Cardiovascular Diseases on the Global Agenda

The United Nations High Level Meeting, Sustainable Development Goals, and the Way Forward

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ABSTRACT

In 2011, the United Nations (UN) organized the first ever meeting for heads of state to discuss the problem of noncommunicable diseases (NCD), including cardiovascular disease (CVD), cancer, chronic respiratory disease, and diabetes mellitus. Recognizing that these had emerged as leading causes of morbidity and mortality in the world, including in many low- and middle-income countries, advocates from government and civil society had called for increased attention and a UN response. Earlier, NCD including CVD were absent from the global health agenda in part because of their omission from the Millennium Development Goals. The UN meeting and the global advocacy response offered a game-changing opportunity to redress this omission. The World Heart Federation (WHF) played an instrumental role in the UN meeting and follow up, including inclusion of CVD in the Sustainable Development Goals. The next phase of the global CVD movement is expected through national action, including CVD roadmaps and partnering with the World Health Organization. The WHF is heavily committed to these goals and the other nongovernmental organizations invested in the mission must help take this historical mandate forward. Instrumental to this will be the engagement of people affected by or at risk of developing CVD, to draw more attention and resources to NCD and to ensure that successes to date in global policy translate into action at the national level.

In 2013 *The Lancet* [1] published an analysis by the Institute of Health Management and Evaluation (IHME) pertaining to the disbursements of Official Development Assistance for health by disease type or related category (e.g., child health). The findings as illustrated in Table 1 were not surprising—noncommunicable diseases (NCD), of which cardiovascular diseases (CVD) contribute over half of the mortality, received much less funding than did other disease groups. What was striking, though, was that the budget allocation from the U.S. Government, the Global Fund, and Gates Foundation for NCD was $0. The funding for NCD, which accounted for 54% of all deaths (more than the following causes combined) was merely $3 per death compared with $636 for malaria and $149 for injury. Even when these numbers were analyzed in reference to the age range at the time of death, the disparity remained concerning because the highest proportion of premature NCD deaths occurred in low- and middle-income countries (LMIC).

The investment in interventions and research in communicable diseases and maternal and child health has been very effective and fruitful; the focus of this communication and that of the CVD community is certainly not on creating competition for funds. However, this gap between funding and the disease burden, even after factoring for age-adjusted death rates, illustrates what could be described as the fifth risk factor for the majority of NCD, alongside tobacco use, unhealthy diet, physical inactivity, and harmful use of alcohol. It was this lack of recognition of NCD and absence of a commitment to implementing national policies and plans that led to the UN High Level Meeting (HLM) on NCDs in 2011, as also to the inclusion of CVD and other NCD in the Sustainable Development Goals (SDG) in 2015.

CVD OFF AND ON THE AGENDA

The inclusion of CVD and other NCD on the global agenda is owed to several factors that developed in the past 2 decades, including the emergence and success of the global tobacco control movement and treaty, and the reframing of NCD as a threat to development and security with significant economic and political consequences; this necessitated a UN response and encouraged increased global health funding. Just as the World Bank's publication of "Curbing the Epidemic" in 1999 put hard numbers to the costs of not investing in tobacco control, the NCD movement also needed a shift from cost to investment, and assurance of the relative affordability of various interventions. The World Economic Forum and World Health Organization (WHO) launched complementary reports on the eve of the UN HLM on NCD in 2011. It was emphasized that while the cost of continuing to do what we are currently doing about all NCD (i.e., the cost of inaction)

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TABLE 1. Disbursements, deaths, and DALY, according to type of disease

