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**DIABETES INITIATIVE FOR THE
AMERICAS (DIA): Action Plan for
Latin America and the Caribbean
2001-2006**



DIVISION OF DISEASE PREVENTION AND CONTROL
NON-COMMUNICABLE DISEASES PROGRAM

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

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Summary

Diabetes is one of the leading health problems in Latin America and the Caribbean, where an estimated 19 million people suffer from this disease. According to projections, unless major preventive actions are taken this number could rise to 40 million by 2025. In view of the fact that type 2 diabetes is most frequent in obese people and those of low socioeconomic status, the disease represents a serious social burden whose effects are seen both within the health care systems and in the quality of life of diabetic people and their families.

In order to deal with the problem of diabetes from a public health perspective, the proposal calls for people with diabetes, organized interest groups, and multidisciplinary care teams from both the public and private sector to be involved in this plan. Such involvement will strengthen the work with health providers, ensuring the early detection and appropriate management of diabetes and its complications.

The purpose of DIA is to improve the capacity of the health services and systems to organize surveillance and control of diabetes in the countries of the Americas. DIA consists of three principal lines of action which relate to the following three mandates:

- improve the availability and use of epidemiological information;
- promote the rational use of available services through the implementation or evaluation of programs for diabetes care; and
- promote the design and development of educational and self-management programs that take into account the sociocultural characteristics of each region or country.

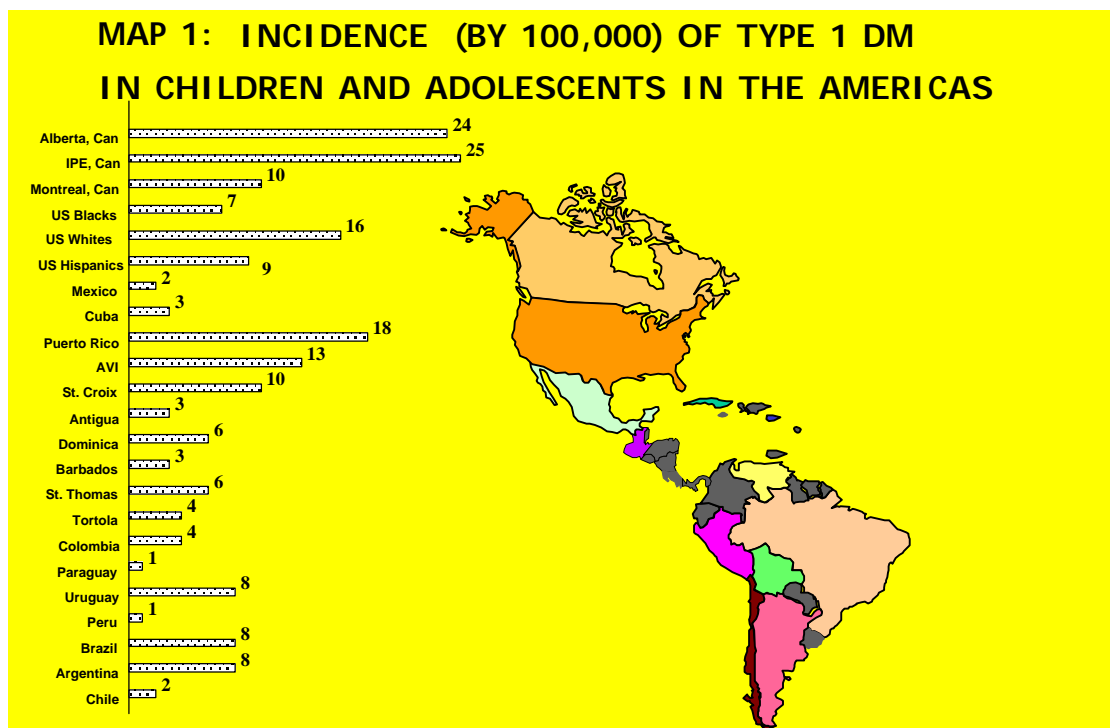
The Pan American Health Organization, together with the International Diabetes Federation (IDF) and the pharmaceutical industry, in 1996 issued the Declaration of the Americas on Diabetes (DOTA), an action plan that in the last few years has successfully coordinated several activities in the Region. This action plan was intended to combine efforts in the struggle against diabetes, consolidating the experience gained in recent years through direct collaboration with the countries of the area and through the alliance with DOTA and with other organizations and institutions of the Americas.

Recent activities organized by PAHO include a workshop on Chronic Complications and National Strategies for Diabetes Control in Latin America and the Caribbean (Washington, D.C., December 1999), the First Workshop on Strategic Diabetes Planning (Santa Cruz de la Sierra, Bolivia, October 1999), and the First Workshop on Epidemiological Surveillance of Diabetes (San Salvador, El Salvador, March 2000). The information gleaned through these activities has contributed to the design and ongoing review of the objectives of DIA.

Development problems to be addressed by the action plan

Prevalence and incidence of diabetes

Diabetes is one of the principal health problems in the Americas. Across the Region, an estimated 35 million people suffer from the disease, with 19 million of them (54%) in Latin America and the Caribbean (King et al., 1998). More troubling still, projections indicate that by 2025 the number of diabetetic people in the Americas will rise to 64 million, with 40 million (62%) of them in Latin America and the Caribbean. Diabetes increases the risk of premature death, mainly through cardiovascular complications. Diabetic people are also at higher than normal risk of suffering visual disorders, renal disease, and problems that require leg amputation.



Sources: WHO (2000), Tan et al. (1981), Fraser et al. (1998), Blanchard et al. (1997), Lisboa et al. (1998), Tull et al. (1997), Raggobirsingh et al. (1995).

Diabetes in children

The incidence of type 1 diabetes has been evaluated over the last 20 years through Project DiaMond (WHO 2000), which promotes the establishment of registries of diabetic children throughout the world. Twenty-four such registries are functioning in the Americas. The incidence of type 1 diabetes is usually higher among the Caucasian populations of the north (Map 1), with the highest rate found on Prince Edward Island in Canada (24 per 100,000) in 1990–93 (Tan et al., 1981). Another more recent study found an incidence of 20 per 100,000 in Manitoba, Canada (Blanchard et al., 1997). Among the countries of Latin America and the Caribbean, the highest rate has been found in Puerto Rico (18 per 100,000) (Fraser et al., 1998) and the lowest in Venezuela (0.1 per 100,000 in 1992) (WHO 2000). Other authors have published similar findings

