Integration of noncommunicable diseases into HIV service packages

Noncommunicable diseases (NCDs) – primarily cardiovascular disease, cancer, diabetes, and chronic respiratory diseases cause nearly 75% of deaths worldwide. NCDs are associated with huge inequity, often caused by, or exacerbate poverty. Every year, 17 million people under 70 years of age die of NCDs, and 86% of the deaths are in low- and middle-income countries. Many of the premature deaths could be avoided by addressing major NCDs risk factors and by early detection and treatment.

People living with HIV (PLHIV) and NCDs: PLHIV are at increased risk of NCDs (especially cardiovascular disease, cervical cancer, diabetes, and mental health conditions) than people without HIV. Cardiovascular disease is one of the leading causes of non-AIDS-related morbidity and mortality among PLHIV. Furthermore, with increased coverage of antiretroviral therapy, the life expectancy of PLHIV has improved, exposing them to the risk of diseases that are common with ageing and exposure to NCD risk factors.

Integration of NCDs and HIV services: National responses for both HIV and NCDs require health systems that can deliver effective acute and chronic care and support adherence to treatment. Chronic HIV care also provides an opportunity to assess, monitor and manage NCDs, especially in primary care. Integrating interventions for the prevention and management of major NCDs in PLHIV care can reduce the risks of NCDs among PLHIV and improve HIV treatment outcomes.

Furthermore, Integration of NCDs services into HIV service delivery models and provision of integrated care will contribute to sustaining the gains made in survival by the introduction of antiretroviral therapy. It will also improve access to services for advancing towards universal health coverage.

Objective of the technical brief:

Provide ministries of health, health authorities, HIV and NCD programme managers, and stakeholders involved in planning and implementing HIV services with practical information to facilitate the integration of NCD services into existing HIV service packages.

NCDs services to be prioritized and integrated into HIV services

1. prevention, early detection and management of hypertension, diabetes, and cardiovascular diseases; and
2. screening and treatment of pre-cancerous lesions to prevent cervical cancer.

Approaches and actions to promote integration of NCD services into HIV services:

Governance, financing, and community involvement

- Policy directives for integration: Policies for services integration encourage investment of resources into integrated services. This action should be considered during development and review of national strategic plans.

- Ensure adequate financing to cover prevention, screening, and care for NCDs within HIV services and HIV prevention, testing and care into NCDs care services; and align financing mechanisms. Donors such as the Global Fund to Fight AIDS, Malaria and Tuberculosis and the US President’s Emergency Plan for AIDS Relief (PEPFAR) have included diagnosis and management of comorbidities, including NCDs, in their funding scope. Their investment should be aligned with domestic resources and contributions from other donors to ensure sustainable integrated services for PLHIV.

- Ensure that the community, including PLHIV and NCDs, is involved in identifying demands, planning of services, health promotion and prevention and in monitoring implementation.
Services integration:
In integration of NCD services into HIV services, NCD-specific interventions are included in the care of people being treated for HIV. Actions to be considered in planning integration include the following.

- Organize coordinated, continuous care to ensure early detection and management of hypertension, diabetes, cardiovascular disease, and cervical cancer. (See Annex 1 for early detection and management)
- Identify gaps in access to essential medicines and commodities and the human resources required for NCD management in a baseline assessment. (See Annex 1 for NCDs medicines and technologies).
- Harmonize the procurement and supply chain management for essential medicines and commodities for both NCDs and HIV to ensure their availability.
- Clearly state the required competence, roles, and responsibilities of health workers, and ensure that they are trained, authorized and have the required competencies for NCD management.
- Integrate training for NCDs, such as the WHO PEN or the HEARTS package, into HIV staff training (basic and refresher). Tailored training is required for the entire team of doctors, nurses, counsellors, and statisticians according to their assigned tasks.
- Plan actions to remove barriers to care provision by updating legislation, task sharing, training and mentoring. For example, in some settings, nurses who manage HIV patients may not be authorized to initiate NCD treatment. They should be authorized and capacitated to manage NCDs. They can gradually become involved in managing patients with NCDs by initially performing screening, follow-up and refilling prescriptions and later initiate treatment as they gain competence.
- Orient health facility managers, district coordinators, health facility supervisors, mentors, and supply chain managers to deliver high-quality, coordinated care and ensure the continuity of supplies for NCD management in HIV care settings.
- Harmonize the strategies for enrolment, adherence to treatment and retention in care for NCDs and HIV.
- Ensure an appropriate referral system within HIV services for severe cases of advanced HIV diseases and comorbidities and for inpatient services for NCD care in special situations.
- Plan national and district level interventions and ensure the engagement of relevant stakeholders in working groups and discussion forums, including NCDs programme managers and cervical cancer focal points and experts.
- Consider a stepwise approach for implementation to allow for learning and acquisition of experience during introduction of services.

