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Global Responses to HIV/AIDS and Noncommunicable Diseases: Analysis of Similarities and Differences

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Authors' contributions

This work was carried out in collaboration between all authors. Author TNH designed the study, performed the review and analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors BO, JE and GS supervised the design, data extraction and analysis. All authors read and approved the final manuscript.

Research Article

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ABSTRACT

Introduction: Recent evidence suggests that HIV/AIDS and Noncommunicable diseases (NCDs) share essential commonalities in their risk factors, progression and management. However, the interrelatedness between the global responses to HIV/AIDS and NCDs hasn't been systematically analyzed.
Objective: To examine the similarities and differences between global responses to HIV/AIDS and NCDs.
Methods: Using preliminary review of literature, we identified four major themes of the global response: Strategies, Systems, Intervention and Monitoring and Evaluation. Detailed review of purposively selected documents was then conducted under these four themes. Similarities and differences between the global response to HIV/AIDS and NCDs were then examined for each major theme using qualitative content analysis and interpretive synthesis. The findings were presented using narrative summaries, tables and boxes.
Findings: HIV/AIDS and NCD strategies are similar in their general approach. However,

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HIV strategies are geared towards improving effectiveness and efficiency of programs while NCD ones focus on increasing access to and coverage of services and enhancing the priority accorded to NCDs. The organizational systems involved in the global response to both HIV/AIDS and NCDs involve multi-sectoral, multi-stakeholder and multi-level approaches that require global coordination mechanisms. The presence of many diseases in the NCD group means more complex coordination of the NCD response. HIV/AIDS and NCD interventions use similar models and approaches despite their differences in the technical content of the interventions and the demographic characteristics of the target population groups. The indicators and the target populations for monitoring and evaluation of HIV/AIDS and NCD programs differ in their timeframe, level of specificity, and relative magnitude. Besides, the current NCD targets are voluntary. However, the Monitoring and Evaluation frameworks share important similarities in the methods used to generate and manage information.

Conclusion: The similarities between the global responses to HIV and NCDs indicate that there are many processes that could be coordinated and/or integrated to improve synergy and efficiency. The differences, on the other hand, warrant the need for maintaining the integrity of the responses to each disease condition.

Keywords: HIV/AIDS; Noncommunicable diseases; global response.

1. INTRODUCTION

Many disease conditions share different characteristics. Besides their epidemiological convergence in developing countries, HIV/AIDS and the common Noncommunicable diseases (NCDs) share important similarities that are related to their etiology, pathogenesis, and management. Knowledge of interconnectedness among these diseases is important for the design and implementation of integrated prevention and control programs.

From etiological perspective, HIV/AIDS is mostly associated with high-risk sexual behavior. Commercial Sex Workers (CSW), Men having Sex with Men (MSM) and Intravenous Drug Users (IDUs) are generally classified as high risk groups for HIV [1]. Correspondingly, the common NCDs (Cardiovascular disease, cancers, diabetes and chronic respiratory disease) are associated with four major behavioral and lifestyle risk factors (Unhealthy diet, insufficient physical activity, tobacco use, and harmful use of alcohol) [2]. This signifies the importance of 'behavioral' domain in the etiology of both HIV/AIDS and NCDs.

Slow development and progression are common to the pathogenesis of HIV/AIDS and common NCDs. HIV/AIDS has an average of ten years of clinically asymptomatic stage between primary HIV infection and the development of AIDS [3]. Studies indicate that the risk of many NCDs is set during development of an individual. Nutritional imbalance and exposure to environmental chemicals during development can increase NCD risk later in life [4]. Most NCDs are associated with long-term and persistent exposure to their risk factors. Many NCDs also have 'pre-disease' stages that may last for a number of years [5].

Previously, there was a big divide between infectious disease, like HIV/AIDS, and NCDs. As HIV/AIDS has now turned out to be a chronic condition, similar to many of the common NCDs, the prevention and control strategies of HIV/AIDS and NCDs have several similarities. Prevention approaches of both HIV/AIDS and NCDs are targeted at modifying risk behaviors. Treatment and care interventions are directed at improving quality of life

through promotion of long-term adherence to treatment, regular monitoring of biomarkers, and sustainable social support [6].

At Global level, the responses to both HIV/AIDS and NCDs involve a multi-sectoral approach and whole-of-government efforts in order to mitigate the multi-faceted risk factors and multidimensional impacts of these problems [7,8]. The implementation of such complex approaches needs well-coordinated policies, strategies and systems. Above all, the global response needs to be informed by global level evidence on the epidemiology of the diseases and local effectiveness of responses.

Despite the existence of several similarities between HIV/AIDS and NCDs in acquisition, progression and response; the extent to which those similarities are actually reflected in the response to these pandemics is not well investigated. Analysis of commonalities between the response functions to HIV/AIDS and NCDs will be useful in identifying potential areas of overlap and thereby facilitate the coordination and integration of the responses. Therefore, this study was designed to examine global level similarities and differences between the response to HIV/AIDS and common NCDs.

2. METHODS

We conducted a structured review and analysis of global level policies, strategies, reports, and organizational profiles relevant to the global response to HIV/AIDS and NCDs. We used four pre-defined thematic areas: Strategies, systems, interventions and Monitoring and Evaluation. These themes were selected based on their relevance to the global response. Global responses are often characterized by a written action framework (strategies), a list of participating organizations and their relationships (systems), a set of action/program areas (interventions), and a clearly designed Monitoring and Evaluation of the response (M and E). After review of the main documents selected for detailed review (Table 1), information relevant to global level response to HIV/AIDS and NCDs was extracted under the four themes. The extracted information for each theme was then summarized separately for HIV/AIDS and NCDs. Additional information was sought from additional sources as necessary.

Table 1. List of major documents that selected for detailed review

HIV/AIDS	NCDs
UNAIDS strategy (2011-2015)	NCD global action plan (2008-2013)
WHO HIV strategy (2011-2015)	Global strategy on diet, physical activity & health
Declaration of commitment, 2001	Global strategy to reduce harmful use of alcohol
“Three ones” Key principles	Framework convention on tobacco control
HIV Political declaration, 2006	Political declaration on NCDs, 2011
UNAIDS: The first 10 years	Draft Global NCD action plan (2013-2020)
Global strategy framework on HIV/AIDS	Global NCD monitoring framework
Global AIDS response progress report, 2012	Global status report on NCDs, 2010
AIDS and Global Health	A framework for M&E of GSDPAH
Political declaration on HIV and AIDS 2011	WHO cluster strategy on NCDs and Mental Health

In this report, we first described the progress of global response to HIV/AIDS and NCDs during the last few decades in an attempt to establish the historical context for the global response. By analyzing each thematic area separately, we then examined the similarities and differences between the attributes of the global response to HIV/AIDS and NCDs. The review of the documents was basically a qualitative content analysis and interpretive synthesis. We presented the analysis results for each thematic area using narrative summaries and tables as appropriate. Detailed descriptions at sub-theme level were also used when found relevant. Where appropriate the implications of the findings of the analysis are highlighted.

