



**Technical Reference Document on
Non-communicable Disease Prevention and Control**

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1. SITUATION ANALYSIS

1.1 Introduction

Noncommunicable diseases (NCDs) are now the primary causes of mortality and morbidity for women and men in virtually every country in the Americas (the most notable exception is Haiti). Future annual NCD deaths are projected to rise substantially as a consequence of population growth and aging. Treating NCDs is a major component of increasing health care costs. The enormity of this health and economic impact, and countries' social and legal obligations to their citizens, demand an effective response to the NCD epidemic.

In recent decades, there has been a rapid and complex demographic, epidemiological, economic, and nutritional transition in the Region of Americas, including the aging of the population. The behaviors and lifestyles driving this change and resulting from it have also changed the Region's profile of illness and death. These changes imply a dual problem for the Hemisphere, where some countries still have a high prevalence of communicable diseases but now also face a growing prevalence of chronic diseases.

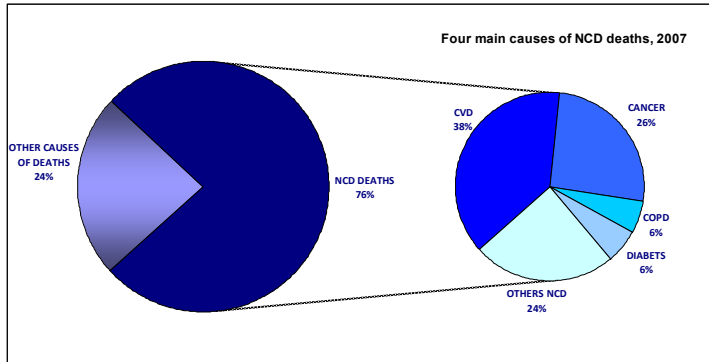
While not homogenous throughout the Region, life expectancy in the Americas overall increased by 20 years in the late twentieth century. By 2010 life expectancy was 81.7 years in Canada, 61.7 years in Haiti, and 66.3 years in Bolivia.¹ Women generally live longer than men do, but women live their extra years with more NCD-related illness and disability and with limited health protection.

The aging of the population in the Region of the Americas is an unprecedented, pervasive, profound, and enduring factor. This can be seen from a variety of statistics. For example, in 2006 the Region of the Americas had about 50 million people age 60 or older, and in 2025 that figure will reach 100 million. The old-age dependency ratio in Latin America and the Caribbean (LAC)—which is the number of persons 65 years and over per one hundred persons 15 to 64 years old—was 6.6 in 1950 and 8.6 in 2000. It is projected to rise to 26.9 in 2050. That LAC ratio has grown much faster than it has in North America, with values of 12.7 in 1950, 18.6 in 2000, and a projected 35.5 in 2050. Two of every three older (≥60 yrs of age) people in LAC have reported having at least one of six chronic diseases.² In addition, the same individual may simultaneously have multiple chronic diseases. There is a highly significant relationship between suffering from more than one chronic disease and the presence of perceived poor health, frailty, or disability, as well as increased demand for long-term care.³

1.2 Non-communicable diseases

Of a total of 5.1 million deaths in the Region of the Americas in 2007, 3.9 million (77%) were due to NCDs. Of these 3.9 million deaths, 2.95 of them (76%) were due to just four groups of NCDs: cardiovascular diseases (CVDs) (1.5 million); cancer (1 million); chronic obstructive pulmonary disease (COPD) (219,000), and diabetes (232, 000) (Figure 1), according to data from PAHO.⁴ In the Region of the Americas approximately 44% of total deaths occurred before the age of 70 years old. In lower-middle-income countries of the Americas, about 53% of deaths occurred before the age of 70 years old. In lower- and upper-middle-income countries, about 52% of deaths occurred before that age, compared with 35% in high-income countries.⁵

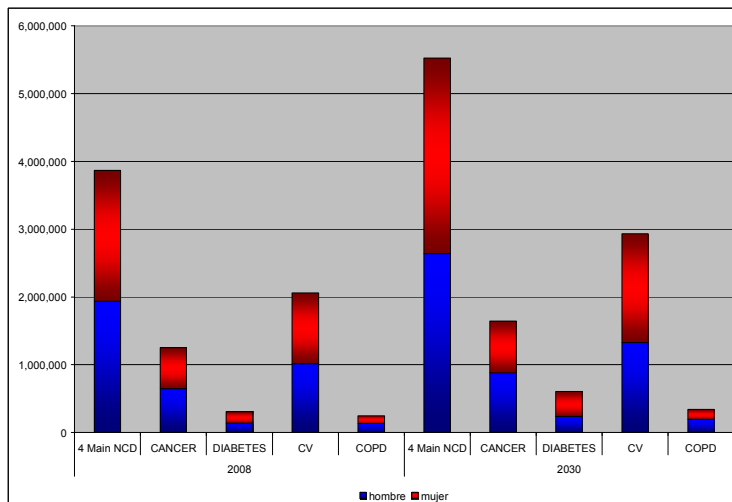
Figure 1 - Mortality by cause of death in the Americas (2007)



Source: data from the PAHO Health Information and Analysis Project, 2010

Some projections indicate there still will be a substantial increase in deaths from NCDs between 2008 and 2030, mainly from malignant neoplasms, diabetes, and cardiovascular diseases.⁶ (Figure 2)

Figure 2- Projected mortality for NCDs (2008-2030)



Source: Based on 2010 WHO Global Burden of Disease mortality projections

Estimates show that by 2030, globally NCDs will be responsible for three times as many disability-adjusted life years (DALYs)* and nearly five times as many deaths as communicable diseases, maternal, perinatal, and nutritional conditions combined. Of particular concern is the burden of premature deaths, which poses serious implications for social and economic development.⁷ Globally, 44% of the NCD deaths occur before the age of 70. In low- and middle-income countries a higher proportion (48%) of all NCD deaths are estimated to occur in people under the age of 70, versus 26% for high-income countries. The difference is even more marked in younger age ranges.⁸

This burden of premature mortality disproportionately affects the poor. In the Americas, for example, almost 30% of premature deaths from cerebrovascular diseases are concentrated in the poorest 20% of the population, whereas only 13% of those premature deaths are concentrated in its richest 20%, according to data from the PAHO Health Information and Analysis Project.⁹

* The disability-adjusted life year (DALY) combines years of life lost due to premature death with years of healthy life lost due to illness and disability.

In addition to information about NCD-related death, morbidity data is also important for its implications for the management of health care systems and for planning and evaluating health system delivery.

Impaired glucose tolerance and impaired fasting glycemia are risks categories for future development of diabetes and cardiovascular disease. Diabetes is the leading cause of renal failure in many populations in both developed and developing countries. More than half of all nontraumatic lower limb amputations are due to diabetes. Diabetes is one of the leading causes of visual impairment and blindness in developed countries. People with diabetes require at least two to three times the health care resources compared to people who do not have diabetes. Globally, diabetes care may account for up to 15% of national health care budgets.¹⁰

Mental conditions and other factors also increase NCD risk. There is evidence from population-based research about prospective associations among depression, anxiety, and coronary heart disease and between depression and increased risk of onset of type 2 diabetes.¹¹ Furthermore, many physical pathologies increase the risk for mental disorder, and this comorbidity not only complicates help-seeking and treatment but also influences prognosis.

In the Region of the Americas, over half of the disease burden is now attributable to NCDs, ranging from 86% in North America to 64% in the Andean Subregion.¹² Worldwide, NCDs are estimated to account for 66.5% of all years lived with disabilities in low-income and middle-income countries.¹³

Last but not least, there is a need to consider how race, culture, and socially constructed gender roles may affect women's and men's risks for NCDs. Tobacco and alcohol use have been associated with masculine gender norms, as will be discussed later. However, the prevalence of these risk factors is growing in women, especially adolescent girls, in the Region. Culturally related patterns and practices of food consumption may also influence the incidence and progression of NCDs. Gender roles and cultural biases also determine the effectiveness of NCD responses. For example, women with myocardial infarction seek emergency services later than do men, and they are less likely to be diagnosed properly or treated adequately. Therefore, women have higher rates of heart attack complications and more associated deaths.¹⁴ Afro-descendent populations, particularly young black adults, also have a greater frequency of heart disease but still they do not receive timely treatment and therefore suffer higher rates of death from heart attack than do other racial groups.¹⁵

Women, indigenous peoples, and Afro-descendent populations comprise the majority of the Region's poor and, as has been discussed, they are disproportionately affected by NCDs.

1.3 Risk factors

While some NCD risk factors are biologically determined, most are due to personal behavior, social and environmental factors, private-sector forces, and government policies (or lack of them). A large proportion of NCDs are preventable through the reduction of four main behavioral risk factors: tobacco use, physical inactivity, harmful alcohol consumption, and unhealthy diet. Those behaviors lead to four key metabolic/physiological changes: raised blood pressure, overweight/obesity, hyperglycemia, and hyperlipidemia.¹⁶ The economic and social conditions under which people live determine the increase or decrease of these risk factors. They are "societal risk conditions," rather than individual factors.

A recent study of the adult population of seven Latin American countries found that 30% smoke, 18% have high blood pressure, 14% have elevated cholesterol, 7% are living with diabetes (related to high blood sugar), and 23% are obese.¹⁷

In terms of attributable death, the leading NCD risk factor globally is raised blood pressure (to which 13% of global deaths are attributed), followed by tobacco use (9%), raised blood glucose (6%), physical inactivity (6%), and overweight/obesity (5%).

1.3.1 Modifiable behavioral risk factors

Tobacco

Globally, almost 6 million people die from tobacco use each year, from either direct tobacco use or secondhand smoke exposure. By 2020, this number is expected to increase to 7.5 million or 10% of all deaths. Smoking is estimated to cause about 71% of lung cancer, 42% of COPD, and nearly 10% of cardiovascular disease. It is responsible for 12% of male deaths and 6% of female deaths. Now, death rates for smoking-related diseases are lower in low-income countries than in middle- and high-income countries, reflecting the past trends in consumption. However, the impact of smoking-related diseases on mortality in low- and middle-income countries will continue to rise for at least two decades, even if successful efforts to reduce smoking are made.¹⁸

There are about 145 million tobacco smokers in the Americas. The prevalence of current adult tobacco use varies widely across the Region, from 38% in Chile to 9.4% in Panama.¹⁹ Although most of the Region's smokers are men, tobacco use is increasing in women, especially at younger ages.²⁰ Of all the WHO regions, the smallest gap between male and female tobacco consumption is in the Region of the Americas, with it being only about 1.5 times more common for men than for women.²¹

In the high-income countries of the Americas, tobacco use caused 470,000 deaths, and in the middle- and low-income countries 271,000 deaths, according to PAHO calculations based on data taken from the 2009 WHO *Global Health Risks* document.

Insufficient physical activity

Insufficient physical activity is the fourth leading risk factor for mortality. Globally, almost 3.2 million deaths and 32.1 million DALYs each year are attributable to this risk factor.²²

Physical activity has been customarily measured as related to the practice of sport or structured exercise. Usually, countries with high levels of sport participation rarely reach levels above 30% of people considered "physically active." However, in recent years, after the development of the International Physical Activity Questionnaire (IPAQ), it has become possible to ascertain the contribution to physical activity in several other domains such as domestic, work and transportation physical activity. Now, increasing attention is being paid to "active transportation." The example below, from the last national nutrition survey in Colombia (2010), shows that among men the level of physical activity is 63.5% and among women 46.1%. Interestingly, two thirds of those levels are contributed by transport-related physical activity (Figure 3).²³

In brief, most current data collection only captures leisure time physical activity. Using that measurement approach, between 10% and 40% of adults reach the recommended minimum 150 minutes of moderate physical activity per week.

