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**11th Annual Meeting
and First Virtual Meeting
of the Intergovernmental
Commission of the Amazonian
Countries Initiative for the Surveillance
and Control of Chagas Disease (AMCHA)**



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11th Annual Meeting and First Virtual Meeting of the Intergovernmental Commission of the Amazonian Countries Initiative for the Surveillance and Control of Chagas Disease (AMCHA)

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RECOMMENDATIONS, CONCLUSIONS AND RESOLUTIONS

The Intergovernmental Commission of the Amazonian Countries Initiative for the Surveillance and Control of Chagas Disease (AMCHA), at its 11th Annual Meeting and First Virtual Meeting, held on 27-28 May 2021, recommends, concludes and resolves:

1

Due to the particular Amazonian situation of vectorial transmission based mostly on the wild cycle of *Trypanosoma cruzi* with diversity of triatomine vectors involved in effective transmission, and the variety of eco-epidemiological situations that facilitate such transmission. The countries of the Amazon Initiative are agreeing to undertake the development and strengthening of preventive actions on the basis of comprehensive surveillance and detection of effective vectorial transmission, based on mandatory notification of acute or chronic cases.

2

To recommend surveillance and prevention and/or vector control actions implemented through local governments (minimum administrative and territorial units of each country), which Colombia adopted as an approach strategy, as a tool that can be useful in complex situations of different types and entities.

3

Implement all the necessary capacities to diagnose Chagas disease, in all clinical symptoms that are compatible with it, especially febrile syndromes without diagnostic confirmation of malaria and dengue (in urban environments).

4

Use the detection of acute cases of Chagas disease, and even of chronic cases when possible, as an indicator for a concomitant epidemiological investigation, and eventual adoption of measures for prevention, control and clinical care of the cases in the situation studied.

5

To encourage and stimulate coordination with other established and functioning health programs (malaria, leishmaniasis, etc.) in Amazonian areas to enhance health actions in a more effective, efficient, and timely manner.

6

Given the importance and frequency of digestive transmission of *T. cