Primary Care Recommendations for People Living with HIV

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NATIONAL HIV PROGRAMME

SINGAPORE HIV CONGRESS 2023

National Centre for Infectious Diseases

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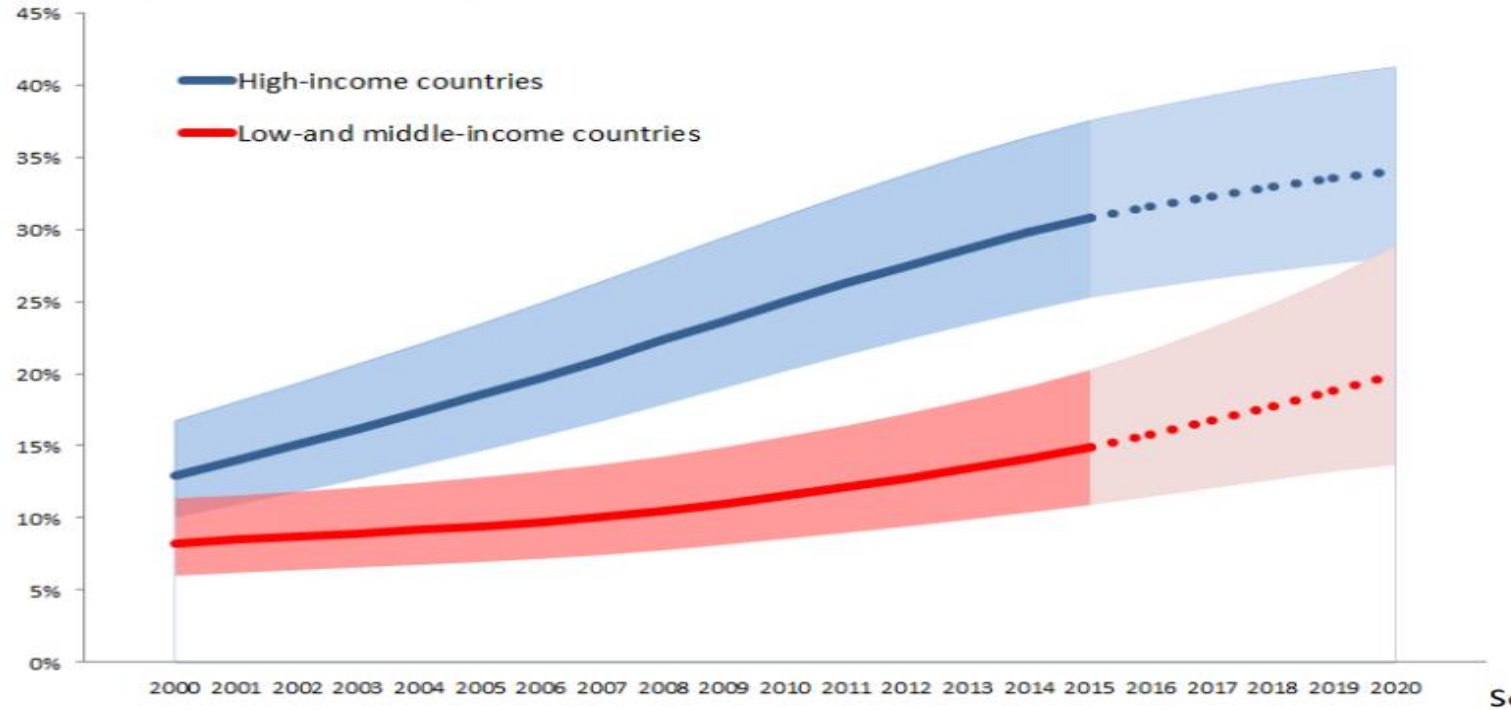
Why do we need a Primary Care Recommendations?

