises the patient who smokes tobacco

- Ask if patient is willing to discuss tobacco smoking. For tips on how to communicate effectively, support the patient to make a change.
- Advise patient that stopping tobacco smoking is the most important action s/he can take to improve health, quality of life and increase life expectancy.
- Explain that nicotine is very addictive and stopping can cause withdrawal symptoms: increased appetite, mood changes, difficulty sleeping/concentrating, irritability, anxiety, restlessness. These should improve after 2-4 weeks.
- Advise that most smokers make several attempts to stop before they are successful.
- If patient is pregnant or breastfeeding, stress the importance of stopping for baby’s health.
- Ask if patient is willing/ready to stop smoking tobacco and give the advice below:

If patient is not ready to stop in the next month

- Discuss risks to patient (worsening asthma, infertility, heart attack, stroke, COPD, cancer) to spouse (lung cancer, heart disease) and to children (low birth weight, asthma, respiratory infections).
- Help identify benefits of stopping tobacco smoking like saving money, improved health, taste, sense of smell and appearance and being a positive role model for children.
- Help identify barriers to stopping tobacco smoking and possible solutions.
- Ask if patient is ready to stop smoking tobacco in the next month. If not ready to stop, encourage patient to return, use helpline or support group when ready to stop.

If patient is ready to stop in the next month

- Help patient plan: set date to stop within 2 weeks, seek support from family and friends, support group or helpline. Avoid/manage situations associated with smoking and removing cigarettes, matches, and ashtrays. Help manage cravings using a stepwise approach, starting with step 1. If urge does not subside, move on to next step.
- Step 1: delay as long as you can.
- Step 2: take a deep breath and blow out slowly (repeat 10 times).
- Step 3: drink water as an alternative to tobacco smoking.
- Step 4: distract yourself with reading a book, going for a walk, listening to music, watching TV or other hobby.
- Offer referral for counselling especially if failed previous attempt at stopping, previous depression or alcohol misuse.

Review patient within the first week of stopping tobacco smoking and then as needed.

Cardiovascular disease (CVD) includes ischaemic heart disease, peripheral vascular disease and stroke/TIA.
ALCOHOL AND/OR DRUG USE

Unhealthy alcohol use refers to a pattern of use that puts the patient at risk of dependence and physical, mental and social harm. Any drug use is unhealthy. If patient smokes, encourage to stop. 123.

Assess the patient with unhealthy alcohol use or any drug use

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Note</th>
</tr>
</thead>
</table>
| Symptoms            | • If recently reduced/stopped use and restless, agitated, difficulty sleeping, confused, anxious, hallucinating, sweating, tremors, headache or nausea/vomiting, treat for likely withdrawal. 74.  
• If aggressive/violent or disruptive behaviour. 72.  
• If patient has suicidal thoughts or plans. 72. |
| Harmful use         | • Assess quantity and frequency of alcohol use: if drinking > 14 drinks/week or ≥ 4 drinks/session, explain that this increases risks of harm and dependence.  
• Look for harm: physical harm (like injuries, liver disease, stomach ulcer), mental harm (like depression), social harm (relationship, legal or financial) or risky behaviour. |
| Dependence          | Patient is dependent if ≥ 3 of: strong need to use substance; difficulty controlling use; withdrawal on stopping/reducing; tolerance (needing more); neglecting other interests; continued use despite harm. |
| Stressors           | Help identify domestic, social and work factors contributing to alcohol/drug use. Ask about reasons for his/her substance use. If patient is being abused. 77. |
| Mental health       | • In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either 125.  
• If stress or anxiety. 75. |

Advise the patient with unhealthy alcohol use or any drug use

- If pregnant/planning pregnancy or breastfeeding, advise to avoid alcohol/drugs completely. Alcohol/drugs can harm the developing baby.  
- Suggest patient seeks support from close relatives/friends who do not use alcohol/drugs, a support group or a helpline. 155. Refer patient to social worker, psychologist or counsellor.  
- Discuss risks/harms that using alcohol/drugs may cause. Allow patient to decide for him/herself to stop or cut down. Support the patient to make a change. 154.

Unhealthy alcohol use without dependence
- If pregnant, harmful drinking, previous dependence problem or contraindication (like liver damage, mental illness), advise to stop alcohol completely. Avoid drinking places and keeping alcohol at home.  
- If harmful drinking, advise patient to stop or cut down to low-risk alcohol use: ≤ 2 drinks/day and avoid alcohol on at least 2 days of the week.

Any drug use without dependence
- Advise to stop using illegal or misusing prescription drugs completely.  
- If patient chooses to continue, advise to reduce harm: avoid injections or use sterile injection technique, test regularly for HIV and hepatitis.

Alcohol/drug dependence
Advise that alcohol/drugs need to be stopped slowly. If alcohol/drugs stopped suddenly, withdrawal effects can be harmful. Detoxification (below) will safely wean the body from alcohol or drug/s.

If alcohol/drug dependence, doctor to treat the patient with the help of the carer
- Arrange inpatient detoxification if previous withdrawal delirium/fits or failed detoxification, pregnant, chronic medical or mental illness, homeless/no social support, dependent on opioid or > 1 drug.  
- Doctor can do outpatient detoxification if none of the above. Ensure patient has a close relative/friend to act as supervisor during programme.

Substance | Detoxification programme - Write out programme for patient and chosen supervisor
--- | ---
Alcohol | • Give thiamine 300mg daily for 14 days.  
• Give diazepam 10mg with withdrawal symptoms then 5mg 6 hourly for 3 days. Then 5mg 12 hourly for 2 days. Then 5mg daily for 2 days. Then stop. If withdrawal symptoms persist despite this, refer/discuss.  
Cannabis/Tik/Cocaine/Mandrax | • Medication is not always needed.  
• Treat anxiety or sleep problems with diazepam 5mg daily or 12 hourly, tapering over 5-7 days. Monitor for depression and psychosis.  
Benzodiazepines | • Avoid suddenly stopping benzodiazepines. Withdrawal may take months.  
• Replace benzodiazepine patient is taking with diazepam. If taking lorazepam 0.5mg-1mg, replace with diazepam 5mg. For other benzodiazepines, refer to SAMF, MIC hotline or substance helpline. 155.  
• Decrease diazepam every 2 weeks by 2-2.5mg. If symptoms occur, continue or increase dose for 2 more weeks. Once at 20% of initial dose, decrease by 0.5-2mg every week.  

Review the patient on a detoxification programme daily until stable. Advise to return immediately if any problems. Stop programme if patient resumes alcohol/drug use.

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

Has patient had 1 or more of the following core features of depression for at least 2 weeks?
- Depressed mood most of the day, nearly every day
- Loss of interest or pleasure in activities that are usually pleasurable

Yes
- Depressed mood most of the day, nearly every day
- Loss of interest or pleasure in activities that are usually pleasurable
- Fatigue or loss of energy

No: symptoms likely due to loss/bereavement. Provide support. 125. If persists ≥ 6 months, discuss/refer.

Has patient had 5 or more of the following features of depression for at least 2 weeks?
- Disturbed sleep or sleeping too much
- Change in appetite or weight
- Feeling guilty or worthless
- Reduced concentration or indecisiveness
- Visible agitation or restlessness or talking or moving more slowly than usual
- Ideas or acts of self-harm or suicide

Yes
- Does the patient have difficulty carrying out ordinary work, domestic or social activities?

Yes
- Check for anaemia
  If pallor, check Hb.
  If < 12 (woman) or < 13 (man), anaemia likely. 23.

No:
- Check for thyroid disease
  If weight gain, dry skin, constipation or cold intolerance, check TSH. If abnormal, refer to doctor.

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

Check for medication side effects
Review medication: prednisone, efavirenz, metoclopramide, theophylline and contraceptives can cause depression. Discuss with specialist.

None of above: does the patient have any psychotic symptoms?

Yes
- Check if known bipolar disorder or mania symptoms (now or in the past): are there 3 or more of the following, that have lasted ≥ 1 week and interfered with ordinary work, domestic or social activities?
  - Elevated mood and/or irritability
  - Decreased need for sleep
  - Inappropriate social behaviour
  - Easily distracted
  - Increased activity, feeling of increased energy, talkative, rapid speech
  - Impulsive/reckless behaviour like excess spending, thoughtless decisions, sexual indiscretion
  - Inflated self-esteem

No: has there been a major loss or bereavement within last 6 months?

Yes
- Bipolar disorder likely. Discuss/refer.

No: has patient had depression in the past?

Yes
- Discuss/refer.

No: symptoms likely due to loss/bereavement. Provide support. 125. If persists ≥ 6 months, discuss/refer.

Depression likely 126.

---

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

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• Assess symptoms of depression and anxiety. If no better after 8 weeks of treatment or worse on treatment, discuss/refer. If managing other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Self-harm</td>
<td>Every visit</td>
<td>Asking a patient about thoughts of self-harm/suicide does not increase the chance of this. If patient has suicidal thoughts or plans, assess and manage risk before continuing. Discuss with specialist before starting antidepressant.</td>
</tr>
<tr>
<td>Mania</td>
<td>Every visit</td>
<td>If abnormally happy, energetic, talkative, irritable or reckless, discuss/refer.</td>
</tr>
</tbody>
</table>
| Anxiety        | At diagnosis   | • If excessive worry causes impaired function/distress for at least 6 months with ≥ 3 of: muscle tension, restlessness, irritability, difficulty sleeping, poor concentration, tiredness: **generalised anxiety disorder** likely.  
  • If anxiety is induced by a particular situation/object: **phobia** likely, refer/discuss.  
  • If repeated sudden fear with physical symptoms and no obvious cause: **panic disorder** likely, refer/discuss.  
  • If previous bad experience causing nightmares, flashbacks, avoidance of people/situations, jumpiness or a feeling of detachment: **post traumatic stress disorder** likely. |
| 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**.                                                                                     |
| Alcohol/drug use | Every visit  | In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any. Discuss with specialist.                                                                                       |
| Side effects   | Every visit    | Ask about side effects of antidepressant medication.                                                                                                                                                                                                         |
| Stressors      | Every visit    | Help identify domestic, social and work factors contributing to depression or anxiety. If patient is being abused. If recently bereaved.                                                                                                                           |
| Family planning | Every visit  | • Assess patient’s contraceptive needs.  
  • If patient pregnant or breastfeeding, doctor to discuss risks: the risk to baby from untreated depression may outweigh any risk from antidepressants. If possible, avoid antidepressants in first trimester of pregnancy. Ensure counselling/support and follow-up 2 weekly until stable. If possible, discuss with specialist. |
| Chronic conditions | Every visit | Ensure that other chronic conditions are adequately treated. If on oral steroids, efavirenz or atenolol, discuss with specialist.                                                                                                                               |

Advise the patient with depression and/or generalised anxiety

• Explain that depression is a very common illness that can happen to anybody. It does not mean that a person is lazy or weak. A person with depression cannot control his/her symptoms.  
• Explain that thoughts of self-harm and suicide are common. Advise patient that if s/he has these thoughts, s/he should not act, but tell a trusted person and return for help immediately.  
• Educate the patient that anti-depressants can take 4-6 weeks to start working. Explain that there may be some side effects, but these usually resolve in the first few days.  
• Emphasise importance of adherence even if feeling well. Advise patient that s/he will likely be on treatment for at least 9 months and it is not addictive.  
• Advise to avoid stopping treatment abruptly as patient may have withdrawal symptoms. If stopping, treatment needs to be tapered.  
• Help the patient to choose strategies to get help and cope:
  - Get enough sleep
    - If difficulty sleeping.  
    - Spend time with supportive friends or family.  
  - Encourage patient to take time to relax:
    - Find a creative or fun activity to do.  
    - Do a relaxing breathing exercise each day.  
  - Get active
    - Regular exercise might help.  
    - Access support: Link patient with helpline or support group.
### Treat the patient with depression and/or generalised anxiety

- Refer patient for counselling (ideally cognitive behavioural therapy or interpersonal therapy if available) and to social worker and/or helpline/support group.  
- If occupational therapist (OT) available, refer for mood, self-esteem, motivation, coping skills and constructive use of leisure time.  
- Discuss benefits of antidepressants for depression and generalised anxiety disorder: Respect the patient's decision if s/he declines antidepressants.  
- If generalised anxiety disorder or severe anxiety on starting antidepressant, consider diazepam 2.5-5mg daily as needed, for up to 10 days. Avoid if patient is known to use substances.  
- Start fluoxetine. If fluoxetine poorly tolerated, give instead citalopram. If difficulty sleeping and sedating antidepressant desired and no suicidal thoughts, start instead amitriptyline.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Note</th>
<th>Side effects</th>
</tr>
</thead>
</table>
| Fluoxetine | Start 20mg on alternate days for 2 weeks, then increase to 20mg daily in the morning. If patient has increased anxiety, delay increase in dose for another 2 weeks. | • Explain that anxiety may increase initially and to return if severe.  
- Discuss with specialist if patient has epilepsy, liver or kidney disease.  
- Monitor glucose more often in diabetes.  
- Advise family to monitor and return if condition worsens (suicidal thoughts/ unusual changes in behaviour).  
- If patient unable to tolerate fluoxetine, stop fluoxetine and start citalopram 10mg next day. | Changes in appetite and weight, headache, restlessness, difficulty sleeping, nausea, diarrhoea, sexual problems. |
| Citalopram | Start 10mg daily for 1 week, then increase to 20mg daily. | Avoid if heart failure, arrhythmias, kidney failure. | Drowsiness, difficulty, headache, dry mouth, nausea, sweating, changes in appetite and weight. |
| Amitriptyline | Start 25mg at night. Increase by 25mg every 5 days. Review at 2 weeks: if good response, continue at this dose (75mg). If partial or no response, continue to increase by 25mg every 5 days as needed, up to 150mg/day. | Use if fluoxetine and citalopram contraindicated or poorly tolerated. Avoid if on bedaquiline, suicidal thoughts (can be fatal in overdose), heart disease, urinary retention, glaucoma, epilepsy and elderly patients. | Dry mouth, constipation, difficulty urinating, blurred vision, sedation |

### Decide duration of antidepressant

- Has patient had previous episode/s of depression and/or anxiety?
  - Yes
  - No

- Does patient have any of: severe depression/anxiety, previous suicide attempt/s, sudden onset of symptoms, family history of bipolar disorder?
  - Yes
  - No

- Does patient have generalised anxiety disorder (with or without depression)?
  - Yes
  - No

  - Consider stopping antidepressant when patient has had no/minimal symptoms and has been able to carry out routine daily activities for > 9 months.  
  - Consider stopping antidepressant when patient has had no/minimal symptoms and has been able to carry out routine daily activities for > 12 months.

- Reduce dose gradually over at least 4 weeks. If withdrawal occurs (irritability, dizziness, difficulty sleeping, headache, nausea, fatigue) reduce even more slowly.

- Review 2 weekly, even if not on antidepressants, until symptoms get better, then monthly. Once stable, review 3-6 monthly.  
- If no better after 8 weeks either on antidepressant or not, refer.

