

WHO INVESTMENT CASE SERIES

ADDRESSING THE BURDEN OF
NONCOMMUNICABLE DISEASES
IN THE AFRICAN REGION
THROUGH THE PEN-PLUS
REGIONAL STRATEGY





SDG 3.4 – By 2030, reduce by one-third premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being

Key facts:

- ▶ Noncommunicable diseases (NCDs) accounted for 37% of all deaths in the WHO African region in 2019, up from 24% in 2000.
- ▶ The proportion of premature NCD-related deaths, i.e. deaths between 30 and 70 years of age, in the region, stands at 63.6%, higher than the global average of 41.8% (2019).
- ▶ Cardiovascular diseases, diabetes, cancers and chronic respiratory disease represent the leading NCDs in the region.
- ▶ The mortality and morbidity from NCDs in the Region are set to surpass those of communicable, maternal, neonatal and nutritional diseases combined by 2030.
- ▶ The PEN-Plus Regional Strategy, adopted in 2022 by the 47 Member States of the African region, aims to address the burden of severe NCDs among rural and hard-to-reach populations through decentralized, integrated outpatient services in first-level referral health facilities.

Noncommunicable disease (NCD) burden in the WHO African region

Noncommunicable diseases (NCDs) account for 74% of all deaths globally, killing 41 million people each year.¹ Of all NCD-related deaths, more than three quarters are in low- and middle-income countries. In the WHO African region² which is already battling a high burden of communicable diseases, NCDs are responsible for 37% of all deaths, up from 24% in 2000.³ Across countries in the region, deaths attributed to NCDs ranged from 27% to 88% of all deaths.⁴

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¹Bigna, JJ and Noubiap, JJ. The rising burden of non-communicable diseases in Sub-Saharan Africa. *Lancet Global Health*. Published: October 2019. DOI: [https://doi.org/10.1016/S2214-109X\(19\)30370-5](https://doi.org/10.1016/S2214-109X(19)30370-5).

²There are 47 Member States in the WHO African Region. The full list of countries can be accessed from: <https://www.afro.who.int/countries>

³Cause-specific mortality, 2000–2019. In: WHO Global Health Observatory [online database]. Geneva: World Health Organization; 2023 (<https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-leading-causes-of-death>, accessed 28 June 2023).

⁴WHO. Global Health Observatory. Noncommunicable diseases: Mortality.

The latest data shows that the proportion of premature NCD-related deaths in the African region stands at 63.6%, much higher than the global average of 41.7%, and has been consistently higher than that of the global average every year since 2000 (Figure 1)

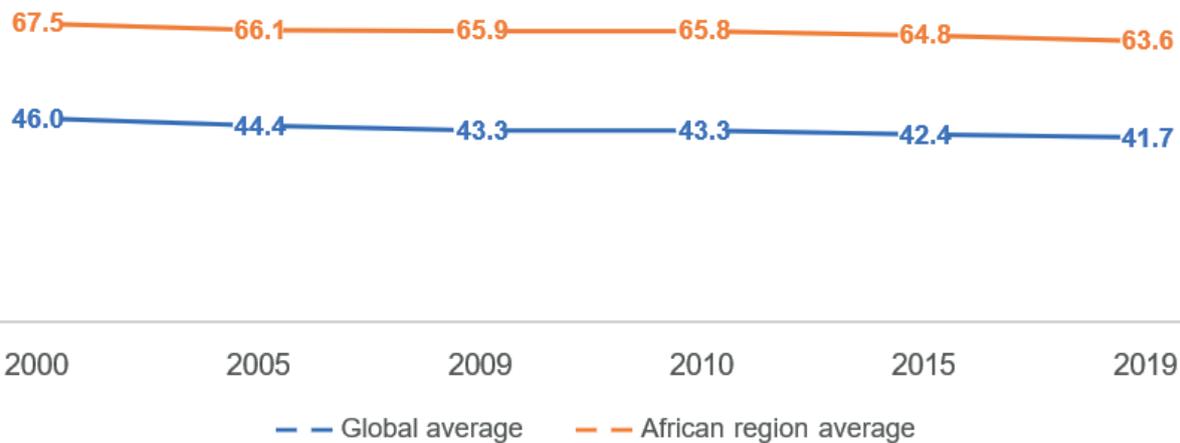


Figure 1. Global and WHO African region premature NCD mortality trends (%), 2000-2019



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Four NCDs, namely, cardiovascular diseases, diabetes, cancers and chronic respiratory diseases, account for 70% of the burden of NCDs in the African region.⁵ Other NCDs, such as sickle cell disease, genetic disorders, mental disorders, violence and injuries, and oral, hearing, and eye disorders, also significantly contribute to premature mortality and morbidity in the region.

If not promptly addressed, NCDs are set to overtake communicable, maternal, neonatal, and nutritional diseases combined as the leading cause of death in sub-Saharan Africa by 2030.⁶

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⁵Regional Committee for Africa. PEN-plus – A regional strategy to address severe noncommunicable diseases at first-level referral health facilities. Brazzaville: WHO Regional Office for Africa; 2022 (AFR/RC72/4, <https://apps.who.int/iris/handle/10665/361838>, accessed 8 June 2023).

⁶Bigna JJ, Noubiap JJ. The rising burden of non-communicable diseases in sub-Saharan Africa. *The Lancet Global Health*. 2019;7(10): e1295–e6.10.1016/S2214-109X(19)30370-5.

HN Gouda, F Charlson, K Sorsdahl, *et al*. Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of

Did you know?

- The prevalence of **cardiovascular diseases** in Africa increased by 50% over the past three decades.
- **Rheumatic heart disease** is a significant cause of major cardiac complications in sub-Saharan Africa, with a short-term mortality rate of close to 18% in children and young adults.⁷
- 1 in 22 adults in the African region have **diabetes mellitus** which is projected to increase by 129% by 2045.⁸ The African Region also has the highest proportion of undiagnosed diabetes at 54%.⁹
- 18 of the top 20 countries in the world with a high incidence of **cervical cancer** are in Africa.
- In 2020, the region registered 129,000 new **breast cancer** cases, which is projected to increase by 85.7% by 2040.
- **Childhood cancer** is on the rise in the African region, with a survival rate below 30%.
- More than 66% of the 120 million people with sickle cell disease globally live in Africa; 50-80% of children born with and children with **sickle cell disease** commonly die before the age of 5.
- **Oral diseases** affect around 480 million people (43.7%) in the African region in 2019.
- The number of people living with mental **disorders** in the region was estimated to be 116 million in 2019, a 26% increase from the 2010 level (92 million).

Progress and challenges in the fight against NCDs

Member States in the African region have made strong commitments and remarkable progress towards reducing the NCD burden. A series of high-level declarations have been made by African Ministers of Health over the past decade or so, putting the fight against NCDs high on the agenda and calling for accelerated action and increased investment in NCD prevention and control.



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Disease Study 2017, Lancet Glob Health, 7 (2019), pp. e1375-e1387. 7 Zhang W, Okello E, Nyakoojo W, Lwabi P, Mondo CK. Proportion of patients in the Uganda rheumatic heart disease registry with advanced disease requiring urgent surgical interventions. Afr Health Sci. 2015; 15(4): 1182–1188. DOI: <https://doi.org/10.4314/ahs.vh15i4.17>.

⁸ World Health Organization. Global health estimates 2019 summary tables, available from: <https://www.who.int/data/global-health-estimates>.⁹ International Diabetes Foundation. Diabetes Atlas 2021, available from: <https://diabetesatlas.org/atlas/tenth-edition/>.

Major commitments made by African Member States on NCDs

- Moscow Declaration NCDs (2011)
- United Nations Political Declaration on Non-communicable Diseases (2011)
- Brazzaville Declaration on NCD Prevention and Control (2011)
- Addis Ababa Declaration on Noncommunicable Diseases in Africa (2012)
- Lusaka Call to Action on NCDs in Africa (2018)
- Abuja Declaration on Noncommunicable Diseases (2019)
- Global NCD Compact 2020– 2030 (2020)

With support from WHO and partners, Member States in the African Region have prioritized the implementation of WHO technical packages to improve access to NCD services, especially at the primary health care level. Since 2008, WHO has been providing support to Member States in implementing the WHO Package of Essential Noncommunicable Disease Interventions (WHO PEN),¹⁰ an approach that focuses on providing decentralized and integrated management of common NCDs at the primary healthcare level and strengthening capacity for referrals in low-resource settings. NCD prevention and control have since been mainstreamed in the region, with 34 out of the 47 Member States implementing the WHO PEN as of 2024.

The region has since achieved important milestones towards NCD prevention and control:

- Almost 100% of countries in the region have established NCD units, branches or departments within the Ministry of Health, with at least one full-time technical or professional staff member;¹¹
- 47% of countries have a national integrated NCD policy or strategy;

- 60% of countries have introduced HPV vaccines, a powerful tool to prevent cervical cancer, into their national immunization programmes;
- Screening for cervical cancer is available in 34 out of the 47 countries, and 16 of them have incorporated HPV DNA testing into their national programmes;
- Five countries have developed national treatment guidelines for childhood cancer;
- All countries implementing the WHO PEN have included prevention and care for diabetes;
- At least 66% of countries have guidelines for the integration of mental health into primary health care and 82% of countries are providing training for primary health care workers.



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¹⁰ WHO PEN is available from: <https://apps.who.int/iris/rest/bitstreams/52662/retrieve>.

¹¹ Assessing national capacity for the prevention and control of noncommunicable diseases: Report of the 2019 global survey. Geneva: World Health Organization; 2020 (ISBN: 978-92-4-000231-9, <https://www.who.int/publications/i/item/9789240002319>, accessed 28 June 2023).