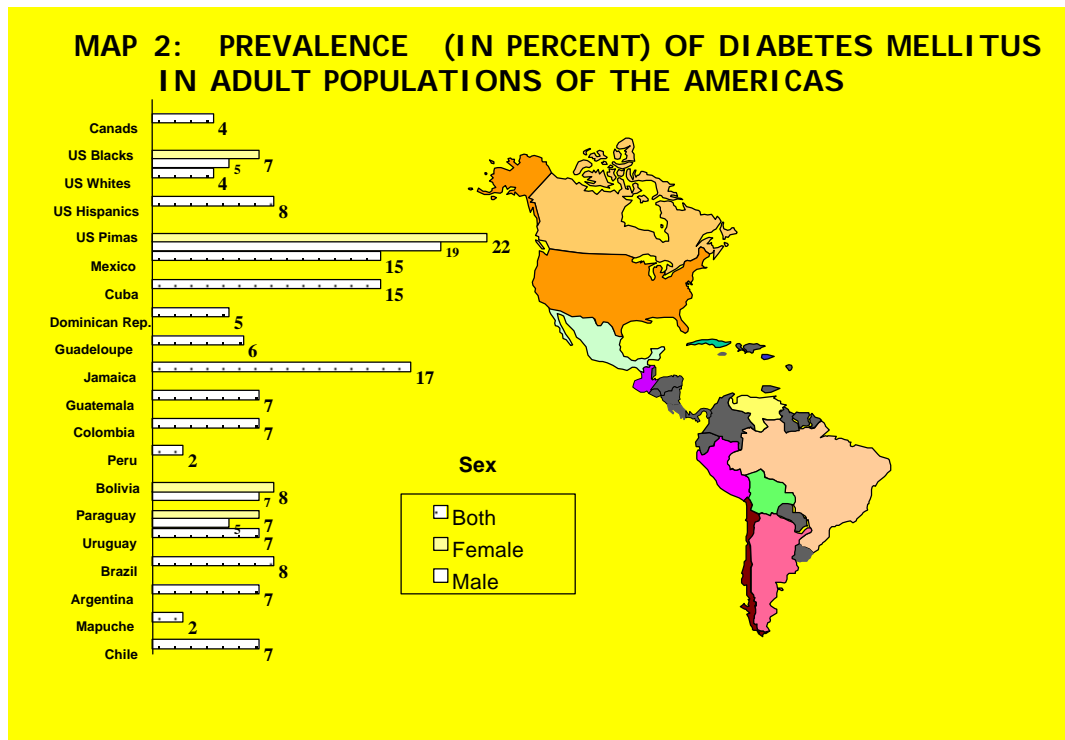
on the incidence of type 1 diabetes in children, for example in Brazil (Lisboa et al., 1997), Chile (Carrasco et al., 1996), and some countries of the Caribbean (Tulle et al., 1997).

Reports have been received showing increases in the number of cases of type 2 diabetes in children in some countries, including Argentina and Venezuela, along with data on certain ethnic groups in the United States (Dabelea et al., 1998; Fagot-Campagna et al., 1999; Fagot-Campagna et al., 2000; Neufeld et al., 1998). For example, it has been reported that among the Pima Indians of Arizona the prevalence of type 2 diabetes in adolescents doubled between the 1970s and the 1990s.

Diabetes in adults

Since most of the countries of Latin America and the Caribbean do not carry out epidemiological surveillance of diabetes, there is not a great deal of information on the prevalence of this disease. Diabetes surveys have been done in several countries, but they have not been part of a policy of regional epidemiological surveillance. As a result, these surveys have been sporadic and they differ in methodological aspects such as selection of the population, sampling, and diagnostic criteria used, all of which hinders efforts to compare the studies.

The highest prevalence of type 2 diabetes has been reported among the Pima Indians of Arizona in the United States (Map 2) (Knowler et al., 1978). In Latin America and the Caribbean, the highest rate is in Jamaica with 17.9% (Raggobirsingh et al., 1995), followed by Cuba with 14.8% (Díaz-Díaz et al., 1999), while the lowest was registered in 1998 among the Aymara Indians who live in a rural area of Chile (1.6%) (Larenas et al., 1985). In the majority of the countries the prevalence of diabetes is higher in women than in men.



Sources: Aschner et al. (1992), Barceló et al. (unpublished), Carrasco et al. (1999a), Carrasco et al. (1999b), De Sereday et al. (1979), Díaz-Díaz et al. (1999), Escaño et al. (1998), Escobedo de la Peña et al. (1998), Guzman et al. (1999), Harris (1990), Hernández et al. (1984), Jiménez et al. (1998), Knowler et al. (1978), Lerman et al. (1998), Malerbi et al. (1992), Miller et al. (1996), Mouter et al. (1990), Odubesan et al. (1988), Statistics Canada (1994), Stern et al. (1992), West et al. (1966), Zubiarte et al. (1999).

A rising trend has been observed in the prevalence of diabetes in certain countries. Some studies indicate that this process is occurring in Latin America and the Caribbean. In a population of Havana, Cuba, for example, two diabetes surveys

conducted 25 years apart found that the prevalence of diabetes in people age 65 and older had increased from 16.6% to 48.0% (Díaz-Díaz, 1998).

Table 1. Diabetes in Bolivia, 1999. Demographic characteristics by category of glucose intolerance (percentages and 95% confidence intervals).

Variable	Total	Known diabetes (%)	New cases of diabetes (%)	Altered glucose tolerance (%)
Sex				
Males	1,036	5.1 (3.7-6.4)	1.8 (1.0-2.5)	6.6 (5.0-8.1)
Females	1,497	5.3 (4.1-6.5)	2.3 (1.5-3.1)	9.1 (7.5-10.6)
Age group				
25-29	460	0.2 (-0.2-0.7)	0.4 (-0.2-1.2)	3.1 (1.5-4.7)
30-34	339	1.3 (-0.3-3.0)	0.5 (-0.2-1.1)	4.5 (2.3-6.6)
35-39	310	2.4 (0.5-4.3)	2.1 (0.4-3.8)	7.1 (4.0-10.1)
40-44	286	2.5 (0.7-4.3)	3.0 (1.0-5.0)	5.2 (2.6-7.7)
45-49	298	8.6 (5.3-11.9)	2.0 (0.4-3.6)	10.1 (6.7-13.5)
50-54	271	10.3 (6.4-13.2)	0.8 (-0.2-1.8)	10.2 (6.1-14.3)
55-59	204	10.3 (6.0-14.6)	3.2 (0.8-5.7)	8.5 (4.8-12.3)
60-64	126	16.0 (8.5-23.6)	3.7 (-0.3-7.7)	11.9 (5.5-18.3)
65 and above	239	11.8 (7.5-16.1)	6.1 (3.1-9.0)	20.5 (15.0-26.1)
Language				
Spanish	1,496	5.8 (4.6-7.1)	2.7 (1.8-3.6)	9.0 (7.5-10.5)
Aymara	776	4.0 (2.5-5.4)	0.8 (0.3-1.4)	5.6 (3.9-7.3)
Quechua	266	5.7 (2.9-8.5)	2.7 (0.7-4.7)	8.1 (4.6-11.7)
Other	22	7.1 (-2.87-17.0)	*	18.6 (-1.3-38.6)
Education				
None	170	9.5 (4.5-14.5)	3.8 (0.8-6.9)	12.8 (7.2-18.3)
Primary	687	6.8 (4.7-8.9)	2.1 (1.0-3.2)	9.9 (7.4-12.4)
Lower secondary	330	4.0 (2.0-6.1)	3.4 (1.3-5.5)	11.5 (8.0-15.1)
Secondary	672	5.2 (3.5-6.8)	1.5 (0.7-2.4)	6.5 (4.6-8.3)
Technical	227	4.3 (1.6-7.0)	*	4.2 (1.5-7.0)
University	435	2.7 (1.0-4.4)	1.7 (0.5-2.9)	4.2 (2.2-6.2)
Total	2,533	5.2(4.3-6.0)	2.0(1.5-2.6)	7.8(6.7-8.9)

In 1998 the Bolivian Ministry of Health with the support of PAHO/WHO conducted a survey on risk factors for noncommunicable diseases, diabetes, obesity, and hypertension. The results showed a diabetes prevalence of 7.2% (5.2% known diabetes, 2.0% new cases) (Table 1). Prevalence of diabetes was similar in men and in women. Prevalence of altered glucose tolerance (AGT) was 7.8%, and was higher in women (9.1%) than in men (6.6%). Both the prevalence of diabetes and that of AGT increased with age, and they were lower among respondents who said they spoke Aymara than among speakers of Spanish or Quechua. Prevalence rates in the three categories of glucose intolerance (known diabetes, new cases, and AGT) were higher among people with lower levels of education. These results suggest that the most disadvantaged

people in Bolivia, one of the poorest countries in the Americas, are those most affected by the diabetes burden (Barceló et al., unpublished).

