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EDITORIAL VIEWPOINT

Building on the AIDS Response to Tackle Noncommunicable Disease

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In September 2011, world leaders at the first-ever UN High-Level Meeting on Non-Communicable Diseases unanimously approved a Political Declaration to stem a rising tide of noncommunicable diseases (NCD), now the world's leading killer [1]. This declaration called for governments, industry, and civil society to develop multipronged plans to curb the risk factors behind the four main NCD: cardiovascular diseases; cancers; chronic respiratory diseases; and diabetes [2]. The document highlighted the need for universal national health coverage and called for strengthened international cooperation to provide technical assistance and capacity-building to developing countries to effectively tackle NCD.

The rising global burden of NCD requires an urgent response to prevent new disease, manage existing morbidities, and control the devastating health, social, and economic impacts. Particularly troubling is that low- and middle-income countries (LMIC) are disproportionally affected by NCD. Approximately 80% of NCD deaths occur in LMIC, and in many cases, these countries are facing a continuing burden of infectious disease [3].

There is an urgent need for programs to specifically provide evidence-based primary and secondary prevention of NCD risk factors, deliver accessible and affordable clinical care for NCD, and mitigate the impact of the NCD burden. The complex and multidisciplinary aspects of NCD will require a comprehensive coordinated multisectoral response.

VALUABLE LESSONS FROM THE AIDS RESPONSE

The Lancet NCD Action Group and the NCD Alliance have proposed five overarching priority actions for the response to the NCD burden: leadership; prevention; treatment; international cooperation; and monitoring and accountability [4]. Over the last 25 years, the global, national, and community responses to the acquired immunodeficiency syndrome (AIDS) epidemic have provided valuable lessons that can be applied or leveraged for the NCD response. Many LMIC have already developed and scaled up AIDS programs in prevention, chronic disease management, and intersectoral approaches. AIDS programs are often the first large-scale chronic disease initiatives in LMIC, offering local and effective models that can be emulated, adapted, and expanded [5–7].

The first key lesson is the critical role of international, national, and community leadership and cooperation in achieving a coordinated and broad-based national response [5]. Like AIDS, the NCD response must start with national leadership of country-owned and -managed strategies and programs. The second key lesson of the AIDS response is that it has led to improved elements of the 6 key health-system components identified in the World Health Organization (WHO) framework: health financing; governance; health workforce; health information; medical products and technologies; and health-service delivery. Furthermore, the AIDS response demonstrates that in order to develop sustainable and effective programs, community health infrastructures must be strengthened [5]. Community-based programs have been generally successful at reaching the most-at-risk and vulnerable populations with AIDS services such as counseling and testing, human immunodeficiency virus (HIV) prevention, treatment, and palliative care. These community

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platforms could be adapted for the NCD response as well.

The NCD response can leverage infrastructure, planning, and management mechanisms such as: (1) lessons learned in multisectoral strategic planning and implementation, governance, resource mobilization, applying a human rights approach, community mobilization, and an enhanced role of civil society; (2) valuable facility-based and community-based service delivery platforms on which a more integrated and horizontal response can be built for other chronic diseases; and (3) existing expertise in how to deliver effective and rapid health care in resource-poor settings such as program scale-up, program outreach, and chronic disease management [5].

The lessons of the AIDS response will be most readily applied in countries with a high burden of HIV and a resulting AIDS infrastructure. In other countries without these HIV platforms that can be built on directly, many elements of successful HIV strategies could nonetheless offer lessons to inform NCD control efforts. In addition, there may be other health and development platforms that can offer similar opportunities to apply the principles described here of building on existing platforms at the country level.

Leveraging the AIDS policy and planning platform. The breadth of the determinants that affect NCD necessitate that any control effort involve not only public health and health systems, but also authorities throughout the whole of government and society. Facing a similar need for broad coordination, most countries with a high burden of HIV have developed a high-level, whole-of-government, multisectoral committee or team for AIDS, which coordinates policy, management, and resource allocation. A national coordinating mechanism of this kind has been widely recommended as part of the national strategies for NCD control. Rather than reinventing the wheel, these coordination mechanisms could be adapted for the equally multisectoral NCD response. The lessons learned from the successes—and the difficulties—in implementing this kind of coordination to address HIV can inform the response to NCD. In addition, the planning experience and insights that have been gained at the country level by leaders in the response to HIV are critical resources to apply valuable lessons and to help improve the policy- and decision-making environment for NCD control.

For example, the promotion of AIDS as a fundamental human rights issue was critical in leveraging resources for treatment. A neglected NCD burden that is responsible for two-thirds of the global disease burden is as much a human rights issue as AIDS is. Another key lesson from the AIDS response is the use of international, national, and community advocacy to change the policy environment and mobilize resources. In addition, the challenges and successes of bringing together different government ministries, departments, and agencies within each country is also a critical learning experience that could benefit the response to NCD. By working with their colleagues in the HIV community who have the direct experience in their own country, leading country-level stakeholders in the NCD community can adapt or learn from these HIV-based policy platforms to achieve similar goals.