Despite the progress made, NCD indicators of the region lag behind those for communicable diseases and maternal and child health. For instance, despite the increasing number of countries implementing WHO PEN, less than five countries in the WHO African region reached over 60% of primary care facilities covered by this implementation. According to a 2019 survey, only 36% of countries in the region reported the availability of essential medicines for NCDs in the public sector.¹² For severe NCDs such as type 1 diabetes, advanced rheumatic heart disease and sickle cell diseases, health care services in most countries are provided at tertiary facilities, while district hospitals are not sufficiently capacitated to provide longitudinal care for patients.

The 2022 NCD progress monitoring report, while showing important achievements made by countries, points to persistent challenges and major gaps in major progress indicators.

For instance, while countries have made inroads in terms of tobacco taxation, restrictions on alcohol advertising and having available NCD policies and plans, there is insufficient public education and awareness of physical activity and a lack of monitoring of marketing unhealthy products to children. No country has policies related to controlling unhealthy diets/nutrition, such as salt/sodium, saturated fatty acids or trans-fats levels.

All these exacerbate health inequities and contribute to the persistent and increasing illness and deaths from NCDs in the region.

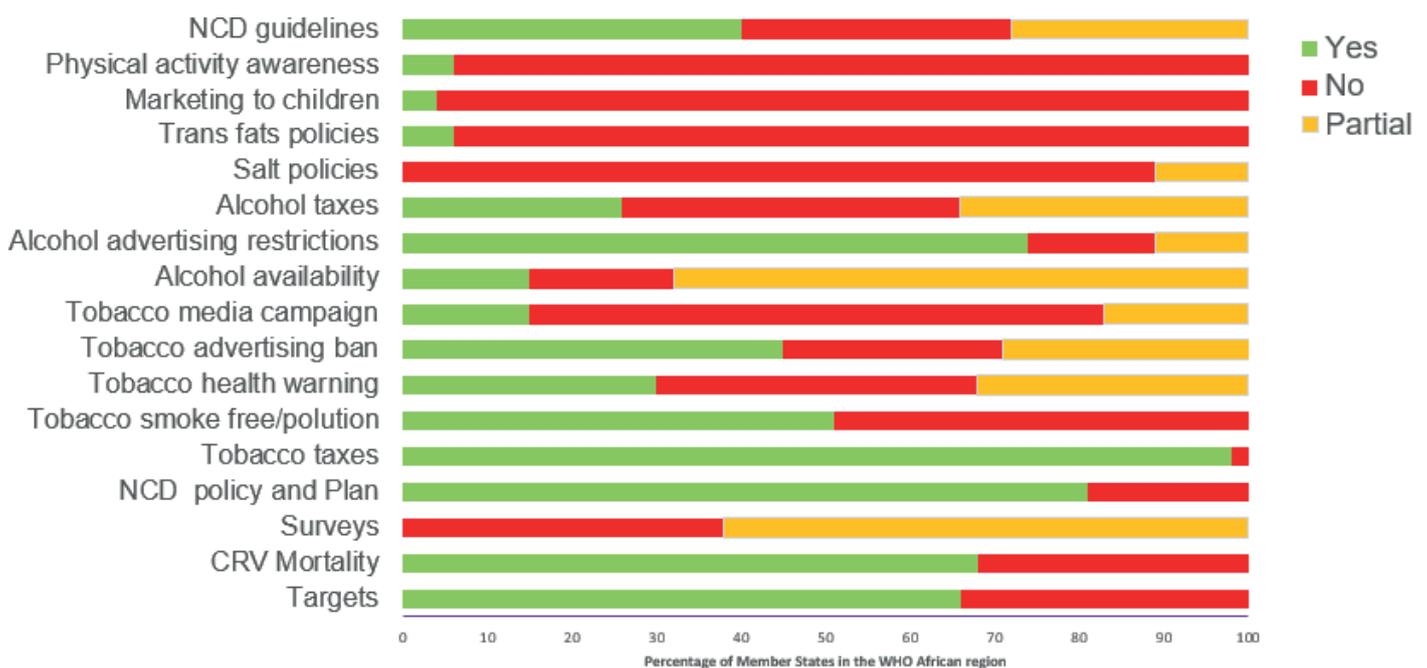


Figure 2. NCD progress monitor in the WHO African region, 2022

¹² Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2019 global survey. Geneva: World Health Organization; 2020. License: CC BY-NC-SA 3.0 IGO.

Financing for NCDs in an easy win

NCDs not only affect the health and well-being of the affected individuals but exert significant socio-economic impacts as they exacerbate the financial difficulties of individuals and households and lead to low productivity in the workforce.

Between 2011 and 2030, the cost of the lost productivity resulting from four major NCDs is estimated to be US\$30 trillion globally, or US\$47 trillion if mental health is included. Direct health care costs of NCDs are high. Available data shows that 26% of total health spending of low- and middle-income countries was due to NCDs, second only to infections and parasitic diseases (37%).¹³

The good news is that **cost-effective and high-impact interventions exist**. WHO has recommended a list of cost-effective interventions, known as the “NCD best buys” (Annex), for the prevention and control of NCDs.¹⁴ However, they are not being implemented or scaled up in countries.