Figure 1: Among adults (15+) living with HIV, the percent who are aged 50 and over, high-income countries and low-and middle-income countries, 2000–2020



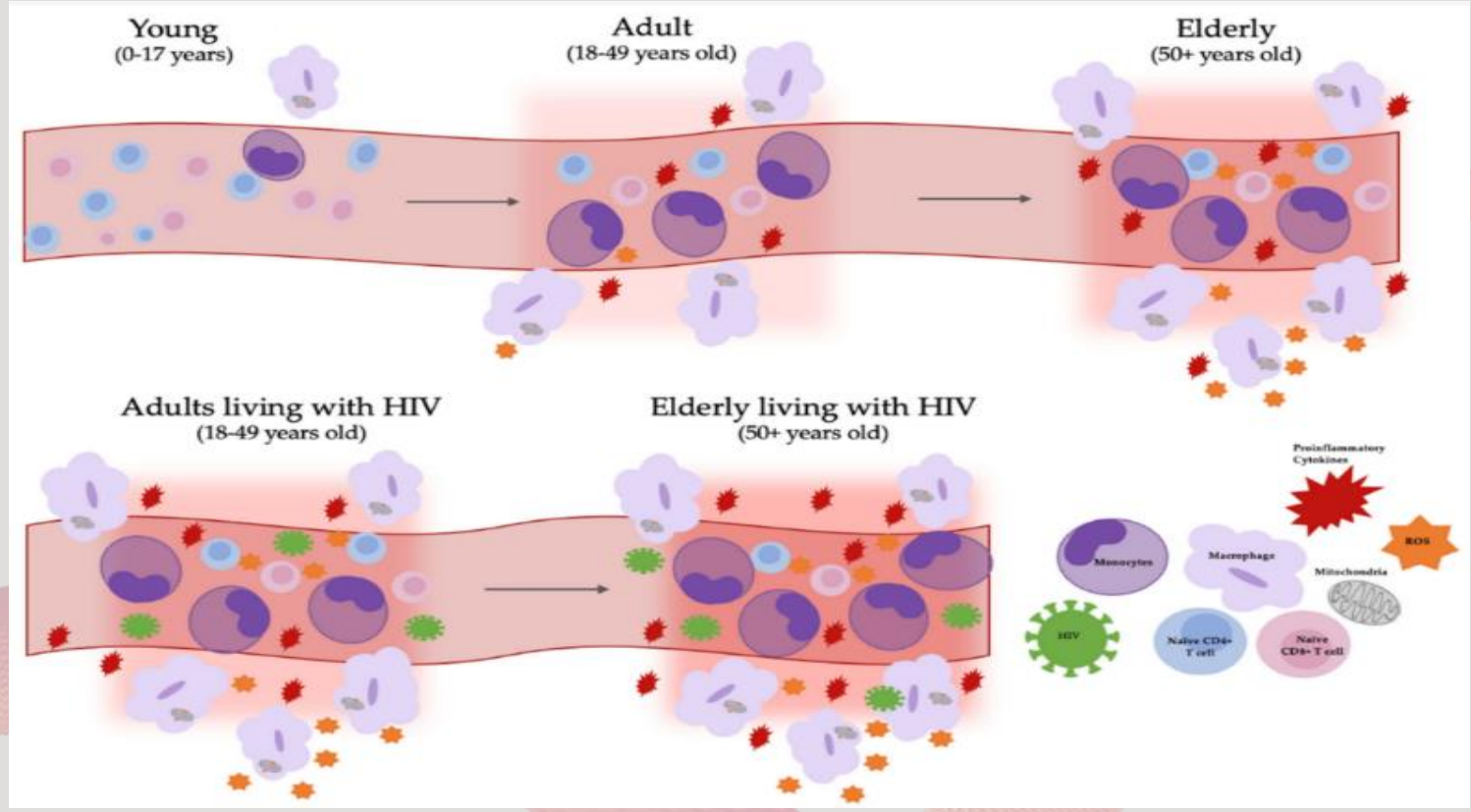
Source: UNAIDS 2016

Estimates. Projections 2016-2020 are based on an assumed scale-up of ART to reach 81% coverage by 2020.
Note: Based on 2015 high-income and low-and-middle-income countries definitions.

