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PUBLIC HEALTH RESPONSE TO CHRONIC DISEASES

The 120th Session of the Executive Committee recognized the predominance of chronic noncommunicable diseases (NCDs) as the leading cause of morbidity and mortality in Latin America and the Caribbean. Priority areas identified were prevention and control of cardiovascular diseases, cancer, diabetes, and injuries, as well as related risk factors. In response to this mandate, the Pan American Health Organization (PAHO) developed four strategic lines of action: 1) Community-based action through the CARMEN initiative (Conjunto de acciones para la reducción multifactorial de las enfermedades no transmisibles) [Actions for the Multifactoral Reduction of Noncommunicable Diseases], which has been adopted by several Member States; 2) Surveillance of noncommunicable diseases and risk factors; 3) Innovations for health services responsive for chronic conditions; and 4) advocacy for policy change. These areas are congruent with the Global Strategy for the Prevention and Control of Noncommunicable Diseases approved by the Fifty-third World Health Assembly in May 2000.

The economic burden of NCDs is of increasing concern among Member States, given the high costs to society, families, and individuals. Efficient interventions must consider the social context and the needs of different population groups. Strategies for prevention and control of NCDs must bridge across three different levels: policy building, community-based activities, and responsiveness of health services of persons with health care needs.

The Executive Committee is requested to propose ways in which PAHO can support and strengthen a unified and integrated strategy for the prevention of NCDs through the CARMEN initiative. The Committee is further requested to examine the challenges that Member States face in confronting the heavy burden of chronic diseases, by facilitating changes so that health care meets the needs of the population and by building infrastructure for prevention and control of NCDs.

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1. Introduction

There is a pressing need for public health to respond to NCDs, given the burden on developing countries and among the poor. Traditionally, two contrasting approaches have been discussed, one that is based mostly on health promotion addressing determinants of risk factors and disease, and the other based on clinical cost-effective interventions. A public health approach must bridge across these two approaches and integrate prevention and control of NCDs in comprehensive programs.

The evidence base for a public health approach that gave way to the strategies is discussed herein. Single risk factors may predict individual ill health; and specific health services interventions may partially address the needs of those living with disease. However, the societal burden of NCDs results from the coexistence of multiple risk factors and disease, in the same individual and population groups, as well as from the response that the health system and society can provide. Therefore, it is imperative to take a broad perspective and learn from the best practices of the integrated multilevel approaches, which can be both cost-effective and sustainable for developing countries.

2. Social and Economic Burden of Chronic Diseases

There is wide recognition that chronic NCDs are the leading cause of premature mortality and disability in the vast majority of countries of the Americas. For those under the age of 70, NCDs account for 44.1% of deaths among males and 44.7% among females; injuries are responsible for 23.3% and 30.1% of deaths of males and females, respectively. The work force of most countries is affected by illnesses and risk factors that are highly preventable.

Noncommunicable diseases of major public health importance in the Region are: (1) cardiovascular diseases, of which stroke and ischaemic heart disease are the most frequent in terms of mortality; (2) cancer, particularly cervix, uterine, and breast cancer among women, and stomach and lung cancer among men as well as prostate cancer in some populations; (3) diabetes, which affects over 35 million people; and (4) injuries that are the leading cause of death among men, especially young adults and adolescents. These diseases share several common interrelated risk factors, namely hypertension; hypercholesterolemia; obesity; impaired glucose tolerance and diabetes, which can be regarded both as disease and as a risk factor for cardiovascular diseases; physical inactivity; tobacco; and high fat consumption. Sexual and reproductive factors are especially important for cancer among women.

The importance of NCDs is evident in all ages and in both sexes. Studies show that the prevalence of hypertension ranges from 14% to 40% among those 35 to 64 years of age, but nearly half are not aware of their condition, and, on average, only 27% control

their blood pressure. Among the 9% to 18% of persons 35 to 64 years of age living with diabetes, nearly 60% already have at least one microvascular complication when diagnosed. These complications, that can be prevented, lead to significant disabilities such as blindness, amputation, and chronic renal failure.