Strategic investments in the prevention and treatment of NCDs are an unequivocal “easy win”, not only for reducing premature NCD mortality and improving health outcomes, but also to generate economic and social benefits through improved employment and productivity. Estimates show that **investing just US\$0.84 per person per year in NCDs could save 7 million lives in low- and lower-middle-income countries by 2030**. Nevertheless, despite being the world’s largest cause of death, NCDs continue to receive only 1-2% of all official development assistance (ODA) for health.¹⁵ Investment in public health and health promotion to address risk factors and underlying social determinants of NCDs remains limited.

To reach SDG Target 3.4 which aims to reduce by one-third premature mortality from NCDs through prevention and treatment and promote mental health and well-being by 2030, **there is an urgent need to ensure sustainable financing to accelerate progress in reducing NCD morbidity and mortality in the African region**.

¹³ WHO: Invisible numbers: the true extent of noncommunicable diseases and what to do about them.

¹⁴ Tackling NCDs: “Best buys” and other recommended interventions for the prevention and control of noncommunicable diseases. Available from: https://iris.who.int/bitstream/handle/10665/25923_2/WHO-NMH-NVI-17.9-eng.pdf

PEN-Plus: A regional strategy to address severe NCDs

As part of the effort to reduce the high burden of premature mortality from chronic and severe NCDs, “PEN-Plus – A regional strategy to address severe chronic noncommunicable diseases at first-level health facilities”, was adopted by all Member States at the 72nd Regional Committee for Africa in August 2022. The strategy aims to **improve access to prevention, treatment, and care for chronic and severe NCDs to rural and peri-urban populations by providing care at first-level referral facilities, using standardized protocol-based management**. It sets out clear activities that, if effectively implemented, would strengthen the capacity for comprehensive care for chronic and severe NCDs, as well as the implementation of the WHO PEN.

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¹⁵ The Global NCD Compact 2020-2030.

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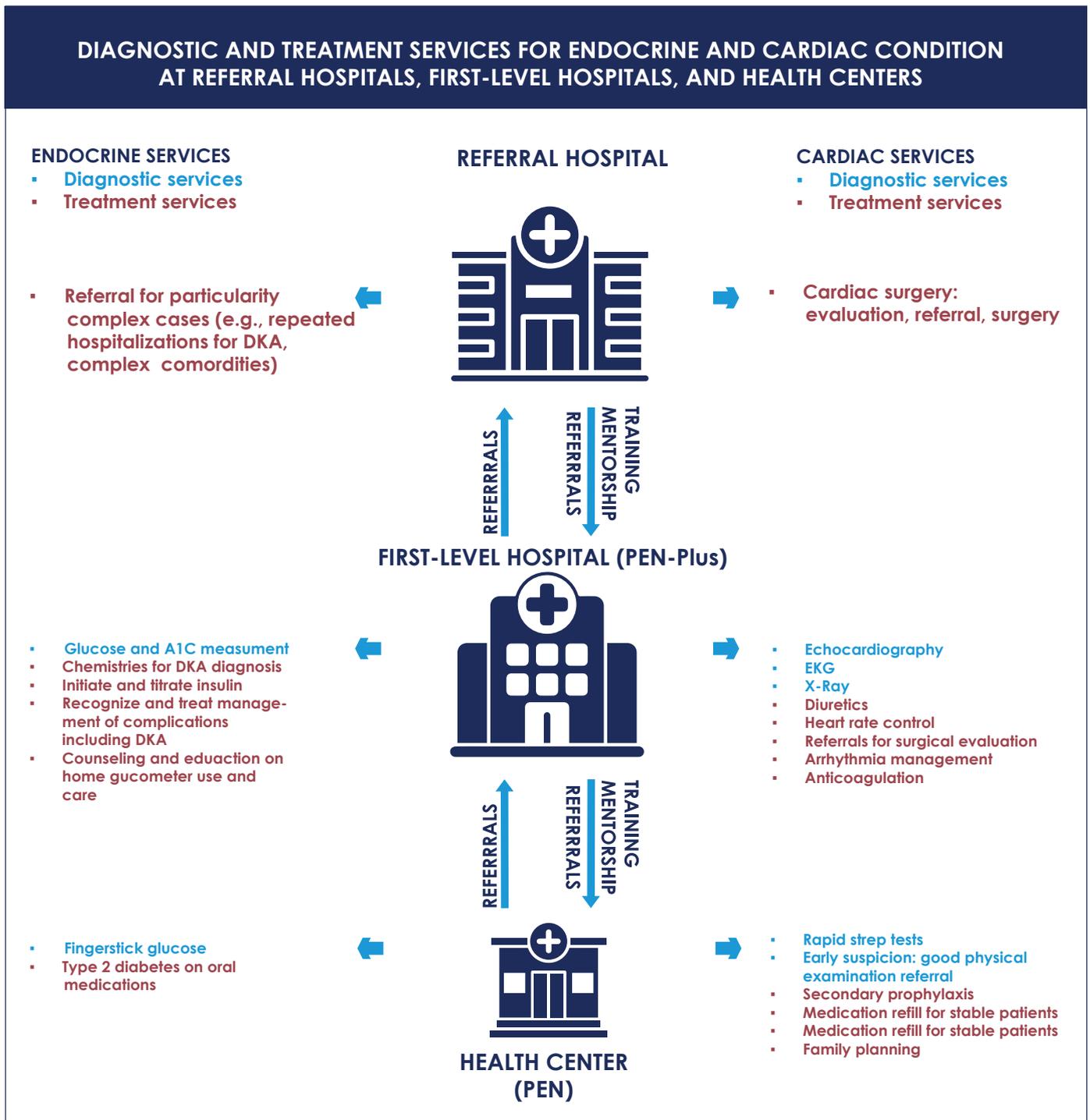