[1] Montaner JS, Lima VD, Harrigan PR, et al.. PLoS One. 2014;9(2):e87872.

Why do we need a Primary Care Recommendations?

Compared to their peers who are also above the age of 50:



1. Lancet. 2013 Nov 2;382(9903):1525-33. doi: 10.1016/S0140-6736(13)61809-7.
2. Viruses 2022, 14(2), 409; https://doi.org/10.3390/v14020409

Why do we need a Primary Care Recommendations?

Compared to their peers who are also above the age of 50:

5 times the risk of multimorbidity, even if they have sustained viral suppression

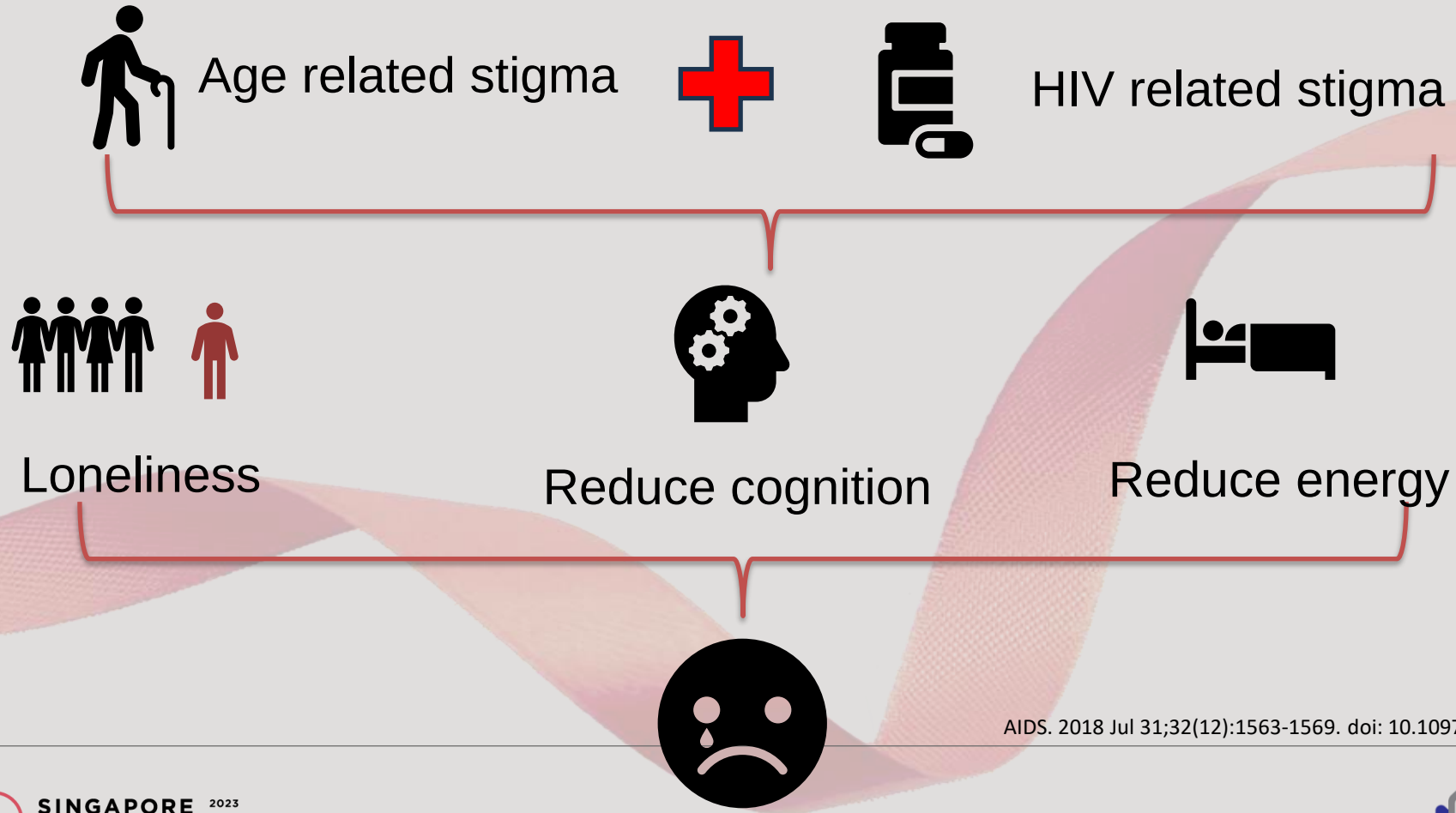
Complicated by




AIDS. 2018 Jul 31;32(12):1563-1569. doi: 10.1097/QAD.0000000000001870.

Why do we need a Primary Care Recommendations?

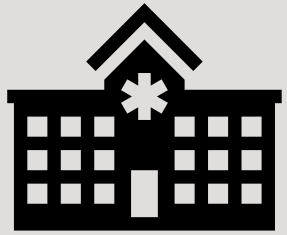
Compared to their peers who are also above the age of 50:



AIDS. 2018 Jul 31;32(12):1563-1569. doi: 10.1097/QAD.0000000000001870.

Why do we need a Primary Care Recommendations?

- Care for older adults are often fragmented and not tailored to their unique needs and challenges
- ID physicians are not specialty trained to handle issues associated with ageing
- Geriatricians and primary care physicians may be less attuned to the needs of people living with HIV



