



PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION



50th DIRECTING COUNCIL

62nd SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 27 September – 1 October 2010

Provisional Agenda Item 4.12

CD50/16 (Eng.)
9 August 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 that expose millions of people to infection. Salient among the main determinants present in vast areas of Latin America are poor-quality dwellings—chiefly in rural and suburban areas—and living in areas marked by poverty, social instability, or high migration rates. The disease is also associated with populations involved in seasonal agricultural work harvesting sugarcane and other crops. This disease contributes to perpetuating 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 perpetuating the effective transmission of the infection and its endemicity.

3. In Resolution WHA51.14 (1998), the 51st World Health Assembly 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 domestic transmission of *T. cruzi* to be unstable, and declared that achieving that goal requires active surveillance, interventions and actions to address this and other modes of transmission. These meetings also recommended taking account of the wide range of conditions and objectives that are a function of the countries' different epidemiological situations.
5. The 63rd World Health Assembly (2010) analyzed the achievements and challenges ahead and the need to reformulate goals and deadlines (Report to the Secretariat of the World Health Organization [WHO], document A63/17, and Resolution WHA63.20).
6. Resolution CD49.R19 (2009) of the 49th Directing Council of the Pan American Health Organization (PAHO) urges Member States to eliminate or reduce 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.

Background

7. The efforts of countries where 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 the Amazon⁴ (2003), and Mexico (2004). Moreover, these initiatives have substantially improved the situation by interrupting vector-borne transmission in all or parts of the

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

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.

territory of affected countries by eliminating allochthonous⁵ species of vectors, adopting universal screening of blood donors, detecting congenital cases of transmission (Annex A, table 2), 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).

8. The strategy for the prevention and control of Chagas' disease must be effective and capable of reducing morbidity, mortality, and human suffering, as well as efficient and capable of saving resources for the countries by reducing the direct and indirect costs associated with the disease. Brazil's national program, for example, prevented 277,000 new infections and 85,000 deaths between 1985 and 1995, and also saved US\$ 7.16 for each dollar spent (5).

9. Significant reductions in the number of acute cases and in the presence of triatomines 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.

10. 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 propagation of the disease, through migration, to non-endemic countries. 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.

11. 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, emerging health events competing for resources, and other situational factors caused the achievement of the expected results to be delayed.

Situation Analysis

12. Chagas' disease is one of the neglected diseases. The affected and at-risk populations, including the most vulnerable ethnic groups, generally live in poverty and precarious conditions, especially as regards their dwellings and environment. Conditions

⁵ Allochthonous (or exotic) species are species introduced outside of their natural area of distribution. A specific case is *Rhodnius prolixus* in Central America, which was introduced from South America by man.

here make colonization by triatomine vectors possible and foster human contact with them (6).

13. 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).

14. 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 megaoesophagus and megacolon (9). Patients with chronic Chagas' disease live with low-level parasitemia throughout their lifetime, which does not preclude 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, training is needed for health care workers in all primary care facilities, so that they can tend to patients and refer them to higher levels of the system for more complex care when necessary.

15. The Pan American Sanitary Bureau's Strategic and Programmatic Orientations, 1999-2002, adopted by the 25th Pan American Sanitary Conference (10), spell out the regional goals for 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).

16. 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).

17. Prevention, control, and medical measures must also address other modes of transmission – some emerging – including, among other possibilities, oral transmission and transmission via transplants 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).

18. Despite the efforts of PAHO and WHO to maintain adequate supplies of nifurtimox and benznidazole, one of the most pressing problems in the care of Chagas' disease is lack of access to etiologic treatments. This problem needs to be studied from an age, gender, and ethnic perspective. These two drugs, which have proven effective over the years and are the drugs indicated for acute cases as well as the early phases of the chronic disease, have 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).

19. 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 non-endemic countries both inside and outside the Region (20-21).

Proposal

Strategy

20. 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 (2009).

21. The elimination of domestic 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) requires action in intersectoral, interinstitutional contexts within the structure and functions of primary health care. These strategies are based on and sustained by community participation and horizontal cooperation among countries through suitable partnerships and coordination.

22. Other important components of the strategy are screening of all blood donors, using diagnostic reagents of proven quality (validated by the relevant regulatory authority or authorized professional association); internal validation of the quality of equipment, procedures, and diagnostic reagents; periodic on-site audits to verify activities and the corresponding records; continued staff training; and obligatory participation in national and international performance evaluation programs.

23. Reducing vertical transmission and its sequelae requires the *T. cruzi* screening for pregnant women as part of universal prenatal care, monitoring of the newborns of infected mothers, and detection of the parasite in umbilical cord blood or through positive serology for *T. cruzi* at 6-12 months following birth, with etiologic treatment of all infants that test positive.

24. 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 institutional and community strategy in which national programs for the prevention, control, and care of Chagas' disease can be incorporated.

25. Recognizing that Chagas' disease can be transmitted by food, best practices in food handling and preparation should be promoted as a way of preventing oral infection by *T. cruzi*.

26. Information, education, and communication activities should cover the population in areas endemic for Chagas' disease, as well as health and education workers. Given the

intimate links between Chagas' disease and various social, productive and environmental factors 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.

27. 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.

28. Continued improvement in the quality of the available scientific evidence is needed. This calls for research with high methodological rigor that can serve 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 DOMESTIC VECTOR-BORN, TRANSFUSIONAL, AND OTHER TYPES OF *T. CRUZI* TRANSMISSION IN ALL SUBREGIONS OF THE AMERICAS. THIS WILL REQUIRE 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 domestic transmission of *T. cruzi* by 2015.

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 domestic transmission.