---

1Patient has felt nervous, anxious or panicky or been unable to stop worrying or thinking too much.  
2Patient has multiple depressive/anxiety symptoms, occurring nearly every day, that severely impair daily functioning.
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.

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• Assess symptoms of psychosis above. If symptoms of psychosis and:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Varying levels of consciousness over hours/days and/or temperature ≥ 38°C. <strong>Delirium</strong> likely.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Patient has defaulted treatment: restart intramuscular treatment and explore reasons for poor adherence (like side effects, substance misuse).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Good adherence to optimal doses of treatment, discuss/refer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manage other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Self-harm</td>
<td>Every visit</td>
<td>If patient has suicidal thoughts or plans. If intent to harm others, alert intended victim/s if possible.</td>
</tr>
<tr>
<td>Stressors</td>
<td>Every visit</td>
<td>Help identify stressors that may worsen or cause symptoms to recur. If patient is being abused.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>Assess patient’s contraceptive needs. If patient is pregnant, planning pregnancy or breastfeeding, refer to specialist.</td>
</tr>
<tr>
<td>Medication</td>
<td>Every visit</td>
<td>• Ask about treatment side effects. If non-adherent, restart medication at same dose, explore reasons for stopping treatment and refer for community health worker support.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discuss with specialist if patient is on medication that might cause acute psychosis, like prednisone, efavirenz, moxifloxacin and terizidone.</td>
</tr>
<tr>
<td>Weight (BMI)</td>
<td>Every visit</td>
<td>• BMI = weight (kg) ÷ height (m) ÷ height (m). If gaining weight, refer to dietician if available and discuss with specialist about possible alternative schizophrenia treatment.</td>
</tr>
<tr>
<td>Glucose</td>
<td>At diagnosis, then yearly</td>
<td>If known diabetes. If not known with diabetes, check glucose.</td>
</tr>
<tr>
<td>Random total cholesterol</td>
<td>At diagnosis, then yearly</td>
<td>• Assess and manage CVD risk. If cholesterol increasing, discuss with specialist about possible alternative schizophrenia treatment.</td>
</tr>
<tr>
<td>HIV</td>
<td>At diagnosis or if status unknown</td>
<td>Test for HIV. If HIV positive, avoid efavirenz, discuss treatment with specialist.</td>
</tr>
<tr>
<td>Syphilis</td>
<td>At diagnosis</td>
<td>If positive, treat and refer.</td>
</tr>
</tbody>
</table>

^One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.
Anticholinergic side effects include: urinary retention, blurred vision, dry mouth/eyes, constipation.

Extrapyramidal side effects (EPSE) include: acute dystonic reaction (acute painful muscle spasm), abnormal involuntary movements, muscle restlessness, slow movements, tremor or rigidity.

Treat the patient with schizophrenia

• Give medication as in table below. Use lowest effective dose. Give one medication at a time. Allow 6 weeks on typical effective dose before considering medication ineffective.
• If repeated adherence problems, consider changing from oral to long-acting intramuscular medication (for health care workers with advanced psychiatric training). If possible, stabilise patient on oral antipsychotic agent before changing to IM depot preparation. Once stable on long-term depot, reduce oral formulation.
• If unsure or more than typical effective dose needed, discuss with specialist.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Starting dose</th>
<th>Maintenance dose</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>Start 1mg orally daily. If poor response, increase gradually to 5mg daily. If &gt; 65 years start 0.5mg 12 hourly and increase more gradually.</td>
<td>Usually 5mg daily.</td>
<td>Minimal anticholinergic side effects(^1). Monitor for extrapyramidal side effects (EPSE)(^2): if present, switch to risperidone.</td>
</tr>
</tbody>
</table>
| Risperidone               | Start 2mg orally daily. If poor response after 4 weeks, increase to 4mg daily.                    | Usually 2-4mg daily.                       | • Use in patients with extrapyramidal side effects (EPSE).  
  • Use short term for breakthrough episodes. Discuss, if possible. |
| Flupenthixol decanoate    | Start single dose 20mg IM. If poor response, give further 20mg IM after 1-2 weeks. If > 65 years: avoid use of IM antipsychotics, discuss with specialist. | Usually 10-40mg IM every 4 weeks.          | • Full response can take 2 months.  
  • Fewer anticholinergic side effects\(^1\) than chlorpromazine.  
  • Monitor for extrapyramidal side effects (EPSE): if any EPSE develop, start orphenadrine 50mg 12 hourly and refer for specialist review. |
| Zuclopenthixol decanoate  | Start single dose 100mg IM. If poor response, give further 200mg IM after 1-2 weeks. If > 65 years: avoid use of IM antipsychotics, discuss with specialist. | Usually 200-400mg IM every 4 weeks.        | • One of the most sedating antipsychotics. Avoid starting unless no other option. |
| Chlorpromazine            | Start 25mg orally 12 hourly. If poor response increase at 25mg intervals.                         | Usually 75-300mg daily but 800mg may be needed. Once symptoms controlled, give as once daily bedtime dose. | • Continue chlorpromazine only if patient stable on it and coping with any side effects. |

Look for and manage schizophrenia treatment side effects

| Urinary retention         | Stop treatment, insert urinary catheter and refer same day.                                  |                                             |                                             |
| Blurred vision            | Stop treatment and refer same day.                                                           |                                             |                                             |
| Painful muscle spasms: acute dystonic reaction likely | Usually within 2 days of starting medication. Give biperiden 2.5mg IM. If needed, repeat after 30 minutes, up to 3 doses in 24 hours. Refer same day. If biperiden unavailable, give instead promethazine 50mg IM. |                                             |                                             |
| Abnormal involuntary movements | Stop treatment and discuss/refer same day. Doctor to consider switch to risperidone (above). |                                             |                                             |
| Muscle restlessness       | Discuss switch to risperidone (above) and arrange specialist review. Give orphenadrine 50mg 8 hourly whilst awaiting review. |                                             |                                             |
| Slow movements, tremor or rigidity | Discuss with specialist whether to change medication. |                                             |                                             |
| Breast enlargement, nipple discharge, amenorrhea | Usually when starting/increasing dose. Usually self-limiting over hours to days. Advise to stand up slowly. |                                             |                                             |
| Dizziness/fainting on standing | Usually self-limiting. |                                             |                                             |
| Dry mouth/eyes            | Usually self-limiting.                                                                      |                                             |                                             |
| Constipation              | Usually self-limiting. Advise high fibre diet and adequate fluid intake.                      |                                             |                                             |

Once stable, review 3 monthly. Advise to return immediately if symptoms of psychosis. If restarting treatment after default, review after 2 weeks, sooner if symptoms worsen.

\(^1\)Anticholinergic side effects include: urinary retention, blurred vision, dry mouth/eyes, constipation.  
\(^2\)Extrapyramidal side effects (EPSE) include: acute dystonic reaction (acute painful muscle spasm), abnormal involuntary movements, muscle restlessness, slow movements, tremor or rigidity.
DEMENTIA

Assess the patient with dementia with the help of the carer

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• If recent change in mood, energy/interest levels, sleep or appetite, consider depression and discuss/refer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If suicidal thoughts or plans.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If sudden deterioration in behaviour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If hallucinations (seeing or hearing things), delusions (unusual/bizarre beliefs), agitation or wandering, discuss/refer to mental health practitioner.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manage other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Side effects</td>
<td>If on treatment</td>
<td>If abnormal movements or muscle restlessness, stop treatment and discuss/refer same day. If painful muscle spasms, manage below.</td>
</tr>
<tr>
<td>Vision/hearing problems</td>
<td>Every visit</td>
<td>Refer to optometry/audiology services for testing and proper devices.</td>
</tr>
<tr>
<td>Nutritional status</td>
<td>Every visit</td>
<td>Ask about food and fluid intake. If BMI &lt; 18.5 arrange nutritional support. BMI = weight (kg) ÷ height (m) ÷ height (m).</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Every visit</td>
<td>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.</td>
</tr>
<tr>
<td>BP</td>
<td>At diagnosis</td>
<td>If known hypertension. If not, check BP: if BP ≥ 140/90.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis, then depending on risk</td>
<td>Assess CVD risk.</td>
</tr>
<tr>
<td>HIV</td>
<td>At diagnosis or if status unknown</td>
<td>Test for HIV. If HIV positive, give routine care. If new HIV diagnosis with dementia, discuss with specialist.</td>
</tr>
<tr>
<td>Syphilis</td>
<td>At diagnosis</td>
<td>If positive, treat and refer.</td>
</tr>
<tr>
<td>Thyroid function</td>
<td>At diagnosis</td>
<td>Check TSH. If abnormal, refer.</td>
</tr>
<tr>
<td>Glucose</td>
<td>At diagnosis</td>
<td>If known diabetes. If not known with diabetes, check glucose.</td>
</tr>
</tbody>
</table>

Advise the patient with dementia and his/her carer

• Discuss what can be done to support the patient, carer/s and family. Identify local resources, social worker, counsellor, NGO. Refer to occupational therapy if available.

Advising the carer/s to:
- Give regular orientation information (day, date, weather, time, names)
- Stimulate memories and give current information with newspaper, radio, TV, photos.
- Use simple short sentences.
- Maintain a routine.
- Remove clutter and potential hazards at home.
- Maintain physical activity and plan recreational activities.

Treat the patient with dementia

• If HIV positive, ensure patient on ART, as HIV-associated dementia often responds well to ART.

• If aggression, wandering, night-time disturbance or psychotic symptoms or anxiety, discuss/refer. Avoid benzodiazepines (lorazepam, diazepam, midazolam) if > 65 years.

Review the patient with dementia every 6 months.
### Assess the patient with epilepsy

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Ask about fit frequency and review fit diary. Manage other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Adherence</td>
<td>Every visit</td>
<td>Ask if takes treatment every day. If not, explore reasons, support adherence and refer to community health worker.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Every visit</td>
<td>Ask about side effects of treatment. If side effects intolerable, switch anticonvulsant.</td>
</tr>
<tr>
<td>Other medication</td>
<td>Every visit</td>
<td>If patient on any other medication (especially TB treatment, ART or contraceptive), consider possible interactions: check SAMF or discuss with MIC hotline.</td>
</tr>
</tbody>
</table>
| Family planning       | Every visit    | - Assess patient’s contraceptive needs. If pregnant or planning pregnancy: discuss/refer to specialist. Give routine antenatal care and give folic acid 5mg daily.  
- Avoid sodium valproate in pregnancy as may cause birth abnormalities. Explain this risk to patient. If on sodium valproate, avoid stopping suddenly as fits may recur, continue sodium valproate and advise reliable contraception. If pregnant, refer to high risk antenatal clinic within 2 weeks. |
| Depression            | Every visit    | In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either. |
| Alcohol/drug use      | Every visit    | In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any. |

### Advise the patient with epilepsy

- If newly diagnosed, refer to community health worker and Epilepsy South Africa for support. Help to get a MedicAlert® bracelet.  
- Advise to keep a fit diary to record frequency and duration of fits, triggers and changes in medication. Educate about the need for adherence and to continue treatment even if no fits.  
- Help identify and avoid triggers like lack of sleep, alcohol/drug use, dehydration, flashing lights and video games.  
- Help reduce chance of injury: advise to avoid dangers like heights, fires, swimming alone, walking/cycling on busy roads, operating machinery. Advise to avoid driving until fit free for 1 year.  
- Advise patient there are many medications that may interact with anticonvulsants (see table 132) and to discuss with doctor before starting any new medication.

### Treat the patient with epilepsy

- **If not on treatment:**  
  - Choose an anticonvulsant based on if patient is a man or woman, child-bearing potential and other medication.  
  - Start a single anticonvulsant at low dose and increase until fits stop or side effects intolerable.  
- **If already on treatment:**  
  - If woman of child-bearing potential on sodium valproate, discuss risks and explain the need to switch anticonvulsant.  
  - If no further fits, continue same dose.  
  - If still having fits:  
    - If poor adherence: support adherence, continue same dose and review patient in 2 weeks.  
    - If medication interactions: adjust medications as needed and review patient in 2 weeks.  
    - If none of above: increase anticonvulsant dose. If already on maximum dose for 4 weeks, switch anticonvulsant once. If already on second anticonvulsant, avoid switching and refer instead.  
- **If switching medication:** add new anticonvulsant and increase as needed. Continue old anticonvulsant for first 2 weeks, then slowly reduce dose over 6-8 weeks, until old anticonvulsant stopped.

### Continue to treat the patient with epilepsy

- If fitting now. If not known with epilepsy and has had a recent fit, assess further.  
- A doctor must confirm the diagnosis of epilepsy and start long term anticonvulsant medication.

---

1. One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.  
2. If woman on sodium valproate becomes pregnant, risks to baby include problems with development of spine, brain and other learning problems.  
3. Reliable contraception includes copper intrauterine contraceptive device (IUCD), subdermal implant, injectable or sterilisation.

---

131
Review the patient with epilepsy

- If no further fits, review 6 monthly.
- If still fitting, doctor to review monthly until fits stop.
- Refer if any of:
  - Newly diagnosed for CT scan
  - Seizures other than generalised tonic-clonic seizures (e.g. absence and focal seizures)
  - Fits increasing in frequency or changing in type
  - No fits for ≥ 2 years, for possible treatment withdrawal
  - Patient has switched anticonvulsant once and is adherent but still fitting after 4 weeks on maximum dose of second anticonvulsant.

**Medication** | **Dose** | **Notes** | **Side effects**
--- | --- | --- | ---
Lamotrigine | **Starting dose**: 25mg daily for 2 weeks, then 50mg daily for 2 weeks. Then increase by 50mg every 2 weeks until controlled (usually 50mg 12 hourly).  
**Usual maintenance dose**: 50-100mg 12 hourly (or 100-200mg daily)  
**Maximum dose**: 250mg 12 hourly | - Preferred anticonvulsant if on ART.  
- No significant interactions with dolutegravir.  
- If on lopinavir/ritonavir: doctor to double the dose of lamotrigine.  
- May also interact with paracetamol, rifampicin, other anticonvulsants, oral contraceptive: check SAMF or discuss with MIC 155.  
- If known liver or kidney disease, discuss with specialist.  
- If lamotrigine not suitable or not tolerated, refer. | - **Urgent**: rash 64  
- **Self-limiting**: nausea, vomiting, blurred or double vision, dizziness, drowsiness, insomnia, fatigue

Carbamazepine | **Starting dose**: 100mg 12 hourly for 1 week, then 200mg 12 hourly for 1 week. If needed, increase every week by 100-200mg/day.  
**Usual maintenance dose**: 300-600mg 12 hourly  
**Maximum dose**: 600mg 12 hourly | - Avoid if on needing ART.  
- May interact with dolutegravir, isoniazid, rifampicin, warfarin, fluoxetine, amitriptyline, theophylline, other anticonvulsants, oral/subdermal contraceptive: check SAMF or discuss with MIC hotline 155. | - **Urgent**: rash 64  
- **Self-limiting**: drowsiness, dry mouth, dizziness, nausea

Phenytoin | **Starting dose**: 200mg at night (this is equivalent to 4.5–5mg/kg lean body mass daily). If needed, increase up to 300mg daily (or 150mg 12 hourly).  
**Maximum dose**: 300mg daily | - Avoid if a woman or on needing ART.  
- May interact with isoniazid, rifampicin, warfarin, fluoxetine, fluconazole, theophylline, folate, other anticonvulsants, oral/subdermal contraceptive: check SAMF or discuss with MIC hotline 155.  
- If on > 300mg daily, monitor drug levels regularly. | - **Urgent**:  
- Rash 64  
- If unsteady on feet, blurred/double vision or slurring, doctor to check phenytoin level for toxicity. If doctor not available, refer same day.  
- **Self-limiting**: drowsiness  
- **Other**: large gums; facial hair/course features in women: switch medication.
CHRONIC ARTHRITIS

- If patient has discrete episodes of joint pain and swelling that completely resolve in between, consider gout 134.
- The patient with chronic arthritis has had continuous joint pain for at least 6 weeks. Distinguish mechanical osteoarthritis from inflammatory rheumatoid arthritis as follows:

**Osteoarthritis** likely if:
- Affects joints only.
- Weight-bearing joints and possibly hands and feet.
- Joints may be swollen but not warm.
- Stiffness on waking lasts less than 30 minutes.
- Pain is worse with activity and gets better with rest.