AIDS. 2018 Jul 31;32(12):1563-1569. doi: 10.1097/QAD.0000000000001870.

Purpose of the Primary Care Recommendations?

1. Guide physicians in providing comprehensive care to people living with HIV in both the HIV specialty or primary care setting

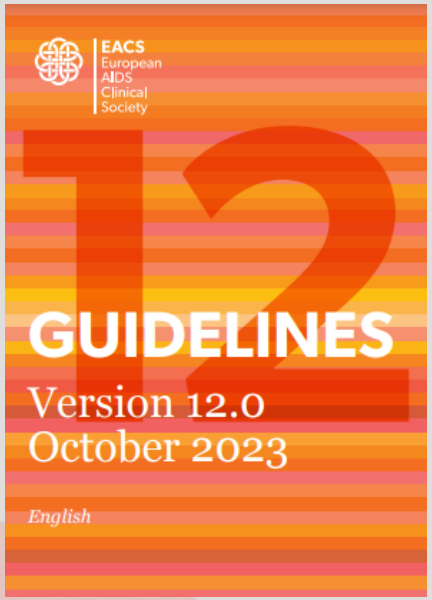
2. Identify gaps in the care of people living with HIV where further research is required

3. Improve the quality of NCD-related care specific to the needs of people living with HIV

4. Improve knowledge of the specific areas of care required when managing NCD in people living with HIV

Recommendation and Workgroup Processes

1. Review of select benchmark international and local guidelines and updates



Recommendation and Workgroup Processes

2. These recommendations are then discussed and adapted to the Singapore context with the Primary Care Recommendations Advisory Group via a consensus decision making process.

3. Consultation and feedback
   - ✓ Chapter of Infectious Disease Physicians, Academy of Medicine Singapore (AMS)
   - ✓ Chapter of Family Medicine Physicians, AMS Academy of Medicine, Singapore
   - ✓ College of Family Physicians Singapore (CFPS)
   - ✓ Community Advisory Board (CAB)

What are the sections of the recommendation?