Box 1. Operational definitions of the four research themes

Strategies:
Global HIV/AIDS and NCD prevention and control strategies as indicated in strategic documents including global strategies, strategic plans, strategic frameworks, and policies.

Systems:
The global level institutional arrangements and coordination mechanisms which are involved in the design, implementation, coordination, and financing of the global response to HIV/AIDS and NCDs.

Interventions:
The action/program areas put forward to tackle the causes and consequences of the diseases. These include prevention, treatment, care and structural interventions.

M and E:
The core elements of a health information system that are of great relevance to global response to HIV/AIDS and NCDs. These include M&E frameworks, indicators, targets and data collection methods.

3. RESULTS AND DISCUSSION

3.1 Historical Context of the Global Responses to HIV/AIDS and NCDs

Currently, both HIV/AIDS and NCDs are major global health challenges that demand global response [9,10]. HIV/AIDS is a single disease condition that can be managed with a defined set of interventions. NCDs represent group of diseases which are generally defined by 'what they are not' (i.e. Noncommunicable). The global responses to HIV/AIDS and NCDs have undergone several historical processes. These processes of global response occurred during the last three decades for HIV/AIDS but mainly during the last decade for NCDs [11,12]. The major progresses of in the development of global response to HIV/AIDS and NCDs are presented in Table 2.

Table 2. Major elements of the global response to HIV/AIDS and NCDs

End points	HIV/AIDS	NCDs
Recognition as a public health problem	WHO's first official acknowledgement of the HIV was in 1983. WHO Control Programme was set up in 1986. Global program on AIDS set up in 1987	Health consequences of smoking were recognized by WHO since 1970. NCDs have been the leading causes of morbidity and mortality since 1990 in all burden of disease reports.
WHA resolutions related to HIV/AIDS and NCDs	Global strategy for the prevention and control of AIDS adopted in 1987. Avoidance of discrimination in 1988. Role of NGOs in 1989. Women, children and AIDS in 1990. Updated global strategy in 1992. Comprehensive resolution on HIV/AIDS in 2000. Global fund and WHO medicine strategy adopted in 2001.	Global Strategy for the Prevention and Control of NCDs developed in 2000. FCTC adopted in 2003. Resolution WHA60.23 on Prevention and control of NCDs: implementation of the global strategy adopted in 2007. Resolution WHA61.4 on Strategies to reduce the harmful use of alcohol and Action Plan for the Global Strategy for the Prevention and Control of NCDs adopted in 2008
Formulation of a global strategies for Prevention and control	Global strategy framework (2001). Uniting for universal access: towards zero new HIV infections, zero discrimination and zero AIDS-related deaths (2011).	WHO Framework Convention on Tobacco Control (2003); Global Strategy on Diet, Physical Activity and Health (2004, 2008). Global NCD action plan (2013-Draft).
UN level meeting and declarations	Millennium development goals (2000), Declaration of commitment (2001); Political Declaration on HIV/AIDS (2006, 2011).	Political declaration on the prevention and control of NCDs adopted by UN general assembly (2011).
Current Global targets	Getting to Zero: Zero new HIV infections. Zero deaths from AIDS-related illness. Zero discrimination	25% reduction in premature mortality from Noncommunicable diseases by 2025
Global coordination mechanisms	Joint United Nations Program on HIV–AIDS (UNAIDS) since 1996.	WHO playing a leading role in the global response; NCD alliance plays advocacy role.
Major resourcing	Global Fund to Fight AIDS, Tuberculosis, and Malaria (2001). US government announced PEPFAR (2003)	No major global level funding mechanism/commitment is identified in during the period of this review

3.2 HIV/AIDS and NCD Response Strategies

3.2.1 Strategies targeted at reducing incidence through prevention

3.2.1.1 HIV/AIDS prevention strategies

The current global HIV prevention strategy is about revolutionizing HIV prevention in order to reach at a level of zero new infections [13]. The primary goals are to reduce sexual transmission of HIV by half; to eliminate vertical transmission of HIV; and eliminate new infections among drug users [14]. The strategies to achieve these goals are framed under three major areas: Improving political palatability, renewing prevention approaches and empowering people. In order to generate *political commitment* that address how and why people gets infected, HIV prevention strategies aim to create positive incentives for leaders so that they can do the right things in responding to HIV by better recognizing the critical efforts.

Renewing prevention approaches is related to directing resources to epidemic hot spots through implementation of the right interventions. Prevention strategies emphasize priority prevention programs and include bold prevention targets based on "know your epidemic, know your response" [15]. To *mobilize communities* in order that they effectively demand transformative social and legal change, HIV prevention efforts intend to create shared social commitment to health, overcome stigma and discrimination and support people in changing their behavior. HIV prevention strategies also aim to maximize the empowerment and facilitation of young people as change agents through peer-led approaches and through Positive health, dignity and prevention [16].

3.2.1.2 Noncommunicable disease prevention strategies

NCD prevention strategies attempt to counteract the risk of NCDs from the four common risk factors [17]. As the ultimate decision of adoption healthy behavior depends on an *individual choice,* the NCD prevention strategies are geared towards influencing individual decisions. The major NCD prevention strategies can be categorized in to three broad classes [12,18]. The first is about *framing Public policies* that influence the standards for food composition and marketing; the planning of cities that are appropriate for physical activities; the regulation of contents of tobacco products, tobacco product disclosures and marketing of tobacco products; and the availability, composition and marketing of alcohol [19].

The second is *creating enabling environment* by reducing modifiable risk factors and facilitating health promoting environments for individuals who are expected to make healthy choices. This includes increasing availability of healthy food choices and improving the labeling of food composition; improving physical environments to be appropriate of walking, cycling and other relevant physical activities; creating smoke free environments and provision of support for economically viable alternative activities; enhancing community capacity to encourage and coordinate the reduction of harmful use of alcohol.

The third one is *building individuals' capacity* by providing adequate information related to health diet, adequate level of physical activity, harmful effects tobacco and alcohol use. Clear public messages about physical activity, information on healthy diet, and risks of tobacco and alcohol use should be communicated with individuals [20-23].