**Inflammatory arthritis** likely if:
- May be systemic: weight loss, fatigue, poor appetite, muscle wasting.
- Hands and feet are mainly involved.
- Joints are swollen and warm.
- Stiffness on waking lasts more than 30 minutes.
- Pain and stiffness get better with activity.

*If inflammatory arthritis likely or uncertain of diagnosis, refer for specialist assessment.*

**Assess**

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Activities of daily living</td>
<td>Every visit</td>
<td>Ask if patient can walk as well as before, can cope with buttons and use knife and fork properly.</td>
</tr>
<tr>
<td>Sleep</td>
<td>Every visit</td>
<td>If patient has difficulty sleeping.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>In the past month, has patient: 1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either, 125.</td>
</tr>
<tr>
<td>Joints</td>
<td>Every visit</td>
<td>Look for warmth, tenderness and limitation in range of movement of joints.</td>
</tr>
<tr>
<td>BMI</td>
<td>At diagnosis</td>
<td>BMI = weight (kg) ÷ height (m) ÷ height (m). BMI &gt; 25 puts stress on weight-bearing joints. Assess CVD risk, 110.</td>
</tr>
<tr>
<td>HIV</td>
<td>At diagnosis</td>
<td>Test for HIV, 195.</td>
</tr>
</tbody>
</table>

**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 patient to manage his/her CVD risk, 111.
- Encourage the patient to be as active as possible, but to rest with acute flare-ups.
- If patient smokes, encourage to stop, 123.
- Refer patient and carer for education about chronic arthritis, to available support group and helpline, 155.
- Ensure the patient using disease modifying medication knows to have regular blood monitoring depending on the prescribed medications from the specialist clinic.

**Treat the patient with chronic arthritis**

- If rheumatoid arthritis or difficulty with activities of daily living, refer to physiotherapist or occupational therapist.
- Give paracetamol 1g 6 hourly as needed. If this effective, reduce paracetamol dose to 500mg 6-8 hourly as needed. Give methyl salicylate ointment to apply to affected areas.
- If no response to paracetamol and inflammation present in the patient with osteoarthritis, give ibuprofen 400mg 8 hourly with food as needed for 7 days. If > 65 years, previous peptic ulcer, on aspirin, warfarin or prednisone, also give lansoprazole 30mg daily for 7 days.
- Rheumatoid arthritis must be treated early with disease modifying anti-rheumatic drugs to control symptoms, preserve function, and minimise further damage.
- If inflammatory arthritis likely and awaiting specialist confirmation: give ibuprofen 4,000mg 8 hourly with food for up to 3 months.
- If known with rheumatoid arthritis and symptoms much worse (acute flare): refer. While waiting for appointment, give ibuprofen 400mg 8 hourly with food for up to 2 weeks. If asthma, hypertension, heart failure, kidney disease or on warfarin, give instead prednisone 7.5mg daily for up to 2 weeks.

**Review monthly until symptoms controlled, then 3-6 monthly. If poor response to treatment, refer to specialist.**

---

1 Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease or on warfarin, discuss instead. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen. 2 If > 65 years, previous peptic ulcer, on aspirin or prednisone, also give lansoprazole 30mg daily to take while on ibuprofen.
GOUT

- An acute gout attack tends to affect a single joint, most commonly the big toe or knee. There is a sudden onset of severe pain, redness and swelling. It resolves completely, usually within days.
- Chronic tophaceous gout tends to asymmetrically affect > 1 joint and may not be very painful. Deposits can be seen or felt at the joints and there is incomplete recovery.

Assess the patient with gout

<table>
<thead>
<tr>
<th>Assess</th>
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<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage symptoms as per symptom pages.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks1/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any 124.</td>
</tr>
<tr>
<td>Medication</td>
<td>Every visit</td>
<td>Hydrochlorothiazide, furosemide, ethambutol, pyrazinamide and aspirin may induce a gout attack. Discuss with doctor. Avoid stopping aspirin given for CVD risk.</td>
</tr>
</tbody>
</table>
| Joints          | Every visit    | • Recognise the acute gout attack: Sudden onset of 1-3 hot, extremely painful, swollen joints with red, shiny overlying skin (often big toe, knee or ankle).  
                  |                               | • Recognise chronic tophaceous gout: deposits appear as painless yellow hard irregular lumps around the joints (picture). |
| CVD risk        | At diagnosis, then depending on risk | • Assess CVD risk 110.  
                  |                               | • If BMI < 18.5 or patient < 40 years, refer within 1 month to exclude possible cancer cause for gout. |
| Creatinine (eGFR) | At diagnosis, then 6 monthly | If eGFR < 60, refer.                                                                                                                |
| Urate           | • At diagnosis  
                  | • On allopurinol | • Wait at least 2 weeks after an acute gout attack before checking urate level. If urate > 0.5, start allopurinol (see below).  
                  |                               | • If starting/on allopurinol: repeat urate monthly and increase allopurinol dose if needed until urate < 0.35, then repeat urate yearly. |

Advise the patient with gout

- Help the patient to manage his/her CVD risk 111.
- Give dietary advice:  
  - Reduce alcohol (especially beer), sweetened fizzy drinks, seafood, offal and meat intake.  
  - Increase low-fat dairy intake.
  - Avoid fasting and dehydration as they may increase the risk of an acute gout attack.
- Advise patient to avoid medication above that may induce an acute gout attack. Discuss with doctor before starting any new medication.

Treat the patient with gout

- Treat the patient with an acute gout attack
  - Give ibuprofen 4 400mg with food 8 hourly until pain and swelling are better.  
  - If peptic ulcer, asthma, hypertension, heart failure or kidney disease, avoid ibuprofen and give instead prednisone 40mg daily for 5 days.
  - If patient is already using allopurinol, avoid stopping it during the acute attack.
- Treat the patient with chronic gout
  - Patient needs allopurinol if any of: ≥ 2 attacks per year, chronic tophaceous gout (picture), kidney stones, kidney disease, serum urate > 0.5.
  - Wait at least 3 weeks after an acute gout attack before starting allopurinol.
  - Start allopurinol 100mg daily. Use lowest dose to keep urate < 0.35: if needed, increase monthly by 100mg daily, up to 400mg daily. Usual maintenance dose 300mg daily.

If no response to treatment or unsure about diagnosis, doctor to discuss/refer patient to specialist.

1One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.  
2BMI = weight (kg) ÷ height (m) ÷ height (m).  
3If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.
FIBROMYALGIA

- Consider fibromyalgia if the patient has had general body pain above and below the waist, affecting both sides of the body for more than 3 months associated with at least 11 of 18 tender points (see picture) on palpation.
- Fibromyalgia diagnosis more likely if any of: woman, family history, fatigue, reduced ability to think and remember clearly, mood or sleep disturbances.
- Check for other causes of general body pain:
  - If weight loss
  - 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.
  - Check CRP, Hb, TSH and test for HIV.
- *A doctor must make or confirm the diagnosis of fibromyalgia.* If joint problem, HIV positive, blood results abnormal or uncertain, consider another diagnosis and refer.

Assess the patient with fibromyalgia

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• Manage symptoms as on symptom pages. Ask patient to identify the 3 symptoms that bother her/him most and focus on these.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not dismiss all symptoms as fibromyalgia: exclude treatable and serious illness. If unsure, refer.</td>
</tr>
<tr>
<td>Sleep</td>
<td>Every visit</td>
<td>If patient has difficulty sleeping.</td>
</tr>
<tr>
<td>Stressors</td>
<td>Every visit</td>
<td>Help identify psychosocial stressors that may exacerbate symptoms. If stress or anxiety.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>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.</td>
</tr>
<tr>
<td>Chronic arthritis</td>
<td>Every visit</td>
<td>If patient also has chronic arthritis, give routine care.</td>
</tr>
</tbody>
</table>

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.
  - Refer to available support group and helpline.
  - 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 on maximum dose, refer.

A supportive relationship with the same health practitioner can contain frequent visits for multiple problems. Review patient 6 monthly once stable.

1 Avoid if on bedaquiline.
CONTRACEPTION

Give emergency contraception if patient had unprotected sex in past 5 days and does not want pregnancy:

- Give as soon as possible single dose levonorgestrel 1.5mg orally or if patient chooses, insert copper intrauterine contraceptive device (IUCD) instead.
  - If patient > 80kg, BMI ≥ 30, or on antiretrovirals, rifampicin, phenytoin or carbamazepine, increase dose of levonorgestrel to 3mg or offer copper IUCD instead.
  - If patient vomits < 2 hours after taking levonorgestrel, repeat dose or offer copper IUCD instead.
  - Offer to start long-term contraceptive at same visit (if IUCD not chosen).
- Advise patient to return for pregnancy test if next period is more than 1 week late.
- Consider need for HIV and hepatitis B post-exposure prophylaxis ①78.

Assess the patient starting and using contraception

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
</table>
| Symptoms | Every visit | • Check for symptoms of STIs: vaginal discharge, ulcers, lower abdominal pain. If present ①41. If sexual problems ①50.  
• If > 40 years, ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping and sexual problems ①147. If menopausal, decide how long to continue contraceptive ①147.  
• 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 ①137. |
| Side effects | Every visit | If already on contraceptive, ask about side effects of method ①137. |
| Sexual Health | Every visit | Ask about risky sexual behaviour: patient or regular partner has new or multiple partner/s, uses condoms unreliably or has risky alcohol/drug use ①124. |
| Other medication | Every visit | If on ART, TB or epilepsy treatment, check method is suitable ①137. If not suitable, choose/change to copper IUCD or injectable. |
| Vaginal bleeding | Every visit | If abnormal vaginal bleeding: if already on contraceptive, see method to manage ①137. If not yet on contraceptive ①49. |
| Weight (BMI) | Every visit | If BMI > 25, assess CVD risk ①110. |
| BP | First visit, every visit if on pill or injectable | • Check BP: if ≥ 140/90 ①114.  
• If hypertension or BP ≥ 140/90, avoid/change from combined oral contraceptive. If BP ≥ 160/100, also avoid/change from injectable. |
| Breast check | First visit, then yearly② | Check for lumps in breasts ①316 and axillae ①21. |
| Pregnancy | Every visit | • Before starting contraception, exclude pregnancy: if after day 7 of cycle and patient has had unprotected sex since last period, advise patient to abstain or use condoms until next period. Start contraception when period starts. If period delayed, do pregnancy test. If pregnant ①138.  
• If pregnancy suspected (nausea/breast tenderness or if using IUCD/combined oral contraceptive and missed period), do pregnancy test. If pregnant, stop method and ①138. |
| HIV | Every visit | Test for HIV ①95. |
| Cervical screen | When needed | If HIV negative: do 3 routine screens in a lifetime from age 30, with a 10-year interval between each screen ①47; if HIV positive: do screen every 3 years from time of HIV diagnosis ①47. |

Advise the patient starting and using contraception

- Educate patient to use contraceptive reliably. Advise to discuss concerns/problems with method and find an alternative, rather than stopping it and risking unwanted pregnancy.
- Advise patient on pill or implant to tell clinician if starting ART, TB or epilepsy treatment as these may interfere with pill or implant effectiveness.
- If vomits within 2 hours, or severe diarrhoea within 12 hours of taking pill, repeat dose as soon as possible. If persistent vomiting/diarrhoea > 24 hours, advise to use condoms or abstain during illness and for 7 days after resolved.
- Demonstrate and give male/female condoms. Recommend dual contraception: one method of contraception plus condoms to protect from STIs and HIV.
- Encourage patient to have 1 partner at a time and if HIV negative to test for HIV between partners. Advise partner/s to be tested for HIV.
- Educate about the availability of emergency contraception (see above) and termination of pregnancy ①139 to prevent unwanted pregnancy.

②BMI = weight (kg) / height (m) 2. ①If patient > 40 years old: check breasts 6 monthly.