1. Introduction
2. Ageing and Geriatrics Syndromes
3. Renal care
4. Bone metabolism
5. Cardiovascular Risk factors
6. Liver and viral hepatitis
7. Mental health screening
8. Latent TB screening
9. STI management
10. Cancer screening
11. Vaccinations
12. Multidisciplinary care: Care and counselling, pharmacy, nursing care

Format of the recommendations

Management of HIV-associated Kidney Disease[a]

S/N	Clinical Consideration	Recommendations
1	ART	• Start ART immediately if strong suspicion for HIV-associated nephropathy[b] or HIV immune complex diseases, for instance: proteinuria, unexplained hypertension, abnormalities of urinalysis, otherwise unexplained elevations in creatinine • Avoid nephrotoxic ART in patients with additional risk factors for kidney disease (e.g. tenofovir disoproxil fumarate and tenofovir alafenamide) • Refer to the section below on ART-associated nephrotoxicity for considerations with regards to patients on TDF
2	HIV immune complex kidney disease	• Renal biopsy is recommended for confirmatory histological diagnosis • Consider immunosuppressive therapy
3	ACE inhibitors or angiotensin-II receptor antagonists[c]	• Initiate if presence of hypertension and/or proteinuria • Monitor eGFR and serum potassium levels closely on starting treatment or when modifying dose • Aim for blood pressure target of <130/80 mmHg
4	General measures	• Avoid nephrotoxic drugs • Renally adjust dosages of medications, if necessary • Lifestyle modifications – smoking cessation, weight management, dietary modifications • Manage dyslipidaemia and diabetes

Abbreviations: ART, anti-retroviral therapy; TDF, Tenofovir disoproxil fumarate; HIV, human immunodeficiency virus; GRF, glomerular filtration rate; ACE, angiotensin-converting enzyme

Notes:

a. HIV-associated kidney disease should be managed jointly with a nephrologist. The goal of management is the prevention of progressive renal disease.

b. HIV-associated nephropathy (HIVAN) is characterized by significant proteinuria and progressive kidney failure. It is more prevalent in individuals of African descent and rarely reported in Singapore. ART has been associated with risk reduction for HIVAN as well as longer time to renal replacement therapy in patients with HIVAN[38, 39].

c. ACE inhibition is associated with improved long-term renal survival and reduced risk of renal failure in patients with HIVAN[40, 41].

What are the sections of the recommendation?

1. Introduction
2. **Ageing and Geriatrics Syndromes**
3. **Renal care**
4. **Bone metabolism**
5. **Cardiovascular Risk factors**
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12. Multidisciplinary care: Care and counselling, pharmacy, nursing care

Section 2: Ageing and Geriatric Syndromes

Assessment/Screening tools	When to Screen and frequency	Additional Comments
General approach with focus on: • Frailty → Clinical Frailty Scale • Polypharmacy • Multi-morbidity • Falls • Cognitive impairment → MMSE, AMT and MoCA are available screening tools	• At age 50 years and older • If negative, repeat screen if patient develops multi-morbidity or geriatric syndrome	A holistic approach that is person-centric over a strict methodological adherence to multiple guidelines for each individual disease is preferred. Referral to geriatric and other specialists or allied health professionals including physiotherapists, occupational therapists, dieticians, speech therapists may be required if patients have geriatric syndromes reflecting accelerated ageing.

Section 3: Renal Health

Assessment/Screening tools	When to Screen and frequency	Additional Comments
Renal panel	Every 3-6 months	Avoid nephrotoxic ART e.g. tenofovir disoproxil fumarate (TDF) in patients with risk factors for kidney disease Dolutegravir, bictegravir, rilpivirine, cobicistat and boosted protease inhibitors are associated with an increase in serum creatinine/eGFR reduction (10-15 ml/min or up to 25%) due to inhibition of proximal tubular creatinine transporters without impairment of actual glomerular infiltration
Urinalysis	Annual	
Urine albumin/creatinine ratio or urine protein/creatinine ratio	• if abnormal urinalysis • at least annually for patients with existing chronic kidney disease • at least every 6-months for patients with diabetes	
• Serum bicarbonate and urinary pH • Blood phosphate and urinary phosphate excretion • Blood glucose and glucosuria • Blood uric acid level and urinary uric acid excretion • Serum potassium and urinary potassium excretion	If proximal tubulopathy is suspected for patients on tenofovir disoproxil fumarate	

