

HIV TREATMENT

MEETING REPORT

SCOPING CONSULTATION ON NONCOMMUNICABLE DISEASES AND MENTAL HEALTH CONDITIONS IN PEOPLE LIVING WITH HIV:

MEETING REPORT, GLOBAL HEALTH CAMPUS, GENEVA, SWITZERLAND
9-10 APRIL 2019



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ABBREVIATIONS

AH-HA!	Accelerated Action for the Health of Adolescents
AIDS	Acquired immunodeficiency syndrome
HAT	Helping Adolescents Thrive
HbA1C	Glycated haemoglobin
HEARTS	Technical package for cardiovascular disease management in primary health care
HIV	Human immunodeficiency virus
mhGAP	Mental Health Gap Action Programme
PEN	WHO Package of Essential Noncommunicable Disease Interventions
SAFER	WHO-led initiative to reduce death, disease and injuries caused by the harmful use of alcohol using high-impact, evidence-based, cost-effective interventions: strengthen restrictions on alcohol availability; advance and enforce drink driving counter measures; facilitate access to screening, brief interventions and treatment; enforce bans or comprehensive restrictions on alcohol advertising, sponsorship and promotion; and raise prices on alcohol through excise taxes and pricing policies.
TB	tuberculosis

1. BACKGROUND

The scaling up of antiretroviral therapy has significantly reduced the devastating impact of the global HIV epidemic in recent decades. Many people living with HIV are now ageing and require lifelong care and treatment, both for HIV and for chronic comorbidities. People living with HIV now have an increased risk of chronic noncommunicable diseases, including mental health and substance-use conditions. These conditions may be pre-existing, HIV-associated, treatment-associated or age-related. Children and adolescents living with HIV are also at risk of chronic comorbidities such as neurocognitive disorders, which may have life-long consequences and may additionally subject to violence.

The 2016 WHO consolidated antiretroviral therapy guidelines contained limited guidance regarding preventing and managing chronic comorbidities among people living with HIV. The recommendations focus on adults and are limited to assessing and managing cardiovascular risk and depression. The guidelines reference the WHO Package of Essential Noncommunicable (PEN¹) diseases, intervention guide and Mental Health Gap Action Programme (mhGAP) intervention guide for managing these conditions.

The WHO consolidated guidelines for treating HIV infection are being reviewed in 2020–2021. There is increasing global recognition of the burden of chronic comorbidities among people living with HIV and the challenges of managing these chronic comorbidities in low- and middle-income countries. Integrating noncommunicable diseases and mental health conditions and HIV is important as part of universal health coverage. This includes preventing cervical cancer, a flagship initiative of WHO.

Since the 2016 HIV consolidated guidelines were published, other initiatives for managing noncommunicable diseases in low- and middle-income countries, including the HEARTS package endorsed by WHO, have been developed. For children and adolescents, policy documents that address chronic comorbidities have also been produced, such as the Global Accelerated Action for the Health of Adolescents (AA-HA!) and the Nurturing Care for Early Childhood Development Framework. Partners and national programmes are already implementing the integration of the care of noncommunicable diseases and mental health conditions into HIV programmes, with examples of service delivery models of integration.

WHO convened an expert scoping consultation in April 2019, held in Geneva, Switzerland, of policy-makers, academics and partners from the HIV, noncommunicable diseases and mental health communities.²

The objectives of the Consultation were as follows:

- to review the current data on the epidemiology of chronic noncommunicable diseases and mental health conditions and their burden and risk among people living with HIV;
- to review current WHO norms and policies for preventing and managing major noncommunicable diseases and mental health conditions and co-managing these chronic conditions among people living with HIV;
- to identify and set priorities for the technical areas and interventions for co-managing major noncommunicable diseases and mental health conditions among people living with HIV;
- to identify and priorities for the major clinical and programmatic gaps to guide the development of research questions for further systematic reviews and other assessments needed for the future updates of the WHO consolidated HIV treatment guidelines and other technical documents;
- to review country examples of integrating noncommunicable diseases and mental health conditions into HIV treatment programmes and to identify best practices, challenges and opportunities; and
- to create a technical working group to steer a global short- and medium-term agenda on integrating HIV and noncommunicable diseases.

This meeting report summarizes the proceedings and outcomes (areas of consensus) of the Consultation. Annex 1 lists the participants and agenda for the Consultation.

1 Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva: World Health Organization; 2010 (https://www.who.int/nmh/publications/essential_ncd_interventions_lr_settings.pdf, accessed 20 October 2020).

2 Integrating the screening and treatment of cervical cancer (and other HIV-associated types of cancer) is acknowledged as being a priority but was outside the scope of this meeting, since other WHO processes are in place for this disease area.

2. SUMMARY OF PRESENTATIONS AND DISCUSSIONS

Introduction from the WHO Department of HIV: WHO normative work in HIV

Presenters: Meg Doherty and Marco Vitoria

A summary of current WHO recommendations on noncommunicable diseases, including mental health conditions included in the consolidated HIV treatment guidelines, was presented. Plans for updating the HIV treatment guidelines in 2020–2021 were shared. Current guidance regarding differentiated service delivery models was also presented, including that, for people who are stable, reduced frequency of clinic visits and community antiretroviral therapy delivery models are recommended. These should be considered in the delivery of integrated care for comorbidities.

The presentation included an analysis of the Global AIDS Monitoring Tool of policy uptake reported by countries regarding HIV policy on antiretroviral therapy providers assessing and managing cardiovascular risk and depression among people living with HIV. The results of an analysis of national HIV treatment guidelines from countries with a high burden of HIV infection were presented. Both analyses showed limited uptake of WHO recommendations on cardiovascular risk and depression.