Table 2. Mortality rate* for diabetes mellitus (X 100.000 inhabitants) by sex in selected countries

Country	Year	Male	Female	Both
Argentina	1993	20,1	20,3	20,2
Chile	1994	12,3	13,4	12,9
Colombia	1994	9,3	13,4	11,4
Costa Rica	1994	6,6	8,9	7,8
Cuba	1995	16,3	29,7	23,0
Mexico	1995	32,5	40,6	36,6
Trinidad and Tobago	1994	82,8	95,2	89,0
Venezuela	1994	16,4	19,3	17,9

*Elaborated with WHO data (1998)

Mortality associated with diabetes

Diabetes is considered the underlying cause of some 45,000 deaths every year in Latin America and the Caribbean. Because of specific problems of underreporting, it is believed that diabetes may be causing much higher mortality than what is reported in the vital statistics. It is possible that the total number of diabetes-related deaths in Latin America and the Caribbean may be as high as 300,000 per year.

Table 2 shows mortality from diabetes mellitus in selected countries of Latin America and the Caribbean. Trinidad and Tobago presented the highest rate (82.8 per 100,000 population in men, 95.2 per 100,000 in women, and 89.0 per 100,000 in both sexes). The lowest rate was observed in Costa Rica (6.6 per 100,000 population in men, 8.9 per 100,000 in women, and 7.9 per 100,000 in both sexes). In Argentina the rates for men and women were similar, while in the rest of the countries the rates for women exceed those for men. The variations in mortality from diabetes in different countries are difficult to explain. It has been shown that the vital statistics do not reflect the true magnitude of mortality associated with diabetes (Fuller et al., 1983; Fuller et al., 1993; Whitthall et al., 1990; Jouglu et al., 1992; Andersen et al., 1993; CDC, 1991). In the countries where studies have been conducted, it has been found that diabetes is omitted, or is cited as only a secondary cause of death, in a high proportion of death certificates of people with diabetes; this leads to a significant underestimation of mortality associated with the disease. In Costa Rica, the country of the Americas that shows the lowest mortality from diabetes, it has been reported that when deaths caused by cardiovascular diseases among people with diabetes are counted, mortality from diabetes increases by 56% (Rodríguez et al., 1988). In Brazil (Franco et al., 1998), an analysis of death certificates found that in those where diabetes was mentioned, the underlying causes of death were diabetes (38.5%), cardiovascular diseases (37.2%), respiratory diseases (8.5%), and neoplasms (4.8%). Therefore, an analysis of deaths from diabetes that includes only those certificates naming diabetes as the underlying cause would capture only slightly more than a third of the deaths associated with the disease. Similar results have come from studies conducted in Cuba, using necropsies as their data source (Crespo et al., 1992), as well as in Jamaica and Cuba, using

information from death certificates of people with diabetes (Alleyne et al., 1989, Hernández et al., 1984).

Cohort studies are the ideal source for evaluating mortality related to diabetes, but they have the disadvantage of being expensive, time-consuming, and difficult to carry out. WHO is following a cohort of diabetics in ten cities, including a cohort in Havana, Cuba. In an analysis of the Havana cohort, calculation of standardized mortality rates showed an elevated mortality risk among the diabetic population in relation to the general population: risk was more than three times as high in men and more than four times as high in women for people with type 2 diabetes, and more than six times as high in men and seven times as high in women for people with type 1 diabetes. The rates for Havana turned out to be the highest among the ten centers studied (Shu-Li et al., 1996)

Retrospective cohort studies are a variant of mortality studies that have also been used to evaluate mortality associated with diabetes. An analysis carried out in Havana evaluated mortality retrospectively in a child cohort with type 1 diabetes with between 11 and 25 years of evolution (Barceló 1992, Collado-Mesa et al., 1997). Among members of this cohort, 13.9% had died, a mortality rate 8.5 higher than that of the general population of Cuba. Similar studies conducted in Israel, the United States, Japan, and Finland (Dorman et al., 1984; DERI, 1991; Songer et al., 1992; DERI, 1996) also reported mortality rates in people with type 1 diabetes that are much higher than those of the general population.

The two studies conducted in Cuba demonstrate that even with nearly universal health care coverage, both patients with type 1 diabetes and those with type 2 run an extremely high risk of premature mortality.

Despite sparse available data and the limited nature of information gleaned from death certificates, the aforementioned research findings suggest that diabetes is a major cause of death in the Americas. Because of the limitations of vital statistics, certain indicators such as Potential Years of Life Lost (PYLL) and Years of Productive Life Potentially Lost (AVPPP), usually based on routine statistics, do not reveal the true magnitude of the problem of mortality from diabetes, and their utilization leads to important under-estimations.

Care for people with diabetes

It has been demonstrated that strict glycemic control reduces the frequency of certain chronic complications of diabetes (UKPDS, 1998; Ohkubo et al., 1995). In Latin America and the Caribbean there are few examples that show the results of evaluation of the quality of medical care. In 1999 Gulliford and co-workers published findings from an evaluation of the results of five years of intervention through the diabetes program of Trinidad and Tobago. Although the evaluation showed an improvement in medical care, it did not find improvements in indicators such as metabolic control, bodyweight, and arterial tension (Gulliford et al., 1999).

The results of a multicenter study, the Qualidiab study, were published recently, financed by the Declaration of the Americas on Diabetes (DOTA) and coordinated by the Center of Experimental and Applied Endocrinology (CENEXA), which is a PAHO/WHO Collaborating Center for Diabetes. This study evaluated the quality of medical care provided to 1,368 patients in cities of Argentina, Brazil, Chile, Colombia, Paraguay, and Venezuela. The results showed that among patients who had the glycosylated hemoglobin test (HbA1c test), 29% had results above 10%. Only 8% of the patients evaluated had high arterial tension (systolic tension above 160 and diastolic tension above 95 millimeters of mercury). In Chile the Qualidiab study was replicated in 8,100

patients, with results substantially different from those of the original study, which also included Chile. Only 12% of the patients had a measurement of HbA1c, while 58% had high arterial tension (diastolic tension above 89 and systolic tension above 139 millimeters of mercury)(Escobar et al., 1999). Although the efforts made by these groups are commendable, serious reservations exist regarding the methodology. Both the multicenter study coordinated by CENEXA and the Chilean study used questionable methodology for the selection of centers and cases included in the sample, as well as for definitions of the reported events.

Many countries of Latin America and the Caribbean have troubling limitations in access to the health services. Moreover, these services are oriented mainly toward treating acute health problems. Diabetes, a chronic disease, requires continuous, lifelong care. Furthermore, diabetic people require an adequate supply of insulin and oral hypoglycemics. They should also follow a proper diet, a program of physical activity, and an appropriate lifestyle, and they must have access to medical services in order to ensure early diagnosis and treatment of long-term complications and problems derived from their disease. In some countries of the Americas deaths still occur because of lack of insulin. Insulin and oral hypoglycemics are not included on the list of essential drugs in some countries, and the population faces many difficulties in obtaining them.

The countries of Latin America need to adapt to their particular conditions the technical advances in diabetes control, in cost-effective form. This can be accomplished through the adaptation of appropriate technology to each context. The technical updating of health workers, and the incorporation of local social and cultural particularities, can bring about positive changes in the institutional and social management of diabetes. It is also necessary to generate evaluation patterns for the national diabetes programs where such programs exist.