Section 4: Bone Metabolism

Assessment/Screening tools	When to Screen and frequency	Additional Comments
Dual-energy X-ray absorptiometry (DXA)	• At age 50 years and older • If T-score is normal, rescreening can be done in 3-5 years	For patients on TDF-based regimen who are at risk of osteoporosis or have been diagnosed with osteoporosis, consider switching to another NRTI or consider NRTI-sparing regimen If osteopenia is present, consider the secondary risk factors, and use of the (FRAX™) tool to estimate fracture risk in post- menopausal women and men > 65 years of age. If the risk for fragility fracture is high, consider referral to an endocrinologist
Vitamin D	Consider routine screen at age 40 years and older	If vitamin D is < 10 ng/ml, consider doing DXA. Consider Vitamin D supplementation if Vitamin D < 20ng/ml

Section 5: Cardiovascular risk factor (General Care)

Assessment/Screening tools	When to Screen and frequency	Additional Comments
General Lifestyle Intervention	As clinically indicated	150 to 300 minutes per week of moderate-intensity aerobic activity spread out over 5 to 7 days per week should be undertaken Smoking cessation should be advised A maximum of 2 standard drinks per day for women and 3 per day for men is recommended Weight reduction through diet modification and exercise is recommended if body mass index > 23 kg/m^2

Section 5: Cardiovascular risk factor (Hypertension, Diabetes Mellitus and Hyperlipidemia)

Assessment/Screening tools	When to Screen and frequency	Additional Comments
Blood pressure monitoring	At least annually or at every physical visit Home BP monitoring should be done for any person ≥ 50 years	The recommended target BP treatment levels are: • < 80 years old: BP < 140/90 mmHg • ≥ 80 years old: BP < 150/90 mmHg
Fasting plasma glucose ≥ 7.0 mmol/l, OR Random plasma glucose ≥ 11.1 mmol/l, OR 2-hour post-oral glucose tolerance test plasma glucose ≥11.1 mmol/l	At initial visit, then annually if normal	HbA1c has been found to underestimate the level of glycaemia in people living with HIV. This is due to several reasons, including macrocytosis (for patients on thymidine analogues) and NRTI (particularly abacavir) use, which affect HbA1c values and underestimates the level of glycaemia Dolutegravir may increase the concentration of metformin. US Prescribing Information suggests limiting the total daily dose of metformin to 1000 mg when starting metformin or dolutegravir
Fasting lipid panel	At initial visit, then annually if normal Every 6-12 months if initial screen abnormal	Target LDL cholesterol levels: • Without DM, high-risk of CAD <2.6mmol/L • With DM, very high-risk of CAD <2.1 mmol/L When possible, consider switching ART regimens for patients on PI-based regimens

Section 6: Liver and Viral hepatitis (HIV-HBV co-infection)

Assessment/Screening tools	When to Screen and frequency	Additional Comments
Ultrasound hepatobiliary system (US HBS)	Every 6 months	• Tenofovir-containing regimen is preferred ART regimen • For patients with contraindications to tenofovir, entecavir is recommended together with fully active ART
Alpha-fetoprotein (AFP)	Every 6 months	
Liver function test (LFT)	• At initiation of antiretroviral therapy (ART) • 1 month after initiation of ART • Every 3-6 months after	
HBV DNA	• At initiation of treatment • Every 3-6 months after initiation of treatment • Annually if undetectable	
Transient elastography (e.g., FibroScan®)	At baseline upon diagnosis	

Section 6: Liver and Viral hepatitis (HIV-HCV co-infection)

Assessment/Screening tools	When to Screen and frequency	Additional Comments
US HBS	Every 6 months in patients with HCV-related cirrhosis or F3/bridging fibrosis	Treatment with direct-acting antivirals should be offered and initiated by experienced HIV physician/hepatologist
AFP	Every 6 months patients with HCV-related cirrhosis or F3/bridging fibrosis	
LFT	• At initiation of treatment • 4 weeks after initiation of treatment • Every 3-6 months as per routine once normalized	
HCV RNA	• Baseline • At 12 weeks, 24 weeks and 1 year after treatment cessation • Annually for at risk populations (MSM, PWIDs*)	
Transient elastography (e.g., FibroScan®)	At initiation of treatment	
Genotype testing	Prior to initiation of treatment	