Health for All ①51
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:

<table>
<thead>
<tr>
<th>Method</th>
<th>Help patient to choose method</th>
<th>Instructions for use</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper intrauterine contraceptive device (IUCD)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
  - eg. Cu T380A (5 year device)  
  - can be inserted within 48 hours of delivery  
  - effective for 3-5 years depending on the device used.  
  - Fertility returns on removal.  
  - avoid if current STI, unexplained vaginal bleeding, abnormal cervix/uterus.  
  - can be inserted within 48 hours of delivery  
|  
  - Insert any time during cycle.  
  - Trained staff to insert/remove.  
  - Give ibuprofen if ≥ 2 active pills missed during:  
  - if > 24 hours diarrhoea or vomiting, use condoms or abstain (continue for 7 days once resolved).  
  - No need to adjust dosing interval for ART, TB or epilepsy treatment.  
|  
  - Heavy or painful periods: reassure usually resolves within 3-6 months. To assess and manage if excessive bleeding or pain after insertion, refer.  
  - Irritation of partner’s penis during sex: cut IUCD strings shorter.  |
| Subdermal implant  |  
  - eg. Etonogestrel 68mg (one rod: 3 years)  
  - eg. Levonorgestrel 2x75mg (two rods: 5 years)  
  - effective for 3-5 years depending on the device used.  
  - Fertility returns on removal.  
  - May be inserted postpartum at any stage.  
  - Avoid if unexplained vaginal bleeding, previous breast cancer, liver disease.  
  - Use with caution if on other medication.  
|  
  - Plastic rod just under skin of upper arm.  
  - Trained staff to insert/remove.  
  - If inserted after day 7 of cycle, use condoms or abstain for 7 days.  
  - Give ibuprofen if ≥ 2 active pills missed during:  
  - 400mg 8 hourly with food as needed for up to 3 days for pain after insertion.  
|  
  - Amenorrhoea: reassure this is common.  
  - Abnormal bleeding: common. To assess and manage.  
  - Acne: change to combined oral contraceptive or non-hormonal method.  
  - Headaches: if severe, change to non-hormonal method.  
  - Weight gain (less with progesterone-only pill)  
  - Moodiness: reassure this should resolve. If persists, assess for low mood, stress or anxiety.  |
| Progestogen injection  |  
  - eg. Medroxyprogesterone (DMPA) IM 150mg 12 weekly  
  - eg. Norethisterone enantate (NET-EN) IM 200mg 8 weekly  
  - fertility can be delayed 9 months or more after last injection.  
  - Avoid if unexplained vaginal bleeding, previous breast cancer, ischaemic heart disease, previous stroke, liver disease or diabetes complications.  
  - Can be used postpartum (avoid for first 48 hours).  
|  
  - If started after day 7 of cycle, use condoms or abstain for 7 days.  
  - No need to adjust dosing interval for ART, TB or epilepsy treatment.  |
| Progestogen-only pill (POP)  |  
  - 1 tablet daily  
  - eg. Levonorgestrel 30mcg  
  - Must be motivated to take pill reliably every day.  
  - Fertility returns once pill is stopped.  
  - Avoid both if previous breast cancer, liver disease or on rifampicin, phenytoin or carbamazepine.  
  - Avoid both if previous breast cancer, liver disease or on rifampicin, phenytoin or carbamazepine.  
|  
  - 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)  |  
  - 1 tablet daily  
  - Monophasic: eg. ethinylestradiol/levonorgestrel 30mcg/150mcg  
  - Triphasic: eg. ethinylestradiol/levonorgestrel (varying doses)  
  - use both with caution if on efavirenz, nevirapine, rifabutin/ritonavir as contraceptive may be less effective. advise to use condoms as well and consider alternative method (copper IUCD or injectable). May decrease lamotrigine levels.  
  - Also avoid COC if smoker ≥ 35 years, migrants and ≥ 35 years or visual disturbances, postpartum. BP ≥ 140/90, hypertension, CVD risk > 10%, current or previous deep vein thrombosis/pulmonary embolus, previous stroke, ischaemic heart disease or diabetes complications.  
  - Use both with caution if on efavirenz, nevirapine, rifabutin/ritonavir as contraceptive may be less effective. advise to use condoms as well and consider alternative method (copper IUCD or injectable). May decrease lamotrigine levels.  
|  
  - Must be taken every day at the same time.  
  - If started after day 5 of cycle, use condoms or abstain for 7 days.  
  - If vomiting within 2 hours, or severe diarrhoea within 12 hours of taking pill, repeat dose.  
  - If > 24 hours diarrhoea/vomiting, use condoms or abstain (continue for 7 days once resolved).  |
| Sterilisation  |  
  - Tubal ligation/vasectomy  
  - permanent contraception  
  - surgical procedure  
|  
  - Refer for assessment.  
  - Written informed consent is needed.  
|  
  - Wound pain, swelling or bleeding: refer.  |

Manage the patient who has missed an injection or pill

- If ≤ 2 weeks late: give the injection.
- If > 2 weeks late:
  - exclude pregnancy. If pregnant, refer.  
  - if not pregnant, give injection and use condoms or abstain for 7 days. If unprotected sex in past 5 days, offer emergency contraception.  

Missed progestogen-only pill (> 3 hours late)

- Take pill as soon as remembered, continue pack.
- If unprotected sex in past 5 days, also offer emergency contraception.

Missed combined oral contraceptive (> 24 hours late)

- If 1 active pill missed: take 1 pill immediately and take next pill at usual time.
- If ≥ 2 active pills missed during:
  - first 7 active pills: offer emergency contraception, restart active pills 12 hours later.
  - middle 7 active pills: take the most recent missed pill immediately (discard others). Continue remaining pills as usual. No emergency contraception required.
  - last 7 active pills: finish active pills of current pack. Omit inactive pills. Immediately start active pills of next pack.

Review the patient on oral contraceptive after 3 months, then 6 monthly. Review the patient with subdermal or IUCD 6 weeks after insertion, then as needed.

1 Avoid if chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage.  
2 Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.  
3 The subdermal implant may be less effective on efavirenz, rifampicin, phenytoin and carbamazepine. If patient chooses to use implant, advise to use condoms as well and consider alternative method (copper IUCD or injectable).  
4 The subdermal implant may be less effective on efavirenz, rifampicin, phenytoin and carbamazepine. If patient chooses to use implant, advise to use condoms as well and consider alternative method (copper IUCD or injectable).  
5 Avoid COC for 6 weeks after delivery and for 6 months if breastfeeding. If unable to exclude pregnancy, give progestogen-only pill and condoms for 2 weeks, then give injection if pregnancy test negative.
THE PREGNANT PATIENT

Give urgent attention to the pregnant patient with any of:
- Fitting or just had a fit
- BP ≥ 140/90 and persistent headache/blurred vision/abdominal pain: treat as severe pre-eclampsia
- BP ≥ 160/110 and ≥ 1+ proteinuria: treat as severe pre-eclampsia
- BP ≥ 160/110 without proteinuria: treat as severe hypertension
- Temperature ≥ 38°C and severe back or abdominal pain
- Difficulty breathing

Management:
- If difficulty breathing, give face mask oxygen and refer urgently.
- If BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens. Refer urgently.
- If temperature ≥ 38°C and difficulty breathing/back pain/abdominal pain, give ceftriaxone 1g IV/IM unless PROM (see below). Refer urgently.

Fitting or just had a fit
- If < 20 weeks → 15.
- If between 20 weeks and 1 week postpartum, treat for eclampsia:
  - Lie patient in left lateral position.
  - Avoid placing anything in mouth.
  - Give 100% face mask oxygen.
  - Give magnesium sulphate:
    - Give magnesium sulphate 4g in 200mL sodium chloride 0.9% IV over 20 minutes and 5g IM in each buttock. Repeat 5g IM 4 hourly in alternate buttocks.
    - Insert catheter and record urine output every hour.
    - Stop magnesium if urine output < 100mL in 4 hours or respiratory rate < 16’ or knee reflexes disappear.
    - If fit persists or recurs, give further magnesium sulphate 2g IV over 10 minutes. If no response, discuss.
    - If BP ≥ 160/110 and patient alert: give nifedipine 10mg to swallow, not chew. Repeat BP after 30 minutes: if still ≥ 160/110, give second dose of nifedipine 10mg.
    - Refer urgently.

Severe pre-eclampsia
- Early pregnancy < 22 weeks
  - Cervical os open/dilated or products of conception in cervical os/vagina?
    - No
    - Threatened or complete miscarriage likely
      - Refer to exclude ectopic pregnancy and confirm diagnosis.
    - Yes
    - Incomplete or inevitable miscarriage likely
      - Remove products of conception digitally if possible.
      - If bleeding heavy (pad soaked in < 5 minutes):
        - Give IV fluids as above.
        - Give oxytocin 20units IV diluted in 1L sodium chloride 0.9% at 125mL/hour.
      - If pain, give paracetamol 1g 6 hourly.
  - Late pregnancy ≥ 22 weeks
    - Avoid digital vaginal examination.
    - Give IV fluids as above.

Severe hypertension
- If < 26 weeks: refer to hospital.
- If 26-33+ weeks:
  - Give 2 doses of betamethasone 12mg IM 12 hours apart. Record time given in referral letter so second dose can be given at hospital.
  - Give sodium chloride 0.9% 200mL IV, then nifedipine 20mg orally. If still contractions after 30 minutes, give another 10mg. Then give 10mg 4 hourly until transferred.
  - Refer urgently.
- If ≥ 34 weeks: allow labour to continue at MOU.

Vaginal bleeding
- If temperature ≥ 38°C or foul-smelling products of conception, give ceftriaxone 1g IV/IM and metronidazole 400mg orally.
- If rhesus negative, give anti-D immunoglobulin 100mcg IM.

Late pregnancy
- If temperature ≥ 37 weeks: preterm labour likely
- Sudden gush of clear or pale fluid from vagina with no contractions: prelabour rupture of membranes (PROM) likely

Swollen painful calf
Vaginal bleeding
Decreased/no fetal movements
Painful contractions < 37 weeks: preterm labour likely

Preterm labour
- Confirm amniotic fluid with sterile speculum: litmus turns blue.
- Avoid digital vaginal examination.
- If chorioamnionitis: give ampicillin 1g IV and metronidazole 400mg orally. Refer urgently.
- If no chorioamnionitis:
  - If ≥ 37 weeks: if not in active labour 12 hours after PROM, give ampicillin 1g IV and metronidazole 400mg orally. Refer urgently.
  - If < 37 weeks: give amoxicillin 500mg and metronidazole 400mg both 8 hourly.
  - If 26-33+ weeks, also give 2 doses betamethasone 12mg IM 12 hours apart. Record time given in referral letter so second dose can be given at hospital.
  - Refer urgently.

Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. If respiratory rate < 16, give calcium gluconate 10% 10mL IV slowly over 2 minutes. If gestation not known, manage as late pregnancy if uterus palpable above umbilicus;*temperature ≥ 38°C, painful abdomen or foul-smelling amniotic fluid; If penicillin allergy (history of anaphylaxis, urticaria or angioedema), give instead azithromycin 500mg daily.

*If temperature ≥ 38°C, painful abdomen or foul-smelling amniotic fluid.

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Approach to the newly diagnosed pregnant patient not needing urgent attention

Does the patient want the pregnancy?

- No or patient unsure
- Yes

**Patient requests a TOP**

- Check the following (avoid delaying TOP referral):
  - Screen for STI: if vaginal discharge, rash, itch, lumps, ulcers.
  - Do a cervical screen if needed.
  - Test for HIV.
  - Arrange booking as soon as possible (within 2 weeks) at designated facility according to gestation:
    - Gestation < 20 weeks
      - Book a on-demand TOP:
        - If < 9 weeks, refer to nearest facility offering medical TOP.
        - If 9 - 12 weeks, refer to facility offering 1st trimester TOP.
      - Arrange appointment for patient to return after TOP for counselling and contraception.
    - Gestation ≥ 20 weeks
      - TOP is not an option.
      - Discuss possibility of adoption.

**Patient decides to continue with pregnancy.**

**Decide if patient eligible for basic antenatal care:**

Ask about previous pregnancies. Has patient had any of:

- Stillborn or newborn that died within first 28 days of life
- ≥ 3 consecutive miscarriages
- Birth weight of previous baby < 2500g or > 4500g
- Hospital admission for gestational hypertension or pre-eclampsia
- Surgery to uterus or cervix (caesarean section, fibroid removal, cone biopsy, cervical stitch for cervical incompetence)

- Yes
- No

**Ask about current pregnancy. Does patient have any of:**

- Diagnosed/suspected multiple pregnancy
- Age ≤ 16 or ≥ 37 years
- Vaginal bleeding
- Pelvic mass
- Diastolic BP ≥ 90 at booking

- Yes
- No

**Ask about general medical problems. Does patient have any of:**

- Diabetes
- Heart disease
- Kidney disease
- Asthma
- Epilepsy
- Alcohol/drug use disorder
- Hypertension

- Yes
- No

**Patient is eligible for basic antenatal care.**

- Continue with routine first antenatal visit.
- If ≥ 5 pregnancies or previous postpartum haemorrhage, arrange hospital delivery.

- Patient is not eligible for basic antenatal care.
  - Refer for further assessment.

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*If known hypertension: stop ACE-inhibitors (like enalapril), give instead methyldopa* 250mg 8 hourly and refer.
ROUTINE ANTENATAL CARE: THE BOOKING/FIRST VISIT

Assess the pregnant patient at the booking/first visit, ideally before 14 weeks. If already booked, give routine antenatal care at follow-up visits → 141.

<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Manage symptoms as per symptom page. Check if patient needs urgent attention → 138.</td>
</tr>
<tr>
<td>Estimated delivery date</td>
<td>Use first day of last period and SFH ² to determine estimated delivery date (EDD). If unsure of dates and SFH &lt; 24 cm, refer for ultrasound to confirm EDD.</td>
</tr>
</tbody>
</table>
| TB                | • If cough, weight loss, night sweats or fever, check for TB → 281. If patient has TB, refer to next level of antenatal care clinic.  
|                   | • If HIV positive, send 1 sputum for Xpert MTB/RIF, even if no TB symptoms. |
| Mental health     | • In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any → 125.  
|                   | • In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes → 72. |
| Alcohol/drug use  | Any alcohol/drug use is risky for baby. In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, discuss/refer. |
| MUAC³ and BMI⁴    | • If MUAC < 23 cm or BMI < 18.5 (or BMI < 23 if HIV positive): exclude TB and HIV and refer for nutritional support. Arrange advanced midwife/doctor review.  
|                   | • If MUAC ≥ 33 cm or BMI ≥ 32, check diabetes risk below. |
| Abdomen           | • Measure and plot SFH ³: if < 28 weeks and measurement > 90th centile or multiple pregnancy likely, refer. If SFH < 24 cm at booking, refer for ultrasound (ideally at 18-20 weeks) if facilities available.  
|                   | • If mass other than uterus in abdomen or pelvis, refer for assessment.  
|                   | • If ≥ 34 weeks: palpate presenting part. If breech or transverse lie suspected, reassess at ≥ 38 weeks. If still suspected, refer. |
| Vaginal discharge | If abnormal discharge, treat for STI → 41. If discharge is runny and no contractions, suspect prelabour rupture of membranes → 138. |
| BP                | • If BP ≤ 160/110, manage and refer urgently → 138.  
|                   | • If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP. If repeat BP ≥ 150/100, refer same day. If repeat BP < 150/100, check urine dipstick for protein:  
|                   | - If ≥ 1+ proteinuria, refer same day. If headache, blurred vision or abdominal pain, treat for severe pre-eclampsia → 138.  
|                   | - If no proteinuria, educate about warning signs (persistent headache, blurred vision or abdominal pain), advise to rest/reduce workload and review in 1 week. If BP at review ≥ 140/90, arrange same day doctor/advanced midwife review: treat for gestational hypertension → 142 and review weekly. Refer urgently if proteinuria or symptoms develop. Refer all at 38 weeks for hospital delivery. |
| Urine dipstick:   | • If leucocytes and nitrates in urine treat for likely complicated urinary tract infection → 51.  
| test clean, midstream | • If ≥ 2+ proteinuria (confirmed on 2 dipsticks), discuss/refer. If trace/1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above.  
| urine             | • If glucose in urine, check diabetes risk. |
| Diabetes risk     | • Screen for diabetes only if risk factor⁻¹.  
|                   | • Give unfasted patient oral glucose 75g in 250mL water upon arrival at clinic. Check glucose after 1 hour: if ≥ 7.8, arrange further fasting test at next level of care clinic. |
| Haemoglobin (Hb)  | Give iron according to Hb → 142. Refer if:  
|                   | • If Hb < 6, or Hb 6-7.9 with symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day.  
|                   | • If Hb 6-7.9 without symptoms: refer to next level of care clinic.  
|                   | • If Hb < 10 at ≥ 36 weeks: refer to next level of care clinic and arrange delivery at hospital. |
| Rapid rhesus (Rh) | If rhesus negative, send Coombs test to check for antibodies: if Coombs positive, refer. If Coombs negative, give anti-D Immunoglobulin 100mcg IM after delivery/miscarriage preferably within 72 hours.⁶ |
| Syphilis          | If positive → 45. |
| HIV               | • If HIV negative or status unknown, test for HIV → 95.  
|                   | • If HIV positive give routine HIV care → 96. If not on ART, start ART same day. → 99. If on ART, continue. If currently ≤ 6 weeks pregnant and on dolutegravir, discuss with specialist. |
| Viral load (VL) if HIV positive | • If on ART for ≥ 3 months: do VL at this visit, regardless of previous tests. Follow up result at next visit → 142.  
|                   | • If on ART for < 3 months: do VL at 3 months on ART. |
| Cervical screen   | If < 20 weeks: if HIV negative, do cervical screen if ≥ 30 years and no screen in past 10 years → 47; if HIV positive, do cervical screen every 3 years from time of HIV diagnosis → 47. |

Continue to advise and treat the pregnant patient → 142.

