theAlfred | Victorian HIV Service
Part of AlfredHealth

HIV Service Algorithms

Version 6.1

Screening and Management of HIV related Co-Morbidities

- Vaccinations
- Dyslipidaemia
- Hypertension
- Diabetes
- Kidney Injury
- Liver Health
- Bone Health
- STI Management
- Neurocognitive Impairment
- Cancer Screening

Vaccination Recommendations in adults with HIV at Alfred Health

Vaccine	Recommendation
Influenza	Annual
Diphtheria, tetanus, pertussis	According to routine recommendations
Varicella	2 doses at least 3 months apart if CD4 cells >200 cells/µL and non-immune. Not recommended if CD4 <200 cells/µL (MMRV not recommended)
Measles Mumps Rubella	2 doses at least 4 weeks apart if CD4 cells >200 cells/µL and non-immune. Not recommended if CD4 <200 cells/µL (MMRV not recommended)
HPV	9vHPV registered and recommended for females up to 45 years and males up to 26 years. Single dose if received prior to HIV acquisition, otherwise 3 doses for immunocompromised (0,2,6 months) and MSM aged >26 years Only available free on the NIP schedule for those <26 years. Available on private prescription for those ≥26 years of age
Pneumococcal conjugate 13 (PCV13)	1 dose all. If never received PPV23 then PPV23 should be given a minimum of 8 weeks after the PCV13. If previously received one or more doses of PPV23 then PCV13 should be given at least 12 months after the most recent dose of PPV23
Pneumococcal Polysaccharide 23 (PPV23)	1 dose 8 weeks after PCV13 (if no previous PPV23 dose) If previous PPV23 dose given, then second dose of PPV23 is recommended 5-10 years after the last PPV23 dose (up to max of 2 doses during person's adult life)
Zoster (Shingrix)	Registered for use in all adults >50 years and those ≥ 18 who are at increased risk of herpes zoster due to immunocompromise. Two doses 2-6 months apart Only available on the NIP schedule for: Individuals ≥ 65 years, Aboriginal and Torres Strait Islander individuals ≥50 years, immunocompromised individuals ≥18 years with high risk conditions: haematological stem cell transplant or haematological malignancy, solid organ transplant and untreated or advanced HIV (CD4 cells <250) Available for others on private prescription
Haemophilus influenzae	According to routine recommendations
Meningococcal B	2 doses for person at risk
Meningococcal ACWY	2 doses (at least 8 weeks apart)
Hepatitis B	4 doses (0, 1, 2 and 6 months) - 40mcg Check HBsAb 4-8 weeks after last dose, if <10 IU/ml, repeat 3 doses at 40mcg Consider delaying vaccination until viral load suppressed by ART and ideally when CD4 cell count > 200 cells/µL.
Hepatitis A	2 doses recommended (0, 6-12 months). Three doses if CD4 <350 cells/µL Can be used in combination with HBV (Twinrix) if CD4 >500 cells/µL or consider with additional 20 mcg dose hepatitis B (so total Hepatitis B dose is 40 mcg) if CD4 count <500 cells/µL
Monkeypox JYNNEOS	For those at risk, two doses at least 28 days apart Standard administration is by subcutaneous injection (0.5mL) May be administered by intradermal injection (0.1mL) as an alternative for pre-exposure prophylaxis. Intradermal injection is not recommended if CD4 <200 cells/µL and not preferred for first dose of post exposure prophylaxis

Reducing Cardiovascular Risk in People Living with HIV

Lifestyle Advice – Should be highlighted in ALL patients	
Dietary Counselling	- Include vegetables (5 serves), whole grains (4-5 serves) and fruit (2 serves) in the diet every day - Aim for 2-3 serves of fish per week - Choose healthier fats and oil: choose lean meat, skinless poultry & low-fat dairy; consider a handful of nuts or ¼ avocado each day - Ensure portions aren't too large, limit sugary, fatty & salty meals and snacks
Exercise	- Encourage regular moderate-intensity exercise (take the stairs, walk to work, swimming etc.) rather than vigorous exercise - Aim for at least 30 minutes of exercise per day
Lifestyle	- Smoking cessation advice, consider referral to smoking cessation clinic - Limit alcohol to no more than standard 2 drinks/day

Assess CVD risk using https://www.cvdcheck.org.au/calculator (note 2023 version)

Cholesterol | Blood Pressure | Glucose | Kidneys | **Liver** | **Antiretrovirals***

If 5-year CVD risk is greater than 5% - consider rosuvastatin 5-10 mg (as per RERIEVE study results)

and if ART history and HIV resistance patterns allow, consider ART modifications:

- Replace older NRTIs or abacavir with TAF, continue with lamivudine or emtricitabine
- Replace older PIs or darunavir with atazanavir or an INSTI (integrase inhibitor)
- Cobicistat has more favourable lipid profile than ritonavir. If on ritonavir consider switch from bd to daily

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Dyslipidaemia in HIV

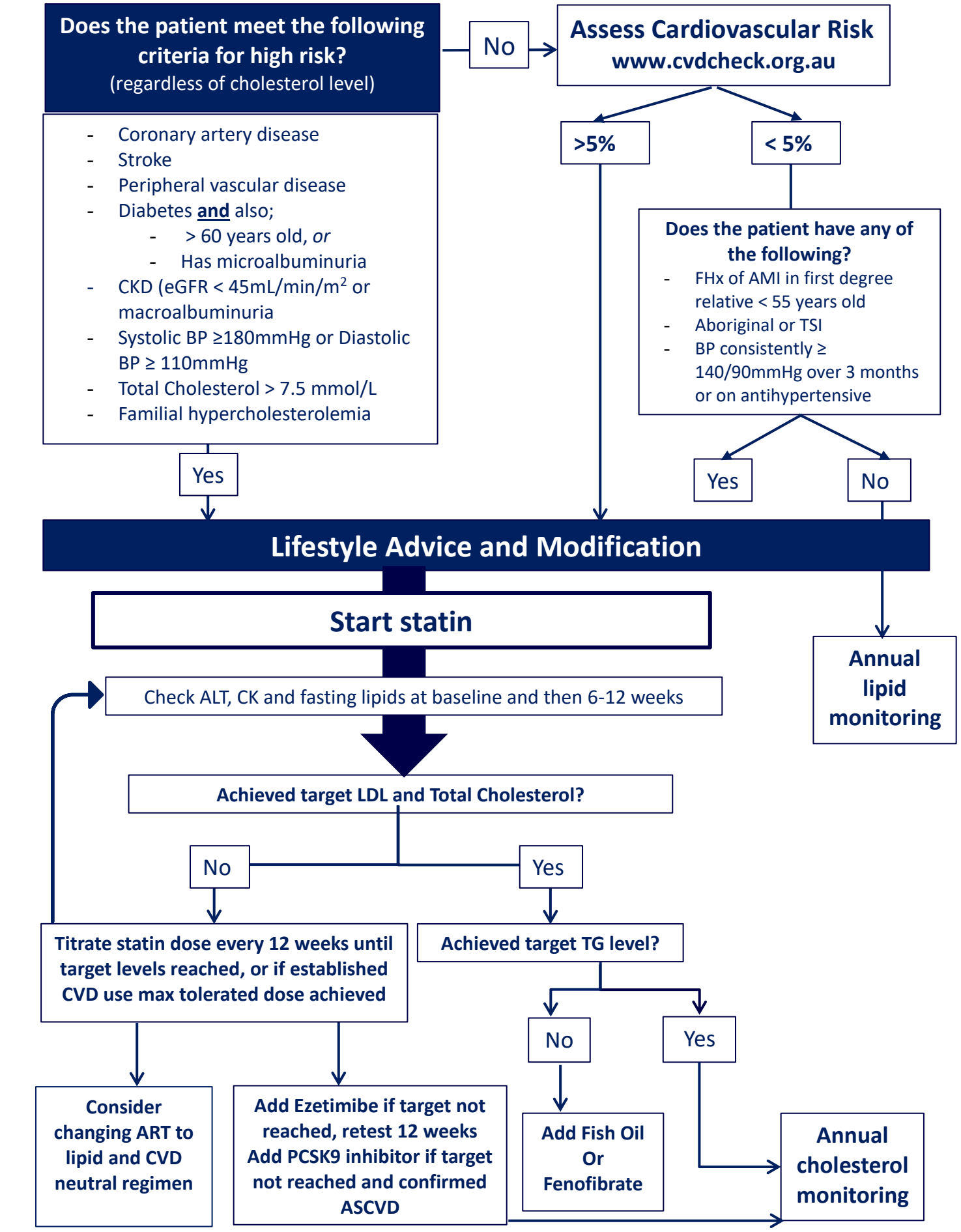
Who to Screen	**ALL** people with HIV
Frequency	At HIV diagnosis, immediately prior to starting ART, annually in those >40, those with other co-morbidities, dyslipidaemia regardless of age.
How to screen	Blood test for total cholesterol, LDL-C, HDL-C, triglycerides. Repeat in fasting state if triglyceride >4.5 or medical intervention required.