3.2.1.3 Similarities and differences between HIV and NCD prevention strategies

The prevention strategies for both HIV/AIDS and NCDs address overlapping arenas: Policies, environments and individuals. In the policy arena, HIV prevention strategies are targeted towards *generating political commitment* to prevention throughout society by improving its political palatability while NCD prevention strategies mainly focus on *formulation of policies* that encourage healthy food choices and adequate physical activity; and reduce the demand for and supply of tobacco and alcohol. Thus, the focus of current policy related HIV strategies is mainly on policy implementers (leaders) while that of NCDs is on the policies.

In the environmental arena, HIV prevention strategies tend to *focus prevention efforts* where they will deliver the greatest returns to investment; incorporating new technologies (vaccine and drugs) and approaches as they are developed. On the other hand, the approach of NCD prevention strategies is towards creating an enabling environment by improving availability and accessibility of healthy foods, environments suitable for physical activity, smoke free environments, and enhancing community capacity against harmful use of alcohol. It looks that the HIV prevention strategies are more concerned about effectiveness and efficiency while NCD strategies are centered on increasing coverage and access.

In the individual domain, HIV prevention strategies aim at *empowering people* to overcome stigma and discrimination and their risk of HIV infection through comprehensive sexuality education and the engagement of networks of people living with HIV and other key populations. In the same domain, NCD prevention strategies give priority to *building individuals' capacity* to make healthy choices by strengthening the informational basis for healthy foods, physical activity, and harmful effects of tobacco and alcohol use among individuals. Empowerment and capacity building are in the same continuum engagement.

3.2.2 Strategies for optimizing treatment care and support

3.2.2.1 HIV/AIDS treatment, care and support strategies

Achieving universal access to treatment for all eligible individuals is the main goal of the HIV strategy. Achievement of this goal is expected to reduce AIDS-related deaths and new HIV infections [24]. As a result of coordinated efforts, people infected and affected by HIV are expected to have improved access to essential care and support services and national protection strategies. One focus area of HIV/AIDS treatment, care and support strategies is *renovating approaches* [13]. The development of simpler, more affordable and effective treatment regimens and tools are among the global strategies for HIV treatment. The adoption of innovative service delivery models that reduce costs and empower communities to demand and deliver better and more equitable treatment, care and support services is another strategy to renovate treatment approaches. Maximizing links with other health and community services is also expected [25].

Another area of focus of HIV/AIDS treatment, care and support strategies is the strengthening of national and community *systems* to deliver decentralized and integrated services. As the majority of care and support is provided by families and communities, strengthening community systems is the main focus. The scale up of community-health provider relations is therefore essential. Moreover, *leveraging broader outcomes* is a key element of HIV/AIDS treatment and care strategies [26]. This involves working with partners to scale up access to tailored care and support. Both international and national level

partnerships need to be strengthened to generate HIV-sensitive social protection policy to accelerate the establishment of effective and transformative programs. Optimizing program links between HIV and other key health areas is also crucial for leveraging broader health outcomes. Such links are also important to ensure that HIV responses benefit from investments in other related health program areas [26].

3.2.2.2 NCD treatment, care and support strategies

The global response to NCDs aims to strengthen and re-orient health systems to address NCD prevention and control through people-centered primary care and universal coverage. Cognizant of this objective, NCD strategies related to treatment, care and support fall under three thematic areas: Reorientation, strengthening and integration. Health systems, especially in developing countries, needs to be re-oriented in order that they put NCDs at the forefront of their priorities. Strengthening the capacity of those health systems to deliver adequate treatment, care and support for people with NCDs is also one of the main priorities. Strengthened health systems are expected to provide comprehensive and integrated services to those in need of such services [27].

3.2.2.3 Similarities and differences in treatment, care and support strategies

HIV/AIDS treatment, care and support strategies call for *renovating systems* for treatment, care and support. Similarly, NCD strategies are directed towards *reorienting systems* to ensure that NCDs are considered as key priorities of the healthcare system. Strategies in this category for both disease conditions give due emphasis for *strengthening systems*. Another major overlapping area in these strategies is the need for integrated response. *Leveraging* broader outcomes by optimizing links between HIV and other health areas is among the HIV strategies, while *integrating* cost-effective NCD interventions in to healthcare systems is among the major strategies of NCDs.

3.2.3 Strategies for addressing vulnerability and structural barriers

3.2.3.1 HIV/AIDS strategies for addressing vulnerability and structural barriers

Current HIV strategies have put human rights, equity and gender equality at the center of the HIV response. Addressing these issues requires a major shift in coverage, content and resourcing of HIV programming [28]. HIV programs introduce measures to eliminate all forms of discrimination and to ensure the full enjoyment of all human rights and fundamental freedoms by people living with HIV/AIDS and other vulnerable groups. They also empower women to have control over and decide freely and responsibly on matters related to their sexuality to increase their ability to protect themselves from HIV infection. Advancing human rights and gender equality in HIV response is a means of ending the HIV-related stigma, discrimination, gender inequality and violence against women and girls[29]. This means putting laws, policies and programs in place to create legal environments that protect people from infection and support access to justice.

HIV/AIDS strategies under this category include there major priority issues. The first one is w*orking with right holders*. HIV programs work with and through people living with HIV, people at higher risk of HIV, civil societies, women and girls. They also actively engage men in addressing negative male behavior and changing harmful gender norms. The second priority issue is *advancing country capacity.* Countries' capacity to create protective social and legal environments, to reduce stigma and discrimination, to realize equitable access to

services, to address the needs and rights of women and girls in the context of HIV, and to include gender issues in the design, delivery and monitoring of health services need to be strengthened. The third priority issue is *addressing vulnerability.* Empowering women is essential to reduce their vulnerability to HIV. HIV responses also need to address factors that make individuals particularly vulnerable to HIV infection. Children orphaned and affected by HIV/AIDS need special assistance. Conflicts and disasters contribute to the spread of HIV/AIDS [30]. All these are well considered in the HIV strategies.

3.2.3.2 NCD strategies for addressing vulnerability and structural barriers

Prevention and control of NCDs is directly related with universal right of people to enjoy the maximum health they can attain. However, women in developing countries bear disproportionate burden of NCDs as they tend to be less physically active than men, more likely to be obese and take up smoking from household fuels at alarming rates. NCD responses, therefore, need to promote gender-based programs that address the critical differences in the risks of morbidity and mortality from non-communicable diseases for women and men.