¹Symphysis-fundal height. ²One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. ³Mid Upper Arm Circumference. ⁴Body Mass Index (BMI) = weight (kg) ÷ height (m) ÷ height (m). ⁵Glucose in urine, BMI ≥ 32, age ≥ 40 years, previous diabetes in pregnancy, family history of diabetes, previous unexplained stillbirth, previous baby ≥ 4000g, polyhydramnios, SFH large for gestational age, Indian ethnicity. ⁶May be given up to 7 days.
# ROUTINE ANTENATAL CARE: FOLLOW-UP VISITS

### Assess the pregnant patient at booking/first visit

- **Assess**
- **When to assess**
- **Note**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Every visit</th>
<th>Manage symptoms as per symptom page. Check if patient needs urgent attention.</th>
<th>138.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestation(^1)</td>
<td>Every visit</td>
<td>If ≥ 40 weeks, advanced midwife/doctor to review: if unsure of dates, to go to hospital at exactly 41 weeks for induction (give referral letter).</td>
<td></td>
</tr>
</tbody>
</table>
| TB | Every visit | - Check for TB symptoms at every visit: if cough, weight loss/poor weight gain or fever, exclude TB. 81. If patient has TB, refer to next level of antenatal care clinic.  
- If HIV positive, check Xpert MTB/RIF result sent at first visit. If not done, do at this visit, even if no symptoms:  
  - If Xpert MTB/RIF positive, start TB treatment and refer to next level of care antenatal clinic.  
  - If Xpert MTB/RIF negative and:  
    - TB symptoms: if CD4 ≤ 100, do a urine LAM\(^2\). If LAM positive, start TB treatment and refer. If CD4 > 100 or LAM negative, refer/discuss.  
    - No TB symptoms: start ART if not already done. If CD4 ≤ 100, also start TPT. 298. If CD4 > 100, defer TPT until 6 weeks after delivery. |
| Mental health | Every visit | - In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any, 125.  
- In the past 2 weeks, has patient had thoughts or plans to harm herself? If yes, 72. |
| Alcohol/drug use | Every visit | In past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any, discuss/refer. |
| Fetal movements | Every visit from 20 weeks | If reduced or absent fetal movements, listen for fetal heartbeat:  
  - If fetal heart beat not heard, refer.  
  - If fetal heart beat heard, arrange for cardiotocograph (CTG). Refer if not available at facility. Ideally, advanced midwife to perform and interpret CTG: if CTG reassuring, give fetal kick chart and review in 1 week. If CTG shows signs of fetal distress, refer urgently for delivery. |
| Abdomen | Every visit | - Measure and plot SFH\(^3\) and refer if: 2 successive (or 3 separate) measurements < 10th centile, no growth for 6 weeks, 1 measurement > 90th centile if < 28 weeks, 2 successive measurements > 90th centile if ≥ 28 weeks or multiple pregnancy likely.  
- If mass other than uterus in abdomen or pelvis, refer for assessment.  
- If ≥ 34 weeks: palpate presenting part. If breech or transverse lie suspected, reassess at ≥ 38 weeks. If still suspected, refer. |
| Vaginal discharge | Every visit | If abnormal discharge, treat for STI. 41. If discharge is runny and no contractions, suspect prelabour rupture of membranes. 138. |
| BP | Every visit | - If BP ≥ 160/110, manage and refer urgently. 138.  
- If ≥ 140/90, lie patient on left side for at least 1 hour, then repeat BP. If repeat BP ≥ 150/100, refer same day: If repeat BP < 150/100, check urine dipstick for protein:  
  - If ≥ 1+ proteinuria, refer same day. If headache, blurred vision or abdominal pain, treat for severe pre-eclampsia. 138.  
  - If no proteinuria, educate about warning signs (persistent headache, blurred vision, abdominal pain), advise to rest/reduce workload and review in 1 week. If BP at review ≥ 140/90, arrange same day doctor/advanced midwife review: treat for gestational hypertension 142 and review weekly. Refer urgently if proteinuria or symptoms develop. Refer all at 38 weeks for hospital delivery. |
| Urine dipstick: test clean, midstream urine | Every visit | - If leucocytes and nitrites in urine treat for likely complicated urinary tract infection. 51.  
- If ≥ 2+ proteinuria (confirmed on 2 dipsticks), discuss/refer. If trace/1+ proteinuria with normal BP, reassess at next antenatal visit. If BP raised, manage above.  
- If glucose in urine, check diabetes risk. |
| Diabetes risk | If risk factor\(^4\), 26 weeks | Give unfasted patient oral glucose 75g in 250mL water upon arrival at clinic. Check glucose after 1 hour: if ≥ 7.8, arrange further fasting test at high risk clinic. |
| Haemoglobin (Hb) | • Around 30 weeks and 36 weeks  
  • If patient pale  
  • If Hb < 10: 1 month after treatment started | Give iron according to Hb. 142. Refer if:  
  - If Hb < 6, or Hb 6-7.9 with symptoms (dizzy, pulse > 100, difficulty breathing at rest): refer same day.  
  - If Hb 6-7.9 without symptoms: refer to next level of care clinic.  
  - If Hb 8-9.9 and Hb is not improving after 1 month of treatment: refer to next level of care clinic.  
  - If Hb < 10 at ≥ 36 weeks: refer to next level of care clinic and arrange delivery at hospital. |
| Syphilis | Around 30 weeks | If positive. 45. Follow positive results up: check mother has received all 3 treatment doses. 45.  
- Continue to assess the antenatal patient. 142. |

\(^1\)Use obstetric wheel to determine gestation, based on estimated date of delivery (EDD).  
\(^2\)Urine LAM (lipoarabinomannan): urine test used to detect active TB in patients with low CD4s.  
\(^3\)One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer.  
\(^4\)Symphytus-fundal height.  
\(^5\)Glucose in urine; BMI ≥ 32, age ≥ 40 years; previous diabetes in pregnancy; family history of diabetes; previous unexplained stillbirth; previous baby ≥ 4000g, polyhydramnios, or HT large for gestational age, Indian ethnicity.
If Hb ≥ 10 give:
- Review weekly, check for new symptoms, BP, urine, weight, SFH and fetal heart/movements.
- Tetanus toxoid: Only if Rh negative, repeat Coombs test at 26, 34 and 38 weeks to check for antibodies. If Coombs positive, refer. If Coombs negative, give anti-D immunoglobulin 100mcg IM after delivery/miscarriage preferably within 72 hours, up to 7 days later.
- If Hb < 10 give:
  - 400mg once weekly with food throughout pregnancy.
  - 200mg daily throughout pregnancy. If daily iron not tolerated, single dose.
  - NVP 3: start NVP (TT) 0.5mL IM into arm. If < 5 previous tetanus vaccinations, give 170mg daily or 5.

Assess

When to assess | Note
--- | ---
If Rh negative: anti-D antibodies | At 26, 34 and 38 weeks
HIV | • Every visit
  • At delivery
  - If HIV negative or status unknown, test for HIV. 295. If patient refuses, offer at each visit, even in early labour.
  - If HIV positive, give routine HIV care and start ART same day. 296.
Viral load (VL) if HIV positive | • 3 months on ART
  • At delivery
  - If VL < 50, continue ART and repeat VL at delivery. If still on EFV or NVP, and no longer in the first 6 weeks of pregnancy, consider switch to dolutegravir. 101.
  - If ≥ 50, manage unsuppressed viral load. 146.

Advising the pregnant patient

- Encourage patient to register on MomConnect (dial *134*550#) to receive messages to support her and her baby during pregnancy, childbirth and baby’s first year.
- Alert patient to the risks of smoking and drinking alcohol and urge to stop. Support patient to change 154 and refer patient to available helpline. 155
- Discuss safe sex. Advise patient to use condoms throughout pregnancy and have only 1 partnership at a time.
- Complete Maternity Case Record and give to patient, remind patient to bring it to every visit and when in labour.
- Educate about signs of early labour and pregnancy emergency: persistent headache, blurred vision, abdominal pain (not discomfort), drainage of liquor, vaginal bleeding, reduced fetal movements.
- From 30 weeks, ensure patient knows where she is going to give birth and check if transport arrangements have been made should she go into labour.
- Discuss contraception choice for after delivery. 136.
- Regardless of HIV status, encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, infant prophylaxis.
- If mother chooses to exclusively formula feed, check if affordable, feasible, acceptable, safe and sustainable. Check correct mixing. Discourage mixed feeding.
- From 6 months, introduce food while continuing with feeding choice. Encourage breastfeeding until 2 years for all, ensuring that HIV positive mother is adherent on ART and virally suppressed.

Treat the pregnant patient

- Give folic acid 5mg daily up to 13 weeks gestation. If on anticonvulsants, family history or previous baby with neural tube defect, continue folic acid throughout pregnancy.
- Give iron according to Hb:
  - If Hb ≥ 10 give ferrous sulphate compound BPC 170mg daily or ferrous fumarate 200mg daily throughout pregnancy. If daily iron not tolerated, give instead ferrous sulphate compound BPC 340mg once weekly with food or ferrous fumarate 400mg once weekly with food throughout pregnancy.
  - If Hb < 10 give ferrous sulphate compound BPC 170mg 12 hourly with food or ferrous fumarate 200mg 12 hourly with food. Continue for 3 months once Hb ≥ 10, then once daily throughout pregnancy.
  - Give calcium carbonate 500mg 12 hourly to reduce the risk of pre-eclampsia.
  - Prevent tetanus: if first pregnancy, give tetanus toxoid (TT) 0.5mL IM into arm. If < 5 previous tetanus vaccinations in lifetime documented, catch up vaccinations.
  - If gestational hypertension start methyldopa 250mg 8 hourly and titrate up to 750mg 8 hourly if needed.
  - Review weekly, check for new symptoms, BP, urine, weight, SFH and fetal heart/movements. Refer at 38 weeks for delivery at hospital.
  - If HIV positive, start or continue ART and check if prophylaxis (e.g. co-trimoxazole preventive therapy or TB preventive therapy) needed. 98.
  - If in malaria area, discuss need and choice of malaria prophylaxis with specialist.

Review the pregnant patient at 20, 26, 30, 34, 36, 38, 40 weeks. If undelivered, also review at 41 weeks.

Treat the HIV positive patient in labour

- If on ART, continue ART throughout delivery. Check viral load, regardless of when last done, and review results at 3-6 day postnatal visit.
- If newly diagnosed HIV positive, or known HIV positive and not on ART, give together:
  - NVP 200mg as a single dose and
  - single dose TDF/3TC/DTG 300/300/50mg. This is also known as TLD and is available as a fixed combination tablet.
- Give ideally during early labour, and urgently if delivery is imminent.
- Start mother on ART next day. 299. Discuss ART risks/benefits, advise reliable contraception and recommend she start DTG-based regimen (TLD); help mother to make an informed decision. 103.
- Decide HIV transmission risk of HIV-exposed baby and treat according to risk. 145.

Give routine postnatal care to mother and baby. 143.

1 If not on ART, re-start same day. No need to wait for results. 2 If possible, avoid taking iron within 4 hours of taking calcium or methyldopa and within 2 hours of milk and tea. If on dolutegravir and taking at same time as iron, take with food. 3 Abdominal pain, nausea, vomiting, constipation. 4 If on dolutegravir and taking at same time as calcium, take with food. 5 Tetanus vaccinations include DTP, DTP-Hib, DTaP-IPV/Hib, TD or TT.
ROUTINE POSTNATAL CARE

Give urgent attention to the postnatal patient (within 6 weeks of delivery) with any of:

- Heavy bleeding (soaks pad in < 5 minutes): postpartum haemorrhage likely
- Fitting or just had a fit up to 1 week postpartum: treat as eclampsia → 138.
- Unwell and temperature ≥ 38°C

Manage and refer urgently:
- If BP < 90/60, give sodium chloride 0.9% 1L IV rapidly, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If postpartum haemorrhage likely: call for help, this is a life-threatening condition and requires immediate referral. Manage urgently:
  - Massage uterus, remove clots from vagina and empty bladder (with catheter if needed).
  - Whilst setting up IV, give oxytocin 10units IM if not already given after baby delivered. Give oxytocin 20units in 1L sodium chloride 0.9% at 250mL/hour IV in a 2nd IV line.
  - Ensure placenta is delivered. If controlled cord traction fails, try manual delivery.
  - If uterus still soft after this:
    - Give ergometrine 0.5mg IM or oxytocin/ergometrine 5units/0.5mg (1mL) IM and continuously massage uterus. Avoid if eclampsia, pre-eclampsia, known hypertension or heart disease unless bleeding is life-threatening.
    - Only if oxytocin and oxytocin/ergometrine unavailable, give misoprostol 600mcg rectally or sublingually.
    - Repair any bleeding tears.
  - If still bleeding heavily, insert balloon catheter¹ into uterus, inflate with 400-500mL of saline, clamp catheter and pack vagina with swabs to prevent expulsion.
  - Apply bimanual compression² during transfer.
  - If unwell and temperature ≥ 38°C: give ceftriaxone 1g IV/IM. If painful abdomen or foul-smelling vaginal discharge, also give metronidazole 400mg orally.

Assess the mother and her baby 6 hours, 6 days, and 6 weeks after delivery.

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>Manage mother’s symptoms as on symptom page. Manage baby’s symptoms with IMCI guide.</td>
</tr>
<tr>
<td>Mental health</td>
<td>Every visit</td>
<td>• In the past 2 weeks, has patient: 1) been unable to stop worrying or thinking too much 2) felt down, depressed, hopeless? If yes to any → 125. If in the past 2 weeks, has patient had thoughts or plans to harm herself? If yes → 129.</td>
</tr>
<tr>
<td>Alcohol/drug use</td>
<td>Every visit</td>
<td>In the past year, has patient: 1) drunk ≥ 4 drinks/session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any → 124.</td>
</tr>
<tr>
<td>Family planning</td>
<td>Every visit</td>
<td>Assess patient’s contraceptive needs → 136. Ideally, insert copper IUCD within 48 hours of delivery if no contraindications³ or, insert subdermal implant at any stage, or start injectable contraceptive after 48 hours or offer tubal ligation if appropriate. Avoid combined oral contraceptive pill for 6 weeks after delivery and for 6 months if breastfeeding.</td>
</tr>
<tr>
<td>Infant feeding</td>
<td>Every visit</td>
<td>• If breastfeeding: check for breast problems → 36. Check that baby latches well and is not mixed feeding during the first 6 months.</td>
</tr>
<tr>
<td>BP</td>
<td>Every visit</td>
<td>Check BP. If BP ≥ 140/90, recheck after 1 hour rest. If BP still ≥ 140/90 → 114, unless ≤ 1 week postpartum: discuss same day.</td>
</tr>
<tr>
<td>BMI</td>
<td>Every visit</td>
<td>Mother’s BMI = weight (kg) + height (m) = height (m). If &lt; 18.5, arrange nutritional support.</td>
</tr>
</tbody>
</table>

¹If balloon catheter unavailable, make condom catheter: slip open condom over large Foley’s catheter and tie with string at the base. ²Bimanual compression: insert clenched fist into vagina, with back of hand posteriorly. Place other hand on abdomen behind uterus and squeeze uterus firmly between two hands. ³Do not mix Ringer’s lactate and IV ceftriaxone. Flush IV line with sodium chloride 0.9% before and after IV ceftriaxone. ⁴One drink is 1 tot of spirits, or 1 small glass (125mL) of wine or 1 can/bottle (330mL) of beer. ⁵Avoid IUCD if: chorioamnionitis, rupture of membranes for > 18 hours or postpartum haemorrhage.

Continue to assess the postnatal patient and baby → 144.
<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
</table>
| HIV test in mother | • If not done | • Test for HIV. ≥95.  
• If HIV positive, give routine HIV care and start ART same day. ≥98. Test baby for HIV same day and if breastfeeding, give infant prophylaxis to prevent mother-to-child transmission. ≥145. |
| Viral load (VL) if HIV positive | • At delivery | • Follow up results of VL done at delivery at the 3-6 days postnatal visit. If VL not done at delivery, do at this visit.  
• If VL < 50, continue ART and give routine HIV care. ≥98.  
• If VL 50-999, manage unsuppressed viral load. ≥146.  
• If VL ≥ 1000: if breastfeeding, manage mother’s unsuppressed VL. ≥146 and if needed, switch infant to high risk infant prophylaxis. ≥145. If formula feeding, manage unsuppressed VL. ≥104 and continue current infant prophylaxis.  
• If on 2nd or 3rd line ART and VL ≥ 1000: discuss with with experienced ART doctor or HIV hotline. ≤155. |
| HIV test in baby | • HIV-exposed: birth, 10 weeks, 6 months, 18 months, 6 weeks after breastfeeding stopped | • If mother diagnosed with HIV while breastfeeding or baby unwell, do HIV test same day.  
• < 18 months: use HIV PCR as initial test. If positive, start ART and confirm result with second HIV PCR (or HIV viral load).  
• 18-24 months: use rapid HIV test as initial test. If positive, confirm with HIV PCR test before starting ART.  
• ≥ 24 months: as for adult testing. ≥95. |
| Haemoglobin | 6 weeks | Give iron according to Hb (see below). If Hb < 10: repeat monthly until Hb reaches 10. If no improvement 1 month after starting treatment, discuss/refer. |
| Syphilis | If not done | If mother positive, treat mother and baby. ≥45. |
| Cervical screen | From 6 weeks | • HIV negative: do 3 routine cervical screens in a lifetime from age 30, with a 10-year interval between each screen. ≥47.  
• HIV positive: do cervical screen every 3 years from time of HIV diagnosis. ≥47. |
| Rhesus (Rh) | If rhesus negative: 6 hour and 6 day visit | If baby rhesus positive/unknown, give mother single dose anti-D immunoglobulin 100mcg IM, preferably within 72 hours, up to 7 days after delivery. |

**Advise the mother**

- Encourage mother to become active soon after delivery, rest frequently and eat well. Advise mother to keep perineum clean and to change pads 4-6 hourly.  
- Advise to return urgently if heavy bleeding, foul-smelling vaginal discharge, red/oozing wound, fever, dizziness, severe headache or abdominal pain, blurred vision, calf pain or baby unwell.  
- Refer to an infant feeding support group. Give feeding advice:  
  - Regardless of HIV status, encourage exclusive breastfeeding for 6 months: baby gets only breast milk (no formula, water, cereal) and if HIV-exposed, infant prophylaxis according to risk profile. From 6 months, introduce food while continuing with feeding choice.  
  - Advise the working mother to consider expressing breastmilk for baby while away.  
  - If patient chooses to formula feed, ensure it is affordable, feasible, acceptable, safe and sustainable. Check formula is correctly prepared. Discourage mixed feeding before age 6 months.  
  - If mother HIV positive, continue to breastfeed until 2 years while ensuring viral suppression, and until at least 2 years if baby diagnosed HIV positive. Check mother knows how to give infant prophylaxis.  
  - If mother HIV negative: continue to breastfeed until at least 2 years. Explain importance of regular (3 monthly) HIV testing while breastfeeding.  
  - Discuss family planning and importance of spacing children. Advise to use reliable contraception and condoms as soon after delivery as possible.  
  - Explain that the first 1000 days of a child’s life are vital to his/her development: encourage mother and father to respond when baby cries and to hold, talk/sing and make eye contact with baby to help with bonding and development. If mother finds this difficult, encourage her to return more frequently and refer to support group, if available.  

**Treat the mother**

- Give iron according to Hb:  
  - If Hb ≥ 10, give ferrous sulphate compound BPC 170mg daily or ferrous fumarate 200mg daily for 6 weeks after delivery. If daily iron not tolerated, give instead ferrous sulphate compound BPC 340mg once weekly with food or ferrous fumarate 400mg once weekly with food for 6 weeks.  
  - If Hb < 10, give ferrous sulphate compound BPC 170mg 12 hourly with food or ferrous fumarate 200mg 12 hourly with food. Continue for 3 months after Hb reaches 10.  
  - If pain after delivery: give paracetamol 1g 6 hourly and ibuprofen 400mg 8 hourly with food for up to 5 days.  
  - If HIV positive mother not on ART, start ART same day, ≥98, especially if breastfeeding. |

**Treat the HIV-exposed baby**

1. If possible, avoid taking iron within 4 hours of taking methyldopa and within 2 hours of milk and tea. If on dolutegravir and taking at same time as iron, take with food.  
2. Abdominal pain, nausea, vomiting, constipation.  
3. Avoid ibuprofen if pre-eclampsia, peptic ulcer, asthma, hypertension, heart failure, kidney disease.  

Treat the HIV-exposed baby → 145. Routinely review mother and baby 6 hours, 6 days, and 6 weeks after delivery.
PREVENT MOTHER-TO-CHILD TRANSMISSION (PMTCT) OF HIV AND HEPATITIS

**Approach to the HIV-exposed baby (mother is known with HIV)**

- Do HIV positive mother’s viral load at delivery and HIV PCR test on her baby as soon after birth as possible (within 48 hours). Place barcodes on discharge form and RtHB.
- If abandoned baby, do rapid HIV test and HIV PCR test on baby. If < 72 hours since delivery, also manage as high risk formula feeding baby below.
- Encourage exclusive breastfeeding for first 6 months. If carer wants to formulat feed, ensure it will be affordable, feasible, acceptable, safe and sustainable. Refer to an infant feeding support group.
- If mother tested hepatitis B positive during pregnancy, give baby hepatitis B immunoglobulin 0.5mL IM and hepatitis B vaccine 0.5mL IM within 12 hours of delivery. Manage further.
- Start HIV infant prophylaxis as soon as possible, ideally within 1 hour of birth. If baby vomits, repeat dose once. Treat according to risk.

### Mother known HIV positive at delivery

Classify baby’s risk profile: initially use mother’s VL done in last 12 weeks, then when delivery VL results available, re-classify if needed:

- **Viral load < 1000**
  - Low risk
    - Give nevirapine daily for 6 weeks (see table).
  - Manage raised VL result.
  - If mother on 2nd or 3rd line ART discuss with HIV hotline.

- **Viral load ≥ 1000**
  - High risk
    - Give zidovudine 12 hourly for 6 weeks (see table) and give nevirapine daily for 6 weeks (see table).

### Mother on ART at delivery

- Viral load not done in last 12 weeks
  - Start mother on ART same day.

### Mother not on ART at delivery

- Start mother on ART at delivery.

### Breastfeeding mother with new VL result ≥ 1000

If not done, do HIV test on baby same day.

### Advise to return for baby’s HIV PCR and mother’s VL result in 3-6 days:

- If HIV PCR positive, send 2nd HIV PCR or viral load. Stop infant prophylaxis and start ART. Advise to breastfeed for 2 years. If formula feeding, consider feasibility of re-establishing breastfeeding.
- If HIV PCR negative, restet at 10 weeks, 6 months, 18 months, 6 weeks after final breastfeed, or any time if baby unwell. If mother on ART, advise to breastfeed for 2 years.
- Start co-trimoxazole (see table) at 6 weeks. Decide when to stop: if HIV PCR negative at 10 weeks. If breastfeeding, stop if HIV negative 6 weeks after final breastfeed.
- Check result of mother’s viral load done at delivery: if VL > 50, discuss with HIV hotline.

#### Nevirapine syrup (10mg/mL)

<table>
<thead>
<tr>
<th>Age</th>
<th>Current Weight</th>
<th>Once daily dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 6 weeks</td>
<td>2-2.49kg</td>
<td>1 mL daily (10mg)</td>
</tr>
<tr>
<td></td>
<td>≥ 2.5kg</td>
<td>1.5 mL daily (15mg)</td>
</tr>
<tr>
<td>6 weeks to 6 months</td>
<td>2 mL daily</td>
<td>(20mg)</td>
</tr>
<tr>
<td>6 to 9 months</td>
<td>3 mL daily</td>
<td>(30mg)</td>
</tr>
<tr>
<td>9 months until 1 week after all breastfeeding has stopped</td>
<td>4 mL daily (40mg)</td>
<td></td>
</tr>
</tbody>
</table>

#### Zidovudine syrup (10mg/mL)

<table>
<thead>
<tr>
<th>Age</th>
<th>Current Weight</th>
<th>12 hourly dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 6 weeks</td>
<td>2-2.49kg</td>
<td>1 mL 12 hourly (10mg)</td>
</tr>
<tr>
<td></td>
<td>≥ 2.5kg</td>
<td>1.5 mL 12 hourly (15mg)</td>
</tr>
<tr>
<td>≥ 6 weeks (according to ART Drug Dosing Chart for Children)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3 kg</td>
<td>4 mg/kg or 0.4 mL/kg 12 hourly</td>
<td></td>
</tr>
<tr>
<td>3-5.9 kg</td>
<td>6 mL 12 hourly (60mg)</td>
<td></td>
</tr>
<tr>
<td>6-7.9 kg</td>
<td>9 mL 12 hourly (90mg)</td>
<td></td>
</tr>
<tr>
<td>8-13.9 kg</td>
<td>12 mL 12 hourly (120mg)</td>
<td></td>
</tr>
</tbody>
</table>

#### Co-trimoxazole syrup (40/200mg/5ml)

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 kg</td>
<td>2.5 mL daily</td>
</tr>
<tr>
<td>5-14 kg</td>
<td>5mL daily</td>
</tr>
</tbody>
</table>

1. If mother has one positive and one negative rapid HIV test results, manage baby as high risk until mother’s status confirmed.
2. Give hepatitis B vaccine and immunoglobulin at different sites.
3. If no viral load done at delivery, do viral load at this visit and review results within 1 week.
4. If < 35 weeks gestation or < 2 kg, discuss with specialist/manager in hospital.
Manage the pregnant/breastfeeding patient with an unsuppressed viral load (VL ≥ 50)

- Assess possible causes: check adherence and dosing and give enhanced adherence support. Encourage disclosure. If alcohol/drug use, if stress.
- Check for interactions with other medications. If unsure, discuss with HIV hotline.
- Ask about and document recent infection/s or illness. Manage other symptoms as on symptoms pages.

Manage further according to VL results:

- **VL 50-999**
  - Repeat VL in 8 weeks. If this is VL done at delivery, repeat instead at 10 week immunisation visit.

- **VL ≥ 1000**
  - Breastfeeding infant: re-classify as high risk and adjust infant prophylaxis (AZT for 6 weeks and NVP for at least 12 weeks).
  - Pregnant/breastfeeding mother: repeat VL in 4 weeks. If this is VL done at delivery, repeat instead at 6 week immunisation visit.

- **VL < 50**
  - Monitor VL routinely:
    - If pregnant
    - If breastfeeding

- **VL ≥ 50**
  - Discuss with experienced ART doctor or HIV hotline.

- **VL < 50**
  - Monitor VL routinely:
    - If pregnant
    - If breastfeeding

- **VL ≥ 1000**
  - If on NVP or EFV: virological failure likely, switch to 2nd line. Before switching, if VL has dropped > 1 log, discuss with experienced ART doctor, or hotline.
  - If on DTG, or already on 2nd or 3rd line ART: patient needs VL ≥ 1000 on at least three occasions over last 2 years for virological failure, discuss same day with experienced ART doctor or HIV hotline.

Give routine HIV care.
MENOPAUSE

- Exclude pregnancy before diagnosing menopause. If pregnant, refer.
- Menopause is no menstruation for at least 12 months in a row. Most women have menopausal symptoms and irregular periods leading up to menopause.
- If menopausal and < 40 years, discuss with specialist.

Assess the menopausal patient

<table>
<thead>
<tr>
<th>Assess</th>
<th>When to assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Every visit</td>
<td>• Ask about menopausal symptoms: hot flushes, night sweats, vaginal dryness, mood changes, difficulty sleeping, cough, weight loss or fever, exclude TB, and other symptoms as on symptom pages.</td>
</tr>
<tr>
<td>Vaginal bleeding</td>
<td>Every visit</td>
<td>If bleeding between periods, after sex or after being period-free for 1 year, refer within 2 weeks.</td>
</tr>
<tr>
<td>Depression</td>
<td>Every visit</td>
<td>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, refer.</td>
</tr>
<tr>
<td>Osteoporosis risk</td>
<td>At diagnosis</td>
<td>Refer for possible treatment if high osteoporosis risk: &lt; 60 years with loss of &gt; 3cm in height or fractures of hip/wrist/spine, previous non-traumatic fractures, oral steroid treatment for &gt; 3 months, onset of menopause &lt; 45 years, BMI &lt; 18.5, heavy alcohol user, heavy smoker.</td>
</tr>
<tr>
<td>Family planning</td>
<td>At diagnosis</td>
<td>• If &lt; 50 years, give contraception for 2 years after last period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If ≥ 50 years, change to progestogen-only or non-hormonal contraceptive until 1 year after last period.</td>
</tr>
<tr>
<td>BP</td>
<td>3 monthly on HT</td>
<td>If known hypertension, refer. If not, check BP: if ≥140/90, refer.</td>
</tr>
<tr>
<td>CVD risk</td>
<td>At diagnosis</td>
<td>Assess CVD risk, refer.</td>
</tr>
<tr>
<td>Breast check</td>
<td>At diagnosis, 6 monthly</td>
<td>If lump/s found in breasts or axillae, refer same week to breast clinic. If available, arrange mammogram at HT initiation.</td>
</tr>
<tr>
<td>Cervical screen</td>
<td>When needed</td>
<td>If HIV negative: do 3 routine screens in a lifetime from age 30, with a 10-year interval between each screen, refer. If HIV positive: do screen every 3 years from time of HIV diagnosis.</td>
</tr>
<tr>
<td>Thyroid</td>
<td>At diagnosis</td>
<td>If weight change, pulse ≥ 100, tremor, weakness/tiredness, dry skin, constipation or intolerance to cold or heat, check TSH. If abnormal, refer to doctor.</td>
</tr>
</tbody>
</table>

Advise the menopausal patient

- To cope with the flushes, advise patient to dress in layers and to decrease alcohol, avoid spicy foods, hot drinks and warm environments.
- If patient is having mood changes or not coping as well as in the past, refer to counsellor, support group or helpline.
- Educate that long term use of hormone therapy (HT) can increase risk of breast cancer, deep vein thrombosis (DVT) and cardiovascular disease. It can be used to treat menopausal symptoms for up to 5 years.