Engaging nongovernmental stakeholders as partners in the response. In addition to working across government, among the most valuable aspects of the response to HIV is the extensive and successful participation of civil society and the private sector. In many countries, the coordination of the HIV response involves soliciting and incorporating the input of various nongovernmental stakeholders in setting priorities for planning the response and allocating limited resources. The participation of stakeholders in civil society has also created an invaluable platform for public–private partnerships in the health and development response. Both international and local nongovernmental organizations have been in the forefront of HIV and would be equally valuable partners in the NCD response. Their unique role includes advocacy, especially at the national and community levels, resource mobilization, program implementation, enhancing the participation of the community, and serving as watchdogs of the response. Another valuable opportunity is the extensive civil society experience in reaching the most-at-risk, vulnerable populations with AIDS. Community-based organizations can play an important role in targeting populations at risk and vulnerable to NCD, especially those who may not be accessing health services.

Integration of NCD services into existing AIDS service delivery platforms. One critical component of a successful national NCD response is a facility- and community-based health delivery system that can effectively ensure access to quality affordable services.

The existence of relatively well-developed delivery systems in LMIC to address other health and economic burdens such as HIV, reproductive health, family planning, maternal

and child health, nutrition, food security, and poverty offer a unique opportunity for the integration of relevant components of NCD services. The potential benefits of such integration efforts include:

- A more diagonal or horizontal health service delivery platform that is more affordable and sustainable in low-income countries that is made possible by leveraging existing primarily vertical platforms for the delivery of multiple services.
- Time and cost savings for clients by establishing a one-stop shop for health services, as compared to the current system of multiple, duplicative, and costly health service visits.
- Reduced duplication and improved cost efficiency of the health workforce, service infrastructure, management, and financial resources.
- Enhanced promotion of country ownership with the development of country-driven and country-led health systems for multiple disease burdens.
- Improved communication and education of patients and the general population with consistent, prevention-based approaches that address synergistic health risk factors and diseases.
- Reduced dependency on often short-term, donor-funded, and donor-driven vertical programs.

In particular, existing HIV-based service delivery platforms in many low-income countries offer several opportunities to screen and reduce NCD risk factors in the general population as well as in people living with HIV. AIDS-supported improvements in health infrastructure for chronic disease management offer a unique opportunity to build on these services for other chronic diseases [7]. These infrastructure platforms include electronic health management information systems; facility and community-based counseling and testing programs, innovative community-based adherence counseling and support services including the use of e-health; and well-developed laboratory services, improved pharmacy services, and reliable supply chain management programs for drugs and other medical commodities [5]. For example, a state-of-the-art laboratory for HIV can add reagents for assessing NCD risks at relatively minimum costs. Similarly, a pharmacy that is well stocked with free or highly subsidized AIDS drugs could also provide affordable drugs for hypertension, diabetes, and other NCD risk factors.

Service delivery models that offer particularly relevant platforms and lessons for implementation of services for NCD include HIV counseling testing, improved access to affordable and essential drugs and technologies for AIDS treatment, and the successful scale-up of programs for the prevention of mother-to-child transmission of HIV.

HIV counseling and testing services were developed to reach the vast majority of people with HIV who were not aware of their status. Similarly, most people with diabetes and hypertension in low-income countries are also not aware of their status. The HIV testing and counseling model may be adapted to offer the following NCD services: (1) screening and counseling for behavioral risk factors such as smoking, excessive drinking, and dietary changes to reduce salt, sugar, and fat intake and (2) identification of those most at risk of NCD due to elevated blood pressure, abnormal blood lipids, abnormal blood sugar, and those who are overweight or obese.

The most extensive HIV platform is the management of AIDS treatment and care. The scale of AIDS treatment has led to the dramatic improvements of chronic disease management services in LMIC. We need to build on these services for other chronic diseases such as NCD and eventually for mental illness and aging to prevent premature mortality. Integrated NCD services could include: (1) prevention and control of risk factors that contribute to risk of NCD (such as hypertension, abnormal blood lipids, and abnormal blood sugar); (2) treatment and clinical management of NCD; and (3) provision of comprehensive palliative care for individuals with chronic diseases.

Programs to prevent mother-to-child transmission of HIV also offer an opportunity to expand health benefits to women and children during pre- and post-natal periods. Women are especially vulnerable to NCD such as diabetes, cardiovascular disease, reproductive cancers, and respiratory diseases due to smoke from a cooking stove. In addition, there are opportunities for reducing the risk for NCD starting as early in life as the prenatal period and early infancy. The platform to prevent mother-to-child transmission of HIV offers the opportunity to integrate and broaden the following services for primary and secondary prevention of NCD risk factors such as: (1) healthy diet and nutrition to prevent excessive maternal weight gain during pregnancy and monitoring of weight gain in infants with low birth weight (both of which are a risk factors for cardiovascular disease during childhood) and monitoring and treatment for elevated blood pressure, blood lipids, and blood sugar; (2) prevention of smoking during pregnancy; (3) adequate physical activity; and (4) early childhood

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immunization for human papillomavirus, and hepatitis B for the prevention of cancer.