Figure 3. PEN-Plus service delivery model

The PEN-Plus strategy is being implemented and scaled up in the region with evidence of significant improvements in the number of patients accessing services in several countries.

WHO, together with partners, is supporting 20 countries in the region in implementing and scaling up the PEN- Plus strategy at the first referral facility level.

The support focuses on:

- Establishing national coordination mechanisms for PEN-Plus partnerships and implementation based on strengthened multi-sectoral approaches and active stakeholder engagement;
- Developing national operational plans, tools, protocols and guidelines for PEN-Plus implementation;
- Supporting the establishment of a service delivery model to integrate PEN-Plus into national health systems.

To scale up the implementation of PEN- Plus in the region, WHO and partners are gearing up to:

- Mobilize the international community to support the prevention and effective management of severe NCDs and facilitate effective linkages, collaboration and coordination among partners and stakeholders;
- Advocate for increased resource allocation to support the implementation of PEN-Plus;
- Support Member States in improving the affordability and availability of essential medicines, diagnostics and monitoring devices for chronic and severe NCDs; and
- Promote partnerships to improve the training and expertise of health personnel and to undertake research.

“On a continent where severe NCDs are mostly treated at tertiary hospitals, which are mainly in cities, the PEN-Plus strategy will boost district-level capacity for early diagnosis and management of these diseases. This will be a major step towards health equity, bringing care to rural communities. We, as WHO in Africa, are ready to provide leadership and support to guide the implementation of PEN- Plus priority interventions”.

Dr. Matshidiso Moeti

Ending disease in Africa

A vision for disease control and elimination and eradication in Africa

The WHO Regional Office for Africa (AFRO), through its Universal Health Coverage/ Communicable and Noncommunicable Diseases (UCN) Cluster, is responsible for delivering the African Region’s strategic agenda of achieving universal health coverage, communicable and noncommunicable disease control, and the endgame strategies for neglected tropical diseases, in line with the SDG targets.

ENDING DISEASE IN AFRICA (VISION)

“An African region with affordable access to quality prevention, treatment and care services to free it of the burden of communicable and noncommunicable diseases.”

To achieve the vision of ending disease in Africa, the UCN Cluster uses analytics and policy to deliver public health interventions to prioritized populations and communities through setting evidence-informed disease control agendas and guiding investments, focusing on four special initiatives, namely, strengthening systems and governance; strengthening institutional capacity, deploying precision public health for Africa, and promoting research and innovation for public health impact.

The NCD Programme within the UCN Cluster contributes to the “ending disease in Africa” vision by performing four major functions: strengthening leadership, partnerships and resource mobilization; generating strategic information and knowledge products; developing technical products, services and tools; and targeted technical support to countries.

The NCD Programme supports Member States in creating an enabling environment for the prevention and control of NCDs by improving access to healthcare services and strengthening health systems, making concerted efforts for NCD-related SDGs, guided by commitments from the United Nations resolutions and the World Health Assembly.

The approach focuses on five key actions:

- I. Engage:** Collaborating with a broad range of partners to tailor NCD interventions to national health system contexts and populations’ needs through innovative partnerships and knowledge-sharing.
- II. Accelerate:** Implementing the NCD Implementation Roadmap 2023- 2030 by adopting WHO’s best-buy interventions and technical packages.
- III. Invest:** Secure adequate, predictable, and sustained funding for NCD prevention and control from domestic, bilateral, and multilateral sources.
- IV. Align:** Integrating the NCD agenda with responses to humanitarian emergencies and environmental changes, other disease areas and building resilient health systems.
- V. Account:** Prioritizing interventions and assessing implementation progress and impact through enhanced surveillance and monitoring.