At global and national levels, NCD responses need to strengthen advocacy efforts in order to raise the priority accorded to prevention and control of NCDs in the UN development agenda. Prevention of NCDs is a pre-condition for and an outcome of sustainable human development. It is interdependent with social, economic and environmental dimensions of development. Therefore, a coherent cross-sectoral response is needed to reduce the NCD burden and enhance the social and economic development, particularly in low- and middle-income countries. Critical to the NCD response is strengthening capacity, leadership, governance and accountability to accelerate countries' response to NCDs. Strengthening national policies and systems in order to effectively plan and execute appropriate NCD programs remains to be among the key strategies in the global response to NCDs.

3.2.3.3 Similarities and differences between Strategies addressing vulnerability and structural barriers

Both HIV/AIDS and NCD strategies address gender-related issues but they seem to be at different levels of gender mainstreaming. HIV strategies advocate for higher levels of women empowerment whereas NCD strategies focus on promotion of gender-based programs to address disproportionate burden of NCD morbidity and mortality. This difference may be due to the variations in the level of previous responses to the diseases. In addressing structural barriers, HIV/AIDS strategies call for advancing countries' capacity to improve protective and legal environments whereas NCD strategies call for accelerating countries' response with actions on policies, systems and leadership. In right related issues, HIV/AIDS strategies endorsed the approach of working with right holders including PLHIV, MARPs, women, civil societies, and engaging men in gender issues. In this aspect, NCD strategies adopted the integration of NCDs with development strategies to promote coherent cross-sectoral response.

3.2.4 Strategies for leadership and coordination of response

3.2.4.1 HIV/AIDS strategies for leadership and coordination

HIV/AIDS, as a global public health problem, needed strong global, regional and national level leadership and coordination of efforts. UNAIDS has been playing major roles in global

leadership on policy and coordination of HIV/AIDS prevention and control through strong collaborations and partnerships with UN agencies, public sectors, civil societies and private sectors. Regional, sub-regional, and inter-regional coordination, cooperation, approaches and strategies have also been designed and implemented to mitigate the impacts of the HIV/AIDS epidemic. Local and national organizations have been enabled to expand their regional partnerships, coalitions and networks [31].

At national level, the HIV/AIDS response adopted the multisectoral and multi-stakeholder approaches in the development and implementation of national strategies. These approaches were needed because of the multifaceted nature of both the impacts and the interventions of HIV/AIDS. The multisectoral approaches facilitated the financing plans for combating HIV/AIDS, the protection of human rights, the wider participation of people living with and affected by HIV, and the effective contribution of international cooperation. It also enhanced the mainstreaming of HIV/AIDS response efforts in to development strategies of the countries. The mainstreaming has further improved accountability through shared ownership. During the course of implementation, HIV/AIDS response was positioned to adapt with the changing world. Strategic directions and leadership roles were also renewed accordingly by building up on progresses in order to address the dynamics of diverse and evolving HIV epidemics [32].

The “Three ones” principle, which emphasizes on the need for one coordination mechanism, one action framework and one monitoring and evaluation framework, has been one of the key steps in the harmonization and alignment HIV/AIDS interventions and actors at national level. Accordingly, in most countries where HIV/AIDS is a major public health problem, there exist a multisectoral response coordinating authority, strategic plan and monitoring and evaluation framework. The multisectoral response coordinating authority provides leadership for the national response in partnership with governmental sectors, non-governmental organizations, civil societies, international organizations and the private sector. At all levels, people living with HIV and at higher risk of HIV, are at the center of the efforts to lead and own the overall response [7].

3.2.4.2 NCD strategies for leadership and coordination

NCDs have a complex set of risk factors that make vicious cycle with poverty. NCD prevention and control approaches promote a whole-of-government and whole-of-society approach for multisectoral action and partnerships. As the primary specialized agency for health, the World Health organization (WHO) plays leadership and coordination role in promoting and monitoring global action against NCDs. The NCD alliance along with its national partners mainly plays an advocacy role to raise the priority accorded to NCDs [10].

International cooperation, including collaborative partnerships, is considered to be among the major strategies in addressing NCDs [33]. Given the diverse nature of risk factors of NCDs, the involvement of both health and non-health sectors is essential. The participation of patient associations and other civil societies is also crucial. Though there is no single model suggested for the leadership of NCD response at country level, a multisectoral approach is imminent. The experience from HIV/AIDS indicates that multisectoral approaches need strong coordinating authority, agreed up on action framework and Monitoring and evaluation frameworks. Given the linkage of NCDs with several other health related issues, integrated approaches will also be needed [34].

3.2.4.3 Similarities and differences between leadership and coordination strategies

Both HIV/AIDS and NCDs are major challenges to development with multi-faceted impacts. Their response requires whole-of-government and whole-of-society efforts with multisectoral and multi-stakeholder approaches. Strong and adaptive coordination mechanisms at all levels as well as international cooperation and collaboration are needed. Active role of people affected by the diseases and those at higher risk of the diseases is also important in the leadership and coordination of the responses. Ensuring synergies, linkages and integration with other programs is a feature of leadership and coordination strategies of both HIV/AIDS and NCDs [35].

3.3 HIV/AIDS and NCD Response Systems

Due to the multi-dimensional nature and impacts of HIV/AIDS and NCDs, several organizations and institutions are involved in the global response [10, 36]. Therefore, there is a need for complex coordination mechanisms within and among these organizations. The analysis of the similarities and differences between these institutional arrangements and coordination mechanisms needs to disentangle such complexities [37].

3.3.1 HIV/AIDS institutional structures and coordination system

Global HIV/AIDS response is coordinated by UNAIDS. This joint and co-sponsored United Nations Program of HIV/AIDS represents an internationally coordinated response of the United Nations system organizations to the HIV/AIDS pandemic. The main objectives of the program are to provide leadership, promote global consensus on policy and approaches, strengthen capacity, promote political and social mobilization and advocate for greater political commitment. To achieve these objectives, UNAIDS collaborate with National governments, inter-governmental organizations, Non-governmental organizations, United Nations system organizations and people living with HIV. The governance structure of the program includes program coordination board which has the representation of governments, co-sponsoring organizations, Non-governmental organizations and civil societies including associations of PLHIV. The standing committee of the program coordination board is the committee of co-sponsoring organizations. The UNAIDS secretariat is comprised of the Executive director, and technical and administrative staff [38].

UNAIDS and its Cosponsoring organizations work together to provide technical assistance to countries to facilitate the implementation of national HIV/AIDS plans. In order to ensure that countries receive the best possible technical assistance in respective areas, and to avoid any possible duplication of efforts, a *division of labor* between the Cosponsor organizations guides the technical support offered to countries [39]. Based on the comparative advantages of each of the UNAIDS organizations, the division of labor enables UNAIDS to deliver a unified and consolidated UNAIDS-sourced technical support plan throughout the program.