Section 6: Liver and Viral hepatitis (Non-Alcoholic Fatty Liver (NAFL) / Non-Alcoholic Steatohepatitis (NASH)

Assessment/Screening tools	When to Screen and frequency	Additional Comments
General Care		Lifestyle modification and weight reduction should be advised Management of NASH should be in conjunction with an experienced hepatologist
US HBS	As clinically indicated	Preferred first-line imaging modality
FIB-4	As clinically indicated	• FIB-4 = Age ([years] x AST [U/L]) / (platelet count [10^9/L] x ALT [U/L]) to determine risk of fibrosis • A FIB-4 score of ≥ 2.67 has an 80% positive predictive value for advanced fibrosis. However, caution should be used for patients ≤ 35 years or ≥ 65 years of age
Transient elastography (e.g., FibroScan®)	As clinically indicated	Used with FIB-4 to determine risk of fibrosis

Section 7: Mental Health Screening

Assessment/Screening tools	When to Screen and frequency	Additional Comments
PHQ-2	Baseline, then at least annually	Proceed to PHQ-9 if screen positive
GAD-2	Baseline, then at least annually	Proceed to GAD-7 if screen positive
General care		• Medical social worker support to support if mild depression or anxiety • Refer to psychiatrist if moderate/severe depression or anxiety or suicidal or reports history of concomitant substance use

Section 8: Latent TB Screening

Assessment/Screening tools	When to Screen and frequency	Additional Comments
IGRA-QuantiFERON-TB Gold test, OR TB T-spot test	Baseline, unless previously tested positive or had documented TB Repeat in patients with initial CD4 < 200 cells/µL and negative IGRA who subsequently immune reconstitute with CD4 > 200 cells/µL on ART	Active TB must be excluded with symptom screening and plain chest radiograph in patients with positive interferon gamma release assay (IGRA)

Where to find the full text guidelines

The full text Primary Care Recommendations can be found at the NCID website under National Recommendations and Guidelines:

https://www.ncid.sg/About-NCID/OurDepartments/Pages/NHIVP-Guidance-Documents.aspx

https://for.sg/nhivp

Acknowledgements

NHIVP
- A/Prof Sophia Archuleta, Director
- Dr Wong Chen Seong, Deputy Director
- Ms Sally Low, Assistant Manager
- Ms Lavinia Lin, Assistant Manager

Enhanced HIV Programme
- Dr Dariusz Olszyna, Director, NUH
- Dr Teh Yii Ean, Director, SGH
- Dr Edwin Sng, Director, CGH
- Mr P Arun Kumar, Programme Manager, NCID

National TB Programme
- Dr Deborah Ng, Deputy Director
- Dr Tay Jun Yang, Consultant

TTSH specialists
- A/Prof Rinkoo Dalan, Senior Consultant, Endocrinology
- Dr Seow Cherng Jye, Senior Consultant, Endocrinology
- Dr Chew Ling Hui Justin, Consultant, ICC-Geriatric Medicine
- Dr Jaspal Singh Dhaliwal, Senior Consultant, Psychiatry
- Dr Lee Tau Hong, Senior Consultant, Infectious Diseases

NUH Specialists
- Dr Sabrina Haroon, Senior Consultant, Renal Medicine
- Dr Mark Muthiah, Consultant, Gastroenterology
- Dr Tham Sai Meng, Associate Consultant, Infectious Diseases

Multidisciplinary team
- Dr Nathalie Grace Sy Chua, Specialist Pharmacist, SGH
- Dr Ho Lai Peng, Senior Principal MSW, NCID
- Ms Law Hwa Lin, Senior Principal Pharmacist (Specialist), NCID
- Ms Cheng Hong, APN, NCID
- Ms Joy Yong, Principal Clinical Pharmacist, NUH
- Ms Virginie Forget, Senior MSW, NUH

Questions?

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Thank you

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