The NCD Alliance

Putting non-communicable diseases on the global agenda

NCD ALLIANCE BRIEFING PAPER

TACKLING NON-COMMUNICABLE DISEASE: WHAT CAN HEALTH SYSTEMS DO?

Countries…need to think about what they have to do to reach their target – not what they can do with the money they have…Control is not done with funds in mind. You always have to think about needs."
- Leopold Blanc, 2003

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HEALTH SYSTEMS AND NCDS

The ultimate goal of every health system is to improve populations' health. The World Health Organization defines health system as all organizations and institutions whose primary purpose is to promote, restore or maintain health. To achieve better health outcomes, health systems should be able to generate resources and provide preventive, curative, rehabilitative and palliative services responsive to patients' needs and expectations without imposing a financial burden on families when they seek care.

Traditionally, health systems have been developed to address acute problems and attend to patients' urgent needs, but tackling NCDs (cancer, cardiovascular diseases, chronic respiratory diseases and diabetes) and their shared risk factors (tobacco use, poor diets, lack of physical exercise and harmful use of alcohol) requires a comprehensive, two-pronged approach that involves both medical care for individuals at high risk or already living with a disease, and public health interventions to prevent and control NCDs.

Addressing the risk factors of NCDs involves a multi-sectoral, population-wide response that is outside the medical care system. Most countries, irrespective of their income, can afford the interventions and achieve significant health gains without increasing their health expenditures. For example, accelerated implementation of the WHO Framework Convention on Tobacco Control (FCTC) would avert more than 5.5 million deaths over 10 years in 23 low-income and middle-income countries with a high-burden of NCDs.

Additionally, a reduction of population-wide salt consumption by only 15 %, with a goal of less than 5mg of sodium per day, through mass media campaigns and reformulation of foods by industry, can avert 8.5 million deaths over ten years in the same 23 high-burden countries. Policies that promote healthy life-styles and consumption of healthy foods are conducive to the prevention of obesity (especially in children), cardiovascular diseases and some cancers. WHO considers these interventions "best-buys" to prevent NCDs. As Table 1 demonstrates, the costs of such population-wide interventions are minimal, yet the benefits can be significant.

While addressing risk factors is the most effective way to prevent and control NCDs, patients with chronic conditions or at high risk of developing those conditions require continual medical services that are well coordinated across all levels of care – primary, secondary and tertiary – and across providers. Therefore, a chronic disease/continuity care model is based on effective referral and appointment systems, health information management, patient counseling and treatment adherence support, uninterrupted supply of affordable quality-assured essential medicines and access to medical technologies, communication between clinical, laboratory and pharmacy services, outreach to communities for tracking new cases, and home-based care.

Well-designed, cost-effective and sustained prevention and treatment interventions are mutually reinforcing in controlling and reducing the burden of NCDs, and they target different segments of the population: people with established disease, people at high risk, and the whole population. However, weak and fragmented health systems in resource-poor settings are not able to provide such a broad range of interventions. The challenge of scaling up services to deliver essential health interventions for NCDs requires efforts to strengthen health systems. The process is complex, and there is a common uncertainty about how to accomplish this task, particularly in low-income countries, where health systems are geared toward the acute care needs of communicable diseases.

There is general consensus that strengthening health systems requires action in all key "building blocks" of health systems: health service delivery; workforce; health information; essential medicine, vaccines and technologies; financing; and leadership and governance (Figure 1). The proposed building blocks address the full range of services required for an effective health-care system and include both treatment-based and preventive strategies. Strengthening the building blocks is intended to improve health outcomes and social and financial risk protection, along with efficiency and quality of care. However, revamping the entire system could be challenging, and each country has to decide which components of the system require an immediate modification and are relevant to its particular setting.

