



PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION



146th SESSION OF THE EXECUTIVE COMMITTEE

Washington, D.C., USA, 21-25 June 2010

Provisional Agenda Item 4.6

CE146/14, Rev. 1 (Eng.)

7 June 2010

ORIGINAL: SPANISH

STRATEGY AND PLAN OF ACTION FOR CHAGAS DISEASE PREVENTION, CONTROL AND CARE

Introduction

1. Chagas' disease, or American trypanosomiasis, is a parasitic disease caused by the protozoan *Trypanosoma cruzi* and transmitted by insects. The vectors of this infection, which is endemic in 21 countries of the Region of the Americas, are hemiptera of the subfamily *Triatominae* capable of colonizing unhealthy rural, periurban, and urban dwellings. Although less frequently, the infection is also transmitted through transfusions, contaminated food, and from mother to child through the placenta. With an annual incidence of 41,000 cases in the Region of the Americas, Chagas' disease affects around 8 million people and causes nearly 12,000 deaths annually (down from 45,000 cases in the 1980s and 23,000 in the 1990s). An estimated 100 million people are at risk of contracting this disease (1).

2. A disease of developing countries, Chagas' is associated with multiple social and environmental determinants putting millions of people at risk. Some of the main determinants common in vast areas of Latin America are poor-quality dwellings—chiefly in rural and periurban areas—and living in areas marked by economic problems, social instability, or high migration rates. The disease is also associated with poor populations involved in seasonal agricultural work harvesting sugarcane and other crops. This disease contributes to perpetuate the cycle of poverty, since it reduces learning, productivity, and earning capacity. The combined presence of certain environmental factors, such as triatomine vectors, mammals that serve as reservoirs of the disease, makeshift dwellings, and human exposure, creates the conditions for effective transmission of the infection and its endemicity.

3. In 1998, the 51st World Health Assembly (in Resolution WHA51.14) called for interrupting Chagas' disease transmission by 2010.

4. The First and Second Joint Meetings of Southern Cone, Central American, Andean, and Amazon Subregional Initiatives for the Prevention and Control of Chagas' disease, which were held in 2007 and 2009 (2.3), deemed the elimination or interruption of household transmission of *T. cruzi* to be unstable, and declared that achieving that goal would require active surveillance, interventions and actions to address this and other modes of transmission. These meetings also stressed that a wide range of conditions and objectives that vary with the epidemiological situation of each country must be considered, and that, the target of 2010 set in Resolution WHA51.14 for meeting the goal is therefore unrealistic.

5. The 63rd World Health Assembly reviewed the 2010 target and analyzed the achievements and challenges ahead in order reformulate goals and deadlines. The result was the proposal in the Report to the Secretariat, found in document A63/17, and the resolution deriving from that report (Resolution WHA63.20).

6. Resolution CD49.R19 (2009) of the 49th Directing Council of the Pan American Health Organization (PAHO) urges Member States to commit themselves to eliminating or reducing neglected diseases and other infections related to poverty, including Chagas' disease, so that these diseases are no longer considered public health problems by 2015. Given the current conditions and situation of Chagas' disease and the experience that the countries have acquired in its prevention and control with support from PAHO, eliminating the disease transmission has been put forward as a feasible goal.

7. The purpose of this document is to call the Member States' attention to this issue and urge them to redouble their efforts to strengthen the initiative to eliminate Chagas' disease, an infectious disease that is still a serious public health problem despite the progress that has been made and whose persistence in the Region of the Americas is associated with poor and marginalized populations.

Background

8. The efforts of countries in which Chagas' disease is endemic, along with the work of the Pan American Sanitary Bureau (the Bureau), have since the early 1990s led to a successful system of horizontal technical cooperation among countries through the subregional initiatives for the prevention and control of Chagas' disease in the Southern Cone¹ (1992), Central America² (1997), the Andean³ countries (1998), the countries of

¹ INCOSUR: Southern Cone Initiative to Control/Eliminate Chagas' disease.

the Amazon⁴ (2003), and Mexico (2004). The situation has substantially improved with these efforts, as they have contributed to the interruption of vector-borne transmission in countries or specific parts of countries by eliminating allochthonous species of vectors, adopting universal screening of blood donors, detecting congenital cases of transmission (Annex A, table 1), reducing the prevalence of the disease in children, decreasing the morbidity and mortality associated with it, expanding coverage, and improving the diagnosis, as well as in providing clinical care and treatment of infected and sick people (4).

9. The strategy for the prevention and control of Chagas' disease must not only be effective and capable of reducing morbidity, mortality, and human suffering, but also efficient and capable of saving resources for the countries by reducing the direct and indirect costs associated with the disease. Brazil's national program may serve as an example. It not only prevented 277,000 new infections and 85,000 deaths between 1985 and 1995, but also saved US\$ 7.16 for each dollar spent (5).