	Disbursements (US$ × 10^8)						
	World Bank	U.S. Government	Gates Foundation	Global Fund	Deaths × 10^6*	DALYs × 10^8*	Total Funding per Death ($)
Child health (excluding vaccines)	140.40 (4)	466.00 (13)	14.40 (2)	0 (0)	10.25 (21)	132.2	60.50
General infectious diseases	159.90 (4)	230.00 (7)	76.90 (9)	0 (0)	—	—	—
Worldwide health strategy, partnerships, and general budget	0 (0)	96.10 (3)	62.50 (8)	0 (0)	—	—	—
Health systems	1287.00 (34)	0 (0)	0 (0)	8.20 (<1)	—	—	—
HIV/AIDS	202.80 (5)	1719.00 (49)	119.30 (14)	593.40 (56)	2.56 (5)	70.8	1029.10
Injury	705.10 (18)	0 (0)	0 (0)	0 (0)	4.71 (10)	155.9	149.70
Malaria	78.00 (2)	156.60 (4)	239.70 (29)	308.20 (29)	1.21 (3)	39.9	646.70
Maternal health (including family planning)	187.20 (5)	406.10 (12)†	29.60 (4)	0 (0)	0.73 (2)	26.4	853.28/295.90 excluding family planning
Noncommunicable diseases	83.50 (2)	0 (0)	0 (0)	0 (0)	26.03 (54)‡	678.8	3.20
Nutrition	74.10 (2)	29.7 (<1)	15.70 (2)	0 (0)	5.89 (12)	29.6	20.30
Polio	51.70 (1)	127.3 (4)	35.10 (4)	0 (0)	0 (0)§	0	>1 × 10^8
Tuberculosis	3.90 (<1)	124.0 (4)	41.90 (5)	146.10 (14)	1.60 (3)	35.9	197.8
Vaccines (excluding the specific disease areas listed in the table)	0 (0)	104.8 (3)	191.40 (23)	0 (0)	1.48 (3)	43.2	200.10
Water and sanitation	854.10 (22)	0 (0)	0 (0)	0 (0)	1.78 (4)	58.7	479.8
Total	3827.70	3459.60	826.50	1055.90	n/a	n/a	n/a

Values are n (%) unless otherwise specified.
DALYs = disability-adjusted life-years; n/a = not applicable.
*Data are for low- and middle-income countries, and are taken from Nishtar and Ralston [4].
†Entire amount for family planning.
‡Data are for all deaths due to child and maternal undernutrition as a risk factor, and are taken from Nishtar and Ralston [4].
§No reported deaths due to polio in low- and middle-income countries, and 1 death in high-income countries in 2001, according to Nishtar and Ralston [4]. Reproduced with permission from Nozaki [1].

would be $47 trillion over 25 years, the annual cost of implementing the WHO Package of Essential NCD Interventions (PEN) in LMIC would be merely $500 million [2]. Moreover, the WHO Global Action Plan 2013 to 2020 notes that "the total cost of implementing a combination of very cost effective population-wide and individual interventions, in terms of current health spending, amounts to 4% in low-income countries, 2% in LMIC and less than 1% in upper-middle income and high-income countries." Ahead of the UN HLM, the U.S. Institute of Medicine had formed a committee to create a set of tangible recommendations that would catalyze and focus action around this important global health problem. Funded by the U.S. National Institutes of Health, the report—*Promoting Cardiovascular Health in the Developing World*—was released in 2010 and highlighted the basis of exponential growth in NCD in developing countries and proposed goal-oriented actions to reduce the global burden of these diseases. Three cardiologists including Drs. Valentin Fuster (Chair), K. Srinath Reddy, and Jagat Narula were the contributing authors [3].

The case of tobacco control and its cross-sectoral nature shows how interdisciplinary alliances can successfully tackle a common challenge and use existing policy mechanisms to achieve public health goals—in this instance the Framework Convention on Tobacco Control (FCTC). The foundation for the FCTC was established in the 1990s with an increased recognition of the role played by trade and policy in tobacco control. The cross border nature of manufacturing and sales necessitated a supranational approach for tobacco control because the drivers of the devastating health consequences of tobacco were trade and economics rather than the traditional vectors of communicable diseases [4]. This increase in focus on tobacco was accompanied by the arrival to the WHO of Director General Gro Harlem Brundtland, who believed

actions by a country to control tobacco would be undermined by the global nature of tobacco trade and that a treaty adopted by member states was the best solution. Through negotiations that included many CVD leaders from across the world, including Eduardo Bianco of Uruguay and Srinath Reddy of India, the treaty was ratified in 2003.