LIPID TARGETS ON THERAPY	
Total Cholesterol (TC)	**<4.0 mmol/L**
Low Density Lipoprotein (LDL-C)	**<2.0 mmol/L <1.8 if ASCVD**
High Density Lipoprotein (HDL-C)	**≥1.0 mmol/L**
Triglycerides (TG)	**<2.0 mmol/L**
Non HDL cholesterol (non HDL- C)	**<2.5mmol/L**

Stop statin if:
ALT > 3x ULN
Creatinine Kinase (CK) > 1000 U/L
CK > 500 U/L plus myalgia
Continue statin if only mild muscle symptoms and CK < 500 U/L
Consider rechallenge after 4 weeks at lower dose if reaction mild

Daily Drug Doses

Agent	Starting dose	Max. dose		Comments
		Non-PI/cobicistat ART	PI/cobicistat ART	
Atorvastatin	10mg	80mg	40mg	Check for antibiotic (e.g. clarithromycin, fusidic acid), antifungal and other drug interactions prior to commencing
Rosuvastatin	5mg	40mg	20mg	
Ezetimibe	10mg	No adjustment required		Used in combination, or as monotherapy if statin is contraindicated
Evolocumab	140mg S/C 2 weekly or 420mg monthly	No adjustment required		Indication: LDL>1.8 (documented IHD) or LDL>4.5 mmol/L without documented ASCVD and already on maximum dose statin and ezetimibe. Also indicated if intolerant to statins/ezetemibe
Alirocumab	75mg S/C 2 weekly, can be increased to 150mg 2 weekly	No adjustment required		Indication: LDL>1.8 (documented IHD) or LDL>4.5 mmol/L without documented ASCVD and already on maximum dose statin and ezetimibe. Also indicated if intolerant to statins/ezetemibe
Fish Oil (with high percentage of omega 3 FA)	Omacor 3-4g	No adjustment required		For triglyceride reduction
Fenofibrate	145mg	No adjustment required		For triglyceride reduction Monitor ALT/CK if combination statin/fibrate, ↑ risk of side effects. Dose reduce if renal dysfunction



Refer to Cardiology/HIV metabolic clinic to consider PCSK9 inhibitor if unable to reach targets (LDL>1.8 with documented CVD or >4.5 without CVD, on maximum dose statin

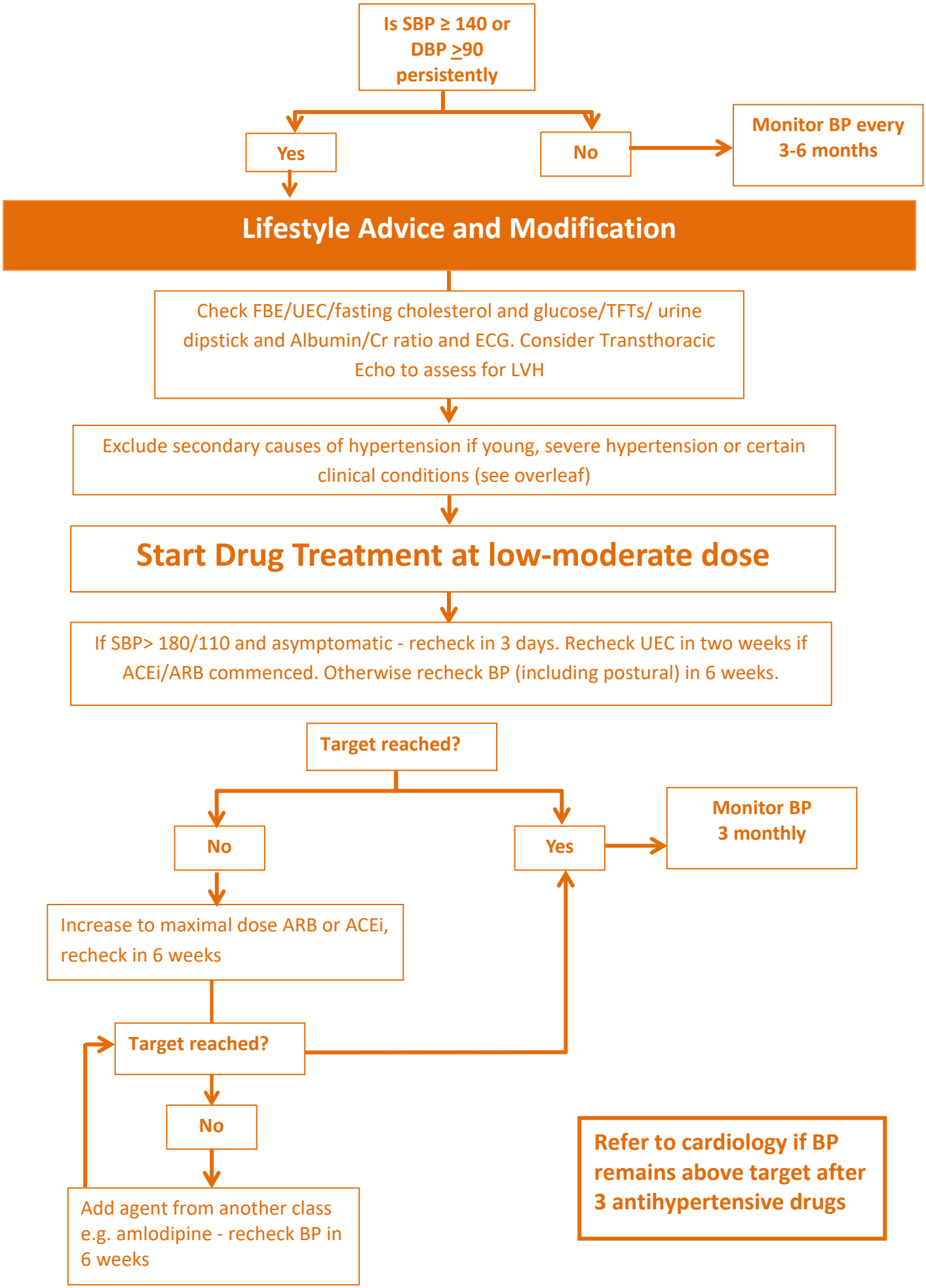
Blood Pressure monitoring and management in HIV