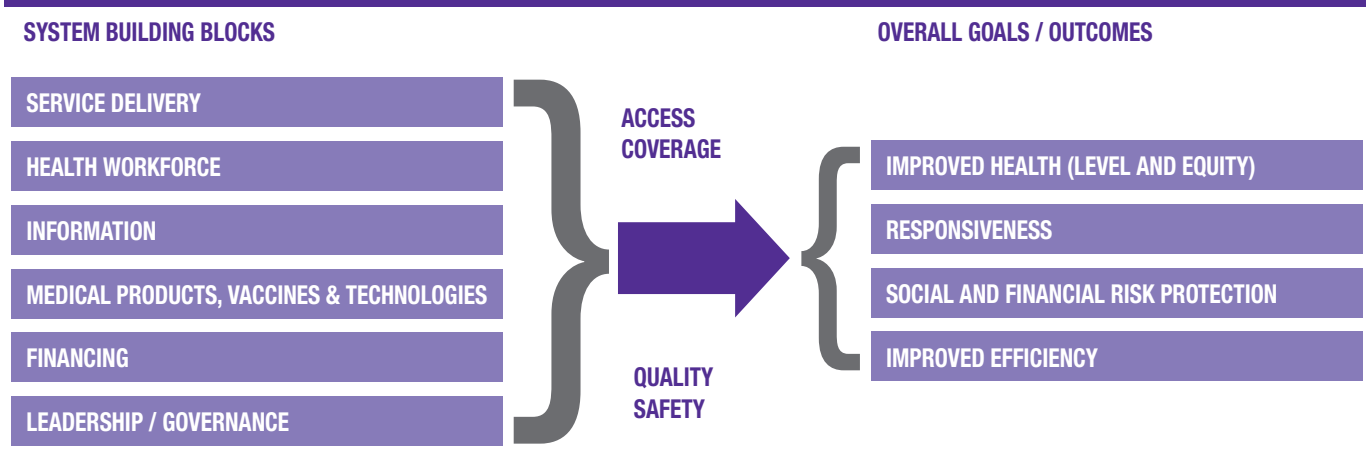
Table 1. Estimated Costs of Five Priority Interventions for Non-Communicable Diseases in Three Countries

Interventions		Cost per person per year (US$)		
		China	India	Russia
1. Tobacco use	Accelerated implementation of the WHO Framework Convention on Tobacco Control[9]	0.14	0.16	0.49
2. Dietary salt	Mass-media campaigns and voluntary action by food industry to reduce consumption[9]	0.05	0.06	0.16
3. Obesity, unhealthy diet, and physical inactivity	Mass-media campaigns, food taxes, subsidies, labelling, and marketing restrictions[16]	0.43	0.35	1.18
4. Harmful alcohol intake	Tax increases, advertising bans, and restricted access[13]	0.07	0.05	0.52
5. Cardiovascular risk reduction	Combination of drugs for individuals at high risk of NCDs[10]	1.02	0.90	1.73
Total cost per person*	..	1.72	1.52	4.08

*Excludes any cost synergies or future treatment cost savings.

Source: Beaglehole at al, 2011

Figure 1. Health Systems Building Blocks



Source: WHO, 2005

STRENGTHENING HEALTH SYSTEMS THROUGH INTEGRATION OF DISEASE CONTROL PROGRAMS AT PRIMARY HEALTH CARE (PHC) LEVEL : A DIAGONAL APPROACH

For decades, the debate about the advantages and disadvantages of vertical versus horizontal health-care organization has divided the global public health community. Vertical programs are those operating outside the existing general health-care structure. Smallpox eradication is one of the best success stories of vertical programs that have succeeded without adversely affecting the health system. By contrast, in horizontal (or integrated) programs, disease control activities are functionally merged or tightly coordinated with the multifunctional health-care delivery.[vi]

More importantly, there is a significant difference in solutions from the disease-specific and health-systems perspectives. For example, lack of patients' access to health care due to their inability to pay will be addressed by specific disease programs through removing user fees. The health-systems response would seek to offer risk pooling strategies to address all health problems. Table 2 below demonstrates disease-specific and health-system responses to possible health-system constraints.[vii]

Table 2. Health systems constraints and possible disease-specific and health system responses