10. Significant reductions in the number of acute cases and in triatomine populations in dwellings have been seen in all endemic areas. The estimated number of annual deaths from Chagas' worldwide fell from 45,000 in the 1980s to around 12,000 in 2008, and the estimated number of people infected declined from 30 million in 1990 to 8 million in 2006. In those 16 years, the annual incidence fell from 700,000 to 56,000, and the burden of the disease decreased from 2.8 million disability-adjusted life years to under 500,000.

11. Although substantial progress has been made, not all of the countries have succeeded in meeting the proposed targets, and new challenges have emerged, such as the spread of the disease by migration to countries where it is not endemic. Programs must be made sustainable, the emergence and reemergence of the disease must be addressed, and the coverage of appropriate diagnosis and medical care and treatment must be expanded. This document reflects the technical contributions of the 21 countries in the Region where Chagas' disease is endemic. It is presented to address the need to review the plans of action that the countries submit annually in the context of the subregional initiatives.

12. In 2010, several of countries in the Region failed to meet their control targets. The failure to give priority to Chagas' disease in health agendas, limited resource allocation, problems in the relationship between the national and local health systems, the

² IPCA: Initiative of Central America Countries to Interrupt Vector-borne and Transfusion Transmission of Chagas' disease.

³ API: Initiative of the Andean Countries for the Control of Vector-borne and Transfusion Transmission of Chagas' disease.

⁴ AMCHA: Initiative of the Amazon Countries for the Surveillance and Control of Chagas' disease.

diversion of resources to address emerging health events, and other situational factors caused the achievement of the expected results to be delayed.

Situation Analysis

13. Chagas' disease is one of the neglected diseases. The affected and at-risk populations, including indigenous populations, are generally poor and live in precarious conditions, salient among them the poor quality of dwellings, where conditions foster both colonization by triatomine vectors and human contact (6).

14. Chagas' disease is the most prevalent tropical communicable disease in Latin America. In 1990, the disease burden associated with this disease was five times greater than that of malaria, and in the Americas as a whole it exceeded the combined burden of all other tropical diseases (7). Although the disease burden declined significantly between 1990 and 2001, it was still greater in the latter year than the burden of malaria, leishmaniasis, leprosy, or schistosomiasis (8).

15. Chagas' disease in humans has two phases: an acute phase with a risk of myocarditis, encephalitis, and other serious disseminated forms of the disease, and a chronic phase in which symptoms can appear decades after the infection, leading to complications in up to 30% of the people infected. The most serious complications are cardiac alterations involving heart rhythm disorders and problems with the conduction of electrical impulses, as well as hard-to-control dilated cardiomyopathies, at times accompanied by secondary problems such as thromboembolism. Chagas' disease can also lead to digestive megaformations such as megalo-esophagus and megacolon (9). The low-level parasitemia that patients with chronic Chagas' diseases live with throughout their lifetime does not prevent flare-ups of the infection in cases of immunosuppression (such as that associated with HIV infection and AIDS, among other conditions), which can increase the lethality of the disease. In view of the wide distribution of *T. cruzi* in Latin America, primary health care workers need to be educated about the disease, and the capacity and coordination needed to refer patients to higher levels of the system for more complex care need to be ensured.

16. The Pan American Sanitary Bureau's Strategic and Programmatic Orientations, 1999-2002, adopted by the 25th Pan American Sanitary Conference (10), include regional goals applying to all the countries. One is the screening of all blood for transfusion to prevent the transmission of hepatitis B and C, HIV, *T. cruzi*, and syphilis. Another is quality control programs in all blood banks to increase blood safety. The Regional Plan of Action for Transfusion Safety 2000-2004 (11) reiterated these goals. The countries' responses have reduced the estimated post-transfusion risk of *T. cruzi* infection in Latin America by reducing the incidence of infected donors from 1 out of 762 in 2000 to 1 out of 3,377 in 2005 (12). In 2007, 18 of the 21 countries where the

disease is endemic screened all donated blood in their blood banks. In 2006, the American Red Cross incorporated screening in its blood bank system, which accounts for 65% of blood donations in the United States (13-15).

17. Vertical mother-to-child transmission of the infection through the placenta can affect some 2% to 8% of children born to mothers infected with *T. cruzi*. The importance and weight of this mode of transmission varies according to country and subregion. Several countries already have legal instruments that stipulate coverage in primary care services, the organization and training of health workers to diagnose the infection in prenatal controls to establish timely diagnostic and therapeutic interventions for newborns during delivery, followed by two checkups at six-month intervals. Congenital infection is curable in the majority of cases if treated within 12 months of birth (16-17).