Other global mechanisms include the Global Fund, which is essentially a *financial model* dedicated to attracting and disbursing additional financial resources to countries. The central element of the Global Fund partnership strategy is country coordinating mechanism (CCM), country-level partnership composed of all stakeholders in a country's response, which develop grant proposals based on priority needs and oversees its implementation. A principal recipient, designated by CCM, receives the fund and implements the program and/or sub-grant the money. Under the governance of a board, the Global fund secretariat

manages the grant portfolio. A trustee manages the Global Fund money. At country level firms are contracted to monitor the implementation of a grant [40].

Another major part of Global response to HIV/AIDS is the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). PEPFAR is the largest commitment by any nation to combat a single disease internationally. Under the leadership of the U.S. Global AIDS Coordinator, the implementing agencies use inter-agency coordination mechanisms to work together. Coordination with countries is based on partnership frameworks [41]. Other major global mechanisms that mainly play advocacy role in the global response to HIV/AIDS include the Global Network of PLHIV, International alliance of civil society organizations, and International society of HIV/AIDS professionals.

3.3.2 NCD institutional structures and coordination system

The highest level of global response to NCDs is that of the United Nations system. Many UN agencies involve in the global response to NCDs. In the global response to NCDs, the World Health Organization (WHO), as a primary specialized agency for health, plays a leading role in the prevention and control of NCDs [10, 41, 42]. Guided by its strategy for Health, Nutrition and Population results, the World Bank has also outlined a number of approaches and roles in the global response to NCDs [43, 44]. UNICEF began to tackle NCDs in children and adolescents. The World Trade Organization (WTO) can also influence trade agreements related to food, alcohol and tobacco. Other UN agencies like UFP and ILO also have important roles. Multi-stakeholder forums, like Global agenda council on NCDs of the World Economic forum, are also relevant to the response coordinating mechanisms.

The NCD alliance, which is founded by four international NGO federations representing the four common NCDs–cardiovascular disease, diabetes, cancer, and chronic respiratory disease- is an essential mechanism for global advocacy. The four international NGO federations in NCD alliance are the International Diabetes Federation (IDF), Union for International Cancer Control (UICC), World Heart Federation (WHF) and International Union against Tuberculosis and lung disease (The union). These four federations have member organizations in many countries [45].

There are also global level foundations acting as independent, non-profit organizations to support the response to NCDs. World Diabetes foundation, world heart foundation, and world lung foundations are examples. These organizations provide technical assistance and implement NCD programs in different countries. In addition, there are also different forms of networks that are organized to facilitate the implementation of NCD prevention and control strategies and plans. Global NCD network, a voluntary collaborative arrangement organized to help implement the NCD action plan, is an example. In this network are United Nations agencies, intergovernmental organizations, academia, research centers, non-governmental organizations, and the business community. Putting in place effective collaboration focused on achieving results in low- and middle-income countries was a priority agenda of this network.

Framework convention alliance works on development, ratification and implementation of FCTC. Other alliances such as Global alliance against chronic respiratory disease (GARD) and Global alliance for chronic disease (GACD) addresses specific diseases or specific element of the NCD response. They also serve as a consortium of several other organizations. International organizations whose primary goal is to advance global health in general, such as Global Health Council, also have important stakes in the global response to

NCDs. Moreover, many other global initiatives, institutes, societies, associations, bilateral development agencies, and partnerships could contribute to the global response to NCDs in terms of advocacy, research, technical assistance or program implementation. As NCDs represent a group of diseases, rather than a single disease, different forms arrangements of professional, patient, civil society exist at global level.

Many of the global level mechanisms have regional level arrangements that take care of the NCD response in their respective geographic regions. Regional mechanism like Pan-American Health Organization Partners Forum to Fight Chronic Disease and regional offices of the different international and global organizations, alliances, and platforms also provide important opportunity for coordination of NCD responses at regional level. African Tobacco alliance and center for Tobacco control in Africa are also examples of other regional organizations.

3.3.3 Similarities and differences between HIV/AIDS and NCD systems

Both HIV/AIDS and NCDs are shared global health challenges that have global determinants. The response to these global challenges needs whole-of-society efforts and an enormous amount of resources that can only be addressed through better coordination of several organizations and mechanisms at global level. With the large proliferation of global stakeholders and emergence of several global initiatives, a global coordination mechanism became the center of the response to HIV/AIDS and NCDs. A key characteristic of the global response to both HIV/AIDS and NCDs is the need for a global multi-sectoral response *coordinating mechanism*.

The presence of global alliances for advocacy that involve people living with disease, health professionals are civil society organizations is another similarity between global responses to HIV/AIDS and NCDs. This indicates that a global level coordination of advocacy go in line with country level coordination of responses. Global level foundations and institutions that implement programs in different countries also have coordination mechanisms within and among themselves. Intra-and inter-institutional coordination are thus the key characteristics that are common to both HIV/AIDS and NCD responses. Global financial mechanisms exist for HIV/AIDS, TB and Malaria. However, such mechanisms for NCDs are currently lacking. In this regard, the global NCD threat demands global level financial commitment and financial mechanisms.

While the involvement of many stakeholders is a characteristic of the responses to both HIV/AIDS and NCDs, the number of stakeholders and the complexity of the coordination are higher in the NCD response. This is due to the fact that NCDs represent many diseases and there are many 'disease-specific' stakeholders that work together with organizations that address NCDs as an entity.

3.4 HIV/AIDS and NCD Interventions

As both HIV/AIDS and NCDs are considered to be *chronic conditions*, the relationships between their interventions can be investigated using different models of chronic disease interventions. Chronic disease interventions can be classified based on three dimensions: Level, approach and technical area. The inter-connected needs of people with chronic diseases mean that the boundaries between different categories of interventions can be difficult to draw, especially in developing countries. This is mainly because many interventions are often implemented by the same organizations or providers. Applying a

triangulated approach, the similarities and differences between HIV/AIDS and NCD interventions are discussed using the dimensions and sub-dimensions of chronic disease intervention frameworks.

3.4.1 Similarities and differences by levels of interventions

At individual (Micro) level, both HIV/AIDS and NCD interventions require *active participation* of the individual concerned. In many instances, self-management is also part of the intervention. To effectively engage people, there is a need to empower and prepare them to manage their own health and healthcare. Patients also participate in patient associations and societies to advocate right and equity related issues in to the policy making processes. While attaining and maintaining healthy behavior using different behavioral change models is the main goal of prevention interventions, early start-up and long-term adherence to treatment with regular monitoring of biomarkers are the main focuses of care and treatment interventions. Worth noting is that the *technical content* of interventions, what is actually delivered to eligible individuals, and the socio-demographic characteristics of the target populations are very different [46,47].