The prevalence of insufficient physical activity rises with country income. High-income countries have more than double the prevalence compared to low-income countries, for both men and women. These data may be related to higher levels of activity related to work and transportation in the low- and lower-middle-income countries. In the Region of the Americas 30% to 60% of the population do not achieve even the minimum level of recommended physical activity.²⁴

Some evidence indicates that girls are less likely to engage in physical activity than are boys, and that sports opportunities for girls are limited.²⁵

Harmful use of alcohol

The harmful use of alcohol is a major risk factor for premature deaths and disabilities around the world. Hazardous and harmful drinking was responsible for 2.3 million deaths worldwide in 2004.²⁶ More than half of these deaths occurred as a result of NCDs. In the Americas in 2004, over 347,000 deaths were

attributed to alcohol, with 42% of alcohol deaths coming from cardiovascular diseases, liver cirrhosis, cancers, and diabetes. Harmful use of alcohol is also the leading risk factor for the burden of disease in the Region, with 16 % of the DALYs related to NCDs.

At about 8.1 liters, the average per capita consumption of pure alcohol in the Region of the Americas is 50% higher than the global average. The pattern of drinking is, on average, of heavy episodic drinking. Men drink more often and in higher quantities on average and with a higher frequency of episodic heavy drinking than do women in almost all countries in the Region, and young people drink more than do older people. Also in general, increasing economic standing equates to increases in alcohol consumption in the Americas.²⁷

Unhealthy diet

The populations in the Americas have undergone a “diet transition.” This change has been characterized by increased consumption of high-calorie foods and of more highly processed foods (rich in salt, sugars, and fat). In addition, there is lower consumption of staple foods (such as maize/white corn and beans) and inadequate consumption of fruits and vegetables.²⁸

The amount of dietary salt consumed is an important determinant of blood pressure levels and overall cardiovascular risk as well as renal disease. The current overall levels of salt[†] consumption in the Region of the Americas, as in the rest of the world, well exceed the daily physiological need.[‡] The INTERSALT study, performed in 1985-87, provided standardized estimates from 32 countries, of which 7 were from the Americas. In addition, the INTERMAP study (1996-99) included salt intake data from the United States. Unfavorably high salt intake levels are prevalent in many countries of the Americas. Recent estimates of dietary and urinary sodium indicate this is true for Brazil (4,500 mg of sodium/day, or 11.25 g of salt/day), Argentina (4,800 mg of sodium/day, or 12.0 g of salt/day), Chile (3,600 mg of sodium/day, or 9.0 g of salt/day), and the United States (3,466 mg of sodium/day, or 8.66 g of salt/day). Sources of dietary sodium vary, from 75% of it coming from processed food in the United States and Canada, to 70% coming from discretionary salt added in cooking or at the table in Brazil.²⁹

There is convincing evidence that saturated fats and trans fats increase the risk of coronary heart disease and that replacement with monounsaturated fats and polyunsaturated fats reduce the risk. There is also evidence that the risk of type 2 diabetes is directly associated with consumption of saturated fat and trans fat and inversely associated with polyunsaturated fat from vegetable sources.

There are large variations across regions of the world in the amount of total fats available for human consumption, with the Region of the Americas having one of the highest rates for saturated fatty acids.³⁰ It is worth noting that even though information is still incomplete, it has been estimated that the consumption of trans fats may be approximately 2% to 3% (4.5-7.2 g/d) of the total intake of calories in the United States, 3% (7.2 g/d) in Argentina, 2% (4.5 g/d) in Chile, and 1.1% (2.6 g/d) in Costa Rica.³¹

One of the main drivers of the diet transition is food marketing targeted to children. There are systematic reviews showing that this is a public health threat that requires attention and public policies to control it.^{32, 33} Among the key conclusions from previous research on this topic are that: (1) various marketing communication strategies are used to market food to children around the world; (2) most of the marketing activity is for foods high in calorie content, sugar, salt, and fat; (3) children are exposed to a multifaceted marketing mix, which is not only intense but is also a powerful, effective tool for gaining

[†] The word “salt” is used to refer to sodium and the term “reducing dietary salt intake” implies the reduction of total sodium intake from all dietary sources including, for example, additives such as monosodium glutamate and other sodium-based preservatives or taste enhancers.

[‡]Conversions: 5 g salt (NaCl) = 2,000 mg sodium = 87 mmol sodium = 87 mEq sodium.

brand loyalty among youth; and (4) there is compelling evidence that food and beverage advertising on television influences children's preferences, purchase requests, consumption patterns, and health. That evidence led WHO to propose 12 major recommendations on marketing food and nonalcoholic beverages to children during the 2010 World Health Assembly.³⁴

1.3.2 Metabolic/physiological risk factors

Raised blood pressure

Worldwide, raised blood pressure[§] is estimated to cause 7.5 million deaths, about 12.8% of the total of all annual deaths. This accounts for 57 million DALYs or 3.7% of total DALYs. Raised blood pressure is a major risk for coronary heart disease and ischemic as well as hemorrhagic stroke. Blood pressure levels have been shown to be positively and progressively related to the risk for stroke and coronary heart disease. Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40% in 2008. The lowest prevalence was in the Region of the Americas, with 35% for the total population, and with a significant difference between men (39%) and women (32%). Across the income groups of countries, the prevalence of raised blood pressure was consistently high, with low-, lower-middle, and upper-middle-income countries all having rates of around 40%. The prevalence in high-income countries was lower, at 35%.³⁵

In high-income countries of the Region of the Americas, hypertension causes 441,000 annual deaths, or 16.8% of all deaths. In 2009, middle- and low-income countries, high blood pressure claimed approximately 431,000 lives.

Overweight and obesity

"Excess weight" (the term includes overweight** and obesity^{††}) is caused by too much calorie intake, in combination with too little physical activity. Worldwide, 2.8 million people die each year as a result of having excess weight, and an estimated 35.8 million (23%) of global DALYs are related to this cause. Overweight and obesity lead to adverse metabolic effects on blood pressure, cholesterol, triglycerides, and insulin resistance. The risk of coronary heart disease, ischemic stroke, and type 2 diabetes mellitus increases steadily with increasing body mass index (BMI). Raised BMI also increases the risk of cancer of the breast, colon/rectum, endometrium, kidney, esophagus (adenocarcinoma), and pancreas.³⁶

In 2008, 35% of the world's adults aged 20 and older were overweight (34% of men, 35% of women). This percentage nearly doubled between 1980 and 2008.³⁷ Estimates for overweight among infants and young children globally for 2008 indicated that there were 40 million (6%) preschool children with weight for height above more than two standard deviations of the WHO child growth standard.

Comparing WHO regions, the Region of the Americas has the highest prevalence (between 60% and 70%) of "excess weight" among both adult men and adult women.³⁸ In Latin America and the Caribbean, nearly two thirds of the adult population (18-64 years old) is currently classified as having excess weight. In Mexico, where the obesity epidemic is a national scourge, the rates have already reached 70%. Among school-age children (5-12 years old) the rates for obesity and overweight (above the 95th percentile of weight for height) have soared in the last decade, to 20% in Colombia and 30% in the United States.^{39, 40} The prevalence of excess weight in adults is 60% in Canada (women: 53%; men: 65%) and 65% in the United States (women: 61%; men: 72%).

[§] Raised blood pressure is defined as systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg or using medication to lower blood pressure.

** Overweight is defined as BMI ≥ 25 Kg/m²

†† Obesity is defined as BMI ≥ 30 Kg/m²

Table 1 – Rates (%) of overweight and obesity

Country	Children <5-12	Women 18-64	Men 18-64	Reference
United States of America	30	61	72	http://www.cdc.gov/women/pubs/overwght.htm http://apps.who.int/bmi/index.jsp
Canada	26	53	65	http://apps.who.int/bmi/index.jsp
Brazil		43	41	http://apps.who.int/bmi/index.jsp
Chile		57.7	62.2	http://apps.who.int/bmi/index.jsp
Colombia	20	55.1	45.6	http://www.icbf.gov.co/icbf/directorio/portel/libreria/php/frame_detalle.php?h_id=7685
Mexico	26	71.9	66.7	http://www.insp.mx/encuesta-nacional-salud-y-nutricion-2006.html
Peru		43	52	http://apps.who.int/bmi/index.jsp
Cuba		26	37.7	http://apps.who.int/bmi/index.jsp

Source: Data from national representative surveys 2004-2010

The rapid rise of obesity rates among adults and youth is a good measure of the seriousness of the new NCD epidemic in the Americas. The number of obese persons 15 years of age or older will have grown by the end of this 2011 to 289 million (39% of the population). Obesity has become more prevalent among socially disadvantaged groups, and it is caused by several environmental factors that have increased consumption of foods high in caloric content and with poor nutritional value. Undernutrition in-utero has been implicated to cardiovascular disease and diabetes mellitus in later life.⁴¹

From a gender perspective, obesity rates for girls and women are also climbing. For example, over 60% of women in the Caribbean are obese.⁴²

Raised cholesterol

Raised cholesterol levels increase the risks of heart disease and stroke. Globally, a third of ischemic heart disease is attributable to high cholesterol. Overall, it is estimated to cause 2.6 million deaths (4.5% of the total) and 29.7 million DALYs, or 2.0% of total DALYs.

Cholesterol is a major cause of disease burden in both the developed and developing world. In 2008, the global prevalence of raised total cholesterol among adults was 39% (37% for males and 40% for females); it was highest in the WHO European Region, followed by the Region of the Americas.

The prevalence of raised total cholesterol is noticeably higher according to the income level of the country, being highest for the high-income countries.⁴³

1.3.3 Additional modifiable risk factors

Conservative estimates have shown that about 2 million cancer cases per year (18% of the global cancer burden) are attributable to a few specific infections. This fraction is substantially larger in low-income countries (26%) than in high-income countries (8%), making the prevention or eradication of these infections a priority to overcome inequalities in cancer incidence between poor and rich populations. The principal infectious agents are human papillomavirus (HPV), hepatitis B and C viruses, and *Helicobacter pylori*.⁴⁴

The U.S. National Toxicology Program report on carcinogens contains 246 entries. Of that total, 58 of them are listed as being known to be human carcinogens, and the remaining 188 are also reasonably anticipated to be human carcinogens.⁴⁵

A wide range of environmental causes of cancer, including environmental contaminants, occupationally related exposures, and radiation, make a significant contribution to the cancer burden. However, they are often modifiable at low cost.

Air pollution continues to be a risk factor for premature mortality, chronic respiratory diseases, and cancer. It is estimated that in LAC, 48,110 premature deaths per year are generated by urban outdoor air pollution,⁴⁶ and more than 100 million inhabitants are exposed to high concentrations of pollution.

1.3.4 Societal risk conditions

Globalization drives risk in populations in complex ways. In developing economies, risks are changing due to the increased availability of tobacco products, saturated fat, and sugars; changes in the way food is produced and distributed; increased promotion and marketing of processed foods, tobacco, and alcohol; and decreased physical activity at work and home.

Changing consumer food preferences is one driver of the diet transition, but it is not the only one. Among other factors are powerful marketplace forces, subsidies, innovations in food technology and distribution systems, urbanization, and limited time for home cooking.⁴⁷ Coupled with intense and highly specialized marketing and advertising efforts, this situation has contributed to the mass culture of prepackaged foods, soft drinks, and eating out that is common in most cities today.

Although economic development is associated with some improvements in health outcomes, economic growth and industrialization are also major contributors to the increase in chronic disease risk factors. Urbanization plays a key role through the conditions in which people live and work, the food they eat, and the environmental factors to which they are exposed.⁴⁸ For example, levels of physical activity are affected by the increase in motorized transport, urban zoning policies that encourage suburban developments where the use of a car is indispensable, lack of attention to the needs of pedestrians and cyclists in urban planning, the profusion of labor-saving appliances in the home, unsafe neighborhoods, and the growing use of computers at work and for entertainment.⁴⁹ Also, as occupations in urban areas have shifted away from agriculture and others involving manual labor to service sector jobs, the level of physical activity has dropped.⁵⁰ Data from the WHO Global Health Observatory shows that in Latin American countries (such as Colombia, Peru, Bolivia, and Honduras), urbanization has more of an influence on obesity growth and prevalence rates than does poverty itself.⁵¹ Finally, crowded, poorly ventilated living and working environments and high levels of air and industrial pollution may contribute to the risk of illness.

1.4 NCDs and communicable diseases

It is important to take into account that an epidemiological transition is occurring. While communicable diseases (e.g., tuberculosis, respiratory infections, and water- and vector-borne diseases) still remain prominent in some countries of the Americas, NCDs are at the same time very prevalent, according to data from the PAHO Regional Health Observatory. This creates a “double-disease burden,” which is challenging for both families and health services. It is also important to consider the interplay of communicable and noncommunicable diseases. This is the case for such things as: (1) the increased risk and duration of tuberculosis in diabetics^{52, 53}, (2) the challenge that health services face with the synergy between AIDS and cervical cancer⁵⁴; (3) the three to four times greater risk of death and obesity found during the epidemic of H1N1 influenza^{55, 56, 57}; and (4) the relationship between active or passive exposure to tobacco smoke and the onset, recurrence, and mortality from tuberculosis.⁵⁸

1.5 Health systems

Whenever individuals lack social protection and payment for care is largely out of pocket at the point of service, those persons can be confronted with catastrophic expenses. Over 100 million people annually fall into poverty because they have to pay for health care.⁵⁹ Inequity in access to health care is in itself a cause of social and health inequalities. People with the most means—whose needs for health care are often less—consume the most care. In contrast, people with the fewest means and the greatest health problems consume the least care. Also, social inequity in the distribution of access to health care produces disparities in health outcomes. For example, between 2003 and 2006, 30.6% of the direct medical care expenditures for African-Americans, Asians, and Hispanics in the United States were excess costs due to health inequalities.⁶⁰

Current resource allocation clusters around curative services at great cost, neglecting the potential of using primary prevention and health promotion to avert up to 70% of the disease burden.⁶¹

The Region of the Americas is characterized by highly fragmented health services and primary health care (PHC) that could be better oriented to address chronic conditions.⁶² Experience to date demonstrates that excessive fragmentation leads to difficulties in access to services, delivery of services of poor technical quality, irrational and inefficient use of available resources, unnecessary increases in production costs, and low user satisfaction with the services received.⁶³

Social, demographic, and epidemiological transformations—fed by globalization, urbanization, and aging populations—pose challenges of a magnitude that was not anticipated three decades ago. In general, the response of the health sector and societies to these challenges has been slow and inadequate.⁶⁴

The Region of the Americas is home to several good practices in the creation of integrated health service delivery networks (IHSDNs). This has been especially true for Brazil, Canada, Chile, Costa Rica, and Cuba. Other countries in Latin America and the Caribbean are adopting similar policies to organize their health services. Despite these efforts, addressing fragmentation and providing more equitable, comprehensive, integrated, and continuous health services remain significant challenges for the majority of countries in the Americas.⁶⁵

Regarding access to drugs, a recent study used data from WHO and Health Action International to assess prices and availability in 40 developing countries. That investigation found a low availability of medicines for chronic diseases, including diabetes, hypertension, and cardiovascular illnesses^{††} (median of 36.0% in the public sector, 54.7% in the private sector) and a wide range in purchase prices, with private sector prices being much higher.⁶⁶

There are several determinants of better access, use, and quality of medicines in general that can guide and frame the policies on pharmaceutical drugs for a country. The validity of a policy document of this kind was reported by 22 of the 31 countries of the Americas surveyed in 2007,⁶⁷ but in only 16 nations was that actually incorporated into health policy. The concept and importance of drug selection appears to be widespread in the Region, with 24 countries having a model list of essential medicines that had been updated within the preceding five years; however, only 11 of them limited the public sector procurement in this list and 23 countries reported the requirement for generic prescribing in the public sector.

1.6 Accomplishment to date with regional NCD plans

The PAHO's Regional Strategy and Plan of Action on an Integrated Approach to the Prevention and Control of Chronic Diseases was agreed to in 2006, and a progress report was presented to the PAHO Directing Council in 2010.⁶⁸ For example, 26 nations reported having a chronic disease unit with its own budget to address the situation of chronic diseases; 28 countries had a national reporting system on these

^{††} Such medicines as atenolol, hydrochlorothiazide, losartan, nifedipine, metformin, and glyburide.

conditions; and 27 nations had ratified the WHO Framework Convention on Tobacco Control. Now, 17 countries apply integrated strategies for primary care recommended for the treatment of chronic diseases, and 15 have records or surveys of their NCD risks. So far, only 10 countries have launched a comprehensive educational and alliance campaigns modified their comprehensive monitoring systems to track risk factors for chronic diseases, established smoking bans for schools and health facilities, or developed guidelines for diet, physical activity, and public transportation systems. There are more than 20 resolutions related to NCDs that need to be fulfilled by the countries; most of them call for inter sectoral action. Clearly, there are ample opportunities for additional improvement.

The efforts on NCDs have permeated the countries of the Region. A willingness to act has been indicated by there being at least 20 World Health Assembly (WHA) resolutions and 28 PAHO Directing Council resolutions that deal with NCDs. In an ongoing review of such resolutions from 1996 to date,⁶⁹ diseases and disabilities, risks, and the situation of special populations as related to NCDs are considered. Even though 48 of the resolutions point out the need for intersectoral action, none specify the implementation steps for effort. Therefore, there are still great opportunities to identify synergies among the various sectors.

In addition, the creation, in July 2008, of the Pan American Alliance for Nutrition and Development opens a mechanism to implement comprehensive, intersectoral programs within the framework of the Millennium Development Goals (MDGs). The Alliance addresses changing such social determinants as malnutrition and poverty as a way to prevent obesity and NCDs.

The Regional Strategy and Plan of Action for Chronic Diseases makes the case for urgent action as an integral part of PAHO's broader vision and commitment to ensure that addressing NCDs and risk factors is strategically placed in the development and political agenda of our Regional leaders. This strategy builds on the concepts and themes of several critical WHO and PAHO resolutions, including WHA53.17, CD42.R9, CSP26/15, WHA56.1, WHA57.17, and WHA58.22.

PAHO has integrated six strategic approaches and four lines of action into that Regional Strategy and Plan of Action to address the burden of NCDs and risk factors. The six strategic approaches are: (1) advocating policy changes and public policy development; (2) capacity-building for community-based actions; (3) health services strengthening; (4) having a competent health care workforce; (5) multisectoral partnerships and networks; and (6) information and knowledge management. The four lines of action are: (1) public policy and advocacy; (2) surveillance; (3) health promotion and disease prevention; and (4) integrated management of chronic diseases and risk factors.

2. IMPACT OF NCDs ON THE ECONOMY, POVERTY, AND DEVELOPMENT

2.1 Introduction

NCDs and poverty create a vicious circle. Poverty exposes people to risks factors for NCDs. In turn, the resulting NCDs may drive families into poverty. In this way, the NCD epidemic hinders the development of countries.

NCDs and sustainable development are deeply intermingled, even though this connection has only recently become a subject of discussion. The United Nations Conference on Sustainable Development, to be held in Rio de Janeiro, Brazil, in 2012 (20 years after the Earth Summit, also held in Rio de Janeiro), seeks to secure renewed political commitment for sustainable development; assess progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development; and address new and emerging challenges such as NCDs, the global financial crisis, the food

crisis, and climate change. The subject of NCDs was first introduced in the sustainable development agenda during the 2002 Johannesburg World Summit, and should become an important element of the social pillar in 2012.

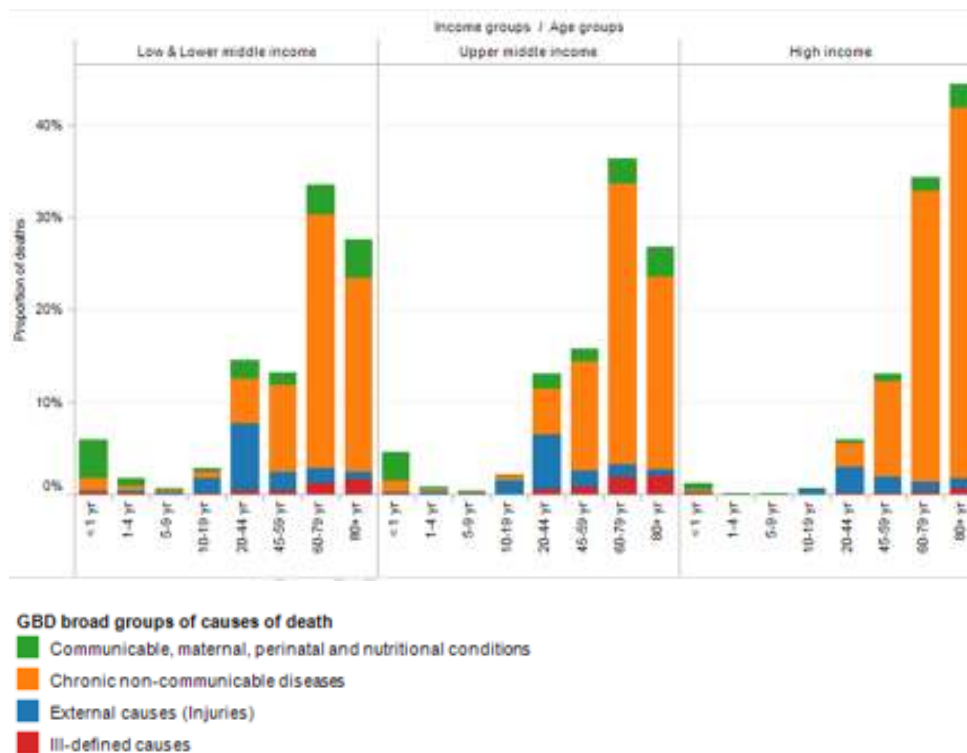
Approaches for quantifying the economic costs of NCDs and risk factors face various methodological and conceptual challenges.⁷⁰ These difficulties include the over- or underestimation of direct and indirect costs derived from potential comorbidities; the incorporation of out-of-pocket expenditures; and the value of lost production at work and of leisure activities forgone by caregivers, usually family members or friends. Further in-depth research is required to better understand these relations.

2.2 Economic impact of NCDs on households and individuals

Despite the quantification difficulties just mentioned, existing studies provide strong evidence for the high economic burden of NCDs and risk factors for individuals and households and also show that the increasing NCD burden disproportionately affects the poor and the disadvantaged.

Figure 4 shows how low- and lower-middle-income countries are “catching up” with high-income nations regarding the distribution of burden by cause. The main difference is that NCDs are affecting younger persons in low- and lower-middle-income countries, while in developed nations, NCDs remain mainly among the elderly.⁷¹

Figure 4 – Proportion of death by age groups and cause of death in country groups according to income



Source: Regional Health Observatory (PAHO), 2010

As with various NCDs, cardiovascular diseases (CVDs) are distributed unevenly. CVDs affect the poor more heavily,^{72, 73} with a catastrophic impact on their finances and their families, as well as on governments. This is due to the costs of treatment and the loss of potential years of life and productivity caused by

premature death and disability. These conditions counteract the countries' efforts to combat poverty, further increasing health inequalities.

A connection has also been found between obesity and poverty. This is most likely a result of the readily available, highly palatable, low-cost processed foods that are high in sugar and laden with fat. Smoking is also a problem that reflects social inequalities. In various countries there is a higher smoking prevalence among population groups that are economically and educationally underprivileged.^{74, 75}

The available literature from the Region of the Americas that deals with the cost perspective consists mainly of "cost-of-illness" studies and broader microeconomic studies. Cost-of-illness studies address direct costs (medical ones) and indirect costs (productivity losses and foregone income). The broader microeconomic approach estimates costs at the individual and household level. Severe disease can limit the ability of patients and caregivers to work, leading to the consumption of household assets in the purchasing of care. One study of three developing countries found that such costs amounted to just over 10% of household income,⁷⁶ a proportion that can have a catastrophic impact on the sustainability of poor households.

The most extensive research on the evaluation of the economic impact of NCDs and risk factors has been developed in the United States and Canada, using a variety of methodologies and sources of data. Nationwide studies are mainly based on data obtained from longitudinal surveys conducted at the national level and from national-level databases. Surveys and databases like these, however, are seldom available in other countries of the Region.

2.3 Economic impact of NCDs on health systems and the national economy

Few studies address the long-term relationship between NCDs and economic growth. However, economic analysis suggests that each 10% rise in NCDs is associated with a 0.5% lower rate of annual economic growth.⁷⁷

Studies from the benefits perspective that use cost-effectiveness or cost-benefit analysis are increasingly common, but still scattered. This is part of a global situation, where most health economics research has been focused on AIDS, injuries, and other communicable and perinatal conditions, and only 5% of them on NCDs.⁷⁸

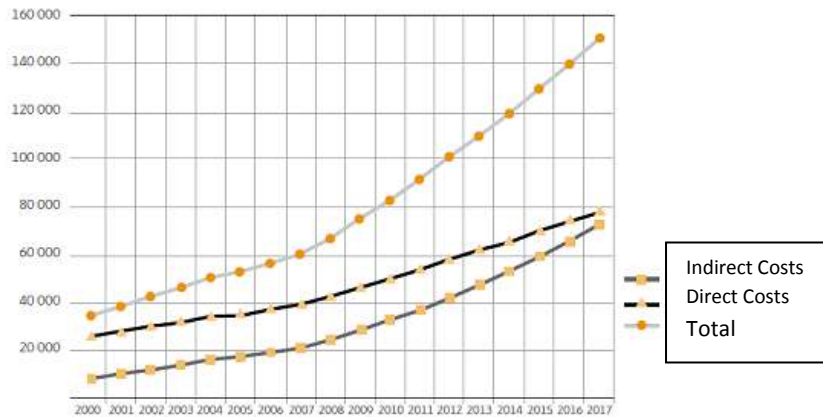
Also there is little evidence available on the impacts on health care systems and government budgets. Studies using the microeconomic approach have found evidence of the effects of NCDs on labor market outcomes, including wages, earnings, workforce participation, hours worked, retirement, and job turnover in specific populations. Estimates from cost-of-illness studies show that the cost of NCDs and risk factors range between 0.02% and 6.77% of a country's annual GDP,⁷⁹ but relatively few results are available for developing countries. One exception is a multicountry study on the economic burden of diabetes,⁸⁰ which showed total costs as a portion of GDP ranging from 1.8% in Venezuela to 5.9% in Barbados.

A recent review of 33 studies developed in the United States between 1992 and 2008 estimated that direct medical costs of obesity and overweight are very heterogeneous and may account for 5% to 10% of total health expenditures in the United States.⁸¹ In the province of Alberta, Canada, a study showed that costs attributable to overweight and obese status in 2005 represented 5.6% of the total direct and indirect costs for all health care expenditures.⁸²

With respect to the distribution between direct and indirect costs, a recent study by Devol et al.⁸³ in the United States looked at seven NCDs: cancer (several types), diabetes, hypertension, stroke, heart disease, pulmonary conditions, and mental disorders. That research estimated that the indirect costs (associated with lost workdays and reduced on-the-job productivity of both patients and employed caregivers) accounted for 79.1% of the total cost of these diseases, estimated at \$1.3 trillion in 2003. In Mexico, the *Salud Alimentaria* [Healthy Nutrition] national strategy included an analysis of past, current, and projected

direct and indirect costs, which were equivalent to the total new financial resources obtained from health reform (Figure 5). This supports the economic argument for investing intersectorally on NCD prevention. These results are consistent with the estimates on the indirect costs of diabetes in Latin America and the Caribbean accounting for 82% of total costs.⁸⁴ However, they contradict the results of studies on the costs of diabetes for the United States, which found that direct costs accounted for the largest share of total costs, equivalent to 69.5% in 2002 and 66.7% in 2007.^{85, 86} Differences in assumptions, populations, and definitions of direct and indirect costs might explain the diverging results.

Figure 5- Total expenditure attributable to overweight and obesity (base scenario). Mexico 2000-2017 (in Mexican pesos)



Source: Estimations from the Economic Analysis Unit from the Secretary of Health with information from INEGI 2008; SEED (2007); Lopez (2006); CONAPO (2008); BANXICO 2008; IMSS 2008; SAEH, Tabulados tarifarios HGG (2007) ENSA (2000) ENSANUT 2006; Villalpando et al. (2009) in Estrategia Nacional de Salud Alimentaria, Mexico 2010.

A study by Ugaz⁸⁷ (see Table 2) presents estimates of the economic burden of NCDs from several studies developed in recent years, mainly based on single-country studies and excluding evidence on specific types of disease. A ratio between indirect and direct costs is presented as a proxy for the bigger threat presented by NCDs. That is the serious impact on the labor force and investments in human capital, rather than the increasing magnitude of direct medical costs.

From the microeconomic approach, various studies addressing labor market implications in Latin American countries (e.g., Colombia, Mexico, Nicaragua, and Peru) have been compiled by Savedoff and Schulz.⁸⁸ The results suggest that earning declines may result from small but consistent deteriorations in health. In the case of Colombia and Peru, with a 1% increase in the number of sick or missed days, there was a 0.7% decrease in wages.

A key consideration from this analysis is the world's progress with the MDGs. Millennium Development Goal 1, on eradicating extreme poverty and hunger, is key for the Region of the Americas. Over the past decade the Region has experienced a period of economic growth that has quickly reduced both poverty and extreme poverty in many countries. Between 2003 and 2008 (before the global economic crisis of 2009), the incidence of poverty fell from 44% to 33%, while extreme poverty fell from 19% to 13%. This put the Region on track to achieve Target 1.A of Goal 1,⁸⁹ but the economic burden posed by NCDs is decreasing the impact of the other actions taken to achieve that goal.

Table 2. Economic burden of chronic diseases in the Americas Region (US\$ million)

Table 1: Economic burden by chronic disease, in the Pan-American region (US\$ millions)								
Country	Disease	Total	Direct costs	Indirect costs	Indirect / Direct	Year estimated	Source	Key information
United States	Cancer			115,800			2000 Bradley, et al (2008)	Does not include productivity lost due to morbidity or disability.
				232,400			2000 Bradley, et al (2008)	Includes earnings lost due to caregiving and household activity.
								Does not include productivity lost due to morbidity or disability.
				960,600				Yakroff (2008)
		96,126	27,458	68,668	2.50	1990	Brown & Fintor (1995)	
		319,000	48,000	271,000	5.65	2003	Devol & Bedrossian (2007)	
	Diabetes	132,000	27,000	105,000	3.89	2003	" "	
	Hypertension	313,000	33,000	280,000	8.48	2003	" "	
Heart disease	170,000	65,000	105,000	1.62	2003	" "		
	Diabetes	174,000	116,000	58,000	0.50	2007	American Diabetes Assoc. (2008)	
		153,000	116,000	37,000	0.32	2002, in 2007	" "	
Canada	Diabetes	4,756	3,478	1,277	0.37	1998	Dawson (1998)	Indirect costs include estimated costs for undiagnosed diabetes, but it does not include costs on disability (only mortality costs).
Brazil	CVD	10,512	4,709	5,803	1.23	2004	Reinert Azambuja et al (2008)	Considers only severe cases of CVD
Mexico	Diabetes		2,618			1998	Villareal-Rios, et al (2000)	
		15,118	1,974	13,144	6.66	2000	Barceló, et al	See footnote 1
	Hypertension	2,486	1,179	1,307	1.11	2007	Arredondo & Zuniga (2006)	Only public institutions
		4,479	1,963	2,516	1.28	2001	Villareal (2002)	
Cuba		1,347	722	624	0.86	2000	Barceló, et al	See footnote 1
Dominican R.		625	226	399	1.77			
Haiti		79	48	31	0.64			
Bahamas		149	11	138	12.91			
Barbados		151	13	138	10.81			
Guyana		36	20	16	0.78			
Jamaica		410	136	273	2.01			
Trinidad/Tobago		285	38	247	6.49			
Costa Rica		473	97	377	3.90			
El Salvador		500	137	362	2.64			
Guatemala		841	291	550	1.89			
Honduras		240	114	126	1.11			
Nicaragua		129	85	44	0.52			
Panama		435	104	330	3.16			
Argentina		10,935	747	10,188	13.64			
Bolivia		228	86	142	1.66			
Brazil		22,604	3,952	18,652	4.72			
Chile		2,418	295	2,123	7.20			
Colombia		2,587	415	2,172	5.23			
Ecuador		599	233	365	1.56			
Paraguay		218	72	146	2.03			
Peru		1,844	502	1,342	2.67			
Uruguay		775	95	680	7.19			
Venezuela		2,194	308	1,886	6.13			

1/ Some variables in the estimation were obtained from a single country, and then extrapolated to other countries with similar levels of GDP per capita. Thus, some variables are constant across countries. Possible underestimation of direct costs.

Source: Ugaz JI, 2009⁸²

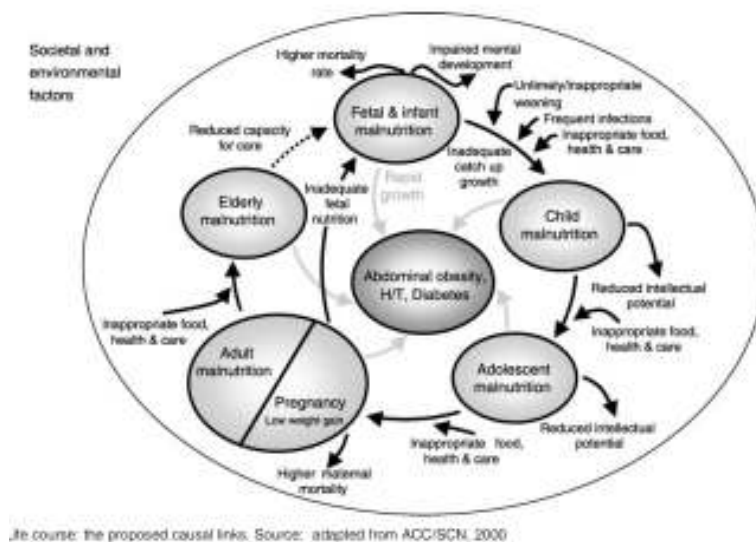
3. INTERVENTIONS TO ADDRESS NON-COMMUNICABLE DISEASES

3.1 Introduction

With interventions to address NCDs, there are three key principles to follow: (1) avoiding new cases by addressing the upstream determinants; (2) avoiding NCDs throughout the life course, by especially focusing on the earliest stages of life, from the womb until the first five years of age; (3) and taking adequate care of those already living with NCDs. For such tasks, there is a need to change the physical and organizational settings as well as to modify the immediate and mediate hazardous and protective determinants. That is, if within the health services, patients must be given good care, once they leave the health system they should not return to the same conditions that caused their disease.

As described by Darnton-Hill et al.,⁹⁰ taking a life course perspective has great potential. The risk of many NCDs is not just determined by risk factors in mid-adult life, but begins in childhood or adolescence, and likely even earlier, e.g., during fetal development. A WHO report⁹¹ identifies three reasons for that: (i) the increasing evidence of “tracking” of conventional risk factors from childhood to adulthood; (ii) the evidence for “programming” as a potential model of disease etiology with, in particular, “the fetal origins of adult disease” hypothesis; and (iii) emerging evidence to indicate that some early risk factors may act across generations.

Figure 6 – Analysis of NCDs and Life Course



Following such an integrated longitudinal approach, health promotion is a strategy to modify the risk and protective factors (including the personal, family, and community assets, while considering the settings, policies, and health services favorable to them) across the course of life. These factors include developing personal skills, strengthening personal assets, and reinforcing community assets and actions⁹² from the earliest stage of life until elder ages. These are underpinned by health services and initiatives to modify determinants. Of a broader scope is the promotion of health-favorable settings, both physical and organizational. Research has pointed out that all determinant modification varies by school, workplace,⁹³ housing, or other setting.⁹⁴

Therefore, the main focus has to be on modifying the immediate NCD risks (tobacco, alcohol, inadequate diet, and physical inactivity) and the NCD protective factors (physical activity, behaviors, and practices). The built environment in cities should be modified and planned to increase the availability of safe spaces

for physical activity and for access to clean water and fresh produce and other healthy food. The interventions have to change the built environment and the social environment, making them conducive to healthy behaviors, and enabling healthier personal and family choices.

These measures should include recommended interventions at the individual, population, and macro levels.⁹⁵ The Organization for Economic Cooperation and Development (OECD) has found that each such intervention alone is cost-effective, but having an integrated, multipronged approach may more than double the total impact.⁹⁶

Another consideration with NCD interventions is the “life-cycle approach.” Much evidence has accumulated about the close relationship between factors and determinants from early life stages that generate chronic diseases in later stages, as well as lead to disability and loss of well-being later in life. A recent longitudinal study demonstrated that if children are allowed to remain obese into their adolescence, then, regardless of lowering their body mass index (BMI), they would still be at high risk for diabetes.⁹⁷ Thus, interventions will be highly effective for prevention when done earlier in childhood and infancy, and then should be modified for early detection, control, and life quality later on in life.

Intervention in the social fabric throughout the life cycle in order to reduce NCDs is an emerging methodology to strengthen individual, family, and community assets.⁹⁸ Analysis has shown that individuals influence each other,⁹⁹ such as with obesity, alcohol, tobacco, and drugs. Modifying the social fabric can be used to influence risk and protective factors.

3.2 National health policies, strategies and plans

National economic growth is not solely the responsibility of the Ministry of Finance, and expanding the labor market is not just the concern of the Ministry of Labor. Similarly, promoting healthy life, free from NCD disabilities, is not alone the responsibility of the Ministry of Health. Further, in all these situations there is a key role for the head of state in carrying out national policy and overseeing stewardship and intersectoral roles.

A critical intervention, then, is to insert NCDs as a development issue in each nation’s highest-level policy instrument, such as the nation’s development plan, where the multidimensional and intersectoral nature of the problem should be identified. This is also the best place to explicitly set a common national societal goal that considers equity, vulnerable groups, and social gradients, and that identifies the shared responsibilities and accountability mechanisms in addressing NCDs. Strategies and plans should be drafted to strengthen the stewardship role, call for intersectoral action on NCDs, and strengthen the health sector response in their specific programs at the national, subnational, and local levels. The policies should be the product of a national dialogue that engages all the stakeholders and responsible parties and considers all of society.

The PAHO Regional Strategy and Plan of Action on Chronic Diseases emphasize the need for multisectoral work. Involving multiple sectors in the development of public policy requires providing for policy coherence and new forms of governance. These steps should be based on establishing common goals, integrating responses, and having increased accountability across government departments and across stakeholders outside government, on their actions on NCD risks and protective factors. Coherence implies seeking the largest alignment of public policies towards a reduction of NCDs, as well as the coherence of such policies and the health service reorientation.¹⁰⁰

ANALYSIS OF DIFFERENT SECTORS' RESPONSIBILITIES RELATED TO NONCOMMUNICABLE DISEASE									
SECTORS	FACTORS / DETERMINANTS								
	Tobacco	Alcohol	Beverages	Food	Physical Activity	Carcinogens	Different Settings	Social Gradient	Health Care
EDUCATION									
SOCIAL DEVELOPMENT									
AGRICULTURE									
COMMUNICATIONS									
INDUSTRIAL DEVELOPMENT									
FINANCE									
PUBLIC WORKS									
CLEAN DRINKING WATER SUPPLY									
TRADE									
LABOR									
TRANSPORTATION									
URBAN PLANNING									
ENVIRONMENT									
SPORTS									
PARKS AND RECREATION									
OSC									
WORKERS - UNIONS									
ACADEMIA									
INDUSTRY / PRIVATE SECTOR									
NATIONAL PARLIAMENT / CONGRESS									
STATE / PROVINCIAL LEGISLATURE									
MUNICIPAL									

Source: PAHO preparation

Institutionalized processes are needed for that intersectoral work (Table 3). A 10-stage intersectoral process to deal with NCDs has been suggested¹⁰¹: (1) conduct self-assessment; (2) assess other sectors (through health impact assessment); (3) analyze the areas of concern; (4) develop engagement strategies; (5) use a common framework; (6) strengthen governance and accountability structures; (7) enhance community participation; (8) choose between best practices; (9) monitor; and (10) evaluate.

Table 4- Mechanisms that have been effective for intersectoral action

Interministerial and interdepartmental committees	Community consultations
Cross-sector action teams	Joined-up work force development
Integrated budgets and accounting	Partnership platforms
Cross-cutting information and evaluation systems	Health lens analysis
	Health impact assessments
	Legislative frameworks

Source: Government of South Australia, Department of Health. Health in All Policies: The South Australian approach. 2009.

This process also calls for new roles for the Ministry of Health (MoH) in addressing the health determinants of NCDs. That has to be clearly established in its normative framework and organization, with a sector that is outward oriented, open to others, and equipped with the needed knowledge and skills. The new responsibilities of health departments¹⁰² include understanding other sectors' agendas and how to add to them; building the evidence base; generating pertinent information; assessing comparative policy options; creating regular platforms for problem-solving and dialogue; evaluating intersectoral work; building capacity; and working with others to achieve their goals.

Successful NCD interventions will be based on research on the effects of gender, poverty, and lack of empowerment. Primary prevention and treatment strategies should be based on data that have been disaggregated by sex, race, and ethnicity, as well as on other factors that have been analyzed with a gender and ethnicity perspective. Interventions should be pro-poor, gender and ethnically sensitive, and based on human rights. Chronic disease policies must prioritize a pro-poor approach because individuals

of low socioeconomic status, especially women and ethnic minorities, are constrained in reducing their exposure to NCD risks and in accessing NCD treatment. Investing in women and girls provides an opportunity to reduce the future NCD burden by empowering them to choose healthy behaviors.

These intersectoral interventions to address NCD determinants should consider the social gradient and gaps related to NCDs among the populations in the Americas. For that, there are six recommended key lines of intervention: (1) assuring a State-wide political commitment to viewing NCDs from an equity perspective; (2) applying health equity impact assessment to budget projects and programs; (3) developing and promoting social participation at the local and national levels, including in the social monitoring of progress, through engaging NGOs, healthy communities, schools, and municipality networks on the NCD agenda; (4) using stratified public policies to address the specific needs of children, elders, workers, migrants, and culturally diverse populations in relation to modifying NCD risks and protective factors; (5) building favorable settings (mainly urban, housing, and school) for NCD protective assets and factors development for persons, families, and communities; and (6) adjusting the public health NCD programs to better consider the social gradient and gaps, thus assuring greater health equity.

MoH stewardship for the health system and outside that system¹⁰³ requires a strong information system, a legal framework, and a regulatory capacity. Confronting the immediate determinants of NCDs (e.g., tobacco, alcohol, substance abuse, food consumption, and physical activities) and the environmental, occupational, urban, school setting, and structural determinants for them requires a profound strengthening of the health regulatory capacity. This enhanced capacity must go beyond the traditional focus on hygiene, medical technology, and medical services.

Population-based approaches are the most cost-effective means to reduce NCD risk factors. For example, regulating the access, availability, price, and marketing of alcoholic beverages, particularly to young people, has reduced overall mortality and alcohol-specific mortality in alcohol-dependent and nondependent people. The WHO Framework Convention on Tobacco Control is another good example, with its inclusion of nonregulatory economic incentives, protection for vulnerable populations and nonsmokers, product disclosures, and regulation and communication.¹⁰⁴ Regulatory interventions¹⁰⁵ to control food marketing to children, which is a serious public health threat, are a key population-based intervention. Furthermore, the MoH must be able to influence workplace, school, and urban design settings in order to be effective in addressing NCDs and their risk factors.¹⁰⁶

The self-regulatory approach has taken the form of industry pledges or guidelines by the advertising industry. In both cases, industry has reported that compliance has been high for the products they have opted to exclude from advertising and the particular media channel targeted. However, there is some evidence that that conclusion is not definitive, with an independent study of pledges in the United States showing that during the time the pledges were in effect, advertising of unhealthy foods actually increased.¹⁰⁷ Some research has estimated that a ban on advertising of all unhealthy foods would result in a substantial decline in purchases of those foods and a reduction of 14% in the rate of overweight among children under age 16.

The WHO Global Status Report on Noncommunicable Diseases 2010 identifies the “best buy” interventions to tackle NCD risk factors (Table below).

Tab 1. Interventions to tackle non-communicable disease risk factors: identifying 'best buys'

Risk factor (DALYs, in millions; % global burden)*	Interventions / actions	Available burden (DALYs averted; millions)	Cost-effectiveness ^b (US\$ per DALY prevented) (Very low = < US\$50/50) Quite low = < US\$ 1 Less = > US\$ 1 /	Implementation cost (US\$ per capita) (Very low = < US\$0.50) Quite low = < US\$ 1 Higher = > US\$ 1 /	Feasibility (health system constraints)
Tobacco use (> 50m DALYs; 3.7% global burden)	Protect people from tobacco smoke * Warn about the dangers of tobacco * Enforce bans on tobacco advertising * Raise taxes on tobacco * Offer counselling to smokers	Combined effect: 25-30 m DALYs averted (> 50% tobacco burden)	Very cost-effective	Very low cost	Highly feasible; among framework (FCTC)
Harmful use of alcohol (> 50m DALYs; 4.5% global burden)	Restrict access to retail alcohol * Enforce bans on alcohol advertising * Raise taxes on alcohol * Enforce drink-driving laws (breath-testing) Offer brief advice for hazardous drinking	Combined effect: 5-10 m DALYs averted (10-20% alcohol burden)	Quite cost-effective	Quite low cost	Feasible (primary care)
Unhealthy diet (15-30m DALYs; 1-2% global burden) ^c	Reduce salt intake * Replace trans-fat with polyunsaturated fat * Promote public awareness about diet * + Restrict marketing of food and beverages to children Replace saturated fat with unsaturated fat Manage food taxes and subsidies Offer counselling in primary care Provide health education in workplaces Promote healthy eating in schools	Effect of salt reduction: 5 m DALYs averted. Other interventions: Not yet assessed globally	Very cost-effective Very cost-effective (more studies needed) Quite cost-effective Less cost-effective	Very low cost Higher cost Quite low cost	Highly feasible Feasible (primary care) Highly feasible
Physical inactivity (> 30m DALYs; 2.1% global burden)	Promote physical activity (mass media) * + Promote physical activity (communities) Support active transport strategies Offer counselling in primary care Promote physical activity in workplaces Promote physical activity in schools	Not yet assessed globally	Very cost-effective Not assessed globally Quite cost-effective Less cost-effective	Very low cost Not assessed globally Higher cost	Highly feasible Highly feasible Intersectoral action Feasible (primary care) Highly feasible
Infection	Prevent liver cancer via hepatitis B vaccination *	Not yet assessed globally	Very cost-effective	Very low cost	Feasible (primary care)

* DALYs (or disability-adjusted life years) are widely used as a measure of premature mortality and ill health - see DALY can be thought of as one lost year of healthy life.

^b Main data sources for globally applicable cost-effectiveness estimates are the Disease Control Priorities project (www.DCP2.org) and the WHO-CHOICE project (www.who.int/choice)

^c This estimate is based on the continued burden of low fruit and vegetable intake, high cholesterol, overweight and obesity, high blood glucose, high blood pressure - all diet related - and low physical activity.

+ Considered a best buy if both the two interventions are implemented together.

Source: World Health Organization. (2011b). Global status report on noncommunicable diseases 2010. Geneva: WHO.

3.3 Health systems

In addition to the stewardship role that health systems have for NCDs, there are various specific functions that have to be addressed.

3.3.1 Health care

Taking adequate care of those already living with NCDs is one of the central public health tasks. Research in the OECD countries has identified mortality that is amenable to health care, that is, premature deaths that should not occur in the presence of timely and effective health care.¹⁰⁸ Such improvements would be particularly noticeable with respiratory, circulatory, and cancer mortality.

Beyond providing medical care for patients, health services themselves are best positioned to generate an impact on NCDs through health promotion that targets patients and their families, the surrounding community, and their own health care workers.¹⁰⁹ Medical personnel are subjects of health promotion as well as role models. The application of health-promoting hospital and health services principles should be expanded; service tools for NCD health promotion and disease prevention have been found to be effective, and they should be applied widely within health services.¹¹⁰

As has been already discussed, the roots of health inequities lie in social conditions outside the health system's direct control. Nevertheless, the health sector can significantly advance health equity internally, by moving toward universal coverage of the full range of personal and nonpersonal health services, with social health protection and a warranted portfolio of entitlements. The health sector also needs to ensure that gender- and cultural-sensitive approaches are applied.

Much recent literature places value on primary care services because of their ability to reduce the burden of disease considerably, and at low cost. However, such services offer other potential benefits to society. Through prevention and early treatment, geographically accessible and financially affordable primary care services can reduce the negative economic consequences of ill health for households, decrease absenteeism, enhance children's performance in school, and reduce human suffering.

Health promotion and preventive services are commonly delivered via primary health care (PHC) as an entry point for the health system. Patients in need of more specialized services are referred to secondary or specialty care. The health of those with chronic conditions—as well as of the aging population—is closely linked with the accessibility and quality of the PHC system. Sufficient human, material, and fiscal resources must be allocated to the PHC system for it to provide effective, universal NCD care.¹¹¹

Fragmentation and excessive specialization of health care providers and the narrow focus of many disease control programs discourage a holistic approach with the individuals and the families who deal with NCDs. Further, those characteristics work against a focus on continuity in care, including palliative care and complementary social services for chronically ill and vulnerable populations.¹¹² To address this, PAHO has encouraged the development of “integrated health service delivery networks” (IHSDNs). Such networks can make a reality of many of the essential elements of primary health care, including universal coverage and access; first contact care; comprehensive, integrated, and continuous care; appropriate care; optimal organization and management; and family and community orientation.¹¹³

Providing remuneration and training to home caregivers is another low-cost intervention. It can assure effective health system investment and build a long-term response to chronic disease. In addition, having financial policies that provide exemptions from user fees can encourage all poor people, and especially women, to access health care.

The process of rehabilitation and recovery of health should be fundamental in the continuum of care for chronic diseases. A lack of effective rehabilitative care may lead to permanent disability and the need for long-term care in the home or an institution, with much higher personal, family, and social costs. PAHO promotes the strategy of community-based rehabilitation (CBR) as a way to meet new challenges and changes that are generated by the gap between the needs of people with disabilities and their access to health care.

The rational use of drugs with proven efficacy, safety, and quality has been proven to reduce morbidity and mortality of people with chronic diseases.^{114, 115, 116} The use of a multidrug regimen in patients at high risk in the context of a health system with coverage of 60% of the population could prevent about 17.9 million deaths from cardiovascular disease in a decade. Applying such approaches in the Region of the Americas could prevent millions of deaths over 10 years, and at a reasonable cost.¹¹⁷

It is necessary to have policies and plans that ensure the availability and accessibility of essential medicines and technologies as well as provide comprehensive pharmaceutical services. These policies should include strategies to strengthen rational use, promote the use of generic drugs to ensure better management, and cost-effective measures to contain NCD treatment costs. Also, the adoption and selection of new drugs and technologies must be based on their relative effectiveness, added therapeutic value, clinical safety, and social value.

There are three objectives that are common to all essential drugs programs: equal access, quality and guaranteed safety, and rational use. These objectives position drugs as an essential part of health systems and services. Three key recommendations would help make this comprehensive approach a reality (Table 6).

Table 6 – Key recommendations for a comprehensive approach for drugs for NCDs

1 - Develop national policies that include key components
Promoting the concept of public and private essential drugs
Providing sustainable funds for essential medicines for NCDs in service portfolio
Developing cost-containment strategies
Developing a unique drug supply system
2 - Develop a specific strategy for rational drug use
Having rational drug selection in the service implemented by prescribers ¹¹⁸
Limiting the use of promotion by the pharmaceutical industry ¹¹⁹ and educating professionals with independent, unbiased information
Having pharmacotherapeutic committees, lists of essential drugs, and standard treatment guidelines with a strategy of linking the lists with the treatment guidelines
Developing interventions that support adherence to treatment ¹²⁰
3 - Have pharmaceutical services based on primary health care
Using the new paradigm developed in a PAHO paper on pharmaceutical services ¹²¹
Developing a network of pharmaceutical services for chronic diseases as part of the integrated network of health services
Implementing good dispensing practices
Developing and/or adopting protocols for pharmaceutical care and pharmaceutical care for chronic diseases, as well as tools for the proper management of pharmacy service.

Source: PAHO preparation

3.3.2 Surveillance

To be able to plan, monitor, and assess the effects of NCDs on population health, the countries, the Regional subregions, and Region as a whole need to build the necessary capacity for securing quality and timely information. This will ensure intra- and intercountry comparability over time, sustainability in terms of continuous data collection and analysis, and strong partnerships.

The line of action for NCD surveillance in the Regional Strategy and Plan of Action for chronic diseases emphasizes strengthening the capacity of health information systems at the national, subregional, and Regional level to perform ongoing collection, monitoring, and analysis of data related to NCD morbidity, mortality, risk factors, and related policies and program performance, with special attention to analyzing NCD social determinants.

Therefore, discussion and agreement among countries and leading public health institutions working on NCD surveillance in the Region requires activities aimed at accomplishing the following:

- a) Endorsing NCD surveillance as part of national, subregional, and Regional health surveillance, with minimal, optimal, and appropriate sets of indicators covering mortality, morbidity, risk factors, coverage, quality of care, and social determinants.
- b) Standardizing and validating methodologies and tools for data collection and analysis, with the goal of ensuring intra- and intercountry comparability and the sustainability of collection and analysis, and which will foster the adoption of a complex analytic approach and stronger partnerships.
- c) Having a repository of quality information that can be accessed and analyzed by interested parties.
- d) Using information for policy development, orientation, social marketing, and quality assurance.

Achieving those things will make it easier for countries, subregions, and the Region as a whole to follow up on progress made in meeting the objectives of the Millennium Development Goals; global and Regional strategies for the prevention and control of NCDs; the WHO Framework Convention on Tobacco Control; the WHO Global Strategy on Diet, Physical Activity and Health; the Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases; and other related international strategies and resolutions.

3.3.3 Regulations

In order to improve regulatory certainty and level the field for industry and society, a transparent, professional, efficient regulatory authority that is well financed and legally supported, and with a strong social and intersectoral basis, is fundamental.

In order to regulate, there are two basic policy options: public regulation and self-regulation by private companies.

In areas such as tobacco control, taking into account the deceptive nature of the tobacco industry, voluntary regulation had proven to be ineffective. Therefore, the WHO FCTC calls on responsible parties to enact legislations to curb the tobacco epidemic. But with other risks over the last six years, there have been a profusion of policy initiatives by governments, as well as from various food companies. Today, more than a dozen countries are resorting to statutory measures. The United Kingdom is notable for its strong stance restricting TV advertising to children under 16 years old. In the Americas, Brazil enacted norms in 2010 requiring warnings in all advertisements. Other countries have opted for “approved” self-regulation, in which public agencies have been actively involved in the planning of the policy. The impact of the United Kingdom measures has been substantial; similar ones in Mexico have shown a reduction from a rate in 2008 of 14.2 advertisements per hour to 8.3 in 2010.¹²²

In other areas, interventions to reduce exposure to environmental and occupational carcinogens and probable carcinogens often lead to reductions in other health risks in the working and living environment. Given all the factors described above, strengthening health regulatory authority is paramount.

3.4 Influencing the role of multilateral and international agencies and organizations

The challenge of NCDs calls for a profound review of the international agencies capable of modifying the global conditions that influence the NCD determinants. This review should encompass:

- the UN System, including its specialized agencies
- the role of international assistance agencies from different countries
- the major donor institutions

According to the WHO Constitution, the WHO’s objective is “the attainment by all peoples of the highest possible level of health.” In order to achieve that objective, among the functions of the WHO shall be “to promote, in co-operation with other specialized agencies where necessary, the prevention of accidental injuries” and “to promote, in co-operation with other specialized agencies where necessary, the

improvement of nutrition, housing, sanitation, recreation, economic or working conditions and other aspects of environmental hygiene.”

Health determinants are modified by policies and interventions beyond health. And, at the global level, the policies, guidance, and cooperation by and among multilateral agencies (such as WHO, UNDP, UNICEF, UNESCO, ILO, UN-Habitat, FAO, ECLAC, WTO, the multilateral banking system, and UNEP) are profoundly influencing the risks and protective factors for NCDs. However, there have to be major efforts among those institutions to link their actions. A good example has been the Intergovernmental panel on climate change (which includes UNEP and WMO), or the well-established Codex Alimentarius (which includes FAO, WHO, and other institutions).

Still, the capacity to build these cooperative mechanisms has to be greatly expanded, including with a particular focus on NCDs. One movement in that direction occurred at the 2011 meeting of the World Economic Forum, which brought together key actors from various sectors and institutions to discuss the issue of NCDs.

International assistance agencies and major donor institutions act mainly on a bilateral basis. However, the corporate policies they define for such assistance have consequences in the interventions financed in developing nations, with still unclear mechanisms to reorient them towards addressing NCDs.

A prime opportunity to influence these agencies’ actions on NCDs will occur with four major global conferences being held over the next two years: (i) the United Nations High-level Meeting (UN-HLM) on noncommunicable disease prevention and control, in New York City, in September 2011, (ii) the Global Conference on Social Determinants of Health, in Rio de Janeiro, in October 2011, (iii) the UN Conference on Sustainable Development (“Earth Summit 2012”) in Rio de Janeiro, in June, 2012, and (iv) the 8th Global Conference on Health Promotion, in Helsinki, in June 2013, addressing the “health in all policies” approach. With all these events, the challenge will be to make their agendas as effective as possible.

4. Way Forward to Address the NCD Challenge

4.1 Introduction

This section summarizes the outcomes from the various consultations held with Ministries of Health during the preparations for the UN high level meeting on NCDs, as well as the recommendations contained in NCD related Regional Strategies and Plans of Action endorsed by the PAHO Directing Council. The section concludes with a set of actions that PAHO can contribute as follow-up to the outcome of the UN-HLM on NCDs.

4.2 The consultation process

Table 7 summarizes the commitments included in the different declarations from the consultations held in the Region of the Americas, as well as the Global Ministerial Meeting on NCDs in Moscow, where country representatives from the Americas also played an essential role.

Table 7 - SUMMARY OF NCDs DECLARATIONS WITH REGIONAL PARTICIPATION

DECLARATION STATEMENT	PORT OF SPAIN DECLARATION	MINISTERIAL CONSULTATION OF MEXICO	LATINAMERICA N COALITION CIVIL SOCIETY, BUENOS AIRES	AMERCON MINISTERIAL MEETING	ASUNA CONSULTATION ON OBESITY
	2007	Feb-11	Mar-11	May-11	Jun-11
NATIONAL POLICIES NCDs CENTRAL TO DEVELOPMENT					
Recognize NCDs in the Development Agenda		Green		Red	
Heads of State and Government to attend the UH HLM in NYC		Green	Yellow	Red	Dark Blue
Participation and policy of other sectors (education, agriculture, trade, media, food industry, finance, public works, environment, park & recreation)	Blue	Green	Yellow	Red	Dark Blue
Establish multi sector Commissions to manage NCDs		Green		Red	
Implement fiscal policies to inculcate healthy consumption		Green		Red	
Propose targets to measure progress		Green		Red	
Information sharing and communication of policies and interventions	Blue	Green	Yellow	Red	Dark Blue
Application of the Framework Convention for Tobacco Control	Blue	Green	Yellow	Red	
Direct tobacco tax revenues to tackle NCDs	Blue	Green		Red	
WHOLE OF SOCIETY INCLUDING APPROACHES					
Promote policies, enabling environments and settings (urban, work, school) and supportive community initiatives		Green			Dark Blue
Incorporate civil society pre, during and post HLM			Yellow	Red	
Eliminate corporation's interference that produce tobacco alcohol and unhealthy foods			Yellow	Red	
Engage private sector in the solution of NCDs problems				Red	
FURTHER PRINCIPLES / APPROACHES INCLUDED					
Act on the Social Determinants of Health and Behavioral Risk Factors		Green			Dark Blue
Life Course approach		Green	Yellow	Red	Dark Blue
Individual, family and community approach		Green	Yellow	Red	Dark Blue
Multi level (national, subnational and local)	Blue	Green		Red	
Gender and intercultural consideration of policies and programs	Blue	Green		Red	
Equitable access to healthy and fresh foods		Green			
Future inclusion of NCDs in MDGs		Green			
MINISTRY OF HEALTH SPECIFIC ACTIONS					
Strengthen Public Health systems to scale up evidence in health promotion interventions				Red	
Strengthen health system stewardship (to coordinate, monitor, evaluate)				Red	
Health Information Systems considering risks, determinants and surveillance of NCDs	Blue	Green	Yellow	Red	Dark Blue
Develop and strengthen standards and regulatory actions (on food, transport, mobility, urban design, housing, school, work place)		Green	Yellow	Red	Dark Blue
Evaluation of NCDs policies		Green	Yellow	Red	
Direct prevention and control interventions according to need - Equity		Green	Yellow	Red	
Access to comprehensive cost-effective prevention / treatment & care based in an effective Primary Health Care		Green	Yellow	Red	
Access to High Quality Medicines in low- middle income countries		Green	Yellow	Red	
Screening and early quality management of NCDs	Blue			Red	
Strengthen services for emergency care			Yellow		
Transform training of health professionals to emphasize NCDs	Blue		Yellow		
Research (on NCDs, determinants and economic impact)	Blue				Dark Blue
INTERVENTIONS ADDRESSING CRITICAL ISSUES					
Integrate amenable environments for physical activity and accessible foods in urban planning		Green		Red	
Implement recommendations on food & non alcoholic beverages marketing to children		Green	Yellow	Red	
Informational food labeling and nutritional content	Blue		Yellow		
Physical activity in schools	Blue		Yellow		Dark Blue
Policies at increasing physical activity	Blue		Yellow		
Incentives for public education programs			Yellow		
Inform society through large mass media on NCDs and their determinants			Yellow		
INTERNATIONAL ACTIONS					
Call upon UN Agencies, development banks to coordinate actions				Red	
Strengthen regional health institutions around NCDs	Blue			Red	
Fair trade policies favorable to NCDs consumption	Blue			Red	
Mobilize the necessary financial, human and technical resources				Red	
Support WHO monitoring of NCDs				Red	

The collective wisdom represented by the consultation process provides a wide scope of demands and commitments that should be considered in designing a strategy. Notably, 21 of the actions lie outside the health sector, which itself needs to take direct action on 12 of them.

4.3. Considerations by the PAHO Secretariat

Building on the information gained from the consultation process and the background provided in this document, the PAHO Secretariat considers the following elements as important for national policies for NCD prevention and control.

4.3.1 Principles

There is an overarching principle that ***noncommunicable diseases are central to the development agenda***. Taken from the consultative process, seven principles or concepts provide general guidance for action on NCDs:

- action on the social determinants of health and behavioral risk factors;
- a life course approach, considering the earliest stages of life as the most effective period for action, which also includes an individual, family, and community perspectives;
- multi-level (global, national, subnational, and local) and multi-sectoral interventions;
- strengthening primary care based health systems;
- gender and cultural considerations in the design of policies and programs;
- equitable access to health determinants and health care; and
- inclusion of NCDs in the future Millennium Development Goals.

4.3.2 Suggestions for setting goals and targets

To develop strategies and monitor progress, goals and targets need to be established at the global, regional, national, and sub-national levels. They should be informed by evidence on effective interventions, their synchronous interaction, and their political feasibility. They should be established through a consultative process that engages all the pertinent stakeholders.

A time frame for the short term (2015), medium term (2025), and long term goals (2030) should be established, representing almost two decades of action in tackling the NCD epidemic.

A common goal is to improve well-being, productivity, and development in the Region by reducing premature mortality, morbidity, risk factors, and avoidable costs from NCDs. A useful performance metric for the entire society could be years of “healthy life expectancy” (or years of life with quality), an indicator routinely utilized in the WHO Global Health Observatory database.

Specific goals should be developed to reduce the incidence and mortality of NCDs, primarily cardiovascular diseases, cancer, diabetes and chronic respiratory diseases, as well as to improve the quality of life of persons living with NCDs.

An effective approach to target setting is to establish them throughout the life course. For example:

- reduce obesity rates and exposure to known risk factors among infants and children;
- stop the increase in obesity rates among adolescents and reduce their exposure to alcohol and tobacco risks and increase awareness of health promoting behaviors; and
- reduce the trend of climbing obesity rates and exposure to risks among adults, and increase access to preventive health services, early detection and treatment of NCDs.

4.3.3 Recommended lines of action

The Regional Strategy and Plan of Action for Chronic Disease Prevention and Control provides an overall framework to reduce the burden of NCDs and related risk factors. Actions are proposed along four main lines of action: public policy and advocacy; surveillance; health promotion and disease prevention; and integrated management of NCDs. In addition, the following policy and health system actions have been recommended in related Regional strategies and plans of action.

1. *State-wide Role in Fostering Coherent Policies and Actions on NCDs:*
 - To introduce a common societal goal on NCDs, an across-government integrated response with an equity lens for its implementation, and the “healthy life expectancy” indicator as an overall metric in the National Development Plans of the countries of the Region
 - To institutionalize a mechanism to identify the added value to other sectors of State-wide policies and programs that have a health impact and their overall impact on development, as well as to assess the health impact of the of State-wide interventions (health impact assessment)
 - To establish an institutionalized intersectoral action mechanism (national commission) to assess the impact on NCDs and on health that results from policies, programs, budgets that insert NCD prevention, health, and equity in all State-wide policies concerned with health and social determinants of NCDs
 - To extend social protection to include health promotion, prevention, and care of NCDs, especially for vulnerable populations
 - To improve the quality and coverage of preventive health services, including screening and early detection for NCDs
 - To expand access to essential medicines which improve treatment and outcomes for persons diagnosed with an NCD
 - To identify fiscal, economic, and marketing control mechanisms for the specific risks from excessive tobacco, alcohol, salt, and sugar consumption
 - To establish a specific government-wide mechanism for monitoring and addressing the equity advances in tackling NCDs
2. *Population Settings:*
 - To establish population based screening programs, especially for cancer, cardiovascular disease and diabetes which contribute to earlier detection and improved care for those with NCDs
 - To establish a platform for integrating public health criteria for health promotion and NCD reduction in urban and housing planning, design, and development
 - To intersectorally foster a basic package of organizational, structural, and well-being actions to reduce NCDs by preventing risk exposures and promoting school health interventions
 - To intersectorally foster a basic package of organizational, structural, and well-being actions to reduce NCDs by preventing risk exposures and promoting workplace health interventions
 - To commit local municipal authorities to developing local participatory programs and ordinances for action on the determinants of NCDs within their communities
3. *Health Stewardship:*
 - To develop national health plans on intersectoral action as well as health program and service interventions on NCD determinants, prevention, and control
 - To strengthen primary based health care, incorporating a chronic care model for service delivery and to improve quality of care for persons with NCDs
 - To assure the normative basis and the organizational development for a renewed role for ministries of health in intersectoral action on the determinants of NCDs, including information and assessment, dialogue, and capacity-building
 - To build MoH capacity to monitor (health surveillance) changes in health, its equity distribution, disease incidence and mortality, health services, and environmental and social determinants in reaching the NCD goals and targets
 - To establish specific mechanisms to communicate, better inform, and engage the different public, private, and societal sectors in a common dialogue and an NCD governance process
 - To establish a basic package of nonregulatory mechanisms to promote economic and social actions on healthy behaviors and consumption, including in the area of marketing products to children
 - To fulfill the actions within WHO Framework Convention on Tobacco Control in the countries of the Region

- To have the countries of the Region provide regulatory certitude—with transparent, well-financed, legally supported professional regulatory authority—concerning NCD health determinants and support for technologies and pharmaceuticals to deal with NCDs
4. *Multilateral Coalition to Tackle NCDs:*
- To set up a Regional interagency coalition for the reduction of NCDs
 - To establish a shared interagency Regional report on NCDs and then a biannual national reporting and monitoring mechanism
 - To design and implement a strategy to triple the 2010 international funding for NCD-related interventions in the region, and attract renewed international aid on NCDs to the Region

4.3.4. Suggested short-term actions

- Government and International policies:
 - National NCD prevention and control plans and programs, which incorporate evidence based guidelines for NCDs: screening, early diagnosis, treatment and supportive care
 - Regional forum for action on chronic disease functioning, incorporating a mechanism for public, private, and civil society inter-sectoral policies
 - Establish policies to increase access to health care, technologies and essential medicines for NCD prevention and control
 - Support the establishment of a Regional interagency coalition
 - Utilize the NCD programs which evidence based guidelines for specific NCDs
 - Application of the WHO recommendations on marketing of food to children, and WHO Framework Convention on Tobacco Control ratified in 90% of countries, including implementation of smoke-free public and private workplaces
- Settings approach
 - Healthy Schools program in 50% of the countries, including with implementation of healthy meals programs
 - Healthy workplace programs in major companies and a public health initiative for medium-sized and small enterprises
 - National Healthy Municipalities, Cities and Communities networks, with a program on NCD prevention and control
 - Health service settings: quality of care campaigns and extended social protection that provides the essential care for patients with NCDs
- Health System actions:
 - Increase the capacity of the health system, and re-orient health care to provide long term chronic illness care for persons affected by NCDs
 - Improve the competency of health providers for screening, early diagnosis, treatment and continuous quality improvement of care
 - Improve access to medical technologies and medicines for improved care of persons with NCDs
 - Regional public education and communications campaigns on NCD prevention and disease management, as well as healthy living
 - Agreement on implementing health surveillance, with inclusion of determinants of health, risk factors and monitoring disease incidence and mortality
 - Accelerated economic studies on the most cost-effective and most equitable interventions
 - Accelerated studies on financing and organization of health services for chronic care

4.4 Influencing the outcome document of the United Nations high level meeting on NCDs and its follow-up

This reference document seeks to help the PAHO Member States to address the results of the UN-HLM on NCDs, before, during, and after the meeting in New York City in September 2011.

The results of a UN high-level meeting are included in a negotiated document (an “outcome document”), which the parties review over several months. The Outcome Document has been built using as input the Secretary General’s Report on NCDs,¹²³ contributions from WHO and the regional consultations, and the Secretary General consultations to countries and to civil society¹²⁴ organized by the UN. The *draft outcome document of the High-level Meeting on the prevention and control of non-communicable diseases* has been provided by the UN-SG facilitators to the countries’ permanent representations at the UN at the end of June of this year and will be under consideration from the beginning of July up to the end of August 2011; this is the key period of time that heads of government and foreign affairs ministries can influence. Some details and key decisions could be finalized during the UN-HLM on NCDs itself. During the UN-HLM NCDs meeting, side events will take place for delegates and other participants. Actions will have to follow after the September meeting, related to the implications of the NCDs outcome document to the current thinking of the PAHO Regional plan on chronic diseases, as well as the member country’s health and other sectors’ actions on NCDs.

Key actions before the UN-HLM:

- With support from the PAHO country office, the MoH of each Member State should seek the attention of the Head of State/Government, and make the case for a “whole of government” interest when confronting NCDs and setting a societal goal on NCDs. In each nation, the internal process should incorporate an intersectoral dialogue, making sure that tackling NCDs is part of the country’s development plan.
- Each country should conduct an intersectoral dialogue, if possible at the cabinet level, involving the social, economic, environmental, and development sectors, to have a basic assessment of the country’s capacity to generate a coordinated response to NCDs and influence the Outcome Document of the UN-HLM.
- The result of the national intersectoral dialogue should be conveyed to the Ministry of Foreign Affairs to make sure it is clearly expressed in the Outcome Document text at the earliest possible point before the end of August 2011.
- In consequence, the composition of a country’s delegation to the UN-HLM on NCDs should include the Head of State, and also have representation from relevant sectors in addition to the health sector. This will help assure the appropriate final adjustments to the outcome document text, as well as to other sectors’ commitments to the developmental agenda that results from the agreements that are reached. Delegates will also have the opportunity to be involved in the various side events happening during the HLM in New York City.
- An awareness-raising process should take place in each country during the week of the HLM. PAHO will be initiating an annual Wellness Week event to build awareness among decisionmakers, the private sector, and the public on settings and policies favorable to the development of healthy personal behaviors to tackle NCDs.

Key actions after the NCD HLM:

- Have diffusion of the outcome document to the relevant sectors and levels of government and to their key actors within each country.
- Advocate for implementing intersectoral action for a “health in all policies” approach, with programmatically implementation with strong leadership from the health sector. Countries should use the outcome document as a reference, but can go well beyond it, under the above mentioned recommendations.
- Continue the building of the integration of the modification of the health determinants with discussion, methodological building, and agreements through additional international dialogue at such conferences as the Global Conference on Social Determinants of Health in 2011, the UN Conference on Sustainable Development in 2012, and the Global Conference on Health Promotion in 2013.
- Develop the economic case to bring NCDs and Development into the agenda of the G20 meeting in 2012 in Mexico.

- At the PAHO Directing Council meetings in 2012 and 2013, continue to build on the experience and knowledge that have been accumulated through the current PAHO review process concerning the Regional approach to NCDs.

4.5 The contribution of PAHO

There are various public health programs and health system resolutions from Member States that address NCDs in some way. Analyzing some 48 mandates to the PAHO Secretariat through Directing Council resolutions as well as the World Health Assembly commitments related to NCDs and their determinants made it possible to identify complementarities and opportunities for synergies, as well as to ensure internal coherence. PAHO as a Secretariat is working on activities in the following areas.

Supporting the Member States to build the needed approach, by

- Building policies and programs with emphasis on NCDs and their determinants, promoting intersectoral action and instruments to facilitate those policies and programs, supporting the establishment of a communications strategy for for the general public and for decisionmakers , and strengthening health systems, including their care and regulatory capacities.
- Advocating for increased investment in and development of national NCD prevention and control plans that are relevant to the country situations and that emphasize prevention.
- Promoting intersectoral policy changes with leaders in and out of government before, during, and after the UN-HLM. A “health in all policies” approach will be emphasized and integrated with other relevant agendas, such as social protection and social determinants, maternal and child health and nutrition, urban planning and transport, and climate change.
- Providing technical assistance to member States to reduce the incidence and mortality from cardiovascular diseases, cancer, and diabetes and improve the quality of care for persons living with NCDs.
- Strengthening efforts of PAHO Member States to review their legislation and norms for NCDs, tobacco control, and obesity prevention, including implementation of the WHO guidelines on marketing food and nonalcoholic beverages to children and striving to harmonize legislation between countries in key areas, based on successful practices in legislation and regulation.
- Strengthening the implementation of the WHO Framework Convention on Tobacco Control and the Global Strategy on Diet, Physical Activity and Health (DPAS), with special attention to childhood obesity; seeking to use innovative approaches and new social media, supported by a major scale-up in traditional media and communications, to promote healthy diets and physical activity; and expanding the healthy settings approaches through urban health and healthy municipalities, healthy schools, workplace well-being, and healthy housing.

Providing technical cooperation and capacity building, by

- Making a concerted effort in training and building competencies and capacity for comprehensive, integrated prevention and control of NCDs, including program management and multi-stakeholder engagement mechanisms; improving health services for cardiovascular diseases, cancer, and diabetes; surveillance; policy analysis and development; tobacco control; salt reduction; healthy diets and physical activity; improved disease management, with a strengthened leadership and stewardship role of ministries of health; expanding the CARMEN School; and leveraging the Virtual Public Health Campus.
- Supporting the scaling up of access to essential medicines and technologies and quality health services for screening, early detection, and control of chronic disease; providing guidelines and norms for the prevention and control of NCDs; strategies for financing and organization of health services; and leveraging the Strategic Fund for Essential Public Health Supplies in order to stimulate access to essential medicines.
- Supporting the development of models of health care through the development of integrated health service delivery networks based on a strong primary health care foundation; seeking to identify and

scale up innovative care approaches, such as the Chronic Care Model, that increase quality of care for persons with chronic conditions.

- Furthering the improvement of the quality and timeliness of surveillance and health information designed to guide policy, planning, and evaluation, especially health determinants and risk factor information and quality and coverage of care; pursuing gender- and poverty-based analyses and novel approaches and technologies such as telephone/cell phone surveys to increase participation, and including monitoring of policies via an expanded CARMEN Policy Observatory and national capacity surveys every three years (2013, 2016, and 2019).
- Strengthening technical cooperation between countries to share/disseminate information on successful practices, including via the CARMEN Network and electronic platforms.
- Coordinating CARMEN and other networks and strengthening/supporting national and subregional intersectoral efforts.
- Leading/stimulating/working with partners on research and analysis of financing options and how to organize health services, especially primary care; researching such economic dimensions of NCDs as cost impacts and cost-effectiveness of different policy options/packages.

Advocating, by

- Leading innovative, multi-stakeholder cooperation (such as the Forum for Action on Chronic Disease), including governments, business, civil society, faith-based organizations, academia, media, and international organizations; emphasizing joint action and scaling up successful practices and such “best buys” as public awareness and mass media, including use of new social media to promote physical activity and healthy diet; healthy workplaces; salt reduction; obesity prevention; adherence to treatment and innovations in care; and cervical cancer prevention.

Taking multilateral action, by

- Developing interagency coalitions and intersectoral actions at the Regional level.
- Taking NCDs to other sectors and entities such as finance ministries (with ECLAC/IADB), health and agriculture (with the RIMSA Regional forum for collaboration and coordination on issues related to veterinary public health), and education; engaging the wider United Nations system in the Region of the Americas on NCD prevention and control (UNDP, FAO, ILO, UNICEF, etc.).
- Considering the process for the inclusion of NCDs in the MDGs.

The Regional Strategy and Plan of Action on an Integrated Approach to the Prevention and Control of Chronic Diseases, including Diet and Physical Activity has provided the framework for PAHO action, since it was approved by the Member States in 2006. PAHO proposes to update this framework following the UN HLM on NCDs, to reflect the outcomes of the meeting as well as the advances in the Region on NCD prevention and control. The revised Strategy will include a set of specific goals and targets which PAHO will recommend for Member States. It will be developed through an extensive consultation process with Member States and to help operationalize the commitments made during the UN HLM on NCDs. This revised Strategy will set the course for tackling NCDs in the Region into the next decade.

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