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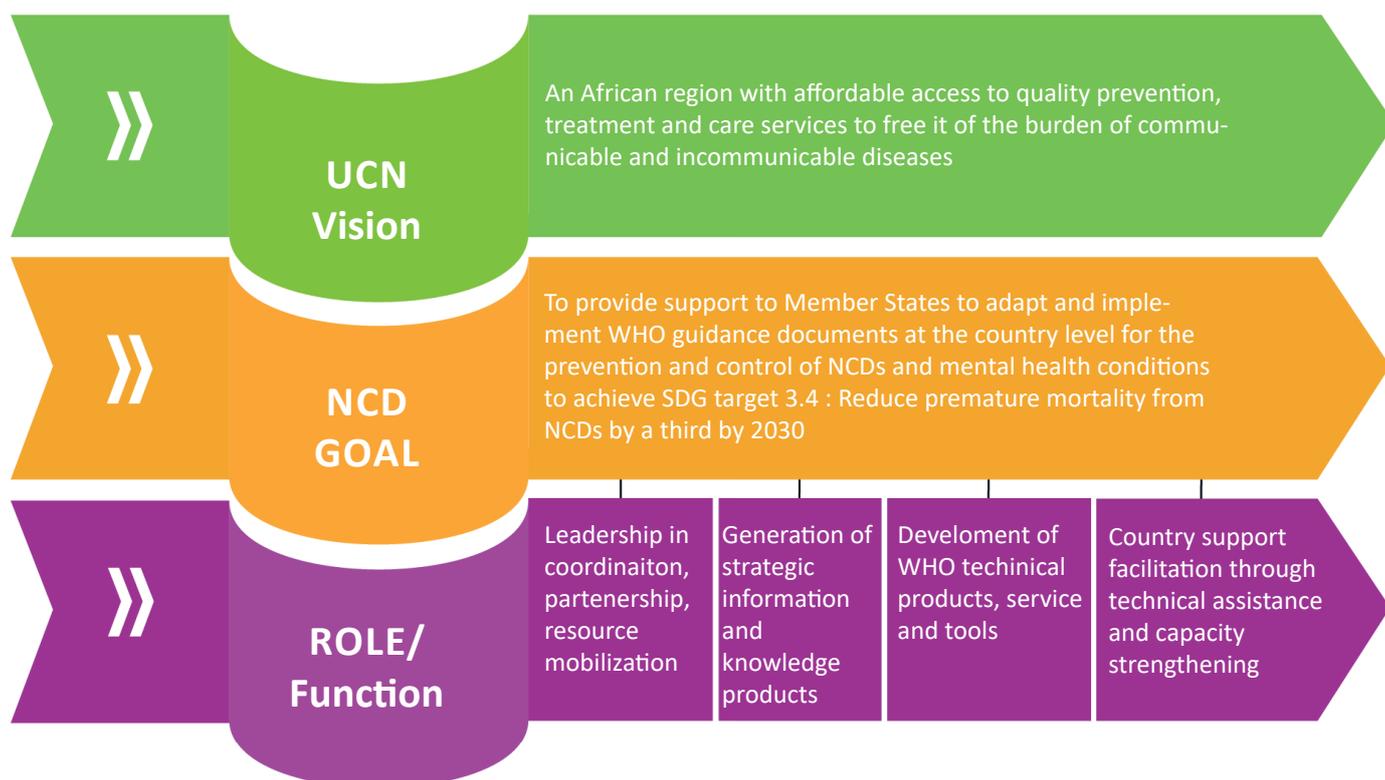


Figure 4. Vision, goals and function of the NCD programme of WHO AFRO

Partnering with WHO to address the NCD burden through PEN-Plus implementation in the African region

Sustainable financing is vital for WHO to deliver on its mandate. WHO is striving to strengthen resource mobilization efforts through the WHO Investment Round, approved at the 154th Meeting of the WHO Executive Board in January 2024, to ensure WHO's 14th General Programme of Work (2025-2028) is sufficiently financed.

As part of the Investment Round, partners will be invited to make financial pledges at various WHO events at global, regional and country levels. **WHO strongly encourages financial contributions with greater predictability and flexibility**, thus allowing WHO to deliver on its goals and targets in a swifter way.