Who to Screen	**ALL** people with HIV
Frequency	At each visit or at least annually
How to screen	Measure BP at rest with an appropriate-sized cuff in both arms at level of heart, ongoing measurement to be done in the arm with the highest BP Measure blood pressure three times in one sitting (average last two) on at least two separate occasions to confirm reading If BP >140/90, confirm with 24 hourly ambulatory BP monitoring or home BP measurement If SBP >180/110 and headache/end organ damage → Medical emergency – refer to Emergency Dept

Targets of Therapy (clinic measurements)	
Patient Group	**TARGET (mmHg)**
High CVD risk >15%	SBP <130/80
Otherwise	<140/90

Secondary Hypertension		
Causes	**When to suspect**	**How to investigate**
Primary Hyperaldosterism	Hypokalaemia (not excluded if potassium normal)	Plasma aldosterone:renin before commencing ACEi/ARB
Cushing's syndrome	Cushingoid or PI with inhaled glucocorticoid	24-hour urinary free cortisol
Phaeochromo-cytoma	Headaches/sweating and palpitations	24-hour urinary catecholamines/ metanephrines
Polycystic kidney disease	Family history/enlarged kidneys	Renal tract US
Reno-vascular	Young, acute worsening of Cr following ACEi	Doppler renal ultrasound
Coarctation of aorta	Radial-femoral delay	TTE
Obstructive sleep apnoea	Obese, daytime somnolence or snorer	Sleep study
Drugs such as NSAIDs/steroids/SNRIs/recreational eg metamphetamine		

Drug	Example drug, dose range	Comments
ACE inhibitor (ACEi)	Ramipril, 2.5mg-10mg daily	Preferred initial therapy unless contra-indications - Increase to maximum dose prior to adding second agent - Do not combine with ARB. Avoid if pregnant.
Angiotensin II Receptor Blocker (ARB)	Candesartan, 8-32mg daily	Preferred initial therapy unless contra-indications - Increase to maximum dose prior to adding second agent Do not combine with ACE In. Avoid if pregnant
Calcium Channel Blockers	Amlodipine, 2.5mg-10mg daily	Preferred treatment added to ACEi or ARB. Do not combine verapamil with Beta blocker Caution with PI ARV therapy
Thiazide Diuretic	Hydrochlorothiazide, 25mg daily	Avoid if gout. Increased risk of diabetes.
Beta blockers	Atenolol, 25-100mg, in one or two doses	Not recommended first line use except if angina, post-AMI Avoid in asthma and bradycardia.


Is SBP ≥ 140 or DBP ≥90 persistently
Yes
No
Monitor BP every 3-6 months
Lifestyle Advice and Modification
Check FBE/UEC/fasting cholesterol and glucose/TFTs/ urine dipstick and Albumin/Cr ratio and ECG. Consider Transthoracic Echo to assess for LVH
Exclude secondary causes of hypertension if young, severe hypertension or certain clinical conditions (see overleaf)
Start Drug Treatment at low-moderate dose
If SBP> 180/110 and asymptomatic - recheck in 3 days. Recheck UEC in two weeks if ACEi/ARB commenced. Otherwise recheck BP (including postural) in 6 weeks.
Target reached?
No
Yes
Monitor BP 3 monthly
Increase to maximal dose ARB or ACEi, recheck in 6 weeks
Target reached?
No
Add agent from another class e.g. amlodipine - recheck BP in 6 weeks
Refer to cardiology if BP remains above target after 3 antihypertensive drugs

Screening and Management of Diabetes in HIV

Who to Screen	**ALL** people with HIV **> 40 years** of age **or** at **any age** if they present with one of the **risk factors** listed below
Screening Frequency	At HIV diagnosis and then annually
How to screen	**Fasting blood glucose (FBG)** and HbA1c Random blood glucose **(RBG)** is a reasonable alternative if unable to obtain FBG

Risk Factors for Developing type 2 Diabetes
Overweight/obesity (BMI>25)
Cardiovascular disease
Aboriginal/Torres Strait Islander ≥18 years old
Pacific Island, Indian subcontinent or Chinese origin > 35 years old
Gestational diabetes
Antipsychotic drug therapy
Impaired fasting glucose
Impaired glucose tolerance

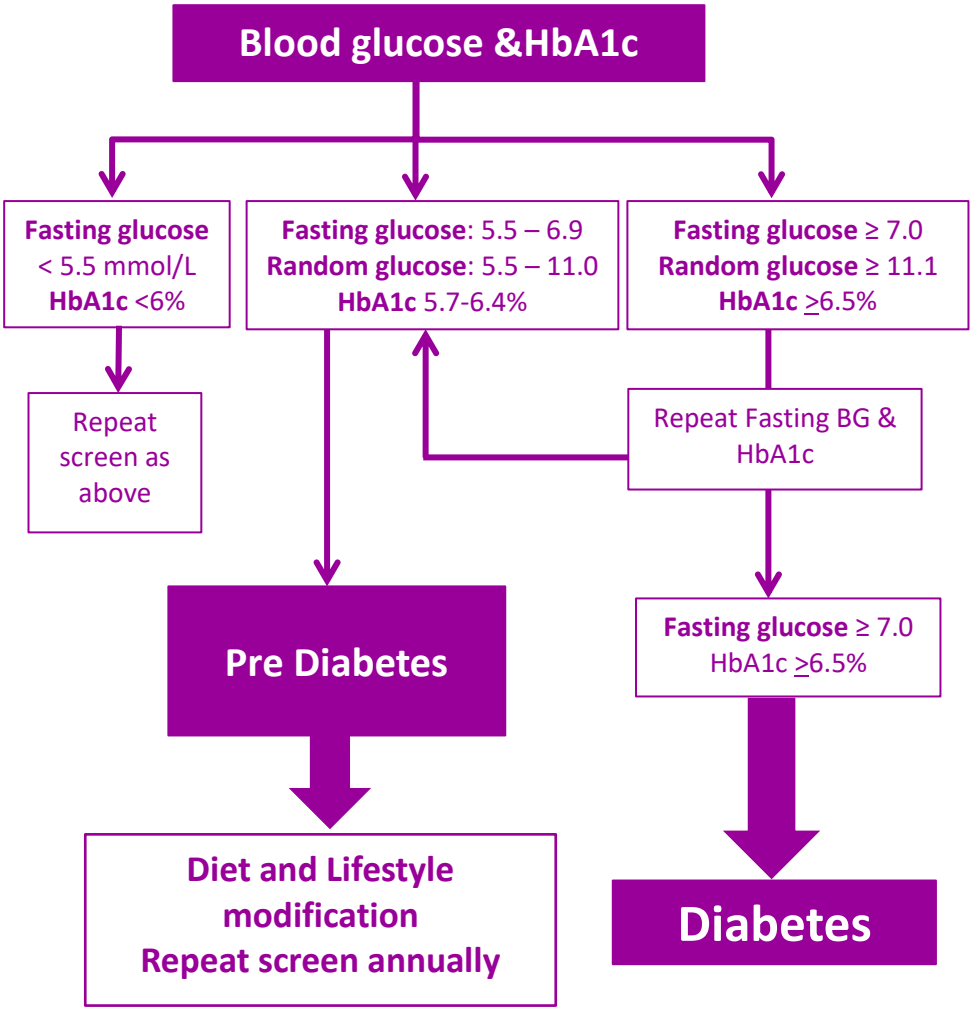
Impaired fasting glucose

Indicator of ↑ risk of diabetes

These patients are already at ↑ risk of cardiovascular disease.