Community perspectives

Presenters: Manjusha Chatterjee, Prossy Luzinge and Kevin Moody

The experiences and challenges of people living with HIV in Uganda in accessing care for noncommunicable diseases and mental health conditions were shared. These include paying for treatment, frequent stock-outs of medication, violation of rights and lack of knowledge and/or capacity of health-care workers to diagnose and treat people with noncommunicable diseases.

Noncommunicable diseases and mental health conditions are not given priority in funding and resource allocation; mobilizing funding has been an uphill struggle both at the national level and globally. There is now momentum with the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases and universal health coverage being recognized as a global priority. There is an opportunity for civil society organizations from the noncommunicable disease and HIV communities to work together to advocate for better access to care and treatment. The noncommunicable disease and mental health conditions movement can learn from the HIV movement, which has established grassroots advocacy and activism using a rights-based approach, which has led to significant investment and funding for HIV.

The important role that civil society can play was stressed, including supporting facilities, engaging leaders and holding governments accountable for meeting targets. Self-care for preventing noncommunicable diseases and mental health conditions is important, and civil society organizations have a vital role to play. This is already happening in the WHO European Region, where community-based organizations are working on programmes to prevent noncommunicable diseases. Measurement of effectiveness is critical, but the gold standard of clinical trials is less feasible for evaluating community-run programmes, so other levels of evidence can usefully inform practice.

Cardiovascular disease and HIV infection:

Epidemiology of cardiovascular diseases among people living with HIV

Presenters: Pragna Patel and Linda Kupfer

Most of the disease burden from cardiovascular diseases lies in low- and middle-income countries, where HIV-related mortality is also concentrated. HIV is associated with a higher risk of cardiovascular disease: the risk of acute myocardial infarction is increased by 50% after adjusting for major traditional risk factors. The increased risk remains among those with well-treated HIV. The impact of HIV on risk is comparable to traditional risk factors, such as hypertension and diabetes. Drivers of cardiovascular disease in HIV may include a higher prevalence of traditional (such as smoking) and untraditional (such as stress) risks, unrecognized depression, the effects of antiretroviral therapy and the effects of HIV itself. Tools for assessing the risk of cardiovascular disease underestimate the risk among people living with HIV.

Other noncommunicable diseases among people living with HIV are less clearly understood. Pulmonary disease among people living with HIV is recognized, but aside from smoking cessation, very few data are available on clinical care and therapy. These gaps will be very important to address to improve the respiratory health of people living longer with HIV. Focusing on preventing noncommunicable diseases is important, since addressing modifiable risk factors can affect a range of chronic conditions.

HIV itself is a chronic disease with successful treatment, and health systems therefore need to shift from offering acute care to chronic care. This involves regular interaction with the HIV platform at various stages of disease. These stages are like the stages of common chronic conditions. As countries achieve the 90–90–90 targets, these systems could be adapted to help low- and middle-income countries address both epidemics.

Integrating care is challenging and requires effective collaboration and coordination, trained and incentivized health workers and clear guidelines. The HEAT study in Eswatini demonstrated that people living with HIV highly appreciated managing cardiovascular disease risk factors in an antiretroviral therapy clinic. Clinicians appreciated being able to provide holistic care to people living with HIV but were concerned about their skills and workload. The results of cardiovascular risk factor management were similar among those randomized to management in antiretroviral therapy clinics versus those randomized to management in outpatient services.

Research questions are summarized in the box below.

There has been increased interest in noncommunicable disease integration, and the United States of America National Institutes of Health commissioned a large study, which has developed a research agenda through scoping reviews and also expert consultations.¹

Research questions

Burden of disease

- What is the prevalence of noncommunicable diseases in HIV populations in sub-Saharan Africa?
- What is the prevalence of the noncommunicable disease risk factors in HIV populations in sub-Saharan Africa?
- How can we identify best practices for the screening and treatment of people living with HIV who have noncommunicable diseases in resource-limited countries?

Strengthening health systems

- How can we build in-country capacity to improve care people living with HIV who have noncommunicable diseases?
- How do we enhance health systems to provide integrated HIV and noncommunicable disease prevention, care and treatment?
- How can evidence-informed noncommunicable disease prevention interventions be integrated into HIV prevention initiatives without determining HIV prevention outcomes?
- What are the best practices for optimizing linkage to and retention in care of people with noncommunicable diseases in HIV programmes?
- Does integrating noncommunicable diseases into HIV programmes affect HIV treatment, in terms of adherence or viral suppression or immune outcomes?

Supply chain

- How can we ensure that the appropriate noncommunicable disease diagnostic tests and medications are available in resource-limited settings?
- How do we improve procurement mechanisms to ensure that high-quality medications for noncommunicable diseases are available and affordable?

Policy and economics

- What policy changes are necessary for population-wide noncommunicable disease prevention among people living with HIV? Are they different from those applied to the general population?
- What is the financial cost and morbidity and mortality impact of population-level scale-up of noncommunicable disease prevention, screening, care and treatment programmes?

¹ Vorkoper S, Kupfer LE, Anand N, Patel P, Beecroft B, Tierney WM et al. Building on the HIV chronic care platform to address noncommunicable diseases in sub-Saharan Africa: a research agenda. *AIDS*. 2018;32: S107–13.

WHO normative and other foci of work for cardiovascular diseases

Presenter: Taskeen Khan

The public health approach to managing cardiovascular diseases at the primary health care level, through the use of simple standardized treatment protocols for patient management, access to medications, team-based care and robust clinical monitoring, has not been adequately implemented in most low- and middle-income countries.