Table 3. Conditions for introducing in primary care strategies for prevention and control of noncommunicable diseases.	
<p>Beforehand</p> <ul style="list-style-type: none"> • Know the burden of the disease (surveillance) • Select cost-effective interventions • Know the availability of drugs and supplies • Have trained human resources available 	<p>To be developed</p> <ul style="list-style-type: none"> • Evaluate selected new interventions • Achieve the integration of services (referral and back-referrale) • Develop and implement guidelines for care • Change the behavior of users and providers

The latest scientific advances in the field of diabetes care should be implemented in a form that is particularly accessible to the neediest. At the same time, in order to contend with the growing impact of private health insurers on the medical care of people with diabetes, it is indispensable to facilitate the flow of information and to promote the incorporation of standards into the care that insurers provide. Both the national diabetes programs, promoted by the state health services, and the services provided by insurers should be based on scientific evidence. Activities for prevention

and control of diabetes and other noncommunicable diseases require certain conditions (Table 3). It is very difficult to introduce control activities if prerequisite conditions, such as knowing the magnitude of the problem and the situation of the health services, do not exist.

Table 4. Components of a systematic approach to developing programs for diabetes prevention and control.

- Understand the problem of diabetes and its complications.
- Show the increase in disability and premature death caused by the chronic complications of diabetes.
- Know the economic and social costs of diabetes.
- Show the social and economic benefits of improving health care services.
- Evaluate the potential impact of implementing strategies to prevent diabetes.

In the case of diabetes, it is necessary to adopt a systematic approach (Table 4) that includes epidemiological surveillance of diabetes, its complications, and the costs associated with this disease, as well as an evaluation of the impact of preventive strategies.

Costs associated with diabetes

The cost of diabetes is extremely high. In the United States it was estimated at US\$ 92,000 million in 1992, or around 13% of the total health budget (Ray et al., 1993). Another evaluation done in 1997 estimated the cost of diabetes in the United States at US\$ 77,700 million, or US\$ 10,071 per person with diabetes (ADA, 1998). Diabetes may have even greater costs in the countries of Latin America and the Caribbean.

The number of studies on diabetes costs in the Region is very limited. In Mexico the cost was estimated at US\$430 million in 1991 (US\$ 100 million in direct costs and US\$ 330 million in indirect costs) (Phillips et al., 1992). In Chile, with a population of 14 million and a diabetes prevalence estimated at 5%, the total cost of diabetes per year was calculated at US \$1,111 million in 1997. According to this study, the annual cost per person with diabetes was US \$1,985. Direct costs constituted 30% of the total, and were basically for routine or emergency medical services and hospitalizations. Indirect costs accounted for 70%, and stemmed from loss of productivity and labor absenteeism (White et al., 1997). In Latin America and the Caribbean, the total amount allocated to health was calculated at US\$ 51,500 million; assuming that diabetes consumes 6% of the total health budget, direct costs alone would come to about US\$ 3,000 million per year (Gagliardino and Olivera, 1997). If, on the other hand, diabetes is assumed to represent 13% of the budget, as has been estimated in the United States (Ray et al., 1993), the figure would rise to US\$ 6,600 million.

The high direct costs of diabetes are mainly the result of the highly specialized treatment that its complications require. Diabetic people need special medical care and education in order to achieve proper metabolic control. At the same time, premature mortality along with reduced productivity due to acute and chronic complications give rise to indirect costs. Hospital costs associated with diabetes are also very high. In one hospital in Mexico City, diabetes costs represented 2.5% of the institution's total expenditures (Collado et al., 1998).

A study of diabetes costs conducted by PAHO in Chile in 1998 measured the cost of a program of care that ensured good glycemic control while also providing education. The educational program carried out in Chile represented a net saving of US\$ 5,000 per patient (White et al., 1997). In some countries of Latin America and the Caribbean the indirect costs associated with diabetes, such as those related to premature mortality and disability, exceed the direct costs attributed to medical care.

Relevance of the action plan to the health policies of the countries and to the priorities established by PAHO

This action plan summarizes several aspects of the policy of the World Health Organization (WHO) and the Pan American Health Organization (PAHO).

Diabetes was included on the agenda of the Forty-second Assembly of WHO in May 1989, which issued a resolution recognizing the importance of diabetes as a chronic and debilitating disease with high associated costs (Annex IV). The plenary invited the member countries to:

- ✓ evaluate the national importance of diabetes;
- ✓ implement population-wide measures, appropriate to local conditions, to prevent and control diabetes;

- ✓ share with other Member States opportunities for training and advanced education on the clinical and public health aspects of diabetes; and
- ✓ establish an integrated model for diabetes prevention and control at the community level.

In addition, PAHO has recognized that the increasing prevalence of obesity, changes in the modern diet, and sedentary lifestyles, together with the aging of the population in many countries, have all contributed to making diabetes one of the leading public health concerns in the Region. The high rates of prevalence of diabetes in some countries have led PAHO to promote the development of epidemiological studies and health services that can support the establishment of intervention programs.

Specifically, the XXXIX Meeting of the Directing Council of PAHO in 1996 adopted resolution CD39.R12 (Annex V), which urges recognition of diabetes as an increasingly important health problem in the Region and calls for adoption of the Declaration of the Americas on Diabetes (DOTA) as a guide for the preparation of national programs (Annex VI).

PAHO is the international health agency best suited to undertake an action plan that promotes cooperation aimed at improving the health of people with diabetes. The mission of PAHO is to cooperate technically with the Member States and to encourage cooperation among them. Over the last 100 years PAHO has participated successfully in various programs for disease eradication and control.

Current situation and situation at the end of the five years

Today, each population or country can be found in one of the following four stages with regard to diabetes:

- has established diabetes programs;
- has recognized the importance of diabetes and is in the process of establishing programs of care;
- has never studied diabetes, and as a result, has not recognized the importance of the disease or instituted programs of care; and
- sectors of the population have normal glucose tolerance.

In accordance with this classification system, the following actions included in this proposal (see Table 7) are necessary:

- Carry out diabetes prevention in populations with normal glucose tolerance.
- Begin epidemiological surveillance of diabetes, other noncommunicable diseases, and their risk factors in those populations where these have never been studied, in order to accumulate the information needed to begin setting up a control program.
- Carry out interventions and implement programs of care for people with diabetes in order to create the necessary services or improve access to and utilization of already existing services.
- Evaluate the quality of care in those populations already served by national programs of care for people with diabetes.



Figure 1. Model for diabetes control in Latin America and the Caribbean

Purpose of the action plan (development objective)

The plan seeks to reduce the social and economic burden of diabetes in Latin America and the Caribbean by improving the capacity of the health systems and services to organize diabetes surveillance and control.

Expected results

In 2006, after completion of this action plan, the following will have been achieved:

- generate the necessary epidemiological information on diabetes, its complications, its costs, and associated mortality, in order to advocate greater attention to this problem.
- create new programs of care in those countries where they do not now exist, with levels of quality based on standards of care.
- evaluate the medical care of people with diabetes and introduce the changes needed to incorporate cost-effective benefits in state-run health services and create incentives for these activities in private companies that provide medical care.
- evaluate the availability of drugs and other critical supplies for the diagnosis and treatment of diabetes mellitus and begin projects to increase the access of the

populations to drugs and diagnostic measures.

- develop and implement a diabetes education program.

Strategies of the action plan

The action plan is based on several complementary strategies designed to develop capacity for diabetes management in the countries of the Region:

1. Collection and publication of existing epidemiological information

Epidemiological information is important for public health planning and as a basis for advocacy aimed at creating new services or improving those that already exist.

Diabetes, as a serious, expanding, and costly public health problem, requires priority attention. The development of this action plan will begin by gathering more complete information on:

- a) the epidemiological situation of diabetes in terms of its prevalence and complications;
- b) the quality of life of patients, and their understanding of the disease;
- c) the situation of the health services, as a basis for developing actions in the areas of information, education, and planning;
- d) costs related to diabetes; and
- e) mortality associated with diabetes.