Strict control of cardiovascular risk factors should be a priority

Life style change can delay or prevent progression to diabetes



Refer all patients with newly diagnosed diabetes to:

- Dietician
- Diabetes Educator (esp if on hypoglycaemic drugs that requires BSL monitoring)
- Ophthalmologist/optometrist for retinal screen
- Podiatrist if clinical evidence of peripheral neuropathy/PVD
- Recommend a diabetes care plan through primary care

Refer to Endocrinology if:

- Symptomatic or severe (BSL >20 mmol/L) hyperglycaemia
- Not meeting targets above despite 2 antihyperglycaemic agents and lifestyle management
- Significant complications of diabetes and CV risk factors present
- Any other concerns

Management Steps following a new diagnosis of Diabetes

Step 1:

Further testing
- HbA1C (3-6 monthly)
- Urinary albumin-creatinine ratio (annually)
- Serum UEC (3 monthly if on metformin or renal pathology, otherwise annually)
- Lipids (annually)
- FBE, LFTs (annually)
- Blood pressure and weight at every clinic review

Step 2:

Calculate cardiovascular risk (www.cvdcheck.org.au)
Optimise management of other risk factors (cease smoking, treat hypertension or albuminuria with ACE Inhibitor first line and treat dyslipidaemia as per guidelines)

Step 3:

Trial lifestyle modification for three months and recheck HbA1c

HbA1c < 7%

Continue to monitor & encourage diet adherence

HbA1c >7%

Consider Metformin if eGFR >30 ml/min
(Starting dose 500mg BD or 1000mg XR)

Titrate not more frequently than fortnightly to maximally tolerated dose (3g IR, 2g XR)*
Repeat HbA1c after three months

Achieved target HbA1c?

Yes

Independent of glycaemic management, consider adding an antihyperglycaemic drug with proven CV or renal benefit in patients with:
ASCVD –an SGLT2 inhibitor (dapagliflozin or empaglifolozin) OR GLP-1 RA (dulaglutide or semaglutide)
Heart failure – an SGLT2 inhibitor (dapagliflozin or empagliflozin)
CKD – an SGLT2 inhibitor (preferred) (dapagliflozin or empagliflozin) OR a GLP-1RA (dulaglutide or semaglutide)

No

Add another antihyperglycaemic drug
For patients with ASCVD, heart failure or CKD, prioritise choosing an SGLT2 inhibitor or GLP-1 RA with proven CV or renal benefit
For patients without comorbidities, usually choose an SGLT2i, a DPP-4 inhibitor(gliptins) or a GLP-1RA

Targets of Therapy	
Fasting BSL	6-8 mmol/L
HbA1C	6.5-7%

* Dolutegravir doubles the effective dose of metformin (max 1000 mg XR with normal renal function)
Dose reduce if eGFR 30-50 ml/min (max 1000mg daily)
Consider ceasing metformin if on dolutegravir and eGFR 30-50ml/min

Kidney Injury in HIV

Who to Screen	**ALL** people with HIV
Screening Frequency	**Annually** for Non-tenofovir disoproxil fumarate (TDF) containing ARV regimens **Six** monthly for people on **TDF** **Three monthly** in patients with chronic kidney injury (eGFR <60 ml/min)
How to screen	Serum **UEC** and estimated glomerular filtration rate (**eGFR**) **MSU** for Micro & Culture Spot urine **albumin-creatinine ratio (ACR)** for all Serum **Phosphate** and **protein-creatinine ratio (PCR)** if exposure to TDF

Some ARVs that require dose adjustment in patients with renal impairment

	Usual Dose	**Creatinine Clearance (**based on Cockroft-Gault equation)			
		30 – 49 ml/min	**15 – 29 ml/min**	**5 – 14 ml/min**	**Dialysis**
Lamivudine	**300mg daily**	150mg daily	100mg daily	50mg daily	25mg daily
Emtricitabine	**200mg daily**	Usual dose	200mg 72 hrly	200mg 96 hourly	
Tenofovir (TDF)	**300mg daily**	Consider ceasing			
Tenofovir (TAF)	**25mg daily (unboosted)**	Usual dose	Do not prescribe if CrCl <30 ml/min (or ongoing signs of Fanconi's syndrome)		
Atazanavir	**300mg daily (with ritonavir)**	Do not use in people on dialysis			
Bictegravir/TAF/ Emtricitabine	**1 tablet daily**	Not recommended if CrCl <30ml/min			

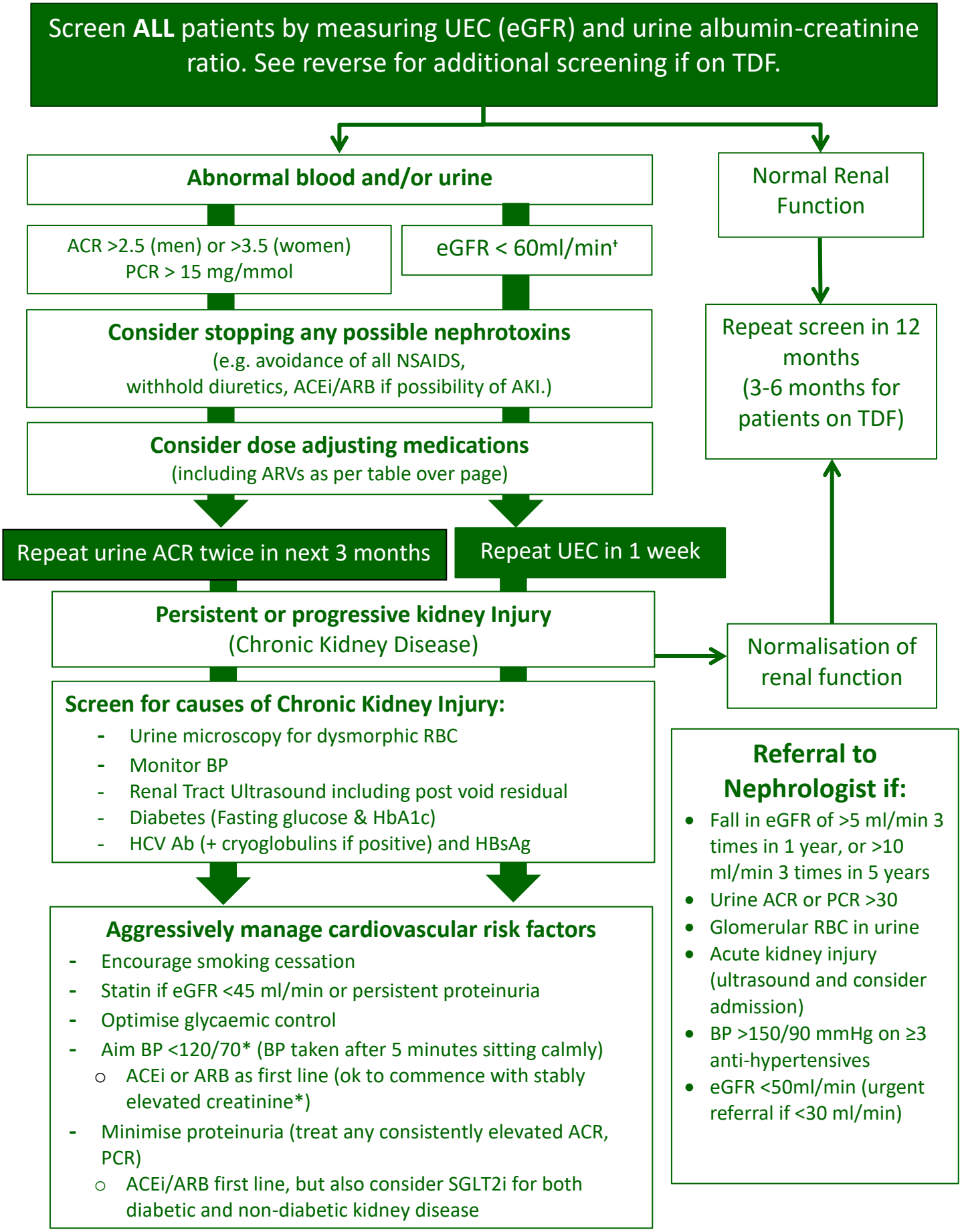
Tenofovir Disoproxil Fumarate (TDF) induced renal dysfunction

TDF can lead to proximal renal tubule toxicity (Fanconi-like syndrome) which occurs in 0.5 – 1.5% of patients receiving TDF. It is often reversible if TDF is ceased early.
TDF can also cause a slow decline in eGFR.

Some Features of Fanconi-like Syndrome (not all may be present):

- Glycosuria (with normal blood glucose)
- Tubular proteinuria (compared to albuminuria)
- Hypophosphatemia (<0.8 mmol/L)

TDF should be ceased in all patients with Fanconi's like syndrome
Consider ceasing TDF if chronic kidney injury identified (eGFR <60mL/min/1.73m2) or high risk for chronic kidney disease
TDF should be switched to a suitable alternative. Ensure the HIV resistance profile and hepatitis B status are taken into account.
It is preferable not to use tenofovir alafenamide (TAF) in subsequent regimens if possible, especially if there are ongoing signs of Fanconi-like syndrome.
TAF is not recommended if eGFR <30mL/min/1.73m2



† Cobicistat, rilpivirine, bictegravir and dolutegravir decrease eGFR without true effect on glomerular filtration. Recheck Cr one-two weeks after starting for new "baseline".

*ACE Inhibitor and ARB may increase serum Cr. If eGFR <45 ml/min repeat UEC in one week. If Cr increased then repeat again for new "baseline".

Liver Health in HIV

Who to Screen	Any person with HIV
Screening Frequency	**6 monthly** if chronic liver disease, otherwise **annually**
How to screen	- Liver function tests - Hepatitis A serology – screen if at risk (MSM) and vaccinate if not immune - Annual hepatitis B serology if remains at risk (unvaccinated or vaccine non-responder). Use ART containing TAF or TDF in vaccine non-responders. - Documented HBsAb response to vaccination – no further HBsAb required unless patient becomes immunosuppressed - If HepBcAb and HepBsAb positive/HepBsAg negative – resolved infection and no further testing required unless significant immunosuppression - If HepBcAb positive and HepBsAg and HepBsAb negative – measure HBV DNA once. If positive then treat as hepatitis B coinfection. Recheck HBV DNA if changing to a non-tenofovir containing regimen and monitor regularly (LFTs & HBV DNA) - Hepatitis D antibodies in all HBsAg positive individuals - Annual Hepatitis C serology if remains at risk (ongoing IVDU/MSM). - HCV RNA if HCV Ab positive. - Annual HCV RNA for cleared HCV infection and ongoing risk.

Causes of persistently abnormal LFTs and assessment of liver disease

Condition	Assessment
Fatty Liver/NAFLD/MAFLD	CVD risk, diabetes screening, lipids Liver Ultrasound (for presence of steatosis)
Alcohol	Alcohol history
Drugs	Drug history, including non-prescription drugs and alternative therapies
Viral Hepatitis	Hep B serology (HbsAg/HBsAb/HBcAb) and Hep C serology/HCV RNA (Hep A IgG to determine immunity)
Autoimmune Hepatitis	ANA, ASMA, AMA, anti- LKM
Coeliac Disease	Coeliac serology
Hemochromatosis	Iron studies
Wilson's Disease	Ceruloplasmin
α1-antitrypsin deficiency	α1-antitrypsin
Non-hepatic causes	Myopathy, strenuous exercise, heart failure

Management of Non Alcoholic Fatty Liver Disease (NAFLD)

1. Assess severity of liver disease (Fibroscan)
2. Check testosterone levels and diabetes (MAFLD)
3. Lifestyle Management – Diet (specifically reduce carbohydrates) and exercise are cornerstone of therapy
4. Avoid alcohol (absolute <10 standard drinks/week)
5. Stop smoking/marijuana
6. No compelling evidence for the use of Vitamin E, metformin, glitazones or semaglutide when used purely for management of steatosis
7. Manage other cardiovascular risk factors, statins have been shown to be safe in NAFLD/MAFLD
8. Consider referral for bariatric surgery if 18-65 years old, and BMI >40 (or BMI >35 and an additional obesity related co-morbidity such as diabetes)

Screen for liver dysfunction with LFTs, viral hepatitis screen
Vaccinate for Hepatitis A and B if non-immune

Liver Injury

ALT > 100 IU/mL

Abnormal GGT or ALP

Recommend stopping possible hepatotoxins, including alcohol

Repeat LFTs/AST/INR three monthly

Persistent or progressive Liver Dysfunction

Screen for causes of Liver Dysfunction (see table overleaf)
Check FBE and INR

Refer for fibroscan to diagnose and stage fibrosis
(https://www.alfredhealth.org.au/contents/resources/referral-forms/Fibroscan-request-form.pdf)
N.B Fibroscan not validated in fatty liver disease

Dose adjustment of antiretrovirals in severe liver disease

Normal Liver Function

Repeat screen in 12 months

Normalisation of liver function

Refer to liver clinic (or Dr Iser in ID) if:

-Acute Liver Injury (ALT >200 IU/ml)
-Significant fibrosis/ cirrhosis
-HCC suggested on US
-Jaundice

Refer to ID Hepatitis co-infection clinic if:

Chronic Hepatitis B or C identified

Common ARVs that require dose adjustment in patients with liver impairment

	Usual Dose	Childs Pugh Score (https://www.mdcalc.com/child-pugh-score-cirrhosis-mortality)		
		A	B	C
Abacavir	300 mg BD or 600 mg daily	200mg BD	Contraindicated	Contraindicated
Atazanavir (with booster)	300mg daily	No adjustment	No adjustment, but no booster recommended	Not recommended
Darunavir (with booster)	800mg daily	No adjustment		Not recommended
Raltegravir 400mg bd or 1200mg daily **Dolutegravir** 50mg daily **Bictegravir (with TAF/FTC)** 1 daily **Cabotegravir** 600mg/3mL **Rilpivirine** 25 mg daily		No adjustment		No data

Screening and Management of cirrhosis

1. Liver Ultrasound to exclude Hepatocellular Carcinoma, 6-12 monthly
2. Alpha fetoprotein
3. INR, Albumin
4. Gastroscopy – annual
5. Vaccination (as per guidelines section 1)
6. DEXA scan
7. Dose adjust ARVs

Bone Health in HIV

Who to Screen	Any person with HIV **> 50 years old**
Screening Frequency	**3 yearly** regardless of age
How to screen	- DEXA for high risk (see overleaf) - Calculate FRAX score (mark **YES** for other secondary causes of osteoporosis) - Measure serum Ca, PO_4, Vitamin D annually - Screen for testosterone deficiency (in men) Request free testosterone level (SHBG and total testosterone) - Falls Risk - https://www.health.vic.gov.au/publications/falls-risk-assessment-tool-frat

Calcium and Vitamin D Supplementation

	Definition of deficient	Replacement Doses	Comments
25-OH Vitamin D	25 - <50 nmol/L moderate to severe deficiency	1,000 IU daily	Replace Vit D before treatment with bisphosphonates
	<25 nmol/L severe deficiency	4,000 IU daily for 4 weeks, then 1,000 IU daily	
Calcium	Less than 3 serves of high calcium food (i.e. dairy) per day	**Encourage increased dietary intake**	**First line**
		If osteoporosis or >80 years, supplement with **caltrate** 600mg daily if dietary calcium inadequate	Must be taken with food.

Screening for Secondary Causes of Osteoporosis

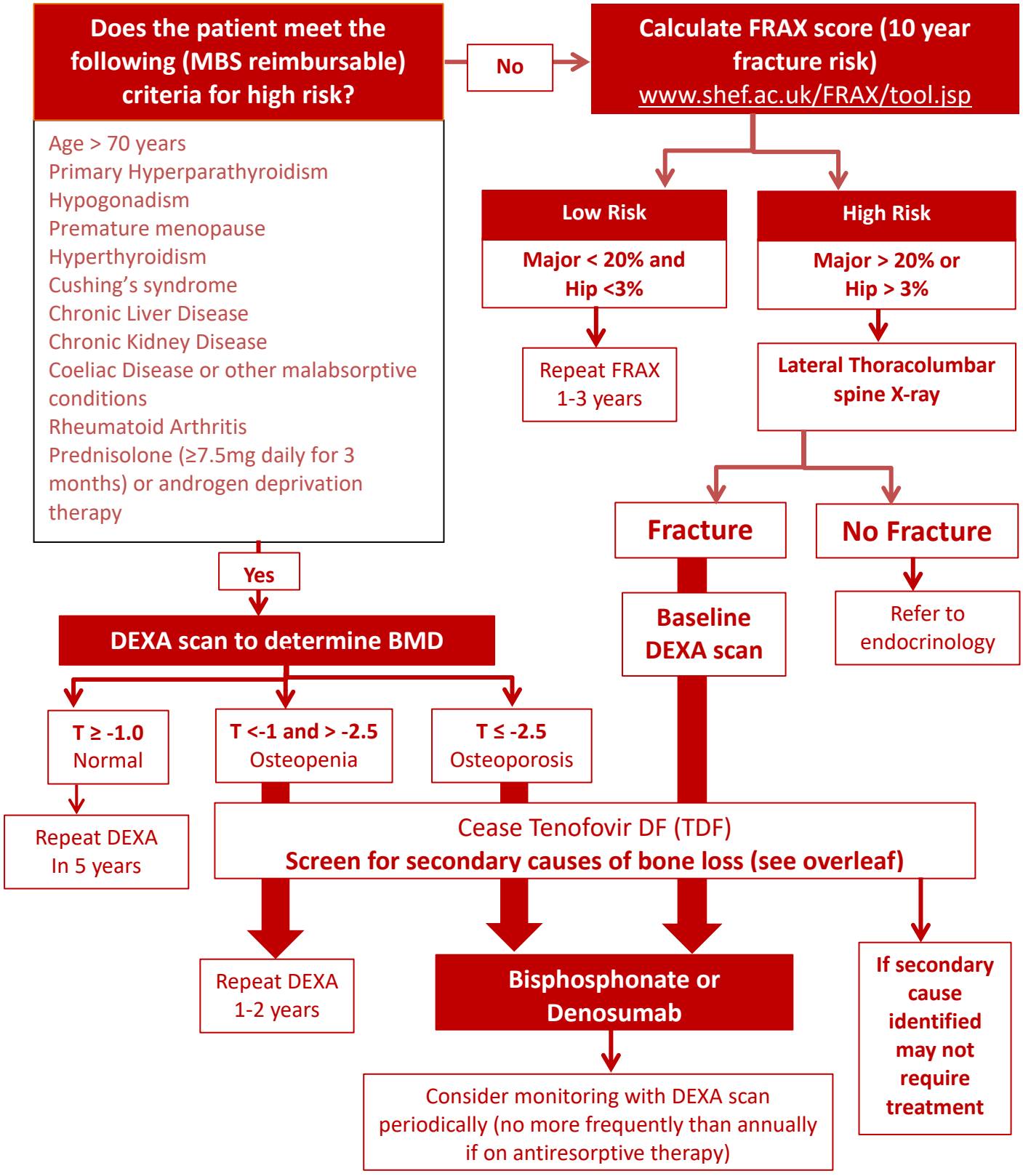
Condition	Screening Test
Hyperparathyroidism	Parathyroid Hormone (PTH), Ca
Hypogonadism	(Men) SHBG & total Testosterone Luteinizing Hormone (LH) (Women) Menstrual history, Oestradiol, FSH and prolactin
Cushing's syndrome	Late evening salivary cortisol
Hyperthyroidism	Thyroid function tests (TFT)
Renal disease	UEC, If on TDF, also Se PO_4, spot urine PO_4, fractional excretion PO_4, urine PCR
Vitamin D Deficiency	Vit D level
Coeliac Disease	Coeliac serology
Liver disease	LFTs
MGUS/ Myeloma	SPEP/ and light chains

Treatment for Osteoporosis

Non Pharmacological	Quit smoking, cease excessive alcohol intake, resistance and balance exercise for falls reduction
Pharmacological	
Zoledronic Acid	5mg IV 1-2 yearly
Risedronate	35 mg p.o. weekly
Alendronate	70 mg p.o. weekly
Denosumab	**60mg SC 6 monthly**

Comments
Bisphosphonates should not be given to patients undergoing major dental procedures
Avoid Bisphosphonates if CrCl <35ml/min
Previous theoretical concern with denosumab but increasing data available to support use