Constraint	Disease-specific response	Health system response
Patients' inability to pay for services	Price reductions for specific diseases	Risk-pooling strategies
Distance to facility	Outreach for specific diseases	Planning for new facilities
Poorly skilled staff	Training on specific diseases	Revising medical curricula
Poorly motivated staff	Financial incentives for delivering priority services	Reviewing salary structures and promotion procedures
Weak planning and management	Training workshops in planning and management	Restructuring ministries of health, developing cadre of dedicated managers
Lack of inter-sectoral action and partnership	Cross-sectoral committees to address specific diseases	Building systems of local government with representation from various sectors
Poor quality care among private sector providers	Training for private sector providers	Developing accreditation and regulation systems

Source: Travis et al. 2004

However, effective management of NCDs may require a combination of both approaches. There is increasing interest in "diagonal programs" for chronic NCDs – disease-specific interventions designed to strengthen health systems more broadly. By promoting a synergy between the vertical and horizontal approaches, a diagonal approach can benefit from disease-specific funding while countering negative consequences of vertical programming, such as brain drain or unattended broader community health needs. It is worth noting, however, that vertical programs can only be sustainable on the condition that a continuous supply of external donor resources will be available.

Health-system strengthening is particularly important at the PHC level, where most cost-effective interventions for the prevention and treatment of NCDs can be delivered. For example, 70% of diabetes-related, 50% chronic respiratory disease-related and 20% of cancer-related admissions to hospital can be prevented by appropriate interventions in a primary-care setting. WHO has identified a number of individual-level cost-effective interventions/ best buys, in addition to previously mentioned population-wide best buys, which need to be scaled up and delivered through PHC.

SELECTED BEST BUYS* AND OTHER COST-EFFECTIVE INTERVENTIONS :

- Counseling and multidrug therapy, including glycaemic control for diabetes from people > 30 years old with a 10-year risk of fatl or nontaftal cardiovascular events*
- Aspririn therapy for acute myocardial infarction*
- Screening from cervical cancer, once, at age 40, followed by removal of any discovered cancerous lesion*
- Early case finding for breast cancer through biennial mammographic screening (50-70 years)
- Early detection of colorectal and oral cancer
- Treatment of persistent asthma with inhaled corticosteroids and beta-2 agonists

Source: WHO Global Status Report on NCDs, 2010

An integrated, patient-centered care delivered at the PHC level to tackle NCDs as a common group of diseases has tremendous potential to reduce the epidemiological burden and societal impact of NCDs. In terms of organization of services, there are a number of suggested ways to improve the primary health-care response to NCDs while simultaneously strengthening the health system. These may include:

I. Integration of the management of chronic NCDs with that of chronic communicable diseases.

This model has been successfully developed and used for antiretroviral therapy (ART) in Malawi, a poor country with gross domestic product of less than US$200 per year. The similarity between NCDs and HIV/AIDS is that both require life-long treatment, and a simple standardized way of diagnosis and treatment and then monitoring and evaluation of outcomes has the advantage of being implemented at low cost, thereby improving access and facilitating follow-up. Other examples of integrated chronic-care service delivery is illustrated below.

Integrated Chronic-Care Service Delivery for NCDs and HIV/AIDS: Management Sciences for Health (MSH), in partnership with other local and international actors, assisted in providing financial and technical help to leverage existing HIV/AIDS platforms to address the rising burden of diabetes, hypertension, and other metabolic disorders. At the Shree Hindu Mandal Hospital in Dar es Salaam, health-care providers received dual training in HIV/AIDS and NCDs, laboratory equipment and technology improvements were carried out, and infrastructure renovations were completed to improve health-system performance and client flow. The integration of HIV/AIDS and NCD services led to a more coordinated response effort and creative health-care delivery system, which improved the delivery of medicines and diagnosis of clients.

USING HIV/AIDS MODEL TO IMPROVE CARE FOR PATIENTS WITH DIABETES AND HYPERTENSION IN UGANDA

The care given patients with HIV, TB, Hypertension (HTN) and Diabetes Mellitus (DM) in Lugazi hospital was inconsistent. Those with HIV were receiving mostly good quality care. Those with hypertension (HTN) and diabetes mellitus (DM), however, were not.

To address the problem, the USAID Health Care Improvement (HCI) Project helped the hospital staff take what they had learned from treating HIV to change how they delivered care for HTN and DM.