Tobacco use is more frequent among males as shown by data from national surveys in 5 countries. Cuban men exhibit a rate of 48.1% regular smokers and those from Barbados, 34.6%; whereas the epidemic is downward among men in the United States and Canada, with rates of 25.3% and 31.5% respectively. Physical inactivity and obesity are considerably high among women. The former ranges from 60% to 80% while obesity among women ranges from 11 % in Cuba to 24% in Barbados.

It is not surprising that cardiovascular diseases are now the leading cause of death in women. As the adult population increases and a larger number of women are approaching menopause, it is important to consider prevention of stroke and ischaemic heart disease, as well as the burden of cervical cancer and the increasing mortality from breast cancer.

Also, noncommunicable diseases among children are a growing concern in Canada and the United States; obesity and diabetes type 2 has increased among children, a trend that is yet to be studied in the rest of the Region. Tobacco consumption for persons 13 to 15 years of age is around 7% in Costa Rica and 10% in Barbados, according to data from the Global Youth Tobacco Survey sponsored by the World Health Organization. This situation brings to the forefront of public health the need for concerted efforts throughout all ages.

The economic burden of chronic NCDs can be analyzed on two levels: first, the effects of macroeconomic policies on opportunities for prevention and control in different population groups, in particular the poor; and second, the potential cost-effectiveness of interventions. There are high costs to society, families, and individuals when social and human capital is affected by long periods of disability, premature mortality, and expensive diagnosis and care.

No comprehensive study on the cost of NCDs in Latin America and the Caribbean has been published. It is known that in the United States, the cost of cardiovascular diseases is on the order of 2% of the gross domestic product. A study on the cost of illness in Canada found that 21% of all such costs are attributable to cardiovascular disease, for a total of US$ 12 billion annually. These costs included treatment, consultations, and indirect costs, such as loss of income due to disability and death. Cardiovascular diseases were also considered responsible for the highest proportion (32%) of lost income due to premature death. In addition, policies associated with prevention and control programs, such as taxation, food labeling, as well as financing access and continuity of treatment for chronic conditions, may have macroeconomic effects that should be further studied.

The cost and overall efficiency of interventions must be evaluated in terms of effectiveness and health gains for the population at large, but it is particularly important that consideration be given to those who bear the cost of such interventions, either the system, through different mechanisms, and/or the patient. Potentially effective interventions may not render adequate results due to high costs. For example, antihypertensive treatment can cost up to $100 per month, putting it out of reach in countries where the average monthly income may be only $50 to $200. The average direct cost of diabetes in Latin America and the Caribbean has been estimated at $730 per patient per year.

The question lies in the affordability of dealing or not dealing with chronic noncommunicable diseases. In a study in Jamaica, it was determined that 57% of persons with cancer and diabetes became medically indigent given the high proportion of the cost that required direct payment from patients; thus 50% of them had to forego treatment due to inability to pay.

Health policies must consider their impact as a two-way interaction between poverty and NCDs that ultimately affects the health of the poor. As an example, the incidence of advanced cervical cancer in Ecuador is higher among women of low socioeconomic status, 50% of whom are diagnosed when the disease is no longer curable. Only 10% of women of high socioeconomic status are diagnosed at that stage. In that country, a cost-recovery scheme requires co-payment for screening and treatment. In Chile, mortality from stroke is higher in the least educated when compared to those that have achieved higher educational status. Furthermore, the gap is larger for women than for men. Coverage and access to services also vary by educational level.

On the prevention side, for those living in a poor, unsafe neighborhood and working long hours, it can be very difficult to increase physical activity. Neighborhoods and communities in the same country or city can have varying availability of food, access to health services, and opportunities to benefit from health promotion initiatives. Noncommunicable diseases have been erroneously regarded as diseases of affluence. This myth has misguided policy decisions. Growing evidence demonstrating otherwise warrants attention from poverty-reduction programs.

Given the complexity that the burden of chronic noncommunicable diseases imposes on developing countries, the problem cannot be analyzed only in epidemiological terms. One-dimensional solutions, dealing with risk factors or diseases independently, have too narrow a scope. There are underlying common elements to several diseases and risk factors. It requires a comprehensive systems perspective that examines the multilevel processes that frame the prevention and control of NCDs.

3. Evolving Framework for Action

Incidences of disease and risk factors, as well as implementation of interventions, are affected by the societal context, which refers to the physical, social, and cultural environment (e.g., urban layout, safety factors, social support, social networks, cultural beliefs, language, gender roles, family composition, education, and income). The State and social groups play crucial roles in shaping the social context. Behavioral and social sciences have contributed to a better understanding of how these factors can influence health. It has become clear that prevention efforts need to extend beyond the individual to the environment that affects behavior.

Several community-based trials for NCD prevention were initiated recognizing this, particularly in the United States and Finland, in the 1970s and 1980s; however, the results varied. Some studies were inconclusive, or changes were difficult to interpret; but others demonstrated reduction of risk factors and disease in specific population groups. In view of the conflicting evidence, some have argued for a focus on health-services-based preventive interventions aimed at individuals. This type of intervention, for example, counseling and opportunistic screening, can be effective for some, especially those at high risk, but lacks the potential to achieve broad coverage. In contrast, others have favored broad, population-based approaches that can reach a large number of persons but have had lower levels of effectiveness.

Recent studies have attempted to determine what is required to achieve successful changes that are both effective and have the potential to reach all sectors of the population. In general, it has been agreed that strategies or favorable conditions at multiple levels are needed to trigger overall system change. Three synergistic levels of action can be identified, namely: (a) policies and regulation addressing macrolevel determinants; (b) community-based actions that promote the participation of the population and affect demand; and (c) health-service-centered modifications to address the needs of those with a given condition.

These levels are interrelated but occur in different scenarios with different stakeholders. The community, that is, social groups provide the channels through which the three levels of action can be integrated. The immediate social environment exerts a strong influence on the likelihood of behavior change. Hence the community supports the two other processes, policy building and the shift for responsive health services. It appears that approaches that bridge levels necessarily include the involvement of the community, and are generally more successful and efficient.

3.1 *Policy Building*

In industrialized countries, several policies, laws, and regulations adopted have been successful in preventing disease and injury, such as tobacco taxation and use of seat belts and helmets. The challenge, however, is in the process by which health policy is developed. Comparative analyses have demonstrated that these processes differ across social contexts and the nature of the proposed change, as well as preexisting political conditions. Government action, either national or at the state and municipal levels, may require the support of internal or external technical and scientific establishments, if they are strong opinion-makers. In addition, the participation of the civil society may be particularly important for legislative changes that affect interests of other influential parties. On a broader view, pivotal policy changes pertaining to NCD prevention affect both public and private entities, often operating internationally. In this case, a country is not likely to be successful by undertaking changes on its own or may even affect others. Three examples of processes can serve as illustrations.

3.1.1 *Information-driven Process Convening Those That Take Action*

Injury and violence are the leading causes of death in young men in many countries, especially where there have been armed conflicts and where economic recovery has been slow. Traditionally, governments have dealt with this problem through judiciary and punitive actions, spending more on police and arms, thus creating a vicious circle. A public health approach to this problem is based on shifting the focus from control to prevention of violence. How can this be achieved?

First, it is important to generate information about who is injured, by whom, where, and when, through epidemiologic surveillance systems. Second, information from these systems is used to propose actions, usually by forming coalitions with other stakeholders, which can engender policy changes such as drinking curfews, restrictions on gun ownership, and creation of employment and educational opportunities. Third, actions need to be evaluated so that those that work can be replicated.