WHO guidance and tools for the management of cardiovascular diseases include the Package of Essential Interventions (PEN) as well as the HEARTS technical package, which was developed with partners and published in 2016. The HEARTS technical package² uses a public health approach, which is not just disease-specific but also uses a health system strengthening approach; simplified treatment protocols for primary and secondary prevention and appropriate referral, using a core set of medicines and basic technology; and an improved cascade of service delivery by task-sharing and robust clinical monitoring. It uses practical, step-by-step modules for use by policy-makers and programme managers within health ministries who can influence cardiovascular disease primary care delivery. Single pill fixed-dose combinations can improve the management of hypertension and are included in HEARTS treatment protocols.

Many challenges exist in implementing noncommunicable disease care in low- and middle-income countries; indicators on patient outcomes are absent. Registries are generally absent. In practice, many people with noncommunicable diseases are still seen by specialists in hospital settings. In some countries, only physicians can prescribe or administer medications for noncommunicable diseases. Experience in forecasting supplies of medication for chronic care is not good in primary health care, which is focused on acute care. The more drug combinations for treating people with hypertension vary, the more difficult this is to implement in primary health care and the greater the challenge for the supply chain mechanism.

WHO is in the process of updating its normative guidance on hypertension. There is ongoing work on developing priority medical devices for cardiovascular disorders and diabetes, and frameworks for myocardial infarction, stroke and cardiac failure are also being developed.

WHO normative work on treating tobacco dependence

Presenter: Dongbo Fu

The prevalence of tobacco use is substantially higher among people living with HIV in both high-income and low- and middle-income countries. Quitting results in better quality of life, fewer HIV-related symptoms and higher life expectancy.

HIV programmes have the potential to reach more than 4 million tobacco users a year. Health professionals should at least routinely offer brief tobacco interventions to identify and advise all tobacco users to quit. Even with minimal counselling (less than three minutes), brief advice has been shown to be effective at increasing quit rates. WHO has evidence-informed guidance and tools for health-care workers to treat tobacco dependence with brief advice (the five A's and the five R's brief tobacco interventions in primary care³).

There are successful examples from tuberculosis (TB) programmes that have integrated tobacco cessation. Brief advice for tobacco cessation advocated by WHO was incorporated into the TB control programme in India in 2010: 2879 people with TB receiving directly observed treatment, short-course who used tobacco in any form, were offered brief advice, and 67% who were offered brief advice quit tobacco use.⁴

² HEARTS: technical package for cardiovascular disease management in primary health care. Geneva: World Health Organization; 2016 (https://www.who.int/cardiovascular_diseases/hearts/en, accessed 20 October 2020).

³ Toolkit for delivering the 5A's and 5R's brief tobacco interventions in primary care. Geneva: World Health Organization; 2014 (https://www.who.int/tobacco/publications/smoking_cessation/9789241506953/en, accessed 20 October 2020).

⁴ Kaur J, Sachdeva KS, Modi B, Jain DC, Chauhan LS, Dave P et al. Promoting tobacco cessation by integrating "brief advice" in tuberculosis control programme. WHO South East Asia J Public Health. 2013;2:28–33.

Diabetes mellitus

Diabetes among people living with HIV: epidemiology, treatment, outcomes and gaps in evidence

Presenter: Dinky Levitt

The association between obesity and HIV is still unclear, since there is very little evidence. In the past, when access to antiretroviral therapy was limited, low body mass index and HIV were associated. However, now that people are starting antiretroviral therapy earlier, the interrelationship is not completely understood. It appears that people living with HIV have similar body mass index when antiretroviral therapy is started early. The impact of newer antiretroviral drugs on body mass index requires clarification. More recently, some studies demonstrated an association between integrase inhibitors and body weight gain. The interaction between hormones, the immune system and endocrine and metabolic disorders among people living with HIV is still largely unknown.

Data on the prevalence of diabetes in the general population of sub-Saharan Africa are scarce. National data are lacking, diagnosis is usually not standardized and the methods of studies estimating prevalence vary. In addition, diabetes is often underdiagnosed and unrecognized. A systematic review of the prevalence of diabetes among people living with HIV in sub-Saharan Africa found an estimated prevalence between 1.3% and 18%. Diabetes rates vary depending on antiretroviral therapy status, but small sample size limits the studies. An increased risk of diabetes among people living with HIV appears to be largely driven by antiretroviral therapy, specifically older-generation antiretroviral drugs (such as indinavir).

Data regarding the outcomes of diabetes among people living with HIV are unclear. Some studies show a higher HbA1C among people on antiretroviral therapy and some a lower HbA1C; in some studies, comparable outcomes are seen. Whether there is any association with more rapid progression is unclear. Some studies suggest that HIV may be protective for some microvascular complications, but this is unclear.

There are many gaps in the evidence regarding diabetes among people living with HIV. These include the epidemiology, prevalence and incidence of diabetes among people living with HIV, which diagnostic test should be used, the impact of newer drugs, the risks of complications and preventing and managing diabetes among people living with HIV.

WHO normative guidance and scope of work on managing diabetes

Presenter: Gojka Roglic

WHO recommendations on testing, diagnosis and management of diabetes were presented. These recommendations are included in the PEN which uses a health system strengthening approach to address noncommunicable diseases through a primary care approach to treatment.