Organization of surveillance of diabetes, its chronic complications, and associated mortality

The success of activities to control a disease depends on evaluation of the epidemiological situation. Because of the particular clinical characteristics of diabetes, its chronic complications, and associated mortality, the usual disease notification systems—such as case registries and vital statistics—are not sufficient. To resolve this problem the following strategies are proposed:

Surveillance of diabetes, other noncommunicable diseases, and their risk factors.

This strategy will be carried out jointly with the Project for Monitoring Risk Factors for Non-Communicable Diseases of HCN/PAHO.

New studies of the prevalence of diabetes, other noncommunicable diseases, and their risk factors in adult populations.

At least three new prevalence studies will be conducted. These studies will employ similar methodology and diagnostic criteria and will use the Glucose Tolerance Test (GTT) as the diagnostic examination. PAHO (as well as WHO) recommends use of the GTT for diabetes diagnosis.

Workshops on epidemiological surveillance of diabetes. At least one workshop per year will be held for the purpose of promoting epidemiological surveillance (planning, design, analysis) of diabetes and its complications.

Surveillance of chronic complications of diabetes. Plans call for carrying out at least one multinational study on the prevalence of chronic complications of diabetes. This study will use standardized methods to measure the prevalence of certain chronic complications (retinopathy, nephropathy, and diabetic foot) in at least three countries.

Surveillance of mortality associated with diabetes. A cohort study will be conducted that contains an adequate number of people with type 2 diabetes in several countries of the Region. This study should meet the basic requirements for mortality evaluation, such as comparability of the cohorts, diagnostic measures, and statistical procedures.

2. Costs of diabetes

Cost studies are an important tool for motivating decision-makers to adopt good clinical and programming practices in the management of diabetes.

Application in Latin America of the Chilean model of diabetes. The model resulting from the Chile study will be used in a study that measures the direct and indirect costs of diabetes in Latin America. This simulation study will calculate the economic savings that could be realized through improvements in the medical care of diabetes.

New studies of diabetes costs. With the support of the collaborating centers, there are plans to carry out new cost studies in other countries of the Region, which could be components of broader research programs. Particular importance will be given to studies that investigate the social cost of diabetes, as well as the cost of hospitalization for acute and chronic complications.

3. Programs of care for people with diabetes

Standards of care. Support will be given for the creation of standards of care for people with diabetes and other chronic diseases in coordination with WHO, which is developing a methodology for this purpose. There will be collaboration with the Latin American Diabetes Association (ALAD), the American Diabetes Association (ADA), and other scientific organizations to plan strategies for adapting the standards to different countries that need them. The standards will be updated and published periodically.

Intervention programs. Those countries that do not have national diabetes programs can implement demonstration projects that provide appropriate medical care and education to groups of patients. On this basis programs of care can be set up and implemented at the national level.

Private health insurers. The action plan calls for private health suppliers to participate in activities aimed at evaluating and improving the quality of medical care provided to diabetic people. At the same time, work will be done with the governments to require the companies operating in each country to create a package of basic care for people with diabetes. These packages should meet standards accepted in the country.

4. Evaluation of the national diabetes programs

There are plans to develop a multinational project (in at least three countries) to evaluate the quality of medical care provided to diabetic people. The methods to be used will be chosen from among the following:

- ✓ audit of clinical data,
- ✓ interviews with patients, and
- ✓ interviews with health providers.

This project profile is being prepared and will be proposed to several interested countries. Steps will also be taken to gain the participation of major private providers of health services.

Evaluation of the access of diabetic people to critical diagnosis and treatment measures

Studies will be conducted on the access of populations to critical diagnosis and treatment measures related to diabetes, beginning with an evaluation of the availability of and access to insulin. These evaluations can be done as special studies or as components of other studies, and will yield the data needed to formulate strategies for improving access where needed. Special emphasis will be placed on access to basic treatment (insulin and oral hypoglycemics) in populations with deficient health services and in the most economically disadvantaged areas.

5. Diabetes education

The success of diabetes interventions also depends to a great extent on patients' taking ownership of their care program, as well as on initiatives to ensure their care in social and institutional contexts. This strategy is aimed at giving patients information and methodological resources that will encourage them to become organized, both to demand services and to manage their disease. Rather than considering education as a simple transfer of information, efforts will be made to promote educational processes in settings that permit the organization of the patients themselves, and as part of the responsibilities of their own associations. Particular importance will be given to issues such as cultural and gender differences. Specifically, those initiatives that favor sustained changes in patient behavior will be supported. The intervention programs will have components of medical care and diabetes education.

In view of the fact that education is a necessary component of programs of care for people with diabetes, the proposal provides for development of an educational program that includes:

- selection of educational models;
- selection of educational programs;
- implementation of a capacity-building program;
- creation of a system of excellence in diabetes education;
- studies of beliefs, practices, and knowledge related to diabetes; and
- creation of an education program on diabetes

6. Primary prevention of diabetes

Type 2 diabetes in susceptible individuals and communities. The studies and programs for prevention of type 2 diabetes are based on weight reduction programs for people at high risk of suffering type 2 diabetes (OMS, 1994). PAHO promotes the prevention of type 2 diabetes within the framework of the CARMEN programs (Set of Actions for the Multifactorial Reduction of Non-Communicable Diseases) (PAHO 1997).

Type 1 diabetes. The etiology of type 1 diabetes is not well understood, but it is known to be a type of autoimmune disease. It has been demonstrated that immunological therapy can prevent the development of type 1 diabetes in first-degree relatives of people who suffer this clinical form of diabetes. Experiments are currently underway with various interventions aimed at preventing diabetes mellitus type 1 in different countries, and it is hoped that these models will be available in the near future for application in public health.

Other institutions and associations working in the field

This PAHO action plan is consistent with other programs and institutions operating in the Americas, such as:

- ✓ The International Diabetes Federation (IDF) / Declaration of the Americas on Diabetes
- ✓ The Latin American Diabetes Association (ALAD)
- ✓ WHO/PAHO Collaborating Centers
- ✓ Centers for Disease Control and Prevention of the United States (CDC)

These organizations will be important allies in carrying out actions under DIA for the surveillance and control of diabetes.

The International Diabetes Federation (IDF), as part of its global initiative and in its action plan for 1998–2001, includes the operation of several working groups focused on topics such as the development of appropriate technology, guidelines for clinical practices, studies of diabetes costs, and access to insulin. There is also another group of complementary projects for IDF member associations, including Evaluation of Needs in Child and Adolescent Diabetes and Training Courses for Primary Health Care Providers.

Because of the similarity of the activities of PAHO and IDF in the field of diabetes, these two organizations are co-founders of the **Declaration of the Americas on Diabetes (DOTA) (Annex VI)**. The objective of DOTA is to promote and improve the health of people who have diabetes or run the risk of developing the disease. DOTA and PAHO have worked together successfully on several projects such as the management of strategic planning workshops in Panama and Bolivia, as well as several educational courses on diabetes.

Latin American Diabetes Association (ALAD). The Diabetes Action Program of ALAD promotes activities to improve care for people with diabetes and their families. Toward this end, ALAD has various working groups that relate to some of the proposed activities of DIA.

WHO/PAHO Collaborating Centers. There exist several collaborating centers in the field of diabetes and other chronic diseases in the Americas. This action plan will rely on these centers, taking into account the technical areas in which they work.

Centers for Disease Control and Prevention (CDC) of the United States. The CDC, based in Atlanta, Georgia, is currently cooperating in several fields related to noncommunicable diseases through initiatives such as the Collaborative U.S.-Mexico Border Diabetes Prevention and Control Project and the Project for Monitoring Risk Factors of PAHO.

It is expected that joint efforts will also be undertaken in the future with other organizations, associations, and institutions such as the **Juvenile Diabetes Foundation (JDF)**, the **Canadian Ministry of Health**, the **National Institutes of Health of the United States**, the **American Diabetes Association (ADA)**, and various regional scientific and medical associations.