THE INTERVENTION

HCI supported Lugazi hospital to form a quality improvement team, training them in health-care quality improvement, in technical aspects of HTN and DM care, and in the Chronic Continuity Care Model. The team was focused on two areas of work : 1) patient empowerment and 2) reorganization of the health-care system toward a patient-centered integrated care model at the clinic level.

As a result, between February and July 2011 the team at Lugazi hospital :

Increased patient skills to understand and manage their condition

- Patient education sessions were organized to teach patients about their medicines, appropriate types of food, the importance of exercise, sites to inject, signs and symptoms of diabetes and hypertension and when to return for treatment and why.

- Patients were also taught to prioritize their problems, set goals, get appropriate advice, and work out a follow-up plan for continuity of care.

Redesigned the care system

- Selected representatives among HTN and DM patients as "expert" patients to work with the health team at the facility. These patients participate in health education talks, sharing testimonies.

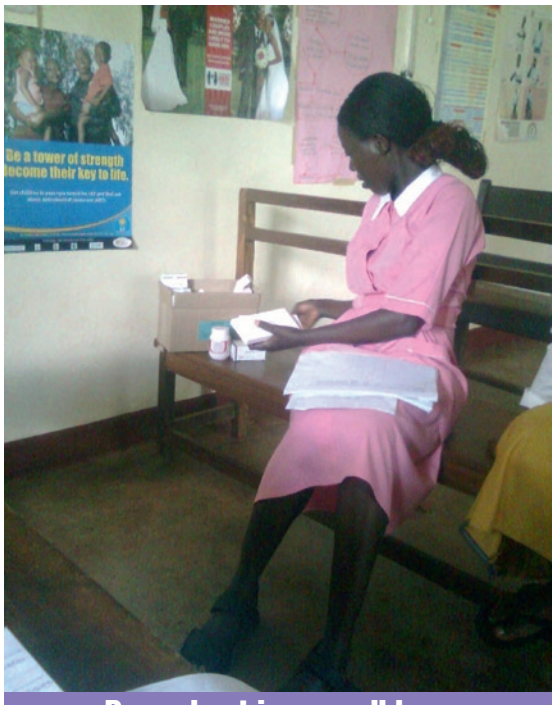
- Started a HTN/DM clinic within the HIV clinic. The clinic staff attend to HIV patients every Monday and Tuesday, but Wednesday is DM/HTN clinic day. The HTN/CM is now called the "chronic care clinic."

- Appointments for subsequent visits are now given to patients every clinic day.

- DM and HTN medicines were moved from the general hospital pharmacy to the chronic care clinic, making them more accessible to the clinic staff. Patients at first were so few that drugs were stored in a small box. However, as the number of patients enrolling increased, a cupboard was brought in (Figure 2).

Figure 2.

a) Before



Drugs kept in a small box.

b) After

A new cupboard at Lugazi hospital.