At Healthcare organization (Meso) level, HIV/AIDS and NCD interventions create a culture, organization, and mechanisms that promote safe and high quality care. Through different approaches of *health systems strengthening*, health facilities promote continuity and coordination of services. They also organize and equip *multidisciplinary healthcare teams* as the services for both HIV and NCDs demand multiple expertise. Moreover, healthcare organizations support self-management and prevention of chronic conditions. Use of information systems that generate practice-based evidence for evidence-based practice is also among the main pillars of health-facility level interventions.

Community (Meso) level HIV/AIDS and NCD interventions involve enabling community systems to effectively contribute to the health of communities. Most prevention interventions are implemented to raise awareness and reduce stigma. Extending care and support services to community and family level require mobilization and coordination of community resources to meet the need of patients. Through leadership and support, community-based organizations can provide complementary services.

Policy (Macro) level HIV/AIDS and NCD interventions aim to create *conducive policy environment* for the overall response to the diseases. These interventions involve formulation, promotion, implementation and evaluation of policies and strategies along with the integration of policies within and among different policies of sectors and stakeholders. Policy level interventions also involve the development and implementation of legislative frameworks that can reduce the burden of diseases and protect the rights of people with chronic diseases. Policy level interventions need to ensure the availability of consistent financing and human resources. Another key policy level intervention for chronic disease is strengthening partnerships and cooperation within and among all stakeholders in order to leverage resources and maximize synergy among different stakeholders.

3.4.2 Similarities and differences by approach of intervention

Both HIV/AIDS and NCDs are related with individual behavior. While HIV is related with high risk sexual behavior, NCDs are related to consistent unhealthy diets, physical inactivity, alcohol use and tobacco use. Accordingly, *behavioral/social* interventions constitute a major part of both HIV/AIDS and NCD interventions. These interventions are meant to reduce the

risk of the diseases by enabling individuals to modify their behavior. Behavioral interventions of both HIV/AIDS and NCDs use a broad range of communication techniques that are tailored to the target population and the risk factor involved.

Biomedical/biological interventions use medical and public health approaches to block the development of HIV/NCDs and reduce susceptibility [48]. For HIV/AIDS biomedical interventions can be designed for individuals who have higher risk of HIV and people living with HIV. These interventions reduce the risk of getting infected (pre-infection interventions) and the risk of transmitting the virus to another individual (post-infection interventions). The pre-ART period is a critical point where essential lifestyle changes are needed. On the other hand, the common NCDs have "pre-disease" conditions that can be managed by both lifestyle changes and medical interventions. Effective interventions can reverse or maintain these "pre-disease" conditions. The "pre-disease" conditions in both HIV and NCDs require the prevention and treatment of other associated conditions. Therefore, screening plays an essential role in both HIV and NCDs in identification of risk of disease at earlier time.

Once a chronic disease, HIV/NCD, is diagnosed in an individual, *clinical/therapeutic* interventions along with other complementary interventions will be the mainstay of the management. The aim of the clinical interventions is to control the disease and prevent and/or treat any other adjacent complications. The level of control of the disease is monitored by key biomarkers. CD4 count is the main biomarker for HIV. Blood glucose level, blood pressure, Lung function indices, ECG and tomography tests are the indicators of progress in NCD treatment. Long-term adherence to treatment as well as sustainable lifestyle changes are needed in clinical interventions of both HIV/AIDS and NCDs. The overall aim of the clinical interventions in most cases is not to cure the disease but to control it within acceptable limits and avoid any complications that could result from further progression of the disease or from its management [49].

Structural interventions for HIV/AIDS and NCDs include programs that change legal environments (often with community pressure or input) to make practicing safer behavior easier. They can also target the immediate social context of behaviors by changing the physical or normative environments within which they occur. Structural interventions also include programs to reduce or abolish inequalities, inequities and oppressions which create vulnerability to chronic diseases. Structural interventions often address issues that seem to be unrelated to the diseases. Factors affecting risk and vulnerability have to be considered when developing and evaluating prevention policies. Although the *social contexts* to be considered are different, structural interventions for both HIV/AIDS and NCDs lay the foundation for the prevention and control of these epidemics [50].

3.4.3 Similarities and differences by technical area of interventions

HIV interventions are usually classified in to four technical areas [51]. *Prevention* interventions, the main pillar of the response to both HIV/AIDS and NCDs, fall under five broad categories. These are interventions that affect knowledge, attitudes and beliefs and influence psychological and social risk correlates; harm reduction interventions that lower the risk of behavior, but do not eliminate the behavior; biological/biomedical interventions that strive to reduce development and progression of disease; interventions that mitigate the barriers to prevention and social and biological outcomes; and hybrid interventions, which bundle discrete intervention approaches, and which are in common use and are well standardized. However, the message content, the delivery mode, the target population,

setting, theory and planned outcomes of HIV/AIDS and NCD prevention interventions vary widely based on the specific contexts [52,53].

Treatment interventions of both HIV/AIDS and NCDs, with an overall goal of improving quality of life, have four major aims: controlling the disease; ensuring adherence to standard treatment and prevent any possible 'resistance' to drugs; preventing and/or treating associated diseases that may include co-infections, co-morbidities, opportunistic infections etc.; and preventing and/or appropriately managing possible complications of the treatment. The treatment approaches, models and tools of HIV and NCDs are largely similar though the technical content of the treatments vary [54].

Care and support interventions include psychological, clinical, social, economic, human rights, legal, family and community focused interventions [55]. Besides having larger overlap with treatment and prevention interventions, the provision of care and support interventions need collaborative effort of healthcare providers, patients, and community and family members to complete the continuum of care. In addition to individuals with the disease, the care and support interventions also address the needs of other peoples affected by the disease including immediate family members, children etc. Except for some disease-specific issues, NCD and HIV/AIDS care and support interventions are largely similar.

The creation of *enabling environment* for the prevention and control of HIV/AIDS and NCDs is another technical area. In broad terms, creating enabling environment describes the formulation and adoption of policies and systems that allow, favor and strengthen actions against HIV/AIDS and NCDs. Creating an enabling environment will have four dimensions: The *actors* who create the enabling environment, the *processes* through which enabling environment is created, the *context* under which enabling environment is created, and the *attributes* of the created enabling environment [56].

There is a significant overlap between creating enabling environment for HIV/AIDS and NCDs prevention and control interventions. *Multiple actors* will be involved in creation of enabling environment. Highly interactive *processes* are needed to create the enabling environment. Creation of the enabling environment happens in the same health system *contexts*. However, the attributes of the policies of HIV/AIDS and NCDs is major area of difference. The battle with HIV has lasted for more than three decades while that of NCDs is at earlier stage. Hence, the focus areas of new HIV policies will be to sustain and advance HIV mitigation efforts that are already in place while that of NCD policies will be to establish, strengthen and promote policies and strategies.

Overall, HIV/AIDS and NCD interventions share several similarities in terms of the attributes of the processes involved in the design and implementation of the interventions. The major areas of similarities are the interventions approaches, models, theories and tools involved in the planning and implementation of the interventions. On the other hand, the key areas of difference are the technical contents of the interventions, the target populations, the settings, and the expected outcomes. It will therefore be appropriate to consider some level of integration between HIV/AIDS and NCD interventions to the least to share important lessons from the HIV/AIDS interventions and to ensure coherence of the interventions.

3.5 HIV/AIDS and NCD Monitoring and Evaluation

Multisectoral responses to HIV/AIDS and NCDs need multisectoral monitoring and evaluation systems. The responses to both HIV/AIDS and NCDs require agreed upon monitoring and evaluation system. A single, unified and coherent Monitoring and Evaluation system for each of these disease conditions minimizes duplication of efforts and generates useful evidence for policy and practice. Because the interventions in both HIV/AIDS and NCDs programs involve diverse technical areas, *multidisciplinary* expertise is also needed for effective monitoring and evaluation of the responses.

Based on their epidemiological profiles and health system arrangements, different countries have different Monitoring and Evaluation needs. Tailoring HIV/AIDS and NCD programs and their Monitoring and Evaluation approaches to the epidemic context is needed. Moreover, the Monitoring and Evaluation of both HIV/AIDS and NCDs require multi-level structures and functions [57].

3.5.1 Goals and targets

For global HIV/AIDS response, there are seven major targets set under three broader themes that envision zero new infections, zero AIDS-related deaths and zero discrimination [13]. Similarly, there are nine voluntary NCD targets organized under three themes: Mortality and Morbidity, Risk factors and National systems response [58]. Three of the seven HIV/AIDS targets and four of the nine NCD targets are directly related with prevention. There are four underlying themes linking these targets: Reduction of risk factors or *prevention* of the occurrence of a disease; reducing the magnitude of *morbidity and mortality* from these diseases; improvement of access to *healthcare services* for those eligible clients affected by the diseases; and strengthening the *national response systems*. Thematic relationships between the targets for HIV/AIDS and NCDs are shown in Table 3.

Table 3. Thematic relationship between HIV/AIDS and NCD targets

Theme	HIV/AIDS targets	NCDs targets
Prevention	Reduce sexual transmission of HIV by 50% by 2015	30% reduction in prevalence of current tobacco use in persons aged 15+ years
	Reduce transmission of HIV among people who inject drugs by 50% by 2015	10% relative reduction of insufficient physical activity
	Eliminate mother-to-child transmission of HIV by 2015	At least 10% relative reduction in the harmful use of alcohol, as appropriate within the national context
		30% relative reduction in mean population intake of salt [/sodium intake]
Morbidity and Mortality	Substantially reduce AIDS-related maternal deaths	25 % relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
	Reduce tuberculosis deaths in people living with HIV by 50% by 2015	25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances
		Halt the rise in diabetes and obesity
Healthcare services	Have 15 million people living with HIV on antiretroviral treatment by 2015	At least 50% eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes
National	Reach a significant level of annual global	80% availability of affordable basic

response systems	expenditure (US$22-24 billion) in low- and middle-income countries Critical Enablers and Synergies with Development Sectors	technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities

All HIV targets are generally higher (in terms of percentage) than that of NCDs. Besides, the NCD targets are voluntary. The timeframe for expected achievement of most HIV targets is 2015 while for that of most NCD targets is 2025. Another key difference is that the HIV targets have more specific target population groups. The differences could be due to the differences in funding commitments, level of previous responses, baseline levels and global epidemiology of the diseases.

3.5.2 Indicators and methods of measurement

At global level there are 30 core HIV/AIDS indicators under the seven target areas [59]. Correspondingly, there are 25 NCD indicators under the nine target areas [58]. The majority of the indicators in both HIV/AIDS and NCDs are prevention indicators and thus demanding community-based data collection systems. In line with the targets, the indicators of both disease conditions fall under four major themes.

3.5.2.1 Behavioral/Lifestyle indicators

Indicators of *sexual transmission* of HIV address three population groups: young people aged 15-24 years, sex workers and Men having sex with Men (MSM). These indicators measure universal knowledge on HIV transmission, reach of prevention programs, rate of high risk sexual behaviors, and rate of condom use. The methods of measurement for these indicators are periodic surveys and surveillances of different kind.

HIV indicators that measure the reduction in *parenteral transmission* of HIV among people who inject drugs aim at measuring use of sterile injecting equipment, and use of condom among this population group. The number of syringes distributed is also considered to be relevant. Apart from the indicator on the number of syringes which needs program data as its method of measurement, the rest of the indicators in this group use surveys and surveillances as their method of measurement.

The behavioral/lifestyle indicators for NCDs address the prevalence of tobacco use, insufficient physical activity, harmful use of alcohol and unhealthy dietary habits. The target populations for these indicators are adolescents and/or adults. Surveys and surveillance will be the main methods of measurement for these indicators. While the target population groups for HIV/AIDS and NCD prevention indicators looks different, the methods of measurement are quite similar. It is also possible to notice that the majority of target population for HIV/AIDS prevention indicators is a sub-set of the target population for NCD prevention indicators [58,59].

3.5.2.2 Morbidity and mortality indicators

HIV/AIDS morbidity indicators measure the prevalence of HIV among youth 15-24 years of age, sex workers, MSM, people who inject drug, and HIV exposed infants (HEI). HIV/AIDS mortality indicators focus on reduction of AIDS-related maternal deaths and TB deaths among PLHIV. Surveys, surveillance and modeling are the main methods of measurement for morbidity and mortality indicators of HIV/AIDS. On the other hand, NCD morbidity

indicators measure prevalences of raised blood pressure, raised blood glucose, raised total cholesterol, overweight and obesity, and alcohol related morbidity among adolescents and/or adults. The NCD mortality indicators measure overall mortality from the four common NCDs among people 30-70 years of age, cancer incidence, and alcohol related mortality among adults and/or adolescents. Similar to the HIV indicators, survey and surveillance will be the key methods of measurement of these indicators [58,59].