WHO recommends testing people for diabetes who have symptoms and people older than 40 years who are overweight or obese. The diagnostic criteria for diabetes are specified, and WHO endorses point-of-care measurement of plasma glucose and HbA1C if a laboratory is not available. Guidelines also include counselling for healthy behaviour, exercise, smoking cessation and managing the acute and chronic complications of diabetes, such as foot care.

WHO recommends noncommunicable disease team-based care for diabetes, including task-shifting of elements of care to nurses; however, this is rarely the scenario in low- and middle-income countries, where diabetes care is still largely delivered by physicians in hospitals.

Noncommunicable diseases can be integrated with other clinic schedules, and existing resources, infrastructure and personnel can be used. For example, WHO and the International Union against Tuberculosis and Lung Disease has developed a collaborative framework for care and control of diabetes and TB. This has been piloted successfully in a few studies in China and India.

Country examples of integrated service delivery for noncommunicable diseases and HIV

Country	Presentation	Presenter
Malawi	Integration of hypertension services at Lighthouse and Martin Preuss Centre in Lilongwe, Malawi	Sam Phiri
Uganda	Integrated hypertension and HIV care cascades in a HIV treatment programme in eastern Uganda: a retrospective cohort study. Uganda Initiative for Integrated Management of Noncommunicable Diseases, Kampala, Uganda, Makerere University Joint AIDS Program	Martin Muddu
Eswatini	Integration of noncommunicable disease prevention, treatment and assessment in HIV programmes: experience from Eswatini. Ministry of Health, Eswatini	Velephi Okello

Mental health conditions

Epidemiology of mental health among people living with HIV

Presenter: Rosie Mayston

People living with HIV face several life challenges on both the individual and a structural levels that present multiple risk factors for common mental health conditions, such as depression and anxiety. Chronic mental health conditions may lead to high-risk behaviour, while high-risk behaviour and acquisition of HIV may lead to poor mental health.

Depression is the most common mental health diagnosis among people living with HIV, closely interrelated with anxiety. Research from high-income countries suggests that the prevalence of depression is higher among people living with HIV than in the general population. However, evidence from low- and middle-income countries shows heterogeneity of prevalence and a diversity of measures. A 2001 meta-analysis of 10 studies showed that HIV is associated with an increased risk of depression compared with the general population in low- and middle-income countries. However, many studies had small sample size. The true prevalence of depression among people living with HIV and how this relates to the prevalence of the local general population is therefore uncertain.

Data are lacking on alcohol and substance use among people living with HIV in low- and middle-income countries. In high-income countries, some evidence indicates that the prevalence of alcohol use disorder may be higher among people living with HIV than in the general population. HIV-associated nervous system disorders have a biological pathway. Although antiretroviral therapy reduces HIV in the central nervous system and has reduced the amount of HIV-related dementia, HIV can remain in the central nervous system, manifesting as milder forms of cognitive impairment. Studies suggest that the prevalence of impairment may be quite similar across high- and low-income settings. There is scarce evidence for the prevalence of severe mental illness among people living with HIV: in the United States of America, the prevalence was 10 times that of the general population: 6.0% versus 0.6%.⁵ The pooled prevalence of severe mental disorders for studies carried out in African settings was 19%.

Strong evidence indicates that depression adversely affects adherence as well as morbidity and mortality. For alcohol use disorder, some evidence indicates adverse impact on disease progression and possibly an indirect impact through adherence. HIV-associated nervous system disorders are associated with advanced HIV disease; the extent to which cognitive impairment independently impacts adherence is not known, but evidence indicates that cognitive problems among older people inhibit the ability to adhere.

Generally, treatment for mental health conditions improves mental health and quality of life in the presence of comorbid physical disease at levels similar to that in the general population. There is, however, little evidence from low- and middle-income countries.

Although there is relatively good evidence about the effectiveness of treatment in improving depressive symptoms, there is some uncertainty about how interventions affect HIV-related outcomes. There are now some pilot findings from low- and middle-income countries on group-based counselling, task-shifting and examples of models of integrated care for HIV.⁶

5 Hughes E, Bassi S, Gilbody S, Bland M, Martin F. Prevalence of HIV, hepatitis B, and hepatitis C in people with severe mental illness: a systematic review and meta-analysis. *Lancet Psychiatry*. 2016;3:40–8.

6 Chuah FLH, Haldane VE, Cervero-Liceras F, Ong SE, Sigfrid LA, Murphy G et al. Interventions and approaches to integrating HIV and mental health services: a systematic review. *Health Policy Plan*. 2017;32(Suppl. 4):iv27–47.

There are many gaps in the evidence, and key questions exist: mental health conditions are commonly perceived as being a consequence of HIV infection, but is this accurate? It may be more a syndemic situation. What is the strength of the evidence that the prevalence of depression is high among people living with HIV? What is the evidence for the co-management of severe mental health conditions and HIV and substance use and HIV. What effect does treating people with mental disorders have on the 90–90–90 targets (especially the first two)? What are the optimal models for integrating the care of mental health conditions, noncommunicable diseases and HIV?

Presentation by WHO: Mental health and HIV: understanding and addressing the intersections

Presenters: Neerja Chowdary and Tarun Dua

The global burden of disease and massive treatment gap for mental health conditions were presented. The prevention and treatment of mental health disorders are poorly funded, but the high return on investment in care was stressed, based on a robust evidence base.