18. Other modes of transmission (some emerging) that need to be addressed with prevention, control, and care measures are oral transmission, transmission by transplantation, and laboratory accidents. Eating contaminated food, in particular, has led to outbreaks and deaths from acute Chagas' disease in several countries in the Region (18).

19. From a public health standpoint, one of the most pressing problems in the care of Chagas' disease is lack of access to etiological treatments, despite the efforts of PAHO and the World Health Organization (WHO) to maintain adequate supplies of nifurtimox and benznidazole, drugs that have proven effective over the years and are the drugs indicated for acute cases as well as the early phases of the chronic disease. These drugs have also recently proven effective throughout the chronic phase of the disease. An innovation worthy of mention is the recent, formulation of pediatric benznidazole by the Federal Laboratory of Pernambuco, Brazil that is expected to be available by the end of 2010. However, more development and innovation are needed. Conceptual changes in treatment, as well as lack of financial incentives for research and the production of the drugs, have at times led to shortages. This is an issue of the greatest importance, since fighting Chagas' disease requires etiologic treatment for affected children and adolescents, as well as for properly diagnosed adults who may need and tolerate it. A clinical trial to determine the feasibility and efficacy of treatment for chronic patients is currently under way (19).

20. Lack of clinical symptoms normally makes Chagas' a silent disease, that often goes undiagnosed, with little attention paid to it in medical schools and training centers for health professionals. Serious shortcomings in medical care remain to be overcome for the sake of the estimated 8 million affected people in the Americas, and for those who have migrated to countries both inside and outside the Region where the disease is not endemic (20-21).

Proposal

Strategy

21. Since 1992, the basic strategy for the prevention, control, and care of Chagas' disease has consisted of international technical cooperation among endemic countries in the form of subregional initiatives. PAHO as Technical Secretariat has participated in these efforts, which have led to improvements in medical care, operations research, and care in rural areas. Given the great wealth of experience that the Region of the Americas has had with strategies to eliminate communicable diseases, and the progress made in reducing the burden of such diseases, there are technically feasible, economically viable, and socially acceptable strategies to ensure success. These strategies which are outlined below, figure in document CD49/9, Elimination of Neglected Diseases and Other Poverty-Related Infections, which was presented at the 49th Directing Council, 61st session of the Regional Committee of WHO for the Americas, held in Washington, D.C., from 28 September to 2 October 2009.

22. The elimination of household vectors (integrated vector control) through the use of insecticides with residual action, entomological surveillance, and improvements in housing and the environment (including the replacement of housing where indicated and feasible) require strategies that involve action in intersectoral, interinstitutional contexts within the structure and functions of primary health care. Such action must be community-based and community-supported and must include horizontal cooperation among countries through suitable partnerships and coordination.

23. Other important strategies include screening all blood donors, using diagnostic reagents of proven quality (validated by the competent authority or an authorized professional association), conducting internal validation of the quality of equipment, procedures, and diagnostic reagents, verifying activities and the corresponding records through periodic on-site audits, conducting ongoing staff training, and mandating participation in national and international performance evaluation programs.

24. Screening pregnant women for *T. cruzi* as part of universal prenatal care, monitoring the newborn infants of infected mothers, and detecting the parasite in umbilical cord blood or through positive serology for *T. cruzi* at 6-12 months following birth, with etiologic treatment of all positive infants, can reduce vertical transmission and its sequelae.

25. Diagnosis, medical care, and etiologic treatment for children and for adolescents aged 15 or over—as well as the diagnosis and care of infected adults—should be a guaranteed part of primary care services. In addition, higher-level, more complex health services should include any appropriate medical or medical/surgical treatment of cases of *T. cruzi* infection that have been referred from the primary level for more specialized care. Primary health care is the appropriate institutional and community context in which to incorporate national programs for the prevention, control, and care of Chagas' disease.

26. Optimal food preparation practices should be promoted as a way of preventing oral infection by *T. cruzi*, since Chagas' disease can be transmitted by food.

27. Information, education, and communication activities should cover the population in areas endemic for Chagas' disease, as well as health and education workers. Given the various social, productive and environmental implications of Chagas' disease in endemic areas, the effectiveness and sustainability of measures to prevent, control, and treat it depend on appropriate intersectoral coordination (including but not limited to the health, agriculture, housing and social security sectors), as well as interinstitutional coordination (involving ministries, municipal governments, universities, research centers, livestock cooperatives, etc.). This is a necessary form of support for, and an integral part of, the strategies mentioned.

28. Partnership, coordination, and cooperation among the public and private sectors and civil society of the countries, along with international technical cooperation, can ensure the sustainability of actions to achieve the expected results in preventing, controlling and treating Chagas' disease.