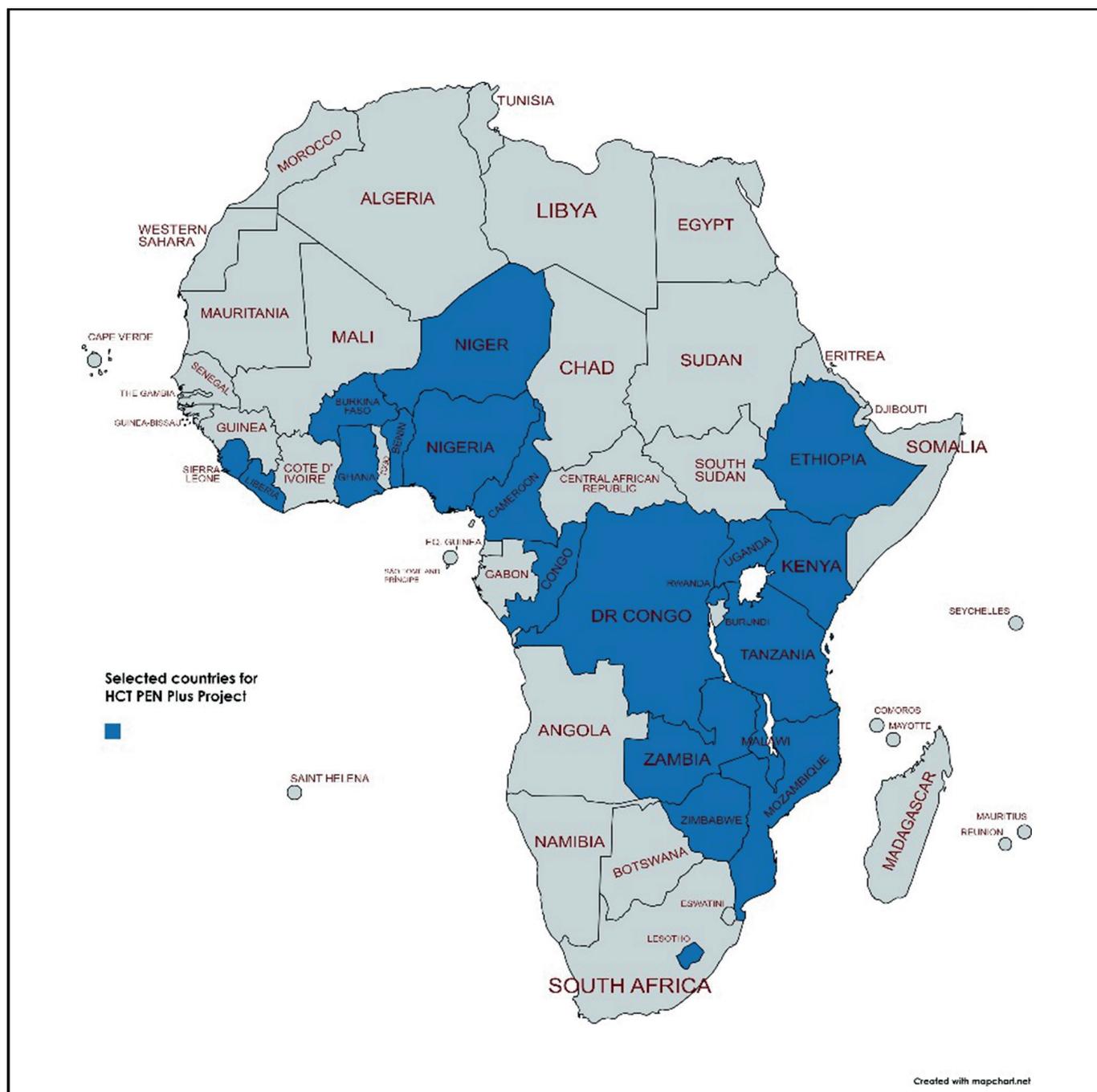
For tackling NCDs and the implementation and scale-up of PEN-Plus in the African region, thematic financing is highly recommended, contributing to the priority areas below.

“For tackling NCDs and the implementation and scale-up of PEN-Plus in the African Region, thematic financing is highly recommended.”



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PRIORITY AREAS	INVESTMENT OPPORTUNITIES
Assessment of countries' systems readiness for PEN-Plus implementation	<ul style="list-style-type: none"> ➤ Data collection and analysis for countries in the region ➤ Priority-setting based on the findings/recommendations of the data analysis ➤ Operational planning for the implementation of PEN-Plus
High-level advocacy for countries' uptake and scale-up of the PEN-Plus	<ul style="list-style-type: none"> ➤ Establishment of a national steering committee meeting for all stakeholders to lead PEN-Plus implementation ➤ Strengthening of country- and regional-level communication efforts on PEN-Plus and severe NCDs
Data and analytics for evidence-based decision-making related to PEN-Plus and severe NCDs	<ul style="list-style-type: none"> ➤ Development of indicators for severe NCDs in the region ➤ Integration of severe NCD indicators into national health information systems ➤ Strengthening of facility-based data by collecting individual-level data in PEN-Plus implementing facilities ➤ Development of interactive dashboards to show progress of PEN-Plus implementation and scale-up in the region ➤ Strengthening of mortality data collection on severe NCDs
NCD integrated management through mentorship and training	<ul style="list-style-type: none"> ➤ Development of a strong service delivery model for integrating PEN-Plus at first-referral-level ➤ Capacity building to facilitate task-sharing/shifting for health care providers at first-referral level ➤ Provision of training of trainers to support mentorship for health care providers at the first-referral facilities ➤ Leveraging on PEN-Plus to establish a network of practitioners for strengthening the implementation of PEN at the primary healthcare level
Medicines, equipment and technologies for severe NCDs	<ul style="list-style-type: none"> ➤ Integration of essential medicines for severe NCDs into countries' essential medicines lists (EML) ➤ Strengthening of the availability of WHO-recommended equipment and technologies to improve diagnosis and treatment of severe NCDs
Monitoring, evaluation and learning	<ul style="list-style-type: none"> ➤ Integration of monitoring and evaluation into programme cycles ➤ Development of logical frameworks linking inputs, processes, outputs, and outcomes, along with programme performance indicators ➤ Assessment of regional progress of the targets and milestones reached by the PEN-Plus strategy ➤ Knowledge generation through case studies and the production of evidence to support the scale-up of PEN-Plus