WHO's Comprehensive Mental Health Action Plan and other normative guidance and consists of clinical tools for non-specialists, manualized psychological intervention tools for capacity-building and tools to scale up integrated mental health care for district health managers. SAFER,⁷ a package of proven interventions to reduce harm caused by alcohol, was also presented, as were recently published WHO guidelines on managing physical health conditions (including HIV) among people with severe mental disorders and HIV.⁸

Other initiatives in which WHO is involved are the UNAIDS thematic segment on mental health and HIV, with publication of an advocacy brochure and a reference document for integrated services expected to be published in the near future. WHO is also developing the Helping Adolescents Thrive (HAT) package, a cost-effective, affordable and scalable package of interventions for promoting mental health and preventing mental disorders, risk behaviour and self-harm among adolescents.

Country examples of integrated service delivery for mental health conditions and HIV

A summary of presentations is shown below.

Country	Presentation	Presenter
Ethiopia	Programmatic integration of HIV and mental health in Ethiopia Centre for Global Mental Health, King's College London, and Department of Psychiatry, Addis Ababa University; WHO Collaborating Centre for Mental Health Research and Capacity Building	Charlotte Hanlon
Islamic Republic of Iran	HIV and AIDS – mental health and drug abuse Center for Noncommunicable Disease Control and Prevention and Cardiovascular Disease Office, Ministry of Health, Islamic Republic of Iran	Alireza Mahdavi
Malawi	Integrated noncommunicable disease and HIV care in Neno District Partners in Health, Malawi	Emily Wroe

Discussion

- It was clarified that the consultation focused on noncommunicable diseases and mental health conditions among people living with HIV. People with HIV have noncommunicable diseases and should be treated for both conditions, and the goal should be to identify those who are at high risk of noncommunicable diseases, such as cardiovascular disease and diabetes, and treat them.
- Participants stressed the importance of recognizing that most noncommunicable diseases occur in people who do not have HIV, and access to diagnosis, care and treatment for everyone who has a noncommunicable disease or mental health condition is the goal. The overarching focus should be on health system strengthening and on providing person-centred care that is affordable for both HIV and noncommunicable diseases. Access to medicines to treat noncommunicable diseases is a major issue in many low- and middle-income countries. It was recognized that it will take time for health systems in low- and middle-income countries to reach universal health coverage, which is the goal.

⁷ SAFER: preventing and reducing alcohol-related harms. Geneva: World Health Organization; 2010 (https://www.who.int/substance_abuse/safer/msb_safer_framework.pdf, accessed 20 October 2020).

⁸ Management of physical health conditions in adults with severe mental disorders: WHO guidelines. Geneva: World Health Organization; 2018 (https://www.who.int/mental_health/evidence/guidelines_physical_health_and_severe_mental_disorders/en, accessed 20 October 2020).

- The importance of not creating a parallel health-care system, in which treatment and care for noncommunicable diseases and mental health conditions is available to those with HIV but not to those without HIV was stressed. However, there the commonalities between HIV and noncommunicable diseases need to be examined.
- In the future, people with noncommunicable diseases could be cared for in HIV programmes. Through this process, we may set priorities for treatment and care of people with noncommunicable diseases in the general population. Getting a health system to manage noncommunicable diseases one way among people living with HIV and a different way among non-HIV-infected people would be very difficult. There is a need to harmonize as much as possible with noncommunicable diseases and mental health programmes and not have separate systems.
- There is a need to be very practical about algorithms, screening, where things are done etc.
- The specificities of HIV should be the focus: the noncommunicable diseases and mental health conditions for which people with HIV have a higher risk. Lessons learned from HIV service delivery platforms, including task-shifting, multi-month prescribing, differentiated service delivery models and fixed-dose drug combinations, serve as examples of how care can be structured for all people with noncommunicable diseases and may also be used to treat everyone with noncommunicable diseases and mental health disorders, regardless of whether they have HIV.
- For mental health conditions, core principles should be adhered to: evidence-informed, rights-based, person-centred and parity between physical and mental health conditions.
- Nurses and health officers can successfully treat people with common and severe mental health conditions in primary care, with good evidence around this. System strengthening has been found to be a key component to support such models of task-shared mental health care, including supervision and mentorship and quality improvement initiatives.
- However, acknowledging that can be challenging: for example, Eswatini tried to implement a screening tool for depression for everyone with HIV attending an antiretroviral therapy clinic, but this was challenging. In HIV care, those at highest risk may have to be selected: this could be those who are struggling with adherence.
- Integration can also be bidirectional, such as bringing the HIV services into the mental health services. Both approaches are likely to be required, reaching different groups of people living with HIV who have comorbid noncommunicable diseases and mental health conditions.
- Adherence counsellors in HIV clinics could be trained in evidence-informed psychological interventions and be integrated into group support, building on a strong evidence base from the non-HIV sector.
- Remembering key HIV populations is important, such prisoners at high risk of substance use etc.

Noncommunicable diseases and mental health conditions among children and adolescents

Presenter: Lisa Frigati

Children have a persistent and ongoing burden of HIV, with 180 000 children acquiring HIV in 2017, and only 43% of children living with HIV younger than 15 years were receiving antiretroviral therapy in 2016. An estimated 2.1 million adolescents are living with HIV, 84% living in sub-Saharan Africa.

Children's developing brains, bones and lungs are particularly susceptible to HIV infection and the adverse effects of treatment. There may be background rates of other noncommunicable diseases that are common in children: such as rheumatic heart disease, asthma, anaemia, malnutrition and seizures.

Noncommunicable diseases among children with HIV are increasingly being recognized. Neurocognitive effects are well recognized, and although early antiretroviral therapy improves outcomes, many children are still not receiving early antiretroviral therapy. Further, children's neurocognitive issues differ from those adults. Other noncommunicable diseases include insulin resistance, bone health issues and metabolic abnormalities. Cancer is another important comorbidity. In South Africa, a study of a cohort of adolescents living with HIV infected perinatally and HIV-negative adolescents from the same community showed no difference in body mass index but higher rates of hypercholesterolaemia and lipid abnormalities. Multimorbidity was common.