Monitoring, evaluation, and surveillance:
- Update the surveillance systems for HIV as required to capture indicators on NCDs, monitor the implementation and assure a better quality of care for PLHIV. Relevant indicators are listed in the noncommunicable diseases facility-based monitoring guidance.
- Ensure that NCDs are integrated into programme monitoring and evaluation activities, including supervisory visits, mentoring, periodic meetings, programme reviews and operational research.

Special considerations for cervical cancer:
- WHO recommends use of HPV DNA detection as the primary screening test for women living with HIV.
- Programmes in which other test are used for primary screening should transition rapidly to HPV DNA testing, which is a more cost-effective technique that will improve the efficiency of programmes.
- When testing is done with HPV DNA, WHO suggests use either of a sample taken by a health-care provider or one that is self-collected.
- WHO suggests use of HPV DNA detection for primary screening with triage, followed by treatment to prevent cervical cancer for women living with HIV. See Annex 2 for triage approaches.
- Before introducing HPV DNA testing, countries must ensure adequate infrastructure to provide timely triage and treatment for precancerous lesions, to ensure that HPV-positive women living with HIV and with cervical disease are treated and followed up.
- Programmes should establish a clear referral mechanism for treatment and adequate management of identified invasive cervical cancer.

Sources of data for estimating the number of PLHIV with NCDs for costing of services
- The first source is national data on the prevalence of NCDs among PLHIV.
- In the absence of such data, the prevalence of NCDs can be extrapolated from the country’s STEPSwise approach to NCD risk factor surveillance (STEPS) results. Data should be disaggregated by age and sex. The STEPS survey provides information on the prevalence of major NCDs risk factors (including raised blood pressure and blood glucose and abnormal blood lipids) and the proportion of the population at risk of developing cardiovascular disease within 10 years.
- Another source is the NCDs data portal (https://ncdportal.org/).
- The number of women living with HIV who require cervical cancer screening can be estimated from the screening recommendation (See Annex 2 for recommendations). You may estimate needs in care for women that screen positive using national data.
Annual targets:

Set national target in accordance with the following global targets:

1) UNAIDS Global aids strategy 2021–2026 end inequalities, end aids - targets for integrated service for PLHIV:

- 90% of people living with HIV and people at risk are linked to people-centred and context-specific integrated services for other communicable diseases, noncommunicable diseases, sexual and gender-based violence, mental health and other services they need for their overall health and well-being by 2025.

2) WHO global health sector strategies on HIV, viral hepatitis and sexually transmitted infections for the period 2022–2030:

- 95% of people living with HIV, viral hepatitis and sexually transmitted infections linked to other integrated health services by 2025 (and same 95% target maintained by 2030)
  » 40% of women by 2025 and > 70% by 2030 screened for cervical cancer using a high-performance test by the age of 35 years and again by 45 years;
  » 40% of women by 2025 and > 90% by 2030 screened and identified as having pre-cancer treated or invasive cancer managed; and
  » 50% of girls by 2025 and 90% by 2030 fully vaccinated with human papillomavirus vaccine by 15 years of age.

3) WHO Global action plan for the prevention and control of NCDs 2013–2020 (extended to 2030):

- 80% availability of affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities by 2030.

4) WHO five global coverage targets for diabetes:

- 80% of people living with diabetes are diagnosed by 2023.
- 80% have good control of glycaemia by 2030.

5) WHO global strategies for the elimination of cervical cancer:

- Ensure vaccination coverage of > 90%, cervical cancer screening participation rates of > 70% and management of cervical disease for > 90% by 2030.

Bibliography and additional resources


Annex 1. Early detection and management of hypertension and diabetes and cardiovascular risk assessment

Minimum NCD medicines and equipment for primary care

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¹ WHO recommends use of automated or semi-automated blood pressure measuring devices validated for clinical use in measuring and displaying blood pressure by automated or semi-automated (hand pump) inflation and deflation of a pressure cuff, usually positioned on the upper arm for even compression of the brachial artery, which is the standard location for blood pressure measurement.

Early detection of hypertension in primary health care facilities:

For early detection of hypertension, blood pressure measurements should be conducted on all adults during routine visits to primary health care facilities, including at first presentation and, if the results are normal, periodically thereafter (e.g., every 1–5 years).