One of the many lessons learned from the treaty process was that it needed a broad-ranging and comprehensively developed effort toward building what would become the NCD civil society movement. The stakeholders and advocates had to be engaged from outside of health precincts, and the negotiations included consumer rights organizations, women's groups, and environmental activists concerned with the consequences of secondhand smoke. It also brought together the disease groups that had not necessarily collaborated before including cancer, cardiovascular, and respiratory disease organizations. In many instances the predecessors to national NCD alliances were started by or with the national heart foundations in regional collaborations.

Another critical development was the growing demand from countries undergoing an epidemiological transition from communicable to noncommunicable diseases to have greater political attention focused on CVD, including beneficiaries of donor aid that prioritized infectious diseases. In middle-income economies the shift was already underway, and in lower resource settings and those with high prevalence of HIV and other infectious diseases, a dual burden pattern was emerging. In 2007, the Caribbean Community nations met in Trinidad and issued the Port of Spain Declaration calling for a coordinated response to NCD including a UN-wide and not just WHO-wide approach, as had been the case with the 2001 UN General Assembly Special Session on AIDS. Sir George Alleyne—the former Director of the Pan-American Health Organization—was instrumental in this process; as a leader in health who had focused much of his career on infectious diseases, his recognition of the new burden of NCD brought weight and visibility to the issue. The Caribbean Community nations meeting was also important because as island nations, these countries represented an important bloc in the UN system, wherein each member state carries 1 vote. Thus the benefits of elevating an issue through blocs were realized, and with time other groups of Small Island Developing States, such as the Pacific Islands and blocs including the Commonwealth nations, also became engaged in advocating for a UN response. As with many movements, the response was due to the vision and commitment of individuals including Mr. Patrick Manning—then the prime minister of Trinidad and Tobago.

It was hoped that the investment case would also foster donor involvement though this has been a challenge in practice; among civil society organizations including the World Heart Federation (WHF), there was recognition that the omission of CVD from the Millennium Development Goals (MDG) had contributed to the major lack of attention and resources. Former WHF President Valentin Fuster and CEO Janet Voute called for inclusion of NCD in development goals in 2007 [5], and a study by the Center for Global Development revealed that an astonishing 97% of health-related Official Development Assistance went to communicable diseases and other health issues, with only 3% dedicated to NCD. The WHF has relentlessly advocated for the deserved importance of NCD and CVD. Their official journal—*Global Heart*—has been constantly engaged in the promotion of the agenda.

Why were NCD excluded from the MDG and the donor agenda? NCD have been tacitly perceived as nonurgent, predominantly affecting the affluent, and too costly for intervention. They therefore have not been on the radar of influential thought leaders and decision makers around development funding and have been left off the global health agenda. Some of this relates back to the fact that NCD have not been prioritized in global health research and are largely absent from the curricula of schools of public health [6] that train future leaders and decision makers. Global health as a discipline in academia has had a parallel journey to the Global Burden of Disease curriculum, which has been shaped by available data that has been overwhelmingly focused on infectious disease and maternal and child health. More recently, Global Burden of Disease data has stimulated the transition toward a full understanding of health around the world as tobacco and hypertension have evolved to be the major global risk factors. However, the core curricula are still catching up, except in the schools wherein the individual champions have steered the agenda, such as Johns Hopkins, supported closely by Michael Bloomberg, who through Bloomberg Philanthropies is currently the most generous contributor to NCD prevention worldwide. Similarly, the Harvard School of Public Health expanded its NCD-focused curriculum during the tenure of Dean Julio Frenk, a former minister of health from Mexico. Alongside training in traditional disciplines of public health, global NCD training requires skills in reaching across sectors, understanding advocacy, understanding of the roles played by trade and commerce in advancing or impeding health, and a much deeper commitment to integrated approaches to healthcare and health systems will be vital to support the next generation of leaders.