Map 1. 20 countries in the African region prioritized for implementing PEN-Plus (2024)

CONTACT DETAILS

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NCD BEST BUYS¹

AND OTHER EFFECTIVE INTERVENTIONS²

EVIDENCE-BASED COST-EFFECTIVE PUBLIC HEALTH INTERVENTIONS TO PREVENT AND CONTROL NCDs

Prevention and control of noncommunicable diseases (NCDs) requires policy and health service interventions to address the four main diseases and their underlying risk factors. This is a summary of the WHO cost-effective interventions, which provides a menu of evidence-based options to guide policy decisions.

● BEST BUYS • EFFECTIVE INTERVENTIONS

REDUCE TOBACCO USE



- Increase excise taxes and prices on tobacco products
- Implement plain packaging and/or large graphic health warnings on all tobacco packages
- Ban tobacco advertising, promotion and sponsorship
- Ban smoking in all indoor workplaces, public places and on public transport
- Warn about the harms of smoking/tobacco use and second-hand smoke through mass media campaigns
- Provide effective and population-wide support for tobacco cessation

REDUCE HARMFUL USE OF ALCOHOL



- Increase excise taxes on alcoholic beverages
- Ban or restrict alcohol advertising
- Restrict the physical availability of retailed alcohol
- Enact and enforce drink-driving laws and blood alcohol concentration limits
- Provide psychosocial intervention for persons with hazardous and harmful alcohol use

PROMOTE HEALTHY DIET



- Reduce salt intake by:
- Product reformulation and setting targets for the amount of salt in foods and meals
 - Providing lower sodium options in public institutions
 - Promoting behaviour change through mass media campaigns
 - Implementing front-of-pack labelling
 - Ban trans-fats in the food chain
 - Raise taxes on sugar-sweetened beverages to reduce sugar consumption

PROMOTE PHYSICAL ACTIVITY



- Promote physical activity with mass media campaigns and other community-based education, motivational and environmental programmes
- Provide physical activity counselling and referral as part of routine primary health care

¹ Best buys are effective interventions with cost effectiveness analysis \leq I\$ 100 per disability-adjusted life year (DALY) averted in low and middle-income countries

² Effective interventions with cost effectiveness analysis $>$ I\$ 100 per DALY

I\$ = The international dollar is a hypothetical unit of currency that has the same purchasing power parity that the U.S. dollar had in the United States at a given point in time.



DIABETES

- Offer glycaemic control for people with diabetes
- Provide preventive foot care for people with diabetes
- Screen diabetes patients for retinopathy and provide laser photocoagulation to prevent blindness

CARDIOVASCULAR DISEASE



- **Provide drug therapy and counselling for eligible persons at high risk to prevent heart attacks and strokes**
- Treat new cases of acute myocardial infarction with either acetylic acid and clopidogrel, or thrombolysis, or primary percutaneous coronary interventions
- Treat acute ischemic stroke with intravenous thrombolytic therapy
- Prevent rheumatic fever and rheumatic heart disease by increasing treatment of streptococcal pharyngitis at primary care level and developing a register of patients who receive regular prophylactic penicillin

CANCER



Prevent cervical cancer by:

- **Vaccinating girls aged 9-13 years against human papillomavirus**
- **Screening women aged 30-49 years with either Pap smear, human papillomavirus test or visual inspection with acetic acid**
- Provide breast cancer screening with mammography for women aged 50-69 years, linked to timely diagnosis and treatment
- Provide treatment with surgery, chemotherapy and/or radiotherapy for colorectal cancer
- Provide home-based and hospital-based palliative care services



CHRONIC RESPIRATORY DISEASE

- Provide symptom relief with inhaled salbutamol for patients with asthma and chronic obstructive pulmonary disease
- Provide treatment of asthma using low dose inhaled beclomethasone and short acting beta agonist

Source: Updated Appendix 3 to the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020, Geneva: WHO; 2017
Available at: <http://www.who.int/ncds/management/best-buys/en/>

Note: The source document includes a comprehensive listing of 88 interventions that are categorized as overarching/enabling policy actions, the most cost-effective interventions, and other effective interventions. This document presents a short summary of the main evidence-based NCD interventions. It is based on a similar factsheet produced by the WHO Regional Office for the Americas (PAHO/WHO).
Available at: http://www.paho.org/hq/index.php?option=com_topics&view=rdmore&cid=9500&Itemid=40933

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