Early detection of diabetes in primary health care facilities:

Testing should be done on adults who have symptoms of diabetes, adults who are ≥ 40 years and who are overweight (body mass index, > 25 kg/m²) or obese (body mass index, > 30 kg/m²), or according to national guidelines.


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Testing should be done on adults who have symptoms of diabetes, adults who are ≥ 40 years and who are overweight (body mass index, > 25 kg/m²) or obese (body mass index, > 30 kg/m²), or according to national guidelines.
Measurement of fasting plasma glucose is the most practical test for low-resource settings, given its low cost. Tests for HbA1c can also be used. If a patient is not fasting and has symptoms, a random plasma glucose test can be performed. The plasma glucose level 2 h after a 75-g oral glucose load can also be used to screen for and diagnose diabetes but is less practical and more costly.


Cardiovascular risk assessment:

According to WHO guidelines on pharmacological treatment of hypertension, a risk assessment should be conducted at least annually for all patients at or after initiation of pharmacological treatment for hypertension, but only when this is feasible and does not delay treatment. If risk assessment threatens timely initiation of hypertension treatment and/or patient follow-up, it should be postponed and included in the follow-up strategy rather than taken as a first step to indicate treatment.

Statin is recommended for all people with type 2 diabetes older than 40 years, but only if it does not negatively impact access to glucose-lowering and blood pressure lowering medication.


For more information on Cardiovascular risk assessment and the PDF version of WHO CVD risk charts please see: https://apps.who.int/iris/bitstream/handle/10665/333221/9789240001367-eng.pdf.

Annex 2. Screening for cervical cancer and treatment of precancerous lesions

Summary recommendation on screening triage and treatment for women living with HIV:

WHO recommendations for screening and treatment of women living with HIV (WLHIV): Use HPV DNA detection in a screen, triage and treat approach, starting at the age of 25 years, with regular screening every 3–5 years.

Priority groups:

Priority should be given to screening WLHIV aged 25–49 years. When tools are available to manage WLHIV aged 50–65 years, those who have never been screened should also be a priority.

Sample collection:

For HPV DNA testing, WHO suggests that samples be collected either by a health-care provider or by the WLHIV.

Triage options:

WHO suggests use of partial genotyping, colposcopy, visual inspection with acetic acid or cytology to triage WLHIV after a positive test for HPV DNA. As the benefits, harms and programme costs of the triage options are similar, the choice of method will depend on feasibility, training, programme quality assurance and resources. HPV16/18 genotyping could be integrated into the HPV DNA test.

Treatment options:

Ablative treatment by heating or freezing; thermal ablation is recommended for resource-constrained settings. Other options are excisional treatment by large loop excision of the transformation zone or cold knife conization, or referral, as appropriate.

Considerations for screening programmes:

A multidisciplinary health ministry team, which can consider various factors and make informed decisions, chooses the algorithm (or algorithms) to be included in the national programme. The choice will depend on the available resources, feasibility and acceptability. An example of an algorithm is shown below. For all WHO algorithms, see WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second edition. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240030824).
Important considerations when planning to screen:

1. The screening approach and the tests used should be of the highest quality and standards to produce accurate, reliable results and beneficial outcomes. Only screening tests approved by regulatory agencies should be considered.\(^2\)

2. Programmes in which visual inspection with acetic acid (VIA) is used as the primary screening test should transition rapidly because of inherented challenges of quality assurance; existing programmes that use quality-assured cytology as the primary screening test should be continued until HPV DNA testing is operational.

3. Where HPV DNA testing is not yet operational, WHO suggests regular screening every 3 years when VIA or cytology is the primary screening test for both the general population of women and WLHIV.

4. During transition to a programme with a recommended regular screening interval, screening even only twice in a lifetime is beneficial for both the general female population and WLHIV.

5. Both women with a positive primary screening test but a negative triage test and women who received treatment must be followed up. For further information on follow-up methods, see the WHO guideline cited above.


Sample algorithm: Primary HPV DNA screening and triage (screen, triage and treat approach):

- **HPV DNA testing** (self-sampled or collected)
- **Via Triage**
  - **Positive**
    - Eligible for ablation
    - Not eligible for ablation
  - **Suspected cancer**
    - Evaluation, biopsy and further management
  - **Negative**
    - Repeat HPV test after 2 years for the general population of women or after 1 year for women
    - Ablative LLETZbc
    - \(\leq\)CIN3/AIS
    - Cancer
- Post-treatment follow-up after 1 year

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