In response to NCDs' high burden but low prioritization, organizations such as the WHF recognized that there were notable benefits in joining forces with other disease groups and to follow the lead of WHO, which had consolidated its efforts and resources on the 4 CVD and 4 common risk factors where the intervention could be expected to yield the maximum benefit. For civil society, this effort to join forces also changed the game and WHF, International Diabetes Federation, and the Union for International Cancer Control formed the NCD Alliance (NCDA) in 2009. The unique strength of the individual organizations and their role as single disease advocacy leaders with global membership allowed a consortium with a common message. This proved to be transformative, as

their collective voice and shared agenda reinforced the seriousness of the problem and their sense of purpose. NCDA also leveraged the assets of each of the founding federations and their members, ranging from political contacts to national reputation and from skills in communications to networks in advocacy. When negotiations around the Political Declaration came to a standstill in August 2011, the NCDA network was able to develop consensus for stronger support to NCD in the final version of the Declaration agreed on in September 2011. NCDA now represents more than 2,000 organizations within the network and has emerged as the voice of civil society for the NCD political agenda. The governance structure allows the founding federations to continue to ensure coordinated effort among their members, while also ensuring a wide range of representation extending to forums beyond health.

Another important moment in the lead up to the UN HLM was the launch of the World Economic Forum 2010 Global Risks Report, which placed NCD far ahead of communicable diseases as the third leading cause of risk in the world, and provided a compelling business and economic argument for addressing NCD prevention. The joint Lancet-NCDA document—*Priority Actions for the Non-Communicable Disease Crisis* [7]—was published in May 2011, and served as an important tool in advocacy with UN Missions. In the months leading up to the HLM, the WHF through President-Elect Srinath Reddy and CEO Johanna Ralston was active in advocacy and ensured that: 1) the UN General Assembly President's 7-member committee for the Summit included a representative from the CVD community; and 2) the specific language on targets and accountability around NCD was included in the Political Declaration.

CVD ON THE AGENDA: NOW WHAT?

Despite the success of 2011 HLM (when the heads of state addressed what the World Economic Forum had classified as one of the greatest threats facing the world) [7], the funding for and attention to NCD has been modest at best. Moreover, though there are cost-effective solutions targeting LMIC, such as the WHO's PEN and HEARTS packages and WHF's CVD Roadmaps [8] (all of which demonstrate that treating the CVD is affordable) [9] the myth persists that investment could become prohibitive. There continues to be resistance to funding commitments based on absence of sophisticated data in many parts of the world; although the WHF has worked with the WHO to align its global policy call on World Heart Day with a demand for greater surveillance, existing data and empirical evidence are more than enough to justify investment. As past WHF President Professor K. Srinath Reddy said, "we can spend time cataloguing the catastrophe with greater and greater precision, or we can take action with a good if not perfect plan for what needs to be done."

One reason that mobilizing support has been a challenge is that the drivers of CVD often sit outside the health system, as do some of the solutions such as physical activity, access to healthy diet, and protection from tobacco. Therefore, accountability is also shared, which is positive in principle but problematic in practice, and new models of governance for the distributed accountability are needed. Ilona Kickbusch has proposed moving from traditional health governance (with a focus on the people and policies within the health system) toward governance for health (which potentially encompasses the inclusion of health across all of government and society). However, the challenge with addressing a health issue that cuts across categories and sectors is one of ownership: how can different players be incentivized to align efforts? A recent McKinsey report on obesity observed 74 different steps for intervention, the majority outside of the health sector, requiring a critical mass of complementary and related approaches. "A systemic, sustained portfolio of initiatives, delivered at scale, is needed to reverse the health burden… no individual sector in society can address obesity on its own—not governments, retailers, consumer-goods companies, restaurants, employers, media organizations, educators, healthcare providers, or individuals" [10]. It is easier when the villain is obvious—whether a virus, mosquito, or tobacco in this case. However, the multisectoral approach reflects a complex interplay of factors that do not easily lend themselves to quick solutions and marketable messages. Accordingly, the adoption of the 25-by-25 target has been helpful, as it distils complex interventions into a message that can be communicated across multiple audiences. Similarly, tangible interventions such as the polypill for CVD can serve as the basis for campaigns and public messages.