Encourage healthy diet (including adequate calcium), appropriate sunlight exposure, smoking cessation, minimial alcohol and resistance exercise for fracture prevention



Refer to Endocrinology if:

- Secondary Osteoporosis
- Severe osteoporosis on DEXA (Z score <3)
- FRAX score – High risk fracture – no fracture on lateral thoracolumbar spine
- Failure of 1st line therapy
- Zoledronic acid required
- Decreased BMD or new fracture on therapy

PBS Indications for Bisphosphonates	
Osteoporosis	Established Osteoporosis
>70 years old AND BMD T-score ≤ -2.5	Had minimal trauma fracture

Screening/Diagnosis and Management of STIs in HIV

Who to Screen	**ALL** sexually active people with HIV
Screening Frequency	At least annually **4 times per year (or every occasion of HIV VL testing) in MSM with recent STI**
Indications for 3 monthly STI testing (every opportunity)	Any unprotected anal sex, >10 partners in 6 months Episode of STI in last 12 months Participation in group sex Use of recreational drugs during sex
How to screen/diagnose	**Collect first void urine (FVU), anal swab and throat swab for chlamydia and gonorrhoea PCR** Put each site swab into COBAS transport medium Patient can self-collect anal swab if asymptomatic **LGV PCR testing** should be performed on original rectal swab if chlamydia PCR on rectal swab is positive AND patient is symptomatic 
	Collect urethral and/or anal swab for gonococcal culture if discharge present or asymptomatic positive PCR result Collect e swab 
	Collect additional anal swab for herpes simplex (HSV) PCR if symptomatic proctitis and consider syphilis PCR if proctitis is associated with ulceration **Consider MPX PCR if pain with proctitis and appropriate epidemiology** Collect e swab
	Syphilis serology quarterly **Hepatitis A, B & C serology annually if remain at risk (unvaccinated for Hep A and B, ongoing IVDU/MSM for hep C)**

Management of Positive Results in Asymptomatic Patients

Chlamydia

Doxycycline is the treatment of choice for all chlamydia infections regardless of site of infection

Doxycycline 100mg BD for 7 days

Azithromycin 1g stat is used in pregnancy and as 2nd line therapy for uncomplicated genital or pharyngeal infection. For anorectal infections, when doxycycline can't be used - give Azithromycin 1g stat & second 1 g dose 12-24 hrs later

Gonorrhoea

Collect swab from positive PCR site for culture and susceptibility

Ceftriaxone 1g* in 3.5 ml of 1% lignocaine as a single IM injection

*Ceftriaxone monotherapy should only be used in specialist centres where culture based antibiotic susceptibility is monitored

Management of Symptomatic Urethritis in men

- Doxycycline 100mg BD for 7 days
  Or
- Azithromycin 1g single dose (2nd line therapy)

If symptoms, signs or contact tracing suggests gonorrhoea is possible then treat with:

- Ceftriaxone 1g in 3.5ml of 1% lignocaine as a single IM injection

Management of Symptomatic Proctitis

Do not wait for test results

- Ceftriaxone 1g in 3.5ml of 1% lignocaine as a single IM injection ***plus***
- Doxycycline 100mg twice daily for 21 days ***plus***
- Valaciclovir 500mg bd for 5 days

  Doxycycline can be ceased if Chlamydia PCR results is negative

Management of Positive syphilis serology

Early syphilis: primary, secondary or early latent syphilis (<2 years from acquisition if previous negative test available)

- Single dose of benzathine penicillin 2.4 Million International Units (MIU)

(administered as 2 x 1.2 MIU (2 x 0.9g) syringes – one in each buttock)

Late syphilis: (if tertiary syphilis has been excluded)

- 3 doses of benzathine penicillin 2.4 MIU given one week apart

Indications for consideration of LP to rule out neurosyphilis	1. Neurological signs or symptoms 2. Evidence of tertiary syphilis 3. Failure of RPR titre to fall 4-fold within 12 months of adequate treatment 4. Some recommend LPs in those with high serofast RPR (>1:32) despite adequate treatment
Other Considerations	Test of cure with PCR no earlier than two weeks post treatment if: • chlamydia in pregnant women • infection with resistant gonococcal isolates or use of non-standard therapy to treat gonorrhoea Contact tracing (www.letthemknow.org.au for patients) Advise to refrain from sex for 7 days post treatment
Doxy-PEP	Consider the use of Doxy-PEP (200mg [2X100 mg tablets] doxycycline up to 72 hours after sex) primarily to prevent syphilis in those at high risk of STIs For current considerations see: https://ashm.org.au/about/news/doxy-pep-statement/

Screening and Diagnosis of Neurocognitive Impairment

Who to Screen	People with HIV **> 45 years old** Current CD4 cell count **<350 cells/µL** Nadir CD4 cell count **<200 cells/µL** Prior CNS Opportunistic infection Family history of dementia Presence of or high risk of Cardiovascular Disease
Screening Frequency	**At HIV diagnosis, then annually, or in the presence of symptomatic cognitive difficulty**
How to screen	**Instrumental Activities of Daily Living (IADL) Scale OR 3 questions** 1) Is the patient experiencing frequent problems with memory? 2) Does the patient feel they are slower planning activities, problem solving or making decisions? 3) Does the patient have difficulty paying attention to reading, conversations or watching a movie? **Make all efforts to obtain collateral history from partner/family and colleagues**

Initial screen confirms cognitive difficulty
IADL Score of 0 on 2 or more measures OR presence of any memory, attention or planning difficulties