Photo credit : Martin Muhire

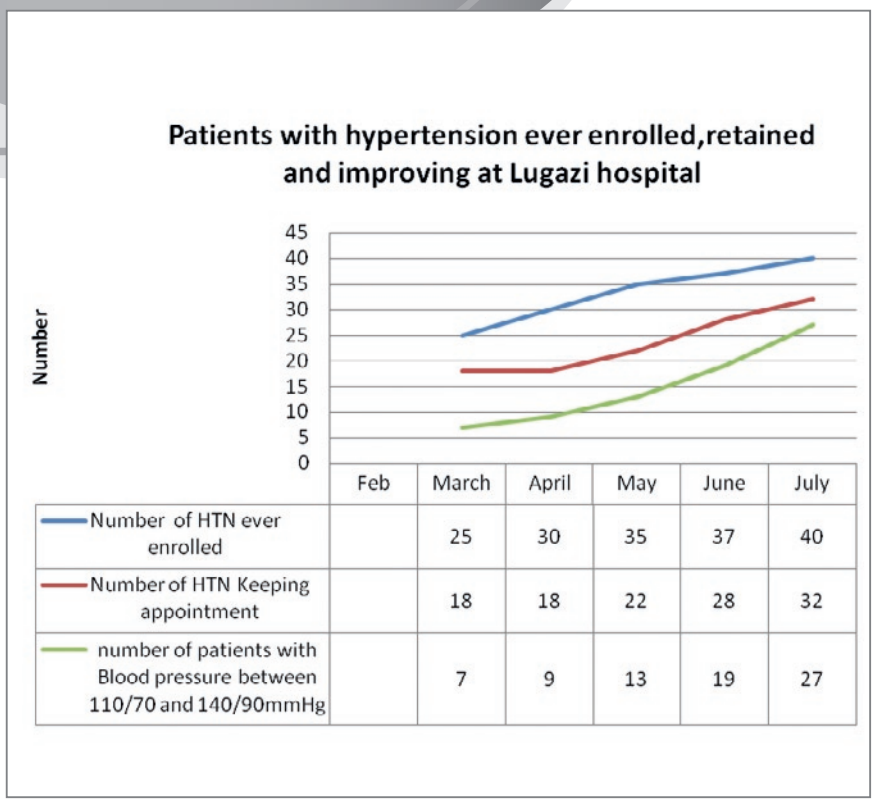
Improved data systems

- Before the collaborative, data was not kept on individual DM/HTN patients. Now the patients are tracked as thoroughly as are HIV patients.

RESULTS

After five months of intervention, 40 HTN and 25 DM patients were registered in care. The percentage of patients with BP less than 140/90mmHg increased from 38% in March to 84% in July. Likewise, diabetic patients with fasting blood sugar (4-7.5mmol/) increased from 33% to 63% during the same period (Figure 3).

Figure 3.



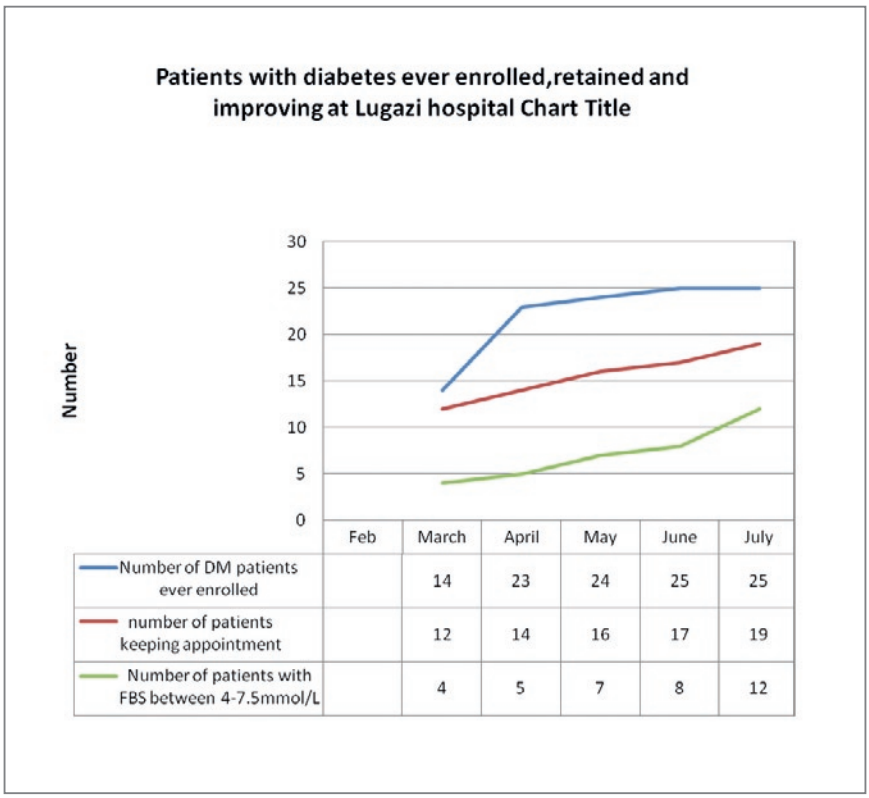
After changes were made, a grateful hypertension patient from Lugazi Hospital gave this comment :

"As you can see me I am ok. I no longer suffer from headache; my heart beat is now ok because these health workers told me what to do. I have stopped eating food with salt, started doing exercises like moving up stairs many times daily. Because of this, whenever I come here they tell me that my pressure is normal. May be I could have died by now."