Thus, the contribution of public health in the formulation of policies for the prevention of violence lies in increasing the capacity to generate and disseminate information to partners so that appropriate action can be taken. Along these lines, a project is under way in San Pedro Sula, Honduras, which established a surveillance system in the city and shared information with the municipality, which used it to develop a project for a major lending institution and to bring about several small-scale changes and actions as a first step.

3.1.2 *Advocacy from Grassroots Organizations for a Local Policy*

A community-based project was implemented in Valparaiso, Chile, where the local health service conducted a baseline survey of risk factors for NCDs which showed a high prevalence of obesity and physical inactivity. A municipal physical activity program was created, in collaboration with a local university and other institutions, encouraging people to walk and use stairs. In addition, at least one low-fat meal was included in cafeteria menus, particularly those that catered lunch for office workers. Women's groups put together menus using products available locally. It is still too soon to evaluate the project, but this is an example of broad community involvement in building local policy and action to educate the population and increase the demand for a supportive environment.

3.1.3 *Open Dialogue for International Policy Action*

It has been established that adequate consumption of fruits and vegetables can contribute to the prevention of heart disease and several cancers. Conversely, consumption of red meat has a demonstrated increased risk for those same conditions, with a clear dose-response effect. Given the burden of heart disease and cancer, it seems appropriate that public health measures provide incentives to increase access to fruits and vegetables and disincentives for consumption of red meat would follow. However, this may require changes in prices and import restrictions, affecting food and meat producers.

he recent economic losses owed to outbreaks of foot-and-mouth disease and the economic crisis in one of the main cattle-exporter countries of the Region poses serious challenges for a major public health response. The cattle industry of South America has recently stated that cattle from this region has less fat, given their feeding practices, and that no study has associated meat from these herds to heart disease or cancer. This is indeed true, but whether consumption of meat from this region has lower or no risk as compared to meat from other parts of the world remains unknown. The only way to clarify this is through an independent study, but this type of study needs to follow exposed and unexposed persons for a long period of time and is expensive. In the meantime, internationally accepted evidence calls for public health action, which must begin by facilitating a dialogue among all stakeholders.

3.2 *Community Involvement*

The decentralization of health services has focused primarily on the provision of care, promoting efforts to transfer decision-making to the local level. However, in many instances, decisions on public health interventions remain highly centralized in national, state, or provincial ministries of health, either because public health has not been part of reform efforts or because capacity has not been developed at the local level. Local

governments are increasingly addressing health issues that go beyond traditional basic sanitation activities. Thus, it is imperative that public health services provide technical contribution, and bring to the table the perspective of the community by identifying organized groups and promoting exchange of information on health issues among them and with the local governments. Two aspects of public health involvement are discussed below: first, coalition building among organized community groups working or interested in health; and second, NCD/risk-factor surveillance as a way to monitor and assess outcomes. Finally, a call is made for the development of a comprehensive evaluation framework that will allow the community to learn from their involvement.

3.2.1 *Coalition Building*

Building coalitions with other governmental and nongovernmental institutions, as well with civil society and the private sector, can expand community resources significantly. These coalitions have common objectives and draw on each other's strengths to advocate for implementation of public health policy, carry out prevention projects and support persons with NCDs or risk factors, that face the need to change behaviors or must self manage their condition. Although this strategy is not exclusive to NCDs and injuries, it is an area in which it is essential.

International alliances can have a ripple effect, orient local partners towards key health issues and subsequently influence community action. PAHO, the International Diabetes Federation, and the private sector (pharmaceutical companies that produce insulin) worked together to create the Declaration of the Americas on Diabetes (DOTA). Through this effort, pharmaceutical companies provide annual funding, and a joint committee awards grants to local coalitions for diabetes education efforts and support for self-management for persons with diabetes. Several programs have been developed in Argentina, Bolivia, El Salvador, and other countries. The alliance involves constituencies that ministries of health and health care providers may not be able to reach easily. PAHO is currently working on similar projects with the Inter-American Heart Foundation and the International Union against Cancer.

Two examples of programs in the Region that have been successful in building coalitions for NCD prevention are Agita São Paulo, in Brazil, which promotes physical activity, and the Nova Scotia Heart Health Program in Canada. Both programs have involved a number of partners and are currently expanding their activities. Women’s groups can be effective within communities to promote behavioral change, because women make decisions regarding food and nutrition, as well as other family activities. In North Karelia, Finland, one project enjoyed considerable success because of the participation of Martas, a women's organization that engaged in the development of products with low-fat content, and supported community activities. More local patient support groups are a key starting point to bring other partners into the public health arena.

3.2.2 NCD/Risk-factor Surveillance

Community action needs the support of a well-established NCD/risk-factor surveillance system. It is not necessary that these systems be national in scope, in fact local systems may be more useful, but it does require continuous or periodic data collection and analysis to examine trends, monitor activities, and assess their pertinence. So far most countries have conducted large surveys to learn about the distribution of risk factors and NCDs. Although these are very useful, there are some disadvantages regarding untimely information, and they do not serve monitoring purposes. Large surveys do not have the power to respond to local community information needs.

Many surveys are conducted by clinical and academic groups and reflect their own interests. In published surveys conducted in Latin America and the Caribbean, 48% were directed to physical measures, such as blood pressure and obesity; 29% to biochemical measures, cholesterolemia, and glycemia; and only 24% to behavioral risk factors. Most of the latter were studies of the prevalence of smoking. The scarcity of data on behavioral risk factors is a consequence of the lack of public health capacity and of the absence of population-based approaches to prevention and control. Ministries of health typically occupy their resources in communicable disease surveillance and have not acquired the expertise for NCD and risk-factor surveillance; and weak NCD programs do not demand it.

Surveillance is an initial step, but more comprehensive evaluations for community-based action of prevention and control programs are essential to further develop this area. For this purpose a framework containing the following components is being proposed: (a) access to the population, particularly to disadvantaged groups; (b) acceptance by and participation of the population; (c) effectiveness, which refers to implementation under existing conditions in the community; (d) assessment of costs; and (e) sustainability, that is, the adoption of strategies by existing organizations. Process indicators are incorporated in each of the categories, since these are particularly useful in scaling up a program.

3.3 *Shift towards Responsive Health Services*

The current acute health care model has not proven effective in dealing with prevention and control of chronic conditions. Prevention and control of NCDs require long-term patient contact with primary health care services and good quality of care. More emphasis must be placed on demand, enabling patients to make informed decisions, and on proactive health-care teams rather than on physicians alone. It is the system behavior that makes the difference and not partial interventions. A model for chronic care aimed at improving outcomes includes five dimensions: (1) clinical information systems, (2) decision support, (3) delivery system design, (4) self-management support, and (5)

the use of community resources. As a means to develop all these components, a quality improvement process has been adopted, so that by introducing, testing, and assessing the effect of small changes a learning system begins to evolve.

The policy framework and financial context must also be conducive to change. For example, recommended practices may not be covered by health insurance, or resources in the system may not be sufficient. Evidence-based medicine must contemplate feasible options to provide the best possible affordable care, but sometimes it may be necessary to make broader changes to deliver it effectively. Senior management must be a fully informed participant, so that policy decisions to facilitate change can be an integral part of the process.

In Mexico, the quality crusade that has already developed benchmarking and outcome indicators has incorporated this approach in the care of diabetes. Demonstration projects are an effective method of making policy-makers aware of the need for change, so the process is being initiated in a few states. In Costa Rica, after developing guidelines and completing the decentralization of health services, this approach is being incorporated for the management of hypertension.

Co-morbidity is an important problem for NCDs and often overlooked. Most NCDs share some of the same strategies for prevention and management, such as adherence to treatment and the need for behavioral change. This calls for incremental changes that address more than one disease. For example, in the United States, approximately 60% of those aged 65 and over have two or more chronic conditions, and 25% have four or more conditions. In Latin America and the Caribbean, among those with diabetes, nearly 30% also suffer from hypertension.

To initiate changes towards an appropriate model for chronic care three priority conditions have been selected: diabetes, hypertension and cervical cancer. This stepped-up approach will enable the improvement of outcomes in management and, in turn, effectively incorporate prevention in health services.

In conclusion, a public health response to the prevention and control of chronic NCDs requires that:

- The problem is addressed from a broad but cohesive system perspective, based on epidemiologic evidence, and at the same time takes into account the social context and international environment;

- Actions, whether to promote policy changes, or to develop community-based programs or individual health service interventions, are evaluated in order to ascertain their effectiveness;

- Financing and a supportive infrastructure are present to assure sustainability and coverage; and

- The needs and perspectives of the population served are considered, so that they can be active participants in prevention and control programs.

4. Response of the Pan American Health Organization

Document CE120/18, approved by the 120th Session of the Executive Committee, identified four priority areas for NCD prevention and control: cardiovascular diseases, diabetes, cancer, and injury. The regional program was structured to address cross-cutting issues in a comprehensive manner, since the risk factors and NCD management and prevention have common approaches. It was also necessary, given resource constraints, to define and maintain the focus for action on potentially effective interventions. Because cardiovascular diseases are the leading cause of death in most countries of the Region, in September 2000, the 42nd Directing Council endorsed an integrated approach and recommended the strategies described below, as well as the implementation of the CARMEN initiative.

The Fifty-third World Health Assembly acknowledged the burden of NCDs in developing countries and approved a strategy that incorporates surveillance, prevention, and management. Most recently, at its 109th Session in January 2002, the WHO Executive
Board adopted Resolution EB109.R2 proposed by the Government of Brazil, which calls for addressing risk factors and prevention via an integrated approach and reporting on progress made by regional networks, such as CARMEN.

It should be noted that Member States are increasing their requests for technical cooperation and for incorporation of their views on NCDs in the public health agenda.

5. Regional Strategies

5.1 *Advocacy for Policy Change*

This area focuses on situation analyses and building partnership to facilitate policy change. The conduciveness of the environment to implement NCD prevention and control strategies is a major concern. Support to countries is provided, particularly through CARMEN intersectoral committees, to conduct their own in-country analyses and decide on a course of action.

The second area is to promote international alliances with multiple organizations, public and private, to have a mirror effect at the country level and to build international consensus around major policies. Currently, PAHO is participating in four such alliances, each one representing a different model: (a) the Inter-American Coalition for the Prevention of Violence, with the Inter-American Development Bank, The World Bank, the United Nations Educational, Scientific and Cultural Organization, and the United States Centers for Disease Control and Prevention; (b) DOTA, with the International Diabetes Federation and the private sector; (c) the Alliance for Cervical Cancer Prevention, with the International Agency for Research on Cancer, the Program for Appropriate Technology in Health, Engender Health, and the Johns Hopkins Program for International Education in Gynecology and Obstetrics; and (d) the Pan American Hypertension Initiative (PAHI) in collaboration with the National Heart, Lung, and Blood Institute (the National Institutes of Health of the United States), the World Hypertension League, the Inter-American Heart Foundation, and other partners that continue to endorse this initiative.

5.2 *Community-based Actions*

The CARMEN initiative contains a set of actions to reduce NCDs, including the establishment of a national intersectoral committee to conduct situation and policy analysis and the development of demonstration sites in which community-based prevention strategies are evaluated. The national committee oversees the demonstration sites and disseminates information on actions that have proven effective. Multilevel actions involving various partners are strongly recommended, both in the development phase and during implementation. Association with academic institutions to support evaluation is encouraged.