29. The quality of the available scientific evidence should be improved by conducting research with high methodological rigor that serves as the basis for the design of public health actions and policies to meet the objectives in the Plan of Action.

Plan of Action

Goals and objectives for 2015

GOAL 1: TO INTERRUPT HOUSEHOLD VECTOR-BORN, TRANSFUSIONAL, AND OTHER TYPES OF *T. CRUZI* TRANSMISSION IN ALL SUBREGIONS OF THE AMERICAS BY EXPANDING THE COVERAGE OF PREVENTION AND CONTROL MEASURES BEARING IN MIND THE CHARACTERISTICS OF THE HEALTH SYSTEM AND ECOLOGY OF EACH SUBREGION

Objective 1.1. To interrupt the vector-borne household transmission of *T. cruzi*

Indicators

- Household infestation index of less than 1% for specific triatomine species.
- Seroprevalence of less than 1% in children under 5 years.
- No acute cases due to vector-borne household transmission.

Tasks

- Eliminate allochthonous triatomine species.
- Prevent transmission to people where autochthonous triatomines (either household or wild species that have colonized or infested dwellings) are present.

Objective 1.2. To interrupt the *T. cruzi* transmission via transfusion and organ transplants

Indicators

- 100% screening for *T. cruzi* of blood and organ donors.
- Decreasing seroprevalence of *T. cruzi* antibodies in blood banks.
- Safe blood program supervised and evaluated.

Tasks

- Conduct serological screening of blood for transfusion.
- Ensure the quality of diagnostic reagents.
- Conduct internal controls of equipment quality.
- Validate information systems.
- Develop uniform written standards and procedures, and institute supervision and evaluation.
- Ensure ongoing training for personnel.
- Mandate participation in both national and international blood bank performance evaluation programs.

Objective 1.3. To prevent the transmission of *T. cruzi* through other channels, such as oral transmission by contaminated food and laboratory accidents

Indicators

- Annual number of outbreaks of Chagas' disease due to contaminated food.
- Annual number of cases (incidence) of *T. cruzi* infection due to laboratory accidents.
- Annual number of people infected by *T. cruzi* due to the consumption of contaminated food or laboratory accidents.

Tasks

- Promote optimal food preparation practices.
- Ensure that legislation is adequate to the epidemiologic realities.
- Prevent and control foodborne outbreaks of Chagas' disease.

Action by the Member States

- Strengthen national programs so that they use allocated resources efficiently, and set criteria for good integrated vector control practices (insecticides, environmental management and information, education and communication strategies).
- Strengthen national capacities to support departments, provinces, regions, and municipalities in vector control efforts.
- Create plans of action to ensure that countries still lacking programs for universal *T. cruzi* screening of blood and organ donors establish such programs, and that programs be maintained in countries that already have them; use diagnostic reagents whose quality has been validated by the competent authority or authorized professional association; conduct periodic audits to ensure the quality of equipment, procedures, diagnostic reagents, and the thoroughness and quality of records of all activities; ensure ongoing staff training; and mandate participation in national and international performance evaluation programs for blood banks.
- Set up comprehensive, sustainable control programs at the national, provincial and municipal levels to deal with coexisting diseases.
- Ensure that national and international performance evaluation schemes are adopted in countries that have not yet embraced such strategies.
- Strengthen food safety measures that take account of Chagas' disease as a foodborne disease.
- Implement sustainable information, education and communication programs with community participation, including a component of ongoing evaluation.
- Strengthen local capacities for the preparation, implementation, and analysis of research that supports work toward the proposed goals.

Action by the Bureau

- To serve as technical secretariat for the subregional prevention and control initiatives and the technical cooperation associated with them.
- To form a technical advisory group on the prevention, control, and medical care of Chagas' disease to support and coordinate regional activities and strategies, with PAHO serving as technical secretariat.
- To create and implement evaluation processes that include missions in the field.
- To continue technical cooperation with the countries in a manner that is integrated with the prevention of other diseases.
- To advocate with the countries to mobilize resources that strengthen efforts in the Region.
- To provide technical support.

GOAL 2: TO REDUCE MORBIDITY AND MORTALITY BY IMPROVING ACCESS TO HEALTH SERVICES FOR INFECTED PEOPLE, BOTH SYMPTOMATIC AND ASYMPTOMATIC, AND INCREASE THE COVERAGE OF DIAGNOSIS, QUALITY MEDICAL CARE, AND TIMELY TREATMENT OF CASES

Objective 2.1. To ensure diagnosis and medical care and treatment of people infected with *T. cruzi*

Indicators

- 100% of children identified by seroprevalence surveys as infected with *T. cruzi* are diagnosed and receive medical care and treatment.
- 100% of adults with a confirmed diagnosis of Chagas' infection or disease are duly treated in timely fashion in compliance with national treatment standards.

Tasks

- Include diagnosis of Chagas' disease in the primary health care system to ensure timely medical care and treatment for all patients infected with *T. cruzi*.
- Strengthen the countries' treatment supply chains to increase access to treatment.
- Establish referral and counter-referral mechanisms to manage cases according to their clinical complexity.

Objective 2.2. To implement secondary prevention of congenital Chagas' disease

Indicators

- Number of countries with functioning programs for the prevention and control of congenital Chagas' disease.
- Increasing annual coverage of *T. cruzi* screening in pregnant women and at-risk populations.
- 100% diagnosis of infants born to infected mothers and 100% treatment of infected mothers.

Tasks

- Diagnose pregnant mothers infected with *T. cruzi* and monitor their children during the first 12 months of life.
- Procure evidence that all of the cases of vertical infection detected during the postnatal period receive medical care and treatment and are cured (12, 13).

Objective 2.3. To perform technology research and innovation, with special emphasis on developing new drugs for etiological treatment

Indicators

- Number of countries with access to the drugs.
- Number of research projects supported.

Tasks

- Support research projects designed to create new and better drugs.
- Produce drugs for pediatric use.
- Improve distribution and access.

Action by the countries

- Increase diagnosis and treatment coverage at the primary health care services , with attention to infants born to infected mothers.
- Establish referral and counter-referral mechanisms to manage cases according to their clinical complexity.
- Universal screening of pregnant woman in at-risk areas for Chagas' disease.
- Strengthen the countries' treatment supply chains to expand access to treatment.

Action by the Bureau

- To serve as technical secretariat for the subregional prevention and control initiatives and the technical cooperation associated with them.
- To form a technical advisory group on the prevention, control, and medical care of Chagas' disease to support and coordinate regional activities and strategies, with PAHO serving as technical secretariat.
- To create and implement a process of evaluation that include missions in the field.
- To continue technical cooperation with the countries in a manner that is integrated with the prevention of other diseases.
- To work with the countries to secure resources that strengthen efforts in the region.
- To provide technical assistance.

Resources required

30. From US\$ 2,500,000 to US\$ 6,000,000 should be invested in PAHO technical cooperation for the period 2009-2013, in addition to approximately US\$ 71,000,000 annually in activities funded by the Region's 21 endemic countries through their national initiatives.

31. This annual figure of US\$ 71,000,000 is a total for the Region's 21 endemic countries and includes investment in each country and each respective subregion and initiative.

Relations with other entities

32. Interaction, coordination, and complementary activity with other entities is essential. Other relevant entities include development banks; regional, national, and international agencies; nongovernmental organizations; foundations; and research centers

33. The World Bank, the Inter-American Development Bank, the European Community, the Japanese International Cooperation Agency (JICA), the Spanish Agency for International Development Cooperation (AECID), the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC), the U.S. Agency for International Development (USAID), Doctors without Borders (DWB), the Drugs for Neglected Diseases Initiative (DNDi), the Fundación Mundo Sano (FMS) in Argentina, academic institutions and universities, professional societies, and community organizations all participate in technical cooperation for the prevention, control and care of Chagas' disease.

Monitoring and evaluation systems

34. Monitoring and evaluation systems are present in the field surveillance, prevention, control, and care activities carried out by PAHO. As part of the subregional prevention and control initiatives (INCOSUR, IPA, IPCA and AMCHA) and the Mexican initiative, the countries submit reports to annual meetings and through external evaluation missions coordinated by PAHO, to inform their peers about the actions completed, results, and goals met. Exercises in the context of PAHO Country Cooperation Strategies are also used to monitor activities and the attainment of objectives.

35. Mechanisms to evaluate action and impact are planned and executed by agreement with the countries and the relevant Subregional Initiatives part. Independent international missions conduct field visits to verify and evaluate results at the national level. The respective report is evaluated by the national delegates at the intergovernmental meetings of each subregional initiative and, if accepted, it is endorsed.

Action by the Executive Committee

36. The Executive Committee is requested to review the information in this document and to consider adopting the proposed resolution provided in Annex C.

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Table 1:
Baseline, objectives, and milestones, expressed as the number of countries that have interrupted vector-borne or transfusion-associated transmission of *T. cruzi*, for the 21 endemic countries of the Americas.

Country group	2007	2008-2009	2010		2011	
			First semester	Second semester	Third semester	Fourth semester
Total (numerator) and partial (denominator) interruption of vector-borne transmission ^a	3/1	6/2	--	8/4	10/2	15
Universal blood screening for Chagas' disease	14	18	--	19	20	--

^a Partial due to incomplete territorial coverage or limitation of the action to a specific species of the entomological vector.

--: Semester without achievement of objectives.