NEXT STEPS

The work is far from over, and HCI continues to work with hospital staff to improve community linkages and decision support mechanisms through monthly coaching. But the progress made in a short time is substantial.

Source : University Research Co., LLC-Center for Human Services (CHS), 2011



II. DOTs for NCDs - lessons from TB.

A major challenge in most countries is to ensure access to healthcare for people living with NCDs. Even when services are available, delays in seeking care can result in unnecessary complications that are difficult to treat. TB and NCDs represent different categories of diseases, but there are lessons to be learned. Adapting the DOTS (Directly Observed Therapy, Short-Course) framework for TB control for diagnosis, treatment, monitoring and reporting of NCDs may prove successful in resource-poor settings.

LESSONS FROM TB TO CONTROL NCDS: DOTS

The TB DOTS five-point policy package to be adapted for NCDs includes :

- Political commitment – Sustained government commitment to health-systems strengthening should include a national plan for NCDs.
- Case finding among people attending primary-care services – PHC is uniquely placed to identify people at high risk and deliver prevention and care interventions.
- Standardised diagnostic and treatment protocols – Use of simple standardised protocols for diagnosis, treatment, follow-up and referral, when necessary, are essential components of quality care for NCDs.
- Regular supply of essential medicines – Uninterrupted supply of essential quality-assured medicines is an integral part of continuity care for chronic conditions. However, adherence to treatment, even when the medicines are available, is a particular issue for patients with chronic NCDs, especially for asymptomatic conditions.
- Systematic monitoring and evaluation – An efficient health-information system for data collection and management is essential for the evaluation of patients' progress and the burden of chronic NCDs, as well as the effectiveness of health-system interventions.

III. Integration of NCDs with other health programs.

There is enough evidence indicating that cervical cancer screening may have an important influence on early detection and prevention of cervical cancer morbidity and mortality and should be widely introduced into primary healthcare settings. Pap tests could easily be used by health-care workers in areas with limited resources. There are some successful examples for implementation of cervical cancer screening programs by using nurses or midwifes.[x]

Available data suggest that a large proportion of breast cancer cases are detected in pre-menopausal women. For example, it is well documented that in more than half of the countries of Latin America and Caribbean, 50% of cases and 40% of deaths occur in women below age 54. Further, there is some evidence suggesting that in many countries in the region, breast cancer is occurring at earlier ages than in developed countries. In the case of Mexico, breast cancer is the second leading cause of death among women aged 30 to 54, and only 5-10% are detected in the earliest stages (0-1). Antenatal care visits, as well as contact with the health care system for other reproductive health needs, such as family planning and child care, offer an invaluable opportunity to provide information on breast cancer to women of reproductive age.[xi]

Linking breast cancer detection to reproductive and maternal and child health interventions is an example of the diagonal approach to the organization of health services at the PHC level. However, in many countries primary health care is neglected, and the emphasis is placed on more costly secondary and tertiary care services. The shortage of primary-care physicians and a lack of basic equipment and medicines as well as appropriate infrastructure further exacerbate the problem. WHO estimates that the availability of NCD treatments in low-income countries is one quarter that of high-income countries. Even in hospital settings in low-income countries, there is limited availability of basic technologies required for NCD care and rehabilitation.[xii]This underscores the need for advocacy for universal coverage for PHC services.

Improved access to highly cost-effective interventions at the PHC level has the potential of reversing the NCD epidemic by preventing the development of diseases and reducing the complications and unnecessary hospitalizations, health-care costs and out-of-pocket expenditures that drive families into poverty.[xiii]

HEALTHCARE FINANCING

No health-care system can function effectively without sustainable financing. The goal of health-care financing is not only to mobilize sufficient funds for the delivery of public-health and medical services, but also to provide financial risk protection to the population. The only way to reduce reliance on out-of-pocket payments, which can be as high as 50% in low-income countries, is for governments to encourage risk pooling or prepayment, which is a prerequisite for universal coverage. This will require governments' commitment at the highest level to devote sufficient resources to health care.