Assess when:

- Pregnancy
- TB
- Sexual problems

Treat the menopausal patient

- If menopausal symptoms interfere with daily function, treat with hormone therapy (HT) if no contraindications. If dose range given, start with lowest dose and increase until symptoms improve.
- If patient has had uterus removed (hysterectomy): give only estradiol 1-2mg daily or conjugated estrogens 0.3mg-1.25mg daily.
- If patient still has a uterus (no hysterectomy), choose HT according to menstruation pattern:

  **If ≥ 1 year since last period, give:**
  - Conjugated estrogens 0.3-0.625mg and medroxyprogesterone 2.5-5mg daily or
  - Estradiol/norethisterone 1mg/0.5mg daily or
  - Estradiol/norethisterone 2mg/1mg daily.

  **If still menstruating/recently stopped, give:**
  - Estradiol/cyproterone 1 tablet daily or
  - Estradiol 1-2mg daily for 21 days with medroxyprogesterone 5-10mg daily from day 12-21, followed by no therapy from day 22-28 or
  - Conjugated estrogens 0.3-0.625mg daily for 21 days with medroxyprogesterone 5-10mg daily from day 12-21, followed by no therapy from day 22-28.

- Treat vaginal dryness and pain with sex with lubricants (avoid petroleum jelly with condoms). If no better with HT or if HT contraindicated, refer.
- Review 6 monthly once on HT. Decrease/stop if symptoms are controlled. If ≥ 5 years of HT or patient ≥ 60 years, stop treatment. If still symptomatic, refer to specialist.

1Hormone therapy. 2Avoid if ≥ 60 years, abnormal vaginal bleeding, cancer of uterus or breast, previous deep vein thrombosis or pulmonary embolism, recent heart attack, liver disease, porphyria (rare hereditary disorder).
A patient can be given curative and palliative care at the same time. A doctor should confirm the patient needs palliative care:
- Patient is in bed or chair for 50% or more of the day or dependent on others for most care or has had 2 or more unplanned hospital admissions in past 6 months and/or
- Patient with advanced disease chooses palliative care only and refuses curative care and/or
- Patient with advanced disease not responding to treatment: heart failure, COPD, kidney or liver failure, cancer, HIV, TB, dementia or other progressive neurological disease.

Assess the patient needing palliative care

<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Manage symptoms as on symptom pages. If constipation, diarrhoea, nausea/vomiting, abdominal cramps, itchiness, acute anxiety or cough/difficulty breathing, also palliate symptoms.</td>
</tr>
<tr>
<td>Pain</td>
<td>• Does pain limit activity or disturb sleep? Is medication helping? Grading the pain 1-10 may help the patient decide if s/he needs to start or increase pain medication.</td>
</tr>
<tr>
<td></td>
<td><img src="pain-scale.png" alt="" /></td>
</tr>
<tr>
<td></td>
<td>• Ask patient to describe the pain: if burning or electric like sensations, nerve pain likely. If deep, dull ache, bone pain likely.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td>Sleep</td>
<td>If patient has difficulty sleeping.</td>
</tr>
<tr>
<td>Mental health</td>
<td>• Ask if patient has persistent feelings of hopelessness or worthlessness? If yes.</td>
</tr>
<tr>
<td></td>
<td>• If patient has suicidal thoughts or plans.</td>
</tr>
<tr>
<td></td>
<td>• If low mood, stress or anxiety.</td>
</tr>
<tr>
<td>Side effects</td>
<td>Manage side effects on symptom pages. Nausea, confusion and sleepiness on morphine usually resolve after a few days. Prevent and treat constipation.</td>
</tr>
<tr>
<td>Chronic care</td>
<td>• Assess how much patient and family understand about the condition and ask what further information the patient and carer need.</td>
</tr>
<tr>
<td></td>
<td>• Assess ongoing need for chronic care in discussion with patient and health care team. Consider which medication could be discontinued.</td>
</tr>
<tr>
<td>Carer/dependents</td>
<td>Ask how the carer is coping and what support s/he needs now and in the future. If needed, refer patient’s dependents and family members to social worker.</td>
</tr>
<tr>
<td>Dying</td>
<td>If known with terminal disease and deteriorating with ≥ 2 of: bed bound, decreased consciousness, only able to sip fluid, unable to take tablets, address patient’s needs.</td>
</tr>
<tr>
<td>Mouth</td>
<td>Check oral hygiene and look for dry mouth, ulcers and thrush. If gum or tooth problem. If difficulty swallowing, discuss/refer.</td>
</tr>
<tr>
<td>Pressure sores</td>
<td>If patient is bedridden or in a wheel chair, check common areas for damaged skin (change of colour) and pressure sores (see picture). If patient has pressure ulcer/sore.</td>
</tr>
</tbody>
</table>

Advise the patient needing palliative care and his/her carer

- Explain about the condition and prognosis. Explaining what is happening relieves fear and anxiety. Support the patient to give as much self care as possible. |
- Emphasise the importance of taking pain medication regularly (not as needed) and if using tramadol/morphine to use a laxative daily to prevent constipation. |
- Refer patient and carer to available community health worker, physiotherapist, support group, counsellor, spiritual counsellor. Deal with bereavement issues. |
- If unable to self-care: |
  - Prevent mouth disease: brush teeth and tongue regularly using toothpaste or dilute bicarbonate of soda. Rinse mouth with ½ teaspoon of salt in 1 cup of water after eating and at night. |
  - If bedridden: |
    - Prevent pressure sores: wash and dry skin daily. Keep linen dry. Move (lift, avoid dragging) patient every 1-2 hours if unable to shift own weight. Look daily for skin colour changes (see picture). |
    - Prevent contractures: at least twice a day, gently bend and straighten joints as far as they go. Avoid causing pain. Massage muscles. |
    - The patient’s appetite will get less as s/he gets sicker. Offer small meals frequently and allow the patient to choose what s/he wants to eat from what is available. |
    - Discuss the plan for caring for the patient. Advise whom to contact when pain or other symptoms get severe. Discuss advance-care plans and preferences. Document decisions. |
    - Educate the carer to recognise signs of deterioration and impending death: s/he may be less responsive, become cold, sleep a lot, have irregular breathing, and will lose interest in eating.
Treat the patient needing palliative care

- Treat pain with medication in conjunction with interdisciplinary team.
- Aim to have patient pain free at rest, able to sleep and as alert as possible. If the patient has any pain, start pain medication. If severe pain, discuss with doctor.

<table>
<thead>
<tr>
<th>Does patient have mild, moderate or severe pain?</th>
</tr>
</thead>
<tbody>
<tr>
<td>If unsure, start at lower step and increase pain medication if needed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mild pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start pain medication at step 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moderate pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start pain medication at step 2.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Severe pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start pain medication at step 3.</td>
</tr>
</tbody>
</table>

If mild pain:

- Use paracetamol in step 1

Pain medication
Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.

- Also check if patient needs adjuvant therapy:
  - If likely nerve pain: use paracetamol in step 1 and add amitriptyline. If likely bone pain: give ibuprofen in step 1.

If pain persists/increases, increase dose to maximum and then move to next step. If pain decreases, step down.

<table>
<thead>
<tr>
<th>Step</th>
<th>Pain medication</th>
<th>Start dose</th>
<th>Maximum dose</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Start one of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol</td>
<td>1g 4-6 hourly</td>
<td>4g daily</td>
<td>If starting, give paracetamol 1g in clinic and reassess pain after 4 hours. If no better, add ibuprofen for 2 days.</td>
<td></td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>400mg 8 hourly</td>
<td>1.2g daily</td>
<td>Give with/after food. Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease. If patient also taking aspirin, advise to wait at least 30 minutes after taking aspirin before taking ibuprofen.</td>
<td></td>
</tr>
</tbody>
</table>

Step 2
Add to step 1:
- Manage side effects below.
- Use with caution if patient on amitriptyline as may cause over-sedation.
- Manage other side effects below.
- If pain increases before next morphine dose due (breakthrough pain), give extra dose: give same dose as regular 4-hourly dose.
- Continue to give regular morphine at scheduled times.
- Increase morphine doses next day. Calculate new dose: add up total amount of extra morphine given in last 24 hours. Divide this amount by 6 and add this to each regular 4 hourly dose^1^.

Step 3
Stop tramadol, continue paracetamol/ibuprofen and add:
- Morphine (oral tablets or solution) or
- Morphine (if dose stable, use oral long-acting) 10-20mg 8-12 hourly^2^
- No maximum-titrate against pain. If respiratory rate < 12, skip 1 dose, then halve usual doses.

Add adjuvant therapy to any step:
- Amitriptyline 25mg at night 75mg at night
  - Use at night. Advise it may cause dizziness, drowsiness and to avoid driving and using heavy machinery.
  - Avoid amitriptyline if patient on bedaquiline, refer/discuss if pain uncontrolled on above medication.

Step 1:
- Check for impaction (solid bulk of stool in rectum):
  - If impacted, gently remove stool from rectum using lubrication.
  - If not, give sennosides A and B 13.5mg at night and/or lactulose 10-20mL orally daily. If needed, increase sennosides A and B to 27mg at night and/or increase lactulose to 12 hourly.

Step 2:
- Give loperamide 4mg initially, then 2mg after each loose stool up to 6 hourly, up to 12mg daily. Avoid if overflow diarrhoea or side effect of antibiotics.

Step 3:
- Give metoclopramide 10mg 8 hourly as needed.
- Allow patient to choose what to eat. Encourage frequent small meals/sips of fluids like water, tea or ginger drinks.

Example: patient on morphine 10mg 4 hourly has 3 episodes of breakthrough pain: 10mg x 3 = 30mg (total extra morphine); 30mg – 6 = 5mg. Add 5mg to each 10mg regular dose. Increase morphine to 15mg 4 hourly.

Add adjuvant therapy to any step:
- Amitriptyline 25mg at night 75mg at night
  - Use at night. Advise it may cause dizziness, drowsiness and to avoid driving and using heavy machinery.
  - Avoid amitriptyline if patient on bedaquiline, refer/discuss if pain uncontrolled on above medication.

Review 2 days after starting or changing medication. If pain/symptoms persist despite treatment or side effects intolerable, discuss/refer.

^1^Example: patient on morphine 10mg 4 hourly has 3 episodes of breakthrough pain: 10mg x 3 = 30mg (total extra morphine); 30mg – 6 = 5mg. Add 5mg to each 10mg regular dose. Increase morphine to 15mg 4 hourly.

^2^If patient already on morphine: add up total dose used over 24 hours, divide by 2 to get 12 hourly dose. Only use 8 hourly if pain regularly recurring before next 12 hourly dose.
ADDRESS THE DYING PATIENT'S NEEDS

The patient with a life-limiting illness is dying if s/he is deteriorating and ≥ 2 of: bed bound, decreased consciousness, only able to sip fluid or unable to take tablets. Doctor to confirm.

### Assess the dying patient's needs every 4 hours

<table>
<thead>
<tr>
<th>Assess</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Manage symptoms below.</td>
</tr>
<tr>
<td>Agitation</td>
<td>If agitated, exclude pain, urinary retention, constipation or dehydration. Consider changing position. Discuss need for sedation with senior family member.</td>
</tr>
<tr>
<td>Excessive secretions</td>
<td>If noisy breathing, try changing position.</td>
</tr>
<tr>
<td>Current care</td>
<td>- Assess current medication and discontinue non-essential medications.</td>
</tr>
<tr>
<td></td>
<td>- Assess patient’s ongoing need for tests in discussion with patient/carer and health care team.</td>
</tr>
<tr>
<td></td>
<td>- Consider switching medication route if unable to swallow orally to subcutaneous.</td>
</tr>
<tr>
<td>Intake</td>
<td>Check with family what patient’s fluids/food intake needs are and whether fluids/food is needed or necessary.</td>
</tr>
<tr>
<td>Psychological well-being</td>
<td>Ask how patient and carer are coping and what support and/or spiritual care is needed.</td>
</tr>
<tr>
<td>Mouth</td>
<td>Check oral hygiene. Ensure patient’s mouth is moist and clean. Consider using glycerine to keep mouth moist.</td>
</tr>
<tr>
<td>Personal hygiene</td>
<td>Check skin care, clean eyes and change of clothing according to patient’s needs.</td>
</tr>
</tbody>
</table>

### Advise the dying patient and carer

- Ensure patient and/or carer is aware that patient is dying.
- Educate carer/family that food/fluids are for comfort only, will not prolong life and a reduced need for food/fluids is part of the normal dying process.
- Advise that investigations and curative treatments like antibiotics may no longer be indicated and will be kept to a minimum according to patient’s care plan.
- Discuss with patient and carer: preferred place of death (home, hospice or hospital), how family are to be informed of impending death, what to do in the event of death.
- Discuss patient’s wishes, feelings, faith, beliefs and values. Discuss patient’s needs now, at death and after death. Listen and respond to patient/carer’s worries/fears.
- Ensure patient and/or carer/family receive full explanation and express understanding of current plan of care. Identify and document any concerns about current plan of care.

### Treat the dying patient

- If pain, nausea/vomiting, diarrhoea, constipation, abdominal cramps, itchiness.
- If difficulty breathing, give morphine solution 2.5-5mg as needed. Increase slowly as needed.
- If urinary retention, insert urethral catheter.
- If agitated, and pain, urinary retention, constipation, dehydration excluded, give diazepam 5mg (or 2.5mg if liver failure). If no response, repeat dose. If aggressive/violent.
- Doctor to review every 3 days or sooner if carer/family concerned about current plan of care or patient’s conscious level, functional ability, oral intake or mobility improves.
- If unsure, discuss with palliative care specialist.

### Diagnose death if:

No carotid pulse in neck for 2 minutes and no heart sounds for 2 minutes and no breath sounds or chest movement for 2 minutes and pupils are fixed, dilated and do not respond to light.
**PROTECT YOURSELF FROM OCCUPATIONAL INFECTION**

Give urgent attention to the health worker with a sharps injury or splash to eye, mouth, nose or broken skin with exposure to any of:
- Blood
- Blood-stained fluid/tissue
- Wound secretions
- Pleural/pericardial/peritoneal/amniotic/synovial/cerebrospinal fluid
- Vaginal secretions
- Semen
- Breast milk

**Management:**
- If broken skin, clean area immediately with soap and water.
- If splash to eye, mouth or nose, immediately rinse mouth/nose or irrigate eye thoroughly with water.
- Assess need for HIV and hepatitis B post-exposure prophylaxis.