Table 2:
Status of vector-borne, transfusion-associated and vertically transmitted *Trypanosoma cruzi* in the Region's 21 endemic countries

Country or territory	Vector-borne transmission	Transfusion transmission	Vertical transmission	Subregional initiative
Argentina	Interrupted for <i>Triatoma infestans</i> in 5 provinces (2001). Active transmission persists in 18 other endemic provinces.	100% screening of donors in all blood banks.	Identified. Program for diagnosis and medical care and treatment created.	INCOSUR
Belize	Interrupted for <i>T. dimidiata</i> .	100% screening of donors in all blood banks.	No data.	IPCA
Bolivia	Active. Has declined in past 10 years with control measures. Household infestation, triatomine infection, and acute cases have fallen.	Partial screening coverage in blood banks.	Identified. No general action.	INCOSUR AMCHA

Country or territory	Vector-borne transmission	Transfusion transmission	Vertical transmission	Subregional initiative
Brazil	Interrupted for <i>T. infestans</i> (2006). Transmission in the wild and outbreaks due to contaminated food in the Amazon region. As part of AMCHA, a specific surveillance system was implemented in the Amazon region. In other parts of the country with vector-borne transmission, vectors are monitored.	100% screening of donors in all blood banks.	Identified. Prevalent in Rio Grande do Sul, where it is diagnosed and treated. Infrequent in the rest of the country.	INCOSUR AMCHA
Chile	Interrupted for <i>T. infestans</i> (1999). Vector surveillance in place. Vector-borne transmission interrupted. (Note: In Chile, <i>T. infestans</i> is the only vector of the disease.)	100% screening of donors in all blood banks.	Identified. Program for diagnosis and medical care and treatment created.	INCOSUR
Colombia	Active transmission by <i>T. dimidiata</i> and <i>Rhodnius prolixus</i> . Transmission in the wild and outbreaks in the Amazon region due to contaminated food. Epidemiological and vector monitoring in place. As part of AMCHA, a specific surveillance system was implemented in the Amazon region.	100% screening of donors in all blood banks.	Identified.	AMCHA IPA
Costa Rica	Active transmission by <i>T. dimidiata</i> .	100% screening of donors in all blood banks.	No data.	IPCA
Ecuador	Active transmission by <i>T. dimidiata</i> and <i>R. ecuadoriensis</i> . Transmission in the wild and outbreaks due to contaminated food in the Amazon region. Epidemiological and vector surveillance place. As a part of AMCHA, a specific surveillance system was implemented in the Amazon region.	100% screening of donors in all blood banks.	Identified.	AMCHA IPA

Country or territory	Vector-borne transmission	Transfusion transmission	Vertical transmission	Subregional initiative
El Salvador	Interrupted for <i>R. prolixus</i> (2009). Active transmission by <i>T. dimidiata</i> .	100% screening of donors in all blood banks.	No data.	IPCA
Guatemala	Interrupted for <i>R. prolixus</i> (2008).	100% screening of donors in all blood banks.	No data.	IPCA
French Guiana	Transmission in the wild and outbreaks due to contaminated food in the Amazon region. Epidemiological and vector surveillance in place. As part of AMCHA, a specific surveillance system was implemented in the Amazon region.	The blood is brought from France.	No data.	AMCHA
Guyana	Transmission in the wild and outbreaks due to contaminated food in the Amazon region. Epidemiological and vector surveillance in place. As a part of AMCHA, a specific surveillance system was implemented in the Amazon region.	100% screening of donors in all blood banks recently implemented.	No data.	AMCHA
Honduras	Interrupted for <i>R. prolixus</i> (2008).	100% screening of donors in all blood banks.	No data.	IPCA
Mexico	Interrupted for <i>R. prolixus</i> (2009). Active transmission by autochthonous species.	80% screening of donors in blood banks. Efforts progressing.	Identified.	None
Nicaragua	Active transmission by <i>R. prolixus</i> and <i>T. dimidiata</i> , with clear progress in control of the former.	100% screening of donors in all blood banks.	No data.	IPCA
Panama	Active transmission by <i>R. pallescens</i> and <i>T. dimidiata</i> , with surveillance in place.	100% screening of donors in all blood banks.	No data.	IPCA
Paraguay	Interrupted for <i>T. infestans</i> in the eastern region (2008). Transmission persists in the Chaco.	100% screening of donors in all blood banks.	Identified. Program for diagnosis and medical care and treatment created.	INCOSUR

Country or territory	Vector-borne transmission	Transfusion transmission	Vertical transmission	Subregional initiative
Peru	Interrupted for <i>T. infestans</i> in Tacna (2009). Persists in four other departments in the south and north through other vectors. Transmission in the wild in the Amazon region. Epidemiological and vector surveillance in place.	100% screening of donors in all blood banks.	Identified.	AMCHA IPA
Suriname	Transmission in the wild and outbreaks due to contaminated food in the Amazon region.	100% screening of donors in all blood banks being implemented.	No data.	AMCHA
Uruguay	Interrupted for <i>T. infestans</i> (1997). Epidemiological and vector surveillance in place.	100% screening of donors in all blood banks.	Identified. Program for diagnosis and medical care and treatment created.	INCOSUR
Venezuela	Active transmission by <i>R. prolixus</i> and <i>T. maculata</i> targeted. Transmission in the wild and outbreaks due to contaminated food in the Amazon region and elsewhere. Epidemiological and vector surveillance in place.	100% screening of donors in all blood banks.	Identified.	AMCHA IPA

INCOSUR: Southern Cone Initiative to Control/Eliminate Chagas' disease

API: Initiative of the Andean Countries for the Control of the Vector-borne and Transfusion Transmission of Chagas' disease.

IPCA: Initiative of the Countries of Central America for Control of Vector-Borne and Transfusional Transmission and Medical Care for Chagas' disease.

AMCHA: Initiative of the Amazon Countries for the Surveillance and Control of Chagas' disease.



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Annex B

ANALYTICAL FORM TO LINK AGENDA ITEM WITH THE INSTITUTIONAL MANDATES

1. Agenda item: 4.6. Strategy and Plan of Action for Chagas Disease Prevention, Control and Care

2. Responsible unit: Communicable Disease Prevention and Control, Health Surveillance and Disease Prevention and Control Area (HSD/CD).

3. Preparing officer: Dr. Roberto Salvatella Agrelo.

4. List of collaborating centers and national institutions linked to this Agenda item:

- Pest and Insecticide Research Center (CIPEIN) / Scientific and Technical Research Institute of the Armed Forces (CITEFA), Argentina, WHO Collaborating Center.
- National Research Institute on Chagas' disease (Dr. Mario Fatala Chabén) (INDIECH), Argentina, WHO Collaborating Center.
- Oswaldo Cruz Foundation (FIOCRUZ), Brazil.
- Fundación Mundo Sano, Argentina.
- Endemic Disease Control Agency (SUCEN), Brazil.

5. Link between Agenda item and Health Agenda for the Americas 2008-2017:

- Reducing health inequalities among countries and inequities within them. Area of action *d*, paragraphs 52-57.
- Reducing the risk and burden of disease. Area of action *e*), paragraphs 58-60.

6. Link between agenda item and Strategic Plan 2008-2012: (October 2007 version)

Region-wide expected result 1.3: Member States supported through technical cooperation to provide access for all populations to measures for the prevention, control, and elimination of neglected communicable diseases, including zoonotic diseases.

Indicators:

1.3.7: Number of countries with domiciliary infestation index by *T. infestans* (Southern Cone) and *R. prolixus* (Central America) under 1%.

1.3.8: Number of countries with total Chagas screening of blood banks to prevent transmission by transfusion.

7. Best practices in this area and examples from countries within the Region of the Americas:

Argentina, Brazil, Chile, Guatemala, Honduras, and Uruguay.

8. Financial implications of this Agenda item:

From US\$ 2,500,000 to US\$ 6,000,000 will be invested in technical cooperation, as well as an annual sum of approximately US\$ 71,000,000 in the countries' activities for the period 2009-2013.

These estimates are based on what is currently invested and what needs to be invested to obtain the proposed results. They reflect a minimum and a maximum proposal.



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146th SESSION OF THE EXECUTIVE COMMITTEE

Washington, D.C., USA, 21-25 June 2010

CE146/14, Rev. 1 (Eng.)
Annex C
ORIGINAL: SPANISH

PROPOSED RESOLUTION

STRATEGY AND PLAN OF ACTION FOR CHAGAS DISEASE PREVENTION, CONTROL AND CARE

THE 146th SESSION OF THE EXECUTIVE COMMITTEE,

Having reviewed the report *Strategy and Plan of Action for Chagas Disease Prevention, Control and Care* (CE146/14, Rev. 1),

RESOLVES:

To recommend that the Directing Council consider adopting a resolution written in the following terms:

STRATEGY AND PLAN OF ACTION FOR CHAGAS DISEASE PREVENTION, CONTROL AND CARE

Having reviewed the report *Strategy and Plan of Action for Chagas Disease Prevention, Control and Care* (CD50/___), and in view of:

- (a) The existence of previous mandates and resolutions of the Pan American Health Organization, such as Resolution CD49.R19 of the 49th Directing Council of 2009 entitled *Elimination of Neglected Diseases and Other Poverty-related Infections*, and World Health Assembly Resolution WHA51.14 entitled *Elimination of Transmission of Chagas' Disease*;
- (b) The need to complete work on the “unfinished agenda,” since the proportion of the population affected remains high among the poorest and most marginalized

- populations of the Americas, and the need to address health determinants in order to reduce the health, social, and economic burden of Chagas' disease;
- (c) The Region of the Americas' vast experience in the implementation of strategies to eliminate communicable diseases and the progress made in reducing the burden of Chagas' disease, for whose prevention and control there are efficacious and cost-effective public health interventions; and
 - (d) The success achieved by the Member States through subregional initiatives for the prevention and control of Chagas' disease, but aware of the need to expand existing activities.