Assumptions and risks (external factors)

Achievement of the objectives of this plan depends to a large extent on the efforts of all parties concerned. It will be necessary, therefore, to identify multisectoral representatives who can participate in its consultative and executive bodies. Of special importance are the participation of health services personnel in training activities and the active adoption of management protocols and guidelines by the various components of the health services.

Commitments by the participating countries

Selection of participating countries will take into account their interest and support for this initiative. Participating countries will be required to allocate specific budgetary resources for some activities. To the extent that these resources come from the regular budget, the sustainability of the project's results will be enhanced. These aspects will be addressed in the specific projects of each country.

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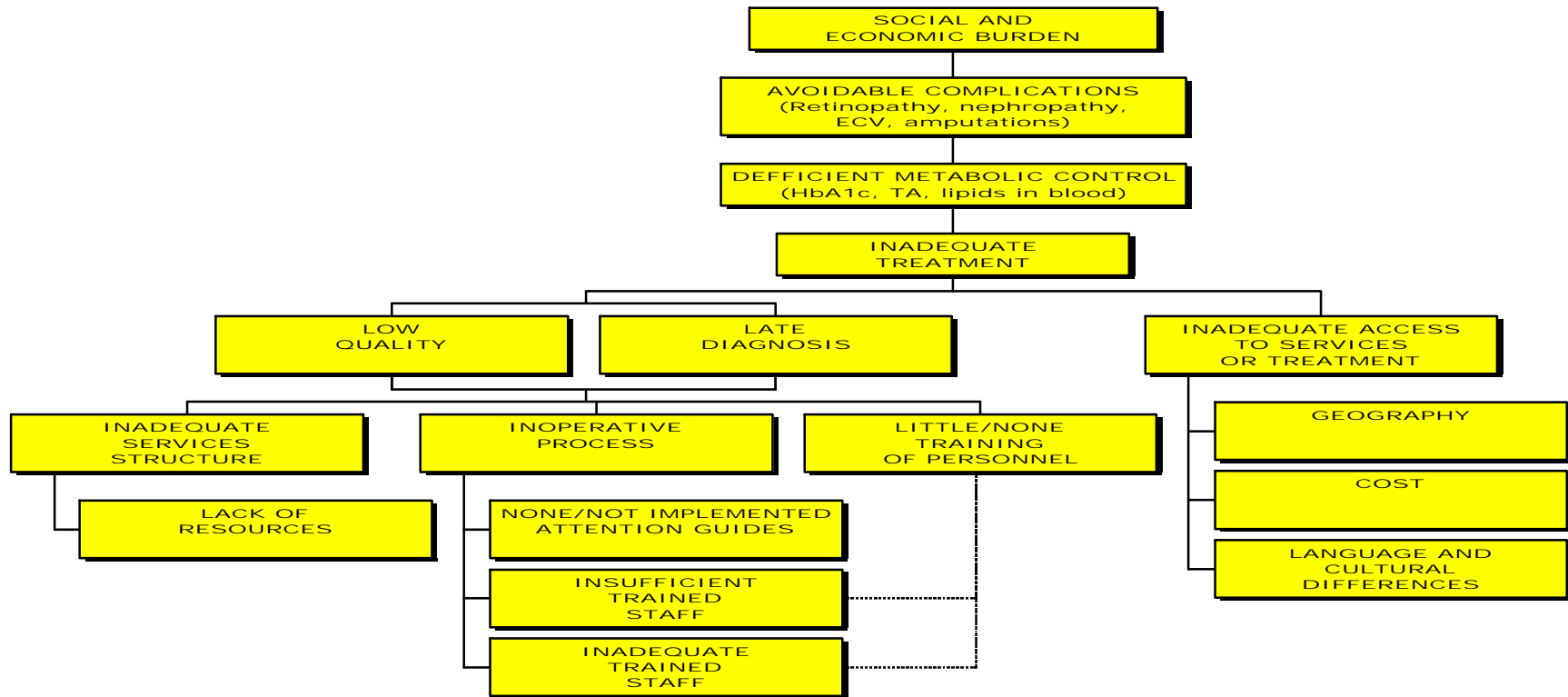
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ANNEX I - Problem tree

DIABETES IN THE AMERICAS



ANNEX II – Diagram of logical framework

	OBJECTIVES	SUCCESS INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
GOAL	<ul style="list-style-type: none"> Reduce the social and economic burden of noncommunicable diseases. 	<ul style="list-style-type: none"> Improvement in the quality of medical care for people who suffer from diabetes. 	<ul style="list-style-type: none"> Work reports from the focal points and project coordinators. 	<ul style="list-style-type: none"> Health workers and patients will be receptive to the project.
PURPOSE	<ul style="list-style-type: none"> Improve the capacity of the countries to understand, monitor, and control diabetes. 	<ul style="list-style-type: none"> Programs of diabetes care have been launched in three countries. Several documents have been published on the epidemiology of diabetes in the Region. The national program of diabetes care has been evaluated in three countries. 	<ul style="list-style-type: none"> Specific reports. 	<ul style="list-style-type: none"> Patients have economic, cultural, and geographic access to services.
	<p>Result N°1 Epidemiological information has been generated on diabetes, its complications, its costs, and associated mortality.</p>	<ul style="list-style-type: none"> The prevalence of diabetes is known in at least five adult populations of Central and South America. The prevalence of several chronic complications of diabetes, such as retinopathy, nephropathy, and diabetic foot, is known in at least three populations of the Region. The cost of diabetes in Latin America and the Caribbean has been estimated. The magnitude of mortality associated with diabetes has been estimated in at least three populations of the Region. 	<ul style="list-style-type: none"> Publication of Diabetes Surveillance in Latin America and the Caribbean. Publication of results. 	<ul style="list-style-type: none"> The countries of the area are interested. Financing for some activities can be found. The information in the countries is accessible
	<p>Result N°2 New programs of care have been created with levels of quality established in standards of care.</p>	<ul style="list-style-type: none"> Standards of care for diabetes have been produced. At least three countries achieve 50% of the standards in the established standards of care by the end of two years. At least three countries achieve 100% of the standards established in the standards of care by the end of five years. 50% of private insurers have adopted a basic package for people with diabetes. 	<ul style="list-style-type: none"> Publications of standards of care. Publication of results. 	<ul style="list-style-type: none"> The ministries of health are interested in improving the quality of care. Medical personnel and patients cooperate.

OBJECTIVES	SUCCESS INDICATORS	SOURCES OF VERIFICATION	ASSUMPTIONS
<p>Result N°3 Medical care for people with diabetes has been evaluated and the changes necessary for improvement have been introduced.</p>	<p>During development of the project, at the end of five years, in at least three countries, with respect to the baseline:</p> <ul style="list-style-type: none"> ▪ The number of people who receive diabetes education has increased by 30%. ▪ The number of people who receive an annual examination of the fundus of the eye with dilatation has increased by 30%. ▪ The number of people who receive an examination of the feet has increased by 30%. ▪ 30% of health insurers participate in an evaluation of the quality of medical care. 	<ul style="list-style-type: none"> ▪ Publication of the standards of care. 	<ul style="list-style-type: none"> • Medical personnel and patients cooperate. • Medical and scientific associations cooperate.
<p>Result N°4 The availability of drugs and other critical supplies has been evaluated and changes have been introduced to improve the access of the population.</p>	<p>During development of the project, at the end of five years, in at least three countries, with respect to the baseline:</p> <ul style="list-style-type: none"> • All people who need them have access to insulin and oral hypoglycemics. • Access to other diagnosis and treatment measures has improved by 30%. 	<ul style="list-style-type: none"> • Publication of results. 	<ul style="list-style-type: none"> • Pharmaceutical companies support the initiative. • Governments are interested.
<p>Result N°5 A program of diabetes education has been created and implemented.</p>	<p>In the participating countries, by the end of the second year:</p> <ul style="list-style-type: none"> • 100% of new diabetes patients receive education. • 30% of already diagnosed patients receive education. 	<ul style="list-style-type: none"> • Publication of educational materials. • Publication of the results of implementation. 	<ul style="list-style-type: none"> • There exists the political will to improve education in the countries.
			<p>Previous conditions</p> <ul style="list-style-type: none"> • Support of governments, nongovernmental organizations, patient associations, DOTA, ALAD, IDF.