A number of integrated AIDS and NCD programs that build on the well-established platform of HIV services have been introduced throughout Africa and Asia [8–10]. For example, a recent pilot program in Kenya integrated NCD services into existing HIV services (see Box). Such programs will provide useful lessons on the approaches and models that should be considered in transitioning HIV platforms into a more inclusive chronic care system.

In addition to these HIV-based screening and clinical services platforms, other health/development platforms that are a part of many HIV programs offer another opportunity for possible integration. These include nutrition and food security programs targeted at women, children, and people living with HIV; income generation and community savings activities for vulnerable populations; education programs for orphans; and agricultural extension programs.

The integration of relevant NCD activities and goals into these other HIV-related program platforms offer a number of opportunities: (1) to reach a vulnerable, community-based population with targeted NCD interventions; (2) to promote the synergies between NCD control and these development activities, e.g., production and consumption of NCD-healthy foods and reduction in the exposure to smoke from a cooking stove; and (3) to minimize the potential harmful NCD effects of development activities, e.g., the use of "excess income" for excessive drinking and the purchase of unhealthy "status foods" such as fast foods and soft drinks.

Although not a panacea for the NCD crisis, the potential for integrating NCD services with large-scale HIV services in the countries where they exist is highly compelling as an important component of strategies for control of NCD. To achieve success in applying this approach, resources need to be dedicated to conduct further research on key operational issues that affect the feasibility and efficiency of integration: (1) the effectiveness and efficacy of different models of NCD/AIDS integration; (2) the impact of integration on human resources, infrastructure, supply-chain management, and healthcare financing; (3) the impact of NCD integration on AIDS services; (4) the complexity, cost, and challenges of strengthening and maintaining an integrated health system; (5) the difficulty of integrating vertical programs with different sources and levels of funding; and (6) the challenges of coordinating integration in different management structures (i.e., by different donors or among the

Leveraging the HIV platform in Kenya: a pilot project integrating HIV and NCD services

In 2009, with the support of the Kenyan Ministry of Health and Kenya Cardiac Society, Family Health International (FHI) 360 launched a pilot program integrating NCD services into existing HIV services in 5 HIV comprehensive care centers supported through the AIDS, Population and Health Integrated Assistance Program, a 5-year cooperative agreement with the U.S. Agency for International Development.

A total of 4,074 HIV clients at these sites were systematically screened for NCD behavioral, biological, and therapeutic risk factors. Clients included those accessing HIV counseling and testing services (n = 1,447) and those who were enrolled in HIV care and treatment (n = 2,627). Those identified with low-to-moderate risks were treated by clinicians at the comprehensive care center, and those with moderate-to-high risks were referred to specialists. Clients were also referred to nutritionists for nutritional counseling and to alcohol addiction counselors/psychiatrists if appropriate.

The pilot was found to be acceptable by both healthcare providers and clients. Healthcare workers appreciated the relationship between NCD and HIV and supported the integration of NCD into routine HIV care. Integration raised the awareness of NCD among healthcare workers and improved their capacity to diagnose and treat both conditions. Furthermore, clients were pleased to receive both NCD and HIV services at the same location, and in some cases, by the same healthcare workers.

The key challenges experienced during implementation centered on human resource, infrastructure, and commodity constraints. For example, frequent staff turnover, which is common in many of the pilot sites, resulted in trained staff taking their NCD skills with them, leaving a void within the comprehensive care centers. Staff turnover also contributed to inconsistent completion of client NCD risk assessment forms, which made long-term monitoring of NCD risk factors difficult. Next, several of the facilities were faced with space constraints prior to integrating NCD services. The addition of services that require a private space compounded this challenge. Additionally, the linkages between departments in the hospitals were generally weak, which made tracking referrals and monitoring patients at high risk of developing an NCD difficult. Lastly, the supply of NCD-related drugs in hospital pharmacies was inadequate. Even when the drugs were available, the cost of treatment was high and not affordable for many clients.

public, private, and nongovernmental organization sectors and community-based programs).

CONCLUSIONS

The emergence of NCD pose a serious threat to the health and development of LMIC. The ongoing global economic crisis has also had a negative impact in donor funding and resource availability for health and development activities. Developing countries, therefore, face multiple threats, namely, the existing infectious disease burden (including HIV, malaria, and tuberculosis), a growing NCD crisis, the environmental impact of climate change, and a worsening resource constraint for an adequate response. There is an urgent need for country-driven and -led solutions to address these threats. There is also a need to improve efficiency in the use of resources by strengthening the health system to deliver a range of services.

The existence of relatively well-developed platforms and models for the HIV response—from policy and planning to partnerships to service delivery—offer a unique opportunity to leverage and build on this experience and infrastructure for control of NCD. This approach needs to be taken with care so that the focus is on opportunities to synergistically enhance the HIV response and inform the evolving response to NCD, but not as a replacement for efforts to develop a comprehensive response to the NCD burden nor as competition for the response to HIV.

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