3.5.2.3 Healthcare service indicators

Healthcare service indicators of HIV measure uptake of HIV test among youth 15-24 years of age, sex workers, MSM, people who inject drug, and HEI. They also measure coverage of and/or adherence to HIV treatment among those PLHIV who are eligible for treatment and HIV-positive pregnant mothers. Coverage of co-management of TB/HIV co-infection is also among these indicators. Facility-based ART registers and cohort analysis reports are the main methods of measurement of these indicators [60]. Healthcare service indicators of NCD measure availability of HPV vaccination, coverage HBV vaccination among infants, access to palliative care services among cancer patients, coverage of cervical cancer screening among women 30-49 years of age and coverage of counseling and therapy for heart attacks and strokes among eligible 40 years and more with cardiovascular risk factors [58]. The methods of measurement of these indicators will mainly be facility-based registers, surveys and surveillance.

3.5.2.4 National systems response

The main national systems response indicators for HIV/AIDS measure domestic and international AIDS spending using national AIDS spending assessment and indicators of critical enablers and synergies with development sectors including national commitment and policy instrument, intimate partner violence among women, orphans school attendance, external economic support to the poorest households affected by HIV and AIDS [61]. Surveys are the main methods of measurement for these indicators. National systems response indicators for NCDs measure the adoption of national policies related to food composition and marketing, and availability and affordability of NCD medicines in both public and private facilities. National commitment and policy index (NCPI) and National AIDS spending assessment (NASA) are two monitoring methods for the policy related indicators [62].

3.5.3 Surveys and surveillance

HIV/AIDS indicators database brings information from several surveys and surveillances. The common surveys that contribute to HIV/AIDS indicators include Demographic and Health Survey (DHS), Multiple Indicator Cluster Survey (MICS), Reproductive Health Surveys (RHS), Sexual Behavior Surveys (SBS), Behavioral Surveillance Survey (BSS), and Health Facility Surveys (HFS) [63].

There are also different types of HIV surveillance. The most commonly known are Behavioral surveillance (General population-based behavioral surveys, Sub-population-based behavioral surveys), Biological surveillance (Sentinel sero-surveillance, Cross-sectional sero-surveys in sub-populations at risk, General population-based HIV serosurveys), Second generation surveillance, HIV and AIDS case surveillance, and HIV Drug resistance surveillance [64,65].

Similarly, global and national level information systems for NCDs involve different forms survey and surveillance [66]. The prominent of one is the STEPS surveillance system which includes the STEPwise approach to risk factor surveillance and STEP wise approach to Stroke surveillance [67]. Two other common surveys are the Global Tobacco survey, which includes Global Adult Tobacco Survey (GATS) and Global Youth Tobacco Survey (GYTS), and Global survey on alcohol and health. Depending on the context of the countries there are also disease-specific survey and surveillances for NCDs [68,69]. As the priority accorded to NCDs increases, more and more survey and surveillance types are expected to evolve. From the analysis of monitoring and evaluation of HIV/AIDS and NCD responses, it is possible to learn that the target populations vary but the methods used are very similar. Comparison of HIV and NCD surveillance frameworks is shown in Table 4.

Table 4. Comparison of HIV and NCD surveillance frameworks

Major elements	HIV/AIDS	NCDs
Mortality	Involves deaths due to HIV disease. Compiled from mortality records and mortality surveys.	Involves 30-70 years group. Compiled from mortality records and mortality surveys.
Morbidity	Sero-prevalence of HIV and prevalence of AIDS are the main focus. Involve clinical and lab tests.	Cancer incidence, by type of cancer, per 100,000 population is the currently the only indicator in the global framework.
Risk factors	High risk behavior is the focus. Repeated behavioral surveys among youth and specific population groups.	Risk factors and pre-disease states are the main focus. Repeated behavioral surveys among adolescents and adults
Health service provision	Health facility records and cohort analysis are used to generate evidence on service utilization. Retention rates and CD4 counts are used as indicators of quality of service. Surveys are also relevant.	Follow up records will be useful in monitoring service utilization. Level of control of disease and prevalence of complications can also be retrieved from health facility records. Surveys also indicate community level utilization rates.

4. CONCLUSION

Globally, for HIV/AIDS, the focus moved from high risk approach to a more generalized approach and now back to high risk approach as most countries have localized epidemic in specific population groups. This is not true for NCDs, at least as of yet as we are still in the phase of a population approach. The attributes of the responses of HIV/AIDS and NCDs emanated from this basic epidemiology of the epidemics and the historical contexts of the response itself. HIV/AIDS and NCD strategies share several similarities in their approach.
They also overlap in systems strengthening components. The systems involved in the global response to HIV/AIDS and NCDs involve multi-sectoral, multi-stakeholder and multi-level approaches that require complex coordination mechanisms. HIV/AIDS and NCD interventions use similar models despite the major differences in the technical content of the interventions. Health system strengthening interventions of HIV and NCDs also converge to enhance the capacities of the same health system. The indicators and the target populations for monitoring and evaluation of HIV/AIDS and NCD programs differ to a larger extent.

However, the Monitoring and Evaluation approaches to be used share important similarities. Monitoring and Evaluation interventions of HIV/AIDS and NCDs that are directed towards strengthening health information systems do overlap.

Box 2. Summary of similarities and differences of HIV and NCD responses

Themes	Similarities	Differences
Strategies	The strategies address similar themes; both focus on health system strengthening and the need for integrated response.	HIV strategies geared towards effectiveness and efficiency of HIV programs while NCD strategies focus on increasing access to and coverage of services and the priority accorded to NCDs.
Systems	Multi-sectoral involvement, complex coordination mechanism, well established coordinating bodies	Interests of the organizations involved differ; many diseases in NCD category means more complex coordination
Intervention	Approaches, models, tools, techniques	Technical content of interventions, demographic profiles of target populations.
Monitoring & Evaluation	Need for unified M &E framework, similar data collection methods	Indicators, target populations, timeframe

In general, there are several important areas of response to HIV/AIDS and NCDs that can be coordinated and integrated. In general, the technical contents of the response to HIV/AIDS and NCDs differ. But the approaches, techniques, models and tools used share several communalities. These imply that the integrity of the responses to HIV/AIDS and NCDs need to be maintained while coordination and/or integration can be considered for approaches, models and tools used in the response. Such approaches will maximize synergy and improve efficiency of responses to both health problems.

CONSENT

Not applicable.

ETHICAL APPROVAL

None required.

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COMPETING INTERESTS

The authors declare that no competing interests exist.

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