Specific objectives:

- Eliminate allochthonous triatomine species.
- Prevent transmission to people where autochthonous triatomines (either domestic or wild species that have colonized or infested dwellings) are present.
- Record the progress made toward interrupting domestic vector-borne transmission through indicators that measure the preliminary stages of consolidation.

Objective 1.2. To interrupt the *T. cruzi* transmission via transfusion and organ transplants by 2015.

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.

Specific objectives:

- 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.

Specific objectives:

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

Activities 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.

Activities 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.
- To create and implement monitoring and 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 neglected 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, AS WELL AS INCREASING COVERAGE OF DIAGNOSIS, QUALITY MEDICAL ATTENTION, AND TIMELY TREATMENT OF CASES.

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

Indicators

- 100% coverage with respect to diagnosis, medical care, and treatment of children identified as infected with *T. cruzi* in seroprevalence studies.
- 100% coverage with respect to diagnosis and timely, adequate treatment of adults with a confirmed diagnosis of Chagas' infection or disease, in keeping with national treatment standards.

Specific objectives:

- Include diagnosis of Chagas' disease in the primary health care system to ensure timely medical attention and treatment for all patients infected with *T. cruzi*, without distinction of gender or ethnicity.
- 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% coverage for diagnosis of infected pregnant women and treatment of their infected infants.

Specific objectives:

- Diagnosis of mothers with *T. cruzi* infection and monitoring of their children up to 12 months of age, with treatment of mothers during the post-partum and post-lactation period, on medical prescription, following individual assessment.
- 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 and better diagnostic tools, as well as drugs for treatment of the disease.

Indicators • Number of countries with access to the drugs. • Number of research and development projects supported.

Specific objectives:

- Promote research, development and technological innovation to create new and better drugs and diagnostic tools for all stages of the disease, based on regional priorities.
- Development and production of drugs for pediatric use.
- Improvements in distribution and access processes.

Activities by the countries

- Promote research and development projects for priority drugs and diagnostic tests through established mechanisms and by developing new institutional, intersectoral, international, and regional cooperation mechanisms.
- Improve funding of research, development, and technological innovation for the diagnosis and treatment of Chagas' disease, taking advantage of opportunities for cooperation with different subregional and regional sectors and international funding mechanisms.
- Quantify the current and future need for drugs and diagnostic tests to inform the demand for their production and use.

Activities by the Bureau

- Promote and strengthen networks, partnerships and cooperative relations with partners and strategic sectors devoted to technological innovation in diagnostic and treatment tools.
- Support the definition of priorities and the identification of gaps in technological innovation for the diagnosis, treatment and prevention of Chagas' disease and the creation of effective mechanisms for disseminating information.
- Promote and support regional and subregional cooperation projects that fill existing gaps in technological innovation, drawing on the usual cooperation mechanisms and other instruments, such as the regional platform for health innovation and access.
- For the benefit of health authorities as well as producers and donors, cooperate in quantifying and systematizing the current and future demand for drugs and diagnostic tools.

- Facilitate access and the rational use of existing drugs and diagnostic tools through joint procurement mechanisms such as the Regional Revolving Fund for Strategic Public Health Supplies.
- Strengthen health authorities and regulators to ensure access to drugs and tools that provide quality diagnosis.
- Work toward putting the promotion of innovation in this area and in any other areas relevant to Chagas' disease on the policy agendas of subregional and regional integration mechanisms and donors.

Resources required

29. Approximately US\$ 6,000,000 should be invested in PAHO technical cooperation for the period 2011-2015, in addition to approximately US\$ 71,000,000 annually in activities funded by the Region's 21 endemic countries through their national initiatives.

30. 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

31. 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, the Tropical Disease Research (TDR) program, the International Red Cross, 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

32. As part of the subregional prevention and control initiatives (INCOSUR, IPA, IPCA and AMCHA) and the Mexican initiative, the countries submit reports at their 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.

33. 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 Directing Council

34. The Directing Council is requested to review the information in this document and adopt the resolution recommended by the 146th Session of the Executive Committee (Annex C).

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

Country group	2007	2008-2009	2010	2011
Total interruption of vector-borne household transmission	3	6	8	15
Partial interruption ^a of vector-borne household transmission	1	2	4	2
Universal blood screening for Chagas' disease	14	18	19	20

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

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. <i>(Note: In Chile, T. infestans is the only vector of the disease.)</i>	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.



PAN AMERICAN HEALTH ORGANIZATION
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CD50/16 (Eng.)
Annex B

ANALYTICAL FORM TO LINK AGENDA ITEM WITH THE INSTITUTIONAL MANDATES

1. Agenda item: 4.12. 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 Fatała 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.



PAN AMERICAN HEALTH ORGANIZATION
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50th DIRECTING COUNCIL

62nd SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 27 September - 1 October 2010

CD50/16 (Eng.)
Annex C
ORIGINAL: SPANISH

PROPOSED RESOLUTION

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

THE 50th DIRECTING COUNCIL,

Having reviewed Document CD50/16, *Strategy and Plan of Action for Chagas Disease Prevention, Control and Care*, 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 (2009), *Elimination of Neglected Diseases and Other Poverty-related Infections*, and World Health Assembly Resolution WHA63.20 (2010), *Chagas Disease: control and elimination*;
- (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 vast experience of the Region of the Americas 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;

- (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 endorse the Strategy and approve the 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 the prevention, control, and optimization of access to 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, in order 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 Strategy and Plan of Action, with emphasis on the development of affordable and early diagnostic tests, including a test for its cure, and safer medications.

3. To request the Director to:
 - (a) support execution of the Strategy and Plan of Action for Chagas Disease Prevention, Control, and Care 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 (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 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: 4.12 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.

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