---

**Adopt measures to diminish your risk of occupational infection**

**Protect yourself**
- Adopt standard precautions with every patient:
  - Wash hands with soap/water or use alcohol-based cleaner after contact with patients or body fluid.
  - Dispose of sharps in the correctly in sharps bins.
- Wear protective gear:
  - Wear gloves when handling blood, body fluids, secretions or non-intact skin.
  - Wear face mask if in contact with respiratory virus suspects (N95 respirator if TB suspect).
  - Wear face mask with a visor or glasses if at risk of splashes.
- Get vaccinated:
  - Get vaccinated against hepatitis B.
- Know your HIV status:
  - Test for HIV. 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.

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**Manage possible occupational exposure promptly**

**Reduce TB risk**
- Identify TB suspects promptly:
  - The patient with cough ≥ 2 weeks is a TB suspect.
  - Separate TB suspect from others in the facility.
  - Educate about cough hygiene and give face mask/tissues to cover mouth/nose to protect others.
- Diagnose TB rapidly:
  - Fast track TB workup and start treatment as soon as diagnosed.
- Protect yourself from TB:
  - Wear an N95 respirator (not a face mask) if in contact with an infectious TB patient.

**Reduce risk of respiratory viruses (including influenza)**
- Wash hands with soap and water.
- Wear a face mask over mouth and nose during procedures on patient.
- Encourage patient to cover mouth/nose with a tissue when coughing/sneezing, to dispose of used tissues correctly and to wash hands regularly with soap/water.
- Advise patient to avoid close contact with others.
PROTECT YOURSELF FROM OCCUPATIONAL STRESS

Experiencing pressure and demands at work is normal. However if these demands exceed knowledge and skills and challenge your ability to cope, occupational stress can occur.

Arrange urgent assessment for to the health worker with occupational stress and any of:
• Alcohol or drug intoxication at work
• Aggressive or violent behaviour at work
• Inappropriate behaviour at work
• Suicidal thoughts or behaviour

Adopt measures to reduce your risk of occupational stress

Protect yourself
Look after your health:
• Get enough sleep.
• Exercise; eat sensibly, minimise alcohol and avoid smoking.
• Address your general health and get screened for chronic conditions.

Look after your chronic condition if you have one:
• Adhere to your treatment and your appointments.
• Avoid diagnosing and treating yourself.
• If you can, confide in a trusted colleague/manager.

Manage stress:
• Delegate tasks as appropriate; develop coping strategies.
• Talk to someone (friend, psychologist, mentor), or access helpline 155.
• Take time to do a relaxing breathing exercise each day.
• Find a fun or creative activity to do.
• Spend time with supportive family or friends.

Have healthy work habits:
• Manage your time sensibly.
• Take scheduled breaks.
• Remind yourself of your purpose as a clinician.
• Be sure you are clear about your role and responsibilities.

Protect your team
Decide on an approved way of behaving at work:
• Communicate effectively with your patients and colleagues 153.
• Treat colleagues and patients with respect.
• Support each other. Consider setting up a staff support group.
• Instead of complaining, rather focus on finding solutions to problems.

Cope with stressful events
• Develop procedures to deal with events like complaints, harassment/bullying, accidents/mistakes, violence or death of patient or staff member.

Look at how to make the job less stressful:
• Examine the team's workload to see if it can be better streamlined.
• Identify what needs to be changed to make the job easier and frustrations fewer: equipment, drug supply, training, space, décor in work environment.
• Discuss each team member's role. Ensure each one has say in how s/he does his/her work.
• Support each other to develop skills to better perform your role.

Celebrate:
• Acknowledge the achievements of individuals and the team.
• Organise or participate in staff social events.

Identify occupational stress in yourself and your colleagues

Possible alcohol or drug problem
• In the past year, have you/colleague:
  1) drunk ≥ 4 drinks/*session, 2) used illegal drugs or 3) misused prescription or over-the-counter medications? If yes to any substance misuse likely.
• Smells of alcohol

Identify occupational stress in yourself and your colleagues

Change in mood
• Indifferent, tense, irritable or angry
• In the past month, have you/colleague:
  1) felt down, depressed, hopeless or 2) felt little interest or pleasure in doing things? If yes to either depression likely.

Recent distressing event
• Diagnosis of chronic condition
• Bereavement
• Needlestick injury
• Traumatic event

Poor attendance at work
• Frequent absenteeism
• Frequent lateness
• Often takes sick leave

Marked decline in work performance
• Reduced concentration
• Fatigue

The health worker with any of the above may have substance misuse, stress, depression/anxiety or burnout and would benefit from referral for assessment and follow-up.

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

Communicating effectively with your patient during a consultation need not take much time or specialised skills. Try to use straightforward language and take into account your patient’s culture and belief system.

Integrate these four communication principles into every consultation:

### Listen

Listening effectively helps to build an open and trusting relationship with the patient.

<table>
<thead>
<tr>
<th>Do</th>
<th>The patient might feel:</th>
<th>Don’t</th>
<th>The patient might feel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Give all your attention</td>
<td>• ‘I can trust this person’</td>
<td>• Talk too much</td>
<td>• ‘I am not being listened to’</td>
</tr>
<tr>
<td>• Recognise non-verbal behaviour</td>
<td>• ‘I feel respected and valued’</td>
<td>• Rush the consultation</td>
<td>• ‘I feel disempowered’</td>
</tr>
<tr>
<td>• Be honest, open and warm</td>
<td>• ‘I feel hopeful’</td>
<td>• Give personal advice</td>
<td>• ‘I am not valued’</td>
</tr>
<tr>
<td>• Avoid distractions e.g. phones</td>
<td>• ‘I feel heard’</td>
<td>• Interrupt</td>
<td>• ‘I cannot trust this person’</td>
</tr>
</tbody>
</table>

### Discuss

Discussing a problem and its solution can help the overwhelmed patient to develop a manageable plan.

<table>
<thead>
<tr>
<th>Do</th>
<th>The patient might feel:</th>
<th>Don’t</th>
<th>The patient might feel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use open ended questions</td>
<td>• ‘I choose what I want to deal with’</td>
<td>• Force your ideas onto the patient</td>
<td>• ‘I am not respected’</td>
</tr>
<tr>
<td>• Offer information</td>
<td>• ‘I can help myself’</td>
<td>• Be a ‘fix-it’ specialist</td>
<td>• ‘I am unable to make my own decisions’</td>
</tr>
<tr>
<td>• Encourage patient to find solutions</td>
<td>• ‘I feel supported in my choice’</td>
<td>• Let the patient take on too many problems at once</td>
<td>• ‘I am expected to change too fast’</td>
</tr>
<tr>
<td>• Respect the patient’s right to choose</td>
<td>• ‘I can cope with my problems’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Empathise

Empathy is the ability to imagine and share the patient’s situation and feelings.

<table>
<thead>
<tr>
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<th>Don’t</th>
<th>The patient might feel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Listen for, and identify his/her feelings e.g. ‘you sound very upset’</td>
<td>• ‘I can get through this’</td>
<td>• Judge, criticise or blame the patient</td>
<td>• ‘I am being judged’</td>
</tr>
<tr>
<td>• Allow the patient to express emotion</td>
<td>• ‘I can deal with my situation’</td>
<td>• Disagree or argue</td>
<td>• ‘I am too much to deal with’</td>
</tr>
<tr>
<td>• Be supportive</td>
<td>• ‘My health worker understands me’</td>
<td>• Be uncomfortable with high levels of emotions and burden of the problems</td>
<td>• ‘I can’t cope’</td>
</tr>
<tr>
<td></td>
<td>• ‘I feel supported’</td>
<td></td>
<td>• ‘My health worker is unfeeling’</td>
</tr>
</tbody>
</table>

### Summarise

Summarising what has been discussed helps to check the patient’s understanding and to agree on a plan for a solution.

<table>
<thead>
<tr>
<th>Do</th>
<th>The patient might feel:</th>
<th>Don’t</th>
<th>The patient might feel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Get the patient to summarise</td>
<td>• ‘I can make changes in my life’</td>
<td>• Direct the decisions</td>
<td>• ‘My health worker disapproves of my decisions’</td>
</tr>
<tr>
<td>• Agree on a plan</td>
<td>• ‘I have something to work on’</td>
<td>• Be abrupt</td>
<td>• ‘I feel resentful’</td>
</tr>
<tr>
<td>• Offer to write a list of his/her options</td>
<td>• ‘I feel supported’</td>
<td>• Force a decision</td>
<td>• ‘I feel misunderstood’</td>
</tr>
<tr>
<td>• Offer a follow-up appointment</td>
<td>• ‘I can come back when I need to’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Not at all important/not at all confident</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Very important/very confident</th>
</tr>
</thead>
</table>

- Ask the patient why s/he rated importance/confidence at this number. Ask what might help improve this rating.
- Summarise the patient’s view. Ask how ready s/he feels to make a change at this time.

**Assist the patient with change**

**If the patient is ready to change:**
- Assist the patient to set a realistic change goal.
- Explore the factors that may help the patient to change or may make it difficult.
- Help the patient plan how s/he will fit the change into the routine of the day.
- Encourage patient to use strategies s/he used successfully in the past.

**If the patient is not ready to change:**
- Respect the patient’s decision.
- Invite patient to identify the pros and cons of change.
- Acknowledge patient’s concerns about change.
- Explore ways of overcoming the difficulties preventing change.
- Offer more information or support if the patient would like to consider the issue further.

**Arrange support and follow up**
- Offer referral to counselor and available support services (social worker, health promoter, community care worker, helpline, 155).
- Identify a friend, partner, or relative to support the patient and if possible attend clinic visits.
- Document decision and goals set by the patient.
- Schedule follow-up contact (clinic visit, email, phone) to review readiness and goals.
## HELPLINE NUMBERS

<table>
<thead>
<tr>
<th>Helpline</th>
<th>Services provided</th>
<th>Contact number/s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General counselling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifeline National Counselling Line</td>
<td>Counselling for any life crisis and referral to relevant services</td>
<td>0861 322 322 (24 hour helpline)</td>
</tr>
<tr>
<td>Childline SA (ages 0 - 16 years)</td>
<td>For children and young adolescents who are in crises, abuse or at risk of abuse and violence</td>
<td>0800 055 555 (24 hour helpline)</td>
</tr>
<tr>
<td>National Council Against Smoking</td>
<td>Support for a patient to quit smoking.</td>
<td>011 720 3145 (08:00-17:00 Monday to Friday)</td>
</tr>
<tr>
<td><strong>Abuse</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop Gender Violence</td>
<td>Support for children, women and men experiencing domestic violence</td>
<td>0800 150 150 (24 hour helpline)</td>
</tr>
<tr>
<td>Rape Crisis</td>
<td>Counselling and court support for rape survivors &gt; 13 years</td>
<td>021 447 9762 (24 hour helpline)</td>
</tr>
<tr>
<td><strong>Chronic condition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arthritis Foundation</td>
<td>Education and monthly support groups for patient with arthritis and/or fibromyalgia</td>
<td>0861 30 30 30 (24 hour helpline)</td>
</tr>
<tr>
<td>Epilepsy South Africa</td>
<td>Education, counselling and support groups for patient with epilepsy and his/her family</td>
<td>0860 37 45 37 (08:00-16:30 Monday to Thursday; 08:00-14:00 Friday)</td>
</tr>
<tr>
<td>Diabetes South Africa</td>
<td>Education, dietary plans, support groups and workshops for patient with diabetes</td>
<td>0861 111 3913 (08:30-16:00 Monday to Thursday; 08:30-14:00 Friday)</td>
</tr>
<tr>
<td>Heart &amp; Stroke Foundation</td>
<td>Education and support groups for patient with stroke, any heart condition or CVD risk.</td>
<td>021 422 1586 (08:00-16:00 Monday to Friday)</td>
</tr>
<tr>
<td>National AIDS helpline</td>
<td>Counselling and information for patient who has HIV or thinking of testing</td>
<td>0800 012 322 (24 hour helpline)</td>
</tr>
<tr>
<td>People living with cancer</td>
<td>Cancer related queries. Link to further resources for patient/family with cancer</td>
<td>0800 033 337 (9am-5pm, toll free)</td>
</tr>
<tr>
<td><strong>Mental health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicide crisis line</td>
<td>For any suicide related support</td>
<td>0800 567 567 (8am-8pm) or sms 31393 and a counsellor will call back.</td>
</tr>
<tr>
<td>Mental health helpline</td>
<td>Counselling and support for patient with mental illness or substance misuse</td>
<td>0800 12 13 14 (24 hour helpline)</td>
</tr>
<tr>
<td>Alzheimer’s South Africa</td>
<td>Information, training and support groups for carers</td>
<td>0860 102 681 (08:00-16:00 Monday to Thursday; 08:00-15:00 Friday)</td>
</tr>
<tr>
<td>Alcoholics Anonymous</td>
<td>Counselling, education and support groups for patient with alcohol misuse</td>
<td>0861 435 722 (24 hour helpline)</td>
</tr>
<tr>
<td><strong>Health worker</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisons Information Helpline</td>
<td>Advice on the management of exposure to or ingestion of poisonous substances</td>
<td>0861 555 777 (24 hour national helpline)</td>
</tr>
<tr>
<td>National HIV &amp; TB Health Care Worker Hotline</td>
<td>For HIV and TB related clinical queries</td>
<td>0800 212 506 (08:30-16:30 Monday to Friday)</td>
</tr>
<tr>
<td>Right to Care Adult HIV Helpline</td>
<td>For adult HIV related clinical queries</td>
<td>082 957 6698 (adult helpline) 0823526642 (paediatric helpline)</td>
</tr>
<tr>
<td>Medicines Information Centre (MIC)</td>
<td>Advice on medicine related query like drug interactions, side effects, dosage, treatment failure</td>
<td>021 406 6829 (08:30-16:30 Monday to Friday)</td>
</tr>
<tr>
<td>Nutrition Information Centre (NICUS)</td>
<td>For all nutrition related queries for health workers and the public.</td>
<td>021 933 1408 (08:30-16:30 Monday to Friday)</td>
</tr>
<tr>
<td>Rabies hotline</td>
<td>For any rabies related queries</td>
<td>082 883 9920 (24 hour)</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td></td>
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</tr>
<tr>
<td>Legal Aid</td>
<td>Information and guidance on any legal matter. They will return messages left after hours.</td>
<td>0800 110 110 (07:00-19:00 Monday to Friday)</td>
</tr>
<tr>
<td>Women’s Legal Centre</td>
<td>Provides free legal advice to women who do not have access to legal services.</td>
<td>021 424 5660</td>
</tr>
<tr>
<td>MedicAlert</td>
<td>Assistance with application for Medic Alert disc or bracelet</td>
<td>086 111 2979 (09:00-16:00 Monday to Friday)</td>
</tr>
</tbody>
</table>