Recent estimates for 49 low-income countries indicate that to ensure access to critical interventions, including for NCDs, these countries need to spend more than US$60 per capita by 2015, which is more than the US$32 they are currently spending.[xiv] However, only eight out of these 49 countries reported that they could mobilize their domestic resources to achieve the Millennium Development Goals by 2015. In most low-income countries, predictable donor funding will be required to address health challenges, including NCD prevention and control as a priority.

Domestically, increased efficiency in revenue collection will generate funds to be used for health. The challenge will be to give NCDs a priority when allocating government budgets.

Another way of generating resources for NCDs is innovative financing for NCD prevention and control, such as tobacco and alcohol taxes, or levies on air tickets and foreign exchange transactions. A 50% increase in tobacco excise taxes would generate 1.42 billion USD in additional funds in 22 low-income countries, according to WHO estimates. By earmarking these funds to NCDs, access to services would be significantly improved.[xv]

KEY RECOMMENDATIONS

Implementation: Recommendations by Health System Building Blocks

Recognizing the potential impact of NCDs and the need for a sound and comprehensive response, action is necessary to address the increasing burden of NCDs by strengthening health systems and advocating for an integrated approach to the delivery of health care in the PHC setting.

Strengthening health systems requires improvements not only in the building blocks of health systems, but also in the underlying social and economic determinants of health, such as gender inequities, education, poverty, water and sanitation, which this paper does not address.

Each health system is unique in terms of complex relationships between different health-care workers and institutions, and the decision on how to move forward must be made for each health system, taking into account what is feasible. It is clear, however, that tackling NCDs involves a comprehensive multi-stakeholder response, with the government, the private sector, the health-care system and the patient all having substantial responsibility to address the growing epidemic.

The building blocks framework below is used to set boundaries on the recommendations for the complex construct of health systems. The recommendations are general and can be easily adapted to individual country needs:

Governance and Policy

- Devote a higher share of GDP to health, and prioritize NCDs within health budgets.
- Increase efficiency of revenue collection, pooling and allocation to NCDs.
- Provide incentives and mechanisms to promote partnerships across sectors (public, private, civil society) to ensure a coordinated response.
- Ground health policy in the principle of universal health coverage.
- Establish national NCD Plans.

Health Service Delivery

- Provide a comprehensive range of services, including preventive, curative, palliative and rehabilitative services and health promotion activities.
- Make services financially, culturally and geographically accessible.
- Strive for universal coverage for a comprehensive range of services for the population at risk for NCDs.
- Ensure continuity of care across levels of care, health conditions and over life-course.
- Consider lessons learned from other chronic conditions (HIV/AIDS, TB) for the delivery of services.
- Provide patient-centered high-quality services at PHC level.
- Increase efficiency and effectiveness of services to ensure minimum waste and improved health outcomes.

Health Workforce

- Provide training and continuing education programs for health-care workers to manage NCDs, with a strong emphasis on self-management education.
- Review pre-service educational curricula to include necessary knowledge and skills for the NCD workforce.
- Establish multi-disciplinary teams for continued and well-coordinated care for NCD prevention and control.

Health Information Systems

- Establish and strengthen national health information systems (including registries) for monitoring and evaluation of NCDs and risk factors, as well as morbidity/mortality statistics by cause.

Essential Medicines and Technologies

- Improve availability of affordable quality-assured essential medicines and technologies through rational selection and public procurement.
- Monitor the quality and safety of medicines and medical devices through national regulatory authorities.
- Make medicines affordable through generic policies and marketing of generic medicines through the private sector.

Healthcare Financing

- Establish insurance/prepaid schemes to avoid catastrophic out-of-pocket expenditure.
- Develop health financing models that reduce out-of-pocket expenditure and catastrophic spending related to NCDs.
- Explore innovative financing mechanisms and earmark generated revenue to NCDs.
- Prioritize NCDs, and devote a greater share of official development assistance to NCDs.

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