RESOLVES:

1. To approve the document *Strategy and Plan of Action for Chagas Disease Prevention, Control and Care*.
2. To urge the Member States to:
 - (a) review national plans or establish new ones for prevention, control, and medical care of Chagas' disease, employing an integrated approach that addresses the social determinants of health and provides for interprogrammatic collaboration and intersectoral action;
 - (b) strengthen and emphasize the subregional initiatives for the prevention and control of Chagas' disease, incorporating a medical care component for the people affected to continue progress toward meeting the proposed objectives through technical cooperation among the countries;
 - (c) provide the necessary resources and implement the Strategy and Plan of Action for the Prevention, Control and Care of Chagas' Disease;
 - (d) redouble efforts to reach the established goal of eliminating vector-borne transmission of *T. cruzi* by 2015, in addition to fighting transmission via transfusion, placenta, organ transplants, and others;
 - (e) establish integrated strategies for prevention, diagnosis, medical care and treatment, and vector control, with broad community participation, so that the process helps to strengthen national health systems, including primary health care, surveillance and alert and response systems, with attention to factors related to gender and ethnicity;

- (f) support research to obtain appropriate scientific evidence on the control, surveillance, diagnosis, and medical care of Chagas' disease, in order to meet the goals of the present plan.
3. To request the Director to:
- (a) support execution of the *Strategy and Plan of Action for the Prevention, Control, and Care of Chagas' Disease*, and provide the technical cooperation that the countries need to develop and execute national plans of action;
 - (b) continue advocating for the active mobilization of resources and encouraging close collaboration to forge partnerships that support the implementation of this resolution, as, for example, in the case of the trust fund designed to support the elimination of neglected diseases and other poverty-related infectious diseases mentioned in Resolution CD49.R19 of 2009;
 - (c) strengthen regional mechanisms to improve access to and the distribution of the etiologic treatment for Chagas' disease, and promote new advances in this area to overcome barriers and problems in access to treatment;
 - (d) promote and strengthen technical cooperation among the countries, and form strategic partnerships to carry out activities designed to eliminate Chagas' disease as a public health problem;
 - (e) provide support to improve primary health care services and the surveillance and evaluation of the national plans of action.



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Annex D

**Report on the financial and administrative implications for the
Secretariat of the Proposed Resolution**

1. Agenda item: 4.6. Strategy and Plan of Action for Chagas Disease Prevention, Control and Care

2. Linkage to Program Budget 2008-2009:

(a) **Area of work:** Health Monitoring, and Disease Prevention and Control (HSD/CD).

(b) **Expected result:** HSD/CD

RER 1.3: Member States supported through technical cooperation to provide access for all populations to measures for the prevention, control, and elimination of neglected communicable diseases, including zoonotic diseases.

Indicators:

1.3.7: Number of countries with domiciliary infestation index by *T. infestans* (Southern Cone) and *R. prolixus* (Central America) under 1%.

1.3.8: Number of countries with total Chagas screening of blood banks to prevent transmission by transfusion.

3. Financial implications:

(a) **Total estimated cost for implementation over the lifecycle of the resolution (estimated to the nearest US\$ 10,000, including staff and activities):** From US\$ 2,500,000 to US\$ 6,000,000 (from the regular budget or extrabudgetary funds) will be invested in technical cooperation for the period 2009-2013. These estimates are based on what is currently invested and what needs to be invested to achieve the proposed results. They reflect a minimum and a maximum proposal.

(b) **Estimated cost for the biennium 2010-2011 (estimated to the nearest US\$ 10,000, including staff and activities):** US\$ 500,000 will be invested in technical cooperation (from the regular budget or extrabudgetary funds).

(c) **Of the estimated cost noted in (b), what can be subsumed under existing programmed activities?** All funds have already been earmarked for activities in the BPB for the biennium.

4. Administrative implications:

- (a) **Indicate the levels of the Organization at which the work will be undertaken:**
National, subregional, and regional.
- (b) **Additional staffing requirements (indicate additional required staff full-time equivalents, noting necessary skills profile):** None.
- (c) **Time frames (indicate broad time frames for the implementation and evaluation):**
Evaluation at the end of 2013.