The next great opportunity lies in development assistance funding. In 2015, CVD was included within a new NCD target in the successor goals to the MDG, called the SDG. The WHF activity lobbied for this and, as part of the NCD Alliance, also ensured that the 25 by 25 premature mortality reduction target that was adopted by the World Health Assembly in 2013 was translated into "one-third by 2030" target for preventing premature NCD mortality in the SDG. The means that the measurement and reporting that has been established in the 25-by-25 target is consistent with the broader SDG.

The successes in securing language around CVD and other NCD in critical policy documents and plans is only half the battle. Their successful implementation requires leadership at national and global levels, and of the informal as well as official variety. To date countries have been reluctant to step forward and embrace the NCD and CVD issue; yet as the Council on Foreign Relations report notes, "leadership on the new emerging global health crisis of NCD in LMIC is vital…" But the ownership must lie with countries and therefore "Determining health priorities and

allocating resources in the face of this crisis are decisions for national governments" [11].

Given the complexity of CVD and NCD drivers, it is worth reviewing what has contributed to the success of global health networks and movements. A few key factors seem to be the most critical, including some already addressed in the lead up to the UN HLM, inclusion of NCD in the SDG, economic evidence of the importance of NCD, harnessing political will and the presence of champions and leaders. Other attributes that have supported successful global health initiatives such as maternal and child health, tobacco control, and malaria include: a governance structure that enabled nimble behavior and issues management; framing strategies that positioned the issue and severity of the problem [12] in ways that resonated with political elites—and, of course, funding. In the case of CVD and other NCD, such funding has yet to materialize in any meaningful way, aside from modest investments by the Danish International Development Agency and a few other development funders. The Bill and Melinda Gates Foundation has provided support to tobacco control and some investment in hypertension, and Michael Bloomberg is perhaps the largest single donor to date, with support for tobacco control and hypertension; his newly declared role as WHO Global Ambassador for NCD is bound to catapult the NCD agenda to prominence.

Although such achievements are to be celebrated and emulated, much more needs to be done. Moderate increases in resources, invested well, can bring major impact. To date there are only pockets of innovation and funding, and of particular note is the absence of the patient voice. Given the role that empowered patients have played in accelerating resource allocation in other disease areas, their low profile in CVD is notable. Moreover, using the Shiffman model of global health networks, NCD and CVD seem to include most of the key elements for success but appear conflicted about how to position the patient or person living with CVD. Given that CVD and other NCD will ultimately affect all of us, reframing this as a people-led rather than patient- or professional-led movement may have the greatest traction, and shift thinking from an exclusive focus on the health system to one in which people are at the center of new policies and programs, with heart health a right and not a privilege. A rights-based approach has worked in many successful movements, and may provide the framing and narrative to mobilize and deploy resources to prevent CVD in all sectors and across all policies. This could in turn be a response to a recent lament from *The Lancet* around lack of a distilled narrative and robust movement—"the NCD community needs an electric shock to its semi-comatose soul" [13]. The passion and commitment of the CVD community, including patients, professionals, and people affected by the disease, belies this, and underscores that the right platform and narrative are urgently needed.

Where are we, then? The political agenda is finally catching up with the burden of CVD. Global instruments, national action, and leadership by organizations including WHF, WHO, and others are essential to sustaining this progress. People are waking up to the burden of CVD in their countries and communities, and policymakers are gradually recognizing that investing in CVD now will yield results for decades to come. World Heart Day this year included an event during the UN General Assembly bringing together heads of state and health leaders to call for better information, shared resources, and a common agenda. The CVD community is mobilizing around the WHO 25-by-25 target, and the WHF ambition to deliver on this. Perhaps now we can be even more ambitious and, as WHF President Salim Yusuf has proposed, halve the burden of CVD in a generation.

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