Different service delivery platforms already established could be used to address screening for and managing noncommunicable diseases among children at different stages of their lives. For those younger than 5 years, early childhood

development, under-five clinics and HIV services. For those 5–10 years old, schools and HIV services, and for adolescents, adolescent-friendly services.

Many gaps exist in how to screen and manage noncommunicable diseases among children and adolescents. There are no standard definitions of neurocognitive impairment for children and adolescents living with HIV. Standardized, validated screening tools are needed.

Many questions remain. What is the global prevalence of insulin resistance, diabetes, hypertension, stunting, obesity, chronic renal disease in children and perinatally infected adolescents? We need examples of service delivery and implementation specific to children and adolescents and differentiated service delivery platforms that integrate HIV, noncommunicable diseases and reproductive health care for adolescents.

WHO noncommunicable disease and mental health priorities for children and adolescents

Presenter: Martina Penazzato

Children continue to acquire HIV, and for adolescents, the decline in the number of adolescents acquiring HIV has flatlined. Only half of children living with HIV receive antiretroviral therapy, and viral suppression is consistently lower among children than among adults, and adolescents have inadequate access to antiretroviral therapy.

In the past five years, rapid uptake and implementation of the “treat all” policy, with earlier median time at antiretroviral therapy initiation, has occurred, but significant delays still occur in western and central Africa. Harmonizing antiretroviral therapy regimens with dolutegravir is now recommended. Rapid scaling up of maternal antiretroviral therapy with more consistent exposure to antiretroviral drugs in utero and breastfeeding for HIV-exposed infants and children.

There are several new global initiatives. In the context of maternal antiretroviral therapy, WHO supports longer duration of breastfeeding. There is better awareness of the short- and long-term complications of HIV infection and antiretroviral therapy. More efforts are needed to integrate and differentiate care services. There is increasing attention to adolescent health and the transition from paediatric care to adult care. There are global initiatives to diagnose cancer and deliver treatment to children and adolescents.

Service delivery for children and adolescents is a continuum, but specific needs are to be addressed for young children: the nurturing care framework and interventions, focusing on health and nutrition, for school-aged children and adolescents. The same adult service delivery elements of care as antiretroviral therapy refills, clinical consultations and psychosocial support apply to children and adolescents.

Mental disorders account for a substantial proportion of the global disease burden among adolescents. Up to half of adult mental health problems begin during childhood and adolescence. There is a focus and more emphasis on promoting mental health and preventing mental health conditions.

The questions for this expert consultation include the following. Are there additional clinical conditions or noncommunicable diseases we need to consider? What preventive and/or treatment interventions should be considered beyond starting antiretroviral therapy early? What service delivery platform should be leveraged, and are existing packages providing the additional services needed?

Discussion

HIV drives much of the comorbidity among children and adolescents, in contrast with adults, so making the case for integrating noncommunicable diseases into HIV services for children is easier. Neurocognition should be emphasized but also behavioural difficulties and expression of distress among adolescents and children.

There are opportunities to integrate psychosocial support and mental health at key points, such as when HIV status is disclosed. Positive living and integrating mental health well-being could be incorporated into existing HIV care. Integration of care should also consider a family-centred approach, since caregivers are very important.

Adolescent-friendly services for both HIV and noncommunicable diseases (such as diabetes) could be integrated and could be an opportunity to reduce stigma in both areas. Adolescent-friendly services are not available in many countries.

Children and adolescents should be asked how they want services to be delivered and be involved in designing services. The integration of sexual and reproductive health services is also important for adolescents living with HIV.

3. GROUP WORK SUMMARY

Groups discussed priorities in the short term (for consideration in the WHO HIV consolidated guidelines planned for revision in 2020–2021) and for the medium- and longer-term research agenda.¹

Noncommunicable diseases among people living with HIV

Short term: interventions for noncommunicable diseases that should be considered as priorities for people living with HIV

Intervention	Details
Prevention and risk modification for noncommunicable diseases for people living with HIV	Routine screening for modifiable cardiovascular disease risk factors at various HIV service entry points and the community level (task shifting and primary prevention) Education on healthy lifestyle counselling, smoking cessation advice, exercise, etc.
Screening and diagnosis of the risk of atherosclerotic cardiovascular diseases among people living with HIV	Hypertension and diabetes screening at various HIV service entry points and the community level (task shifting and secondary prevention)
Cervical cancer screening	Screening and managing cervical cancer among women living with HIV
Treatment and care for the people living with HIV who have noncommunicable diseases	One-stop shop approach for people living with HIV who have noncommunicable diseases (impact on retention and the care burden) Using fixed-dose combinations and polypills for treating people living with HIV who have hypertension or diabetes (impact on pill burden and on adherence and quality of life) Using a fast-track and multi-month refill strategy for drug dispensing in people living with HIV who have noncommunicable diseases and are stable (impact on adherence and retention) Clear advice on drug–drug interactions with antiretroviral drugs
Respiratory diseases	Screening and implementing interventions could build on existing TB screening questions and algorithms, and interventions such as smoking cessation could be delivered

Medium- to long-term priorities for noncommunicable diseases for people living with HIV

People living with HIV are ageing. Chronic conditions to be considered include:

- bone health;
- chronic kidney disease;
- chronic nervous system conditions (including epilepsy);
- dementia;
- dyslipidaemia;
- long-term cardiovascular diseases: heart failure and stroke;
- pulmonary disease (including chronic respiratory diseases);

¹ Not all participants agreed with the priorities shown, but this was the overall consensus of the work groups.