Annex III

Resolution of the WHO Assembly



FOURTY-SECOND WORLD HEALTH ASSEMBLY

WHA42.36

Agenda item 18.2

19 May 1989

PREVENTION AND CONTROL OF DIABETES MELLITUS

The Forty-second World Health Assembly,

Recognizing that diabetes mellitus is a chronic, debilitating and costly disease attended by severe complications including blindness and heart and kidney disease;

Noting that diabetes already represents a significant burden on the public health services of Member States, and that the problem is growing, especially in developing countries;

Aware of the support of the International Diabetes Federation and the WHO collaborating centers on diabetes;

1. INVITES Member States:

- (1) to assess the national importance of diabetes;
- (2) to implement population-based measures, appropriate to the local situation, to prevent and control diabetes;
- (3) to share with other Member States opportunities for training and further education in the clinical and public health aspects of diabetes;
- (4) to establish a model for the integrated approach to the prevention and control of diabetes at community level;

2. REQUESTS the Director-General to strengthen WHO activities to prevent and control diabetes, in order:

- (1) to provide support for the activities of Member States with respect to the prevention and community control of diabetes and its complications;
- (2) to foster relations with the International Diabetes Federation and other similar bodies with a view to expanding the scope of joint activities in the prevention and control of diabetes;
- (3) to mobilize the collective resources of the WHO collaborating centers on diabetes.

Thirteenth plenary meeting, 19 May 1989
A42/VR/13



世界衛生組織執行委員會決議

قرار المجلس التنفيذي لمنظمة الصحة العالمية

RESOLUTION OF THE EXECUTIVE BOARD OF THE WHO
RÉSOLUTION DU CONSEIL EXÉCUTIF DE L'OMS
РЕЗОЛЮЦИЯ ИСПОЛНИТЕЛЬНОГО КОМИТЕТА ВОЗ
RESOLUCION DEL CONSEJO EJECUTIVO DE LA OMS

105th Session

EB105.R12

Supplementary agenda item

27 January 2000

Prevention and control of noncommunicable diseases

The Executive Board,

Noting the Director-General's report on the global strategy for the prevention and control of noncommunicable diseases prepared in response to the magnitude and impact of noncommunicable diseases, especially in low- and middle-income countries and in other disadvantaged communities;

Encouraged by the prospects offered by partnerships, and by adapted preventive and treatment strategies that will reduce premature mortality, morbidity and disability,

RECOMMENDS to the Fifty-third World Health Assembly the adoption of the following resolution:

The Fifty-third World Health Assembly,

Recalling resolution WHA51.18 on noncommunicable disease prevention and control requesting the Director-General to formulate a global strategy for the prevention and control of noncommunicable diseases and to submit the proposed global strategy and a plan for implementation to the Executive Board and Health Assembly;

Recognizing the enormous human suffering caused by noncommunicable diseases such as cardiovascular diseases, cancer, diabetes and chronic respiratory diseases, and the threat they pose to the economies of many Member States, leading to increasing health inequalities between countries and populations;

Noting that the conditions in which people live and their lifestyles influence their health and quality of life, and that the most prominent noncommunicable diseases are linked to common risk factors, namely, tobacco use, unhealthy diet and physical inactivity, and being aware that these risk factors have economic, social, gender, political, behavioural and environmental determinants;

Reaffirming that the global strategy for the prevention and control of noncommunicable diseases and the ensuing implementation plan are directed at reducing premature mortality and improving quality of life;

Recognizing the leadership role that WHO should play in promoting global action against noncommunicable diseases and its contribution to global health based on its advantages compared to other organizations,

1. URGES Member States:

(1) to establish programmes, at national or any other appropriate level, in the framework of the global strategy for the prevention and control of major noncommunicable diseases, and specifically:

(a) to develop a mechanism to provide evidence-based information for policy-making, advocacy and evaluation of health care;

(b) to assess and monitor mortality and morbidity attributable to noncommunicable disease, and the level of exposure to risk factors and their determinants in the population;

(c) to continue pursuit of intersectoral and crosscutting health goals required for prevention and control of noncommunicable diseases by according noncommunicable diseases priority on the public health agenda;

(d) to emphasize the key role of governmental functions, including regulatory functions, when combating noncommunicable diseases including development of nutrition policy, control of tobacco products and policies to encourage physical activity;

(e) to promote community-based initiatives for prevention of noncommunicable diseases, based on a comprehensive risk-factor approach;

(2) to ensure that health care systems are responsive to chronic noncommunicable diseases and that their management is based on cost-effective health care interventions and equitable access;

(3) to share their national experiences and to build the capacity at regional, national and community levels for the development, implementation and evaluation of programmes for the prevention and control of noncommunicable diseases;

2. REQUESTS the Director-General:

(1) to continue giving priority to the prevention and control of noncommunicable diseases, with special emphasis on developing countries and other deprived populations;

(2) to ensure that the leadership provided by WHO in combating noncommunicable diseases and their risk factors is based on the best available evidence, and thus to facilitate, with international partners, capacity building and establishment of a global network of information systems;

(3) to provide technical support and appropriate guidance to Member States in assessing their needs, adapting their health care systems, and in addressing gender issues related to the growing epidemic of noncommunicable diseases;

- (4) to strengthen existing partnerships and develop new ones, notably with specialized national and international nongovernmental organizations with a view to sharing responsibilities for implementation of the global strategy based on each partner's expertise;
- (5) to coordinate, in collaboration with the international community, global partnerships and alliances for resource mobilization, advocacy, capacity-building and collaborative research;
- (6) to promote the adoption of international intersectoral policies, regulations and other appropriate measures that minimize the effect of the major risk factors of noncommunicable diseases;
- (7) to promote and initiate collaborative research on noncommunicable diseases, and to strengthen the role of WHO collaborating centres in supporting implementation of the global prevention and control strategy.

Seventh meeting, 27 January 2000
EB105/SR/7

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Annex IV

Resolution of the Directing Council of PAHO



DIRECTING COUNCIL

PAN AMERICAN
HEALTH
ORGANIZATION

REGIONAL COMMITTEE

WORLD
HEALTH
ORGANIZATION



RESOLUTION

CD39.R12

DIABETES IN THE AMERICAS

THE XXXIX MEETING OF THE DIRECTING COUNCIL,

Having reviewed Document CD39/19, which addresses the growing importance of diabetes in the burden of disease in the Americas;

Noting that promotion of healthy diets and regular exercise can reduce the incidence of non-insulin-dependent diabetes, and that improved quality of care, including patient education, will reduce the incidence of complications among all persons with diabetes;

Recognizing, as a fundamental principle of diabetes care, that insulin must be available for all persons in need;

Recognizing, also, that persons with diabetes, despite their abilities, sometimes suffer from discrimination in employment; and

Noting with appreciation the new relationship between PAHO and the International Diabetes Federation (Resolution CE118.R8) to develop joint technical cooperation, and the successful formulation of a Declaration of the Americas on Diabetes as the first product of this partnership,

RESOLVES:

1. To urge Member States:
 - (a) To recognize that diabetes is a health problem of increasing regional importance;
 - (b) To adopt the Declaration of the Americas on Diabetes as a guide for national program development.