↓

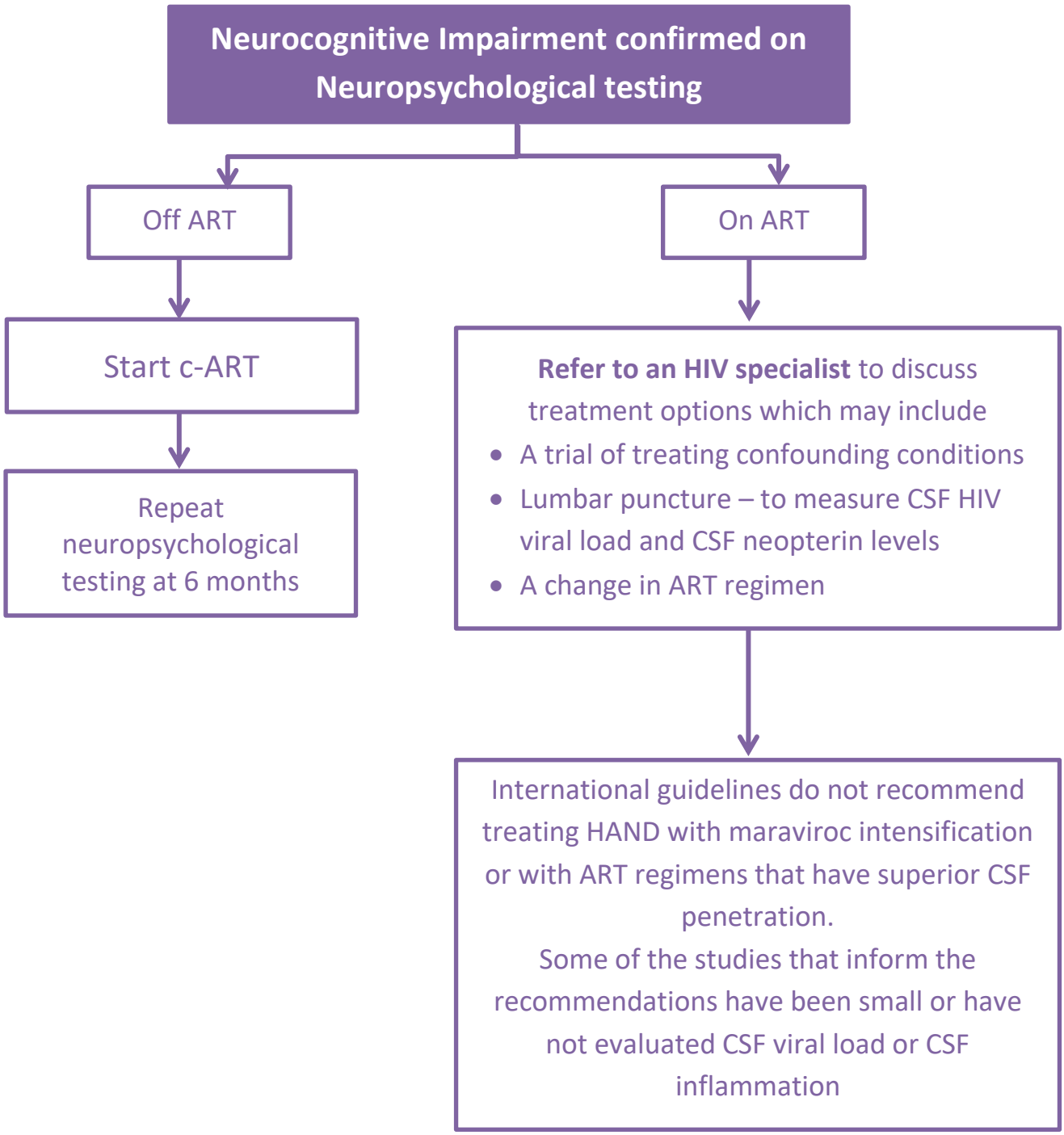
Take a clinical history and assess for confounding conditions which may co-exist with HAND.
Perform Investigations for Neurocognitive Impairment

Confounding conditions

- Mental health conditions including depression and anxiety
- Use of psychotropic drugs
- Excess alcohol and other drug consumption
- Cardiovascular disease or CVD risk factors: hypertension, diabetes, renal disease, dyslipidemia
- Sleep disturbance

Investigations for Neurocognitive impairment

- Brain MRI
- Formal neuropsychological testing: if not available use MOCA https://mocacognition.com/
- TFTs, testosterone, HbA1c, renal function, B12, fasting lipids, syphilis serology



A case-by case approach to the management of patients with HAND is recommended
Professor Bruce Brew and Professor Edwina Wright are available to discuss any cases within Australia as needed via: b.brew@unsw.edu.au and edwina.wright@monash.edu

OR a Referral to the Neurocognitive Health Clinic at Alfred Health for patients in Victoria

Cancer Prevention and Screening Guidelines for People with HIV

Cancer Type	Prevention	Screening	Population	Frequency
Anal Cancer	HPV vaccine Men 9-26 years Women 9-45 years Only available free on the NIP schedule for those <26 years. Available on private prescription for those ≥26 years of age	Visual inspection Anal area DARE (Digital Ano-Rectal Exam) High Resolution Ansoscopy in those with HPV16/18	MSM >50 years	Annual
Bowel Cancer Low/average risk Asymptomatic Moderate-high high risk (First degree relative with colon cancer <55 years or ≥2 with colon cancer any age)		National Bowel Screening test (Faecal Occult Blood test – FOBT) Positive FOBT → Colonoscopy Colonoscopy	PWHIV aged 50-74 years PWHIV ≥ 50 years	Every 2 years Cease at 75 years Every 5 years (with FOBT in intervening years)
Cervical Cancer	HPV vaccine Women 9-45 years Possible benefit in older populations, but only available free on the NIP schedule for those <26 years. Available on private prescription for those ≥26 years of age	Cervical Screening Test (CST test for HPV detection) Indications for referral for colposcopy (1) CST positive for HPV 16/18 (2) CST positive for non-16/18 HPV PLUS abnormal cytology	Women 25 -74 years	Baseline then every 3 years
Hepatocellular cancer	Hepatitis B vaccine if not immune Annual Hepatitis C screening (HCV Ab or HCV RNA with positive HCV Ab) in those at risk	Abdominal ultrasound and Alpha-Foetoprotein (AFP)	PWHIV with chronic HBV and cirrhosis PWHIV and HCV co-infection (untreated and cured) with cirrhosis	Every 6 months

Prostate cancer	Routine screening in low risk or high-risk individuals is NOT recommended[#]	PSA (No role for Digital Rectal Examination) Risks and harms of PSA screening require discussion and informed consent given	PWHIV >50 years who requests screening despite understanding risks and benefits	On demand only after discussion of risks vs benefits and informed consent
Breast Cancer Low risk (no confirmed family history breast cancer) High risk (first degree relative with familial breast cancer (*BRCA1* or *BRCA2)*)	Stop smoking Reduce Alcohol consumption per NHMRC guidelines	Mammogram Mammogram/ Ultrasound/MRI may be considered	Women with HIV 50-74 years	Every 2 years Annual
Skin Cancer (SCC, BCC)	Minimise sun exposure by **wearing sun protective clothing**, broad-brimmed hat, sunglasses and applying SPF30+ or higher sunscreen	Full skin examination (plus history of skin lesion changes)	PWHIV over 50 years	Annually

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Part of AlfredHealth

HIV Service Algorithms

Please direct any comments/suggestions to either Dr Anna Pierce – A.Pierce@alfred.org.au or Prof Jenny Hoy – J.Hoy@alfred.org.au

Contributors for Versions 1, 2 or 3

Vaccinations	Anna Pierce, Michelle Giles, Danielle Kennedy, Jenny Hoy
Dyslipidaemia	James Shaw, Anna Pierce, Janine Trevillyan, Sarah Whiting, Tony Dart, Jenny Hoy
Hypertension	James Shaw, Anna Pierce, Janine Trevillyan, Sarah Whiting, Tony Dart, Jenny Hoy
Diabetes	Daniel Fineberg, Anna Pierce, Janine Trevillyan, Sarah Whiting, Duncan Topliss, Jenny Hoy
Kidney Injury	Anna Pierce, Orla O'Brien, Janine Trevillyan, Sarah Whiting, Rowan Walker, Anastasia Chrysostomou, Jenny Hoy
Liver Health	Anna Pierce, David Iser, Joseph Sasadeusz, Jenny Hoy
Bone Health	Daniel Fineberg, Anna Pierce, Sarah Whiting, Duncan Topliss, Jenny Hoy
STI Management	Anna Pierce, Marcus Chen, Mel Bissessor, Jenny Hoy
Neurocognitive	Edwina Wright, Bruce Brew
Cancer Screening	Anna Pierce, James McMahon, Olga Vujovic, Edwina Wright, Jenny Hoy

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