- solid tumours (such as breast and lung cancer); and
- managing multimorbidity.

In addition to developing guidelines, the approach should include:

- documenting the uptake of guidelines;
- documenting best practices;
- considering the need for a service delivery framework for integrating noncommunicable diseases and HIV: who, what, where and why, linked to differentiated service delivery and including monitoring and evaluation indicators (HIV electronic medical record platform);
- considering a national noncommunicable diseases registry (alternative information systems);
- engaging civil society and communities across the cascades; and
- using existing prevention resources for noncommunicable diseases – community approaches.

The following clinical and programmatic issues may be considered.

Clinical issues	Programmatic issues
Feasibility of preventing cardiovascular diseases with statins among people living with HIV	Impact, effectiveness and cost of integrating HIV and noncommunicable disease care
Stratifying cardiovascular disease risk among people living with HIV	When, where, who, what for integrating services
Potential anti-inflammatory therapies	Specific evidence of the impact of task sharing on outcomes among people living with HIV who have noncommunicable diseases
Using primary and secondary prevention with polypills	Impact of fixed-dose combinations on outcomes and service delivery
Thresholds for diagnosis and treatment targets (diabetes and hypertension)	Community-based delivery of HIV and noncommunicable disease care
Respiratory diseases and complications specific to people living with HIV	Acceptability of interventions among health-care workers and recipients of care
Thresholds for diagnosis and treatment targets (diabetes and hypertension)	Patient-centred outcomes – stigma and discrimination research (HIV with noncommunicable diseases alone)
Immunization for people living with HIV	Policy research, such as task sharing Research on health funding

Funding for noncommunicable diseases can be leveraged by using the HIV platform, and there is a need to consider who will pay for noncommunicable disease care: a top-down policy on universal health coverage versus bottom-up initiatives. The expert group acknowledged that there is increased stakeholder interest in integrating noncommunicable diseases into HIV programmes.

Mental health conditions among people living with HIV

The priority conditions are depression and anxiety, alcohol and other substance use, psychosis and cognitive problems.

The group highlighted several key issues associated with each of the priority conditions listed previously. Currently, mhGAP and severe mental disorder guidance from WHO is available that is applicable to many of the conditions but is not comprehensive. The following table lists key considerations relating to each priority mental health condition brought forward by the expert group.

All the priority conditions shared several considerations – the challenge of polypharmacy, side-effects of medications and drug–drug interactions.

The others are summarized below.

Mental health conditions and current WHO guidance available	Unique considerations	Integration into the HIV platform
Depression and anxiety: mhGAP and severe mental disorder guidance	Identification of psychological stressors, necessary alternatives to pharmaceutical interventions	Management (screening and treatment) can be task-shifted, can be lay workers
Alcohol use disorder: mhGAP	Risk behaviors for HIV transmission have been linked to substance use, and is a key factor for adherence and lifestyle	Screening can be task shifted Diagnosis, psychological counselling and treatment in primary health care
Psychosis: mhGAP and severe mental disorder guidance	Challenges in clinical identification – can be part of an infection, increased vulnerability to sexual assault, increased risk of disengagement and poor adherence, may overlap with substance abuse and tuberculosis	No evidence of effectiveness at the HIV service level – can be integrated into primary health care for diagnosis and further management
Cognitive disorders: International HIV Dementia Scale, 10 questions and mhGAP for developmental disorders and dementia	Direct effect of HIV infection	No evidence currently available - research gap

Research gaps

The following are research gaps:

- the effectiveness of equipping health-care providers with selected evidence-informed interventions for managing mental health conditions in addition to HIV and other chronic conditions;
- the active use of HIV differentiated service delivery models by people with mental disorders and opportunities to integrate mental health care within these models;
- evaluation of interventions for the families of people living with HIV;
- the effectiveness of self-management interventions applied to mental health conditions in addition to HIV and other chronic diseases; and
- increased collection and dissemination of practice-based evidence on integrated care.

Final comments and suggestions from participants on what to give priority and key questions

- Identify opportunities for integration.
- Cardiovascular risk factor screening- adding more granularity to what is already in HIV treatment guidelines.
- Timing on initial screening for noncommunicable diseases – when should this happen and how often should this be done?
- Implementation tools may be required, using existing noncommunicable disease and mental health recommendations rather than making new HIV-specific recommendations.
- Drug interactions for common drugs used to treat noncommunicable diseases and mental health conditions are important.
- Task shifting and lessons learned from the HIV differentiated service delivery platform are important
- mhGAP training for everyone involved in HIV care.
- A focus on person-centred care for the 2021 consolidated guidelines, with other departments in WHO brought together and giving specific guidance to HIV programmes.
- Research priorities: how does integration affect HIV services?

4. NEXT STEPS

The following next steps were agreed.

- Internal dialogue will continue with the WHO departments responsible for noncommunicable diseases, mental health, sexual and reproductive health and other topics.
- It is planned to establish a technical working group, which will help to guide the future direction of the work of the WHO Department of HIV in this area. This should include people living with noncommunicable diseases and mental illness. Members of the technical working groups may also be part of the Guideline Development Group.
- The research agenda will be part of the meeting report. Establishing a research agenda is an important area of work for WHO.
- Operational tools for HIV programmes may be an important focus, and the technical working group will explore this.
- Specificities for children and adolescents need further examination, with a wider paediatric advisory group.