5.3 *Surveillance of Noncommunicable Diseases and Risk Factors*

The purpose of this strategy is to develop common standards and to build capacity in countries to incorporate surveillance in public health systems. In this way, countries can determine the distribution and trends of diseases and risk factors, and use this information for program development and policy formulation. Systems do not need to be national in scope, but rather should seek ways in which information can be collected locally in a cost-effective manner in support of community-based actions.

5.4 *Innovations for Responsive Health Systems*

This strategy refers to supporting field tests and evaluation of the implementation of programs under “real life” conditions at the first level of care. Emphasis is placed on new approaches that Members States can adopt. It considers the diversity of settings and the need to reach underserved populations. Currently, priority areas include the use of different technologies for cervical cancer screening and the development of innovative models for chronic care.

6. Next Steps

6.1 *Internal Environment*

In order for PAHO to implement a unified, strategic approach, framed in a public health perspective, two spheres must come into play within the Organization: regional activities and field offices.

6.1.1 *Regional Programs*

The PAHO Program on Noncommunicable Diseases in the Division of Disease Prevention and Control has the responsibility of coordinating the incorporation of NCD prevention and control in the public health agenda of Member States through a unified, strategic approach. This requires effective internal coordination, since other PAHO programs also have direct responsibility for major risk factors and organizational aspects in which strategies must operate. Levels of coordination differ, depending on the relevance to the overall strategy. With programs that have overlapping areas of responsibility, joint programming and supervision is proposed; with other complementary programs, permanent exchange of information would expand possibilities to support countries.

Since this is not an area that is high on the agenda for international development assistance, the regional program also has a resource mobilization component, which includes advocacy with donors and potential private partners. In this context, a strong partnership with WHO and international NGOs is warranted. Partnership with the private sector must be further explored, within the regulations of the Organization.

6.1.2 *Field Offices*

In the field, new staff positions were created in Chile and Costa Rica, and in the Caribbean Epidemiology Center. Posts in Brazil, Colombia, Jamaica, and Mexico, and in the Caribbean Program Coordination incorporate activities pertaining to NCD prevention and control. National professional posts were created in Ecuador, El Salvador, and Peru using extrabudgetary resources. Coordination and joint activities are under way with the Institute of Nutrition of Central America and Panama and the Caribbean Food and Nutrition Institute. Both institutes have given NCDs higher priority and have adopted the program strategies. Important gains have occurred by strengthening field activities, but there are still unmet needs, particularly in countries in which the burden of NCDs is very heavy.

Technical cooperation is at the root of efforts to develop a public health response to NCDs for two main reasons. First, this has not been a particularly strong area in ministries of health and, in many instances, investment in developing a prevention

infrastructure has not occurred. If this is the case, leadership is likely to come from the clinical sector, which proffers technological and individual solutions rather than a public health perspective. Second, disease prevention and control strategies require multisectoral actions that call for building alliances with different entities, such as NGOs and the private sector. PAHO can facilitate this, while at the same time reinforcing the leadership and stewardship function of ministries of health.

6.2 *External Environment*

In order to assist Member States in implementing strategies, three areas must be given priority: access to knowledge, networking among countries, and incorporating the perspective of Member States. PAHO is in a privileged position to facilitate national efforts to incorporate NCD prevention and control into public health agendas. The Organization can also mobilize resources by engaging other international organizations in the prevention and control of chronic NCDs.

7. Action by the Executive Committee

- Propose ways in which PAHO strategies for prevention of NCDs can be strengthened through the CARMEN initiative, in order to provide a unified approach, which addresses the dynamics and interactions of risk factors in a comprehensive manner.

- Discuss ways to face the challenges of the double burden of disease to change the current acute health care model into a model that is more responsive to health care needs of persons with chronic conditions.

- Propose that PAHO advocate and provide technical cooperation to increase the infrastructure for prevention and control of NCDs and its risk factors.