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2. To urge the participation of all partners in the mobilization of resources, in addition to training, research, dissemination of information, and direct technical cooperation within and among Member States.
3. To recommend to the Director that PAHO continue strengthening its collaboration with diabetes associations and other nongovernmental organizations, promote an integrated approach to noncommunicable diseases within which diabetes would be addressed, and support the development of national diabetes programs.

*(Adopted at the tenth plenary session,
27 September 1996)*

Annex V

Declaration of the Americas on Diabetes

directing council



**PAN AMERICAN
HEALTH
ORGANIZATION**

XXXIX Meeting

regional committee



**WORLD
HEALTH
ORGANIZATION**

XLVIII Meeting

**Washington, D.C.
23-27 September 1996**

Provisional Agenda Item 5.9

**CD39/19, Add. I (Eng.)
12 August 1996
ORIGINAL: ENGLISH**

DECLARATION OF THE AMERICAS ON DIABETES

The Declaration of the Americas on Diabetes, adopted at the regional meeting held in San Juan, Puerto Rico, on 2-4 August 1996, and referred to in Document CD39/19, is annexed. The meeting was cosponsored by the Pan American Health Organization and the International Diabetes Federation; it had participation from 29 countries and representation from ministries of health, professional associations, diabetes societies, private industry, lay organizations, the media, and other international organizations.

The Declaration highlights the growing importance of diabetes in the burden of disease in the population and effective strategies that should be implemented. At the national policy level, people with diabetes should have equal access to employment. At the health policy level, communities should promote healthy diet and exercise for the prevention of the onset of non-insulin-dependent diabetes. At the health services level, the quality of care, including patient education, should be improved, in order to prevent complications in people with the disease and to ensure availability of insulin.

Diabetes itself is an important cause of morbidity and mortality; it is also an underlying cause of cardiovascular disease. It has an impact on the quality of life of affected people and their families, and on the health care system that bears the costs of complications and disability.

The Declaration outlines principles of diabetes program development in the context of integrated noncommunicable disease prevention and control. It seeks participation of all stakeholders and mobilization of existing resources, in addition to training, research, dissemination of information, and partnerships for technical cooperation within and between the Member States.

Annex

DECLARATION OF THE AMERICAS ON DIABETES

Preamble

Diabetes mellitus is a growing pandemic. In 1996, an estimated 30 million people with diabetes live in the Americas, more than a quarter of the world's total case load. By the year 2010 the Americas case load is expected to increase to 45 million, taking into account demographic aging of populations and trends in underlying risk factors which are related to the process of modernization that is taking place in all developing countries. There is also a higher incidence and prevalence of diabetes in certain ethnic groups in the Americas.

Diabetes is a serious and costly public health problem in the Americas. It adversely affects people of all ages and at all socioeconomic levels. Millions of people with diabetes are not diagnosed. Millions of people with diabetes are not properly treated. The impact of diabetes on societies and individuals is underestimated. People with poorly controlled diabetes have a markedly increased risk for and incidence of heart attack, stroke, blindness, kidney failure, leg amputation, and early death. Not only is their productive life span shortened, but the quality of life of people with diabetes and their families is severely impacted. Scientific evidence clearly demonstrates that much of this human suffering can be prevented.

Diabetes, especially when poorly controlled, can be a major economic burden to the individual and society. Most of the direct costs of diabetes are related to its complications, which can often be reduced, delayed in onset, or, in certain cases, prevented. Depending on the country, available estimates indicate that diabetes may account for 5%-14% of health care expenditures.

Poverty adversely affects diabetes care. It influences the likelihood of being correctly diagnosed, the quality of education received, the adequacy of care, the affordability of treatment, and the risk of developing serious complications. There is a need to address these inequities in the development of diabetes prevention and control strategies and programs in all countries.

Unless these trends are addressed through the development of more strategic and integrated multisectoral responses, there will be a commensurate increase in severe, costly complications with associated reduced quality of life as well as premature death from diabetes.

With current knowledge and technology, it is possible to promote health and prevent complications in people with diabetes with good glycemic control and

modification of cardiovascular risk factors. In relation to what is now known about the preventability of this disease and the efficacy of clinical management, current efforts in its management in all countries fall far short of what is possible. Unfortunately, many people with diabetes are not brought to care. Many who are able to access health care are not receiving the quality of care that is possible even under quite modest circumstances. There are opportunities to redirect the resources that are already being applied in response to this increasing problem in ways that will reduce the rate of increase and the frequency of complications and improve the quality of life for all people with diabetes and their families. There are also opportunities to achieve better care at lower cost per patient through attention to the development and more appropriate use of ambulatory and community care. Equally important is the need to enlist the people affected by diabetes in the health care team so as to achieve a greater measure of self-care and quality of life for people with diabetes.

It is in the best health, economic, and social interests of all nations to recognize diabetes as a national health priority and to ensure that the resources applied to this problem achieve all that is possible in terms of effectiveness, efficiency, and quality of life.

To change the way things are to the way things ought to be requires a vision, a plan, and commitment on the part of all nations in the Americas to accept the challenge as we move towards the year 2000 and beyond.

Vision

Better health for people affected by or at risk for diabetes in the Americas by the year 2000 and beyond.

Plan

To realize this vision, all nations should pursue the following general strategic plan:

1. Recognize diabetes as a serious, common, growing, and costly public health problem. Each nation should determine the true epidemiological and economic burden of diabetes as a basis for establishing its priority on the national health agenda.
2. Develop national diabetes strategies, which should include specific and appropriate goals, process indicators, and outcome measures. To the extent possible this should include reference to quantity, quality, and time.

3. Develop and implement a national diabetes program to include delivery of quality care, promotion of healthy lifestyles, and prevention of disease, in order to reduce the morbidity and mortality of all people with diabetes and to improve their quality of life. This national diabetes program can be free-standing or integrated with related noncommunicable disease programs.
4. Allocate adequate, appropriate, and sustainable resources to prevent diabetes where possible, manage the disorder, manage and prevent its debilitating consequences, and provide for important research activities. Management skills should be developed at all levels so as to promote the most effective and efficient use of these resources.
5. Develop and implement an integrated health care model involving people affected by diabetes, health care professionals, and a variety of other individuals within the health system. This model combines care and education, ensures communication of information at all relevant levels, and includes continuous quality improvement. Emphasis should be placed on primary health care to achieve early diagnosis, proper treatment, and follow-up care. Clinical practice guidelines should be introduced so that quality care can be standardized and implemented.
6. Ensure that available and affordable insulin and other medications, as well as supplies needed to properly manage diabetes and prevent its disabling complications, are available and affordable to all people with diabetes.
7. Ensure that people affected by diabetes are able to acquire knowledge and skills to enable and empower them to provide self-care for their chronic disease. Ensure that the health care team has the specific knowledge and skills necessary to care for people with diabetes.
8. Develop national organizations to promote public awareness and the well-being of people affected by diabetes and to provide an avenue for participation in the development of national diabetes programs. Recognizing the problem of discrimination that affects many with diabetes, a key role of associations is to promote a supportive environment for persons affected by diabetes and to advocate social equity. Another key role is to support and promote research which can uncover new knowledge on diabetes. This information can be translated to better health care and ways to prevent diabetes and its complications.
9. Develop and implement a common information system for diabetes in the Americas to document and track the attainment of better health for people with diabetes. The data obtained will provide information for development and improvement of patient care as well as for optimizing systems for care delivery and resources for future programs.

10. Promote partnerships among the major stakeholders involved in achieving better health for people with diabetes. Continuous collaboration between these stakeholders is essential for this mission.

Commitment

All the nations of the Americas will invest in diabetes prevention and control, as a practical application of the strategy for health for all.