ANNEX 1. LIST OF PARTICIPANTS

Academics and implementing partners

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ANNEX 2. MEETING AGENDA

Time	Day 1	Comments	Presenter or facilitator
8:30–8:45	Introductions and objectives of the meeting	<ul style="list-style-type: none"> • WHO work on this area to date <ul style="list-style-type: none"> o Scoping consultation in 2014 and priorities identified o Recommendations in the 2016 consolidated HIV treatment guidelines • Current uptake of noncommunicable disease and mental health recommendations by countries (HIV guidelines and Global AIDS Monitoring) • Objectives of the meeting and expected outputs: <ul style="list-style-type: none"> o Priorities for the 2021 update of the consolidated HIV guidelines o Beyond 2021 	<p>Meg Doherty (WHO)</p> <p>Marco Vitoria (WHO)</p>
8:45–9:00	Civil society perspective	<ul style="list-style-type: none"> • HIV civil society organization and NCD Alliance comments 	Kevin Moody Proscovia Nyanzi Luzige Manjusha Chatterjee
9:00–9:45	Cardiovascular diseases	<ul style="list-style-type: none"> • Overview of epidemiology and evidence of risks and outcomes among people living with HIV • Major gaps in evidence • Existing WHO policy and recommendations on screening, diagnosis, treatment and management of risk factors (including smoking cessation). 	<p>Pragna Patel and Linda Kupfer</p> <p>Taskeen Khan and Dongbo Fu (WHO)</p>
9:45–10:15	Diabetes	<ul style="list-style-type: none"> • Overview of epidemiology and evidence of risks and outcomes among people living with HIV • Major gaps in evidence • Existing WHO policy and recommendations on screening, diagnosis, treatment and management of risk factors (including TB) 	<p>Naomi Levitt</p> <p>Gojka Roglic (WHO)</p>
10:15–10:45	Questions and discussion		Marco Vitoria (WHO)
10:45–11:00	Break		
11:00–11:30	Country examples on programmatic integration of HIV and cardiovascular disease and diabetes mellitus <ul style="list-style-type: none"> • Eswatini • Malawi • Uganda 	<ul style="list-style-type: none"> • What (protocol) • When: frequency and timing of how care is delivered, simplification • Where: decentralization • Who: task sharing • Integration – successes and challenges: 	<p>Velephi Okello Sam Phiri Martin Muddu</p> <p>Moderator: Helen Bygrave</p>
11:30–12:00	Questions and discussions		Helen Bygrave
12:00–13:00	Lunch		
13:00–13:45	Mental health conditions	<ul style="list-style-type: none"> • Epidemiology and evidence of risks and outcomes among people living with HIV and gaps • Existing WHO recommendations on screening for and treatment of common mental health disorders • Existing WHO policy on mental health 	<p>Rosie Mayston</p> <p>Tarun Dua and Neerja Chowdary (WHO)</p>
13:45–14:00	Questions and discussions		

Time	Day 1	Comments	Presenter or facilitator
14:00–14:40	Country examples on programmatic integration of HIV and mental health <ul style="list-style-type: none"> • Ethiopia • Islamic Republic of Iran • Malawi • Zimbabwe 	<ul style="list-style-type: none"> • What (protocol) • When: frequency and timing of how care is delivered and simplification • Where: decentralization • Who: task sharing Integration – successes and challenges	Charlotte Hanlon Alireza Mahdavi Emily Wroe Chido Rwafa Moderator: Pamela Collins
14:40–14:55	Questions and discussion		Pamela Collins
14:55–15:05	Break		
15:05–15:20	Introduction to group work, aims and objectives	<ul style="list-style-type: none"> • Review of priorities in the 2014 meeting • What are the priorities in the short, medium and long term? • What do we need to know? • PICO questions and evidence required 	Marco Vitoria (WHO)
15:20–16:55	Group work	<ul style="list-style-type: none"> • What should the priorities be for WHO in the short term? • What work needs to be done to fill the evidence gaps? • What are the research priorities? • Other 	Group 1: noncommunicable diseases Group 2: noncommunicable diseases Group 3: mental health
16:55–17:45	Feedback to broader group and discussion		Marco Vitoria (WHO)
17:45–18:00	Wrap up and plans for day 2		Meg Doherty (WHO)

Time	Day 2	Comments	Presenter or facilitator
9:00–9:15	Summary of day 1 and objectives day 2		Marco Vitoria/Meg Doherty (WHO)
9:15–10:00	noncommunicable disease priorities in adolescents and children	<ul style="list-style-type: none"> • Existing WHO policy and recommendations • Overview of epidemiology and evidence of risks and outcomes in people living with HIV • Major gaps in evidence 	Martina Penazzato and Wole Ameyan (WHO) Lisa Frigati
10:00–10:15	Questions and discussion		Martina Penazzato and Wole Ameyan
10:15–10:30	Break		
10:30–12:00	Group work	<ul style="list-style-type: none"> • What should the priorities be for WHO in the medium and longer term? • What work needs to be done to fill the evidence gaps? • What are the research priorities? • Other issues 	Group 1: noncommunicable diseases Group 2: noncommunicable diseases Group 3: mental health Group 4: children and adolescents
12:00–12:30	Feedback from groups and group discussion		
12:30–13:30	Lunch		
13:30–14:15	Agreed list of priorities		Marco Vitoria and Martina Penazzato (WHO)
14:15–14:45	Research priorities		Marco Vitoria (WHO)
14:45–15:00	Next steps Summary and wrap-up	Introduce the idea of an HIV noncommunicable disease technical working group	Meg Doherty (WHO)
15:00–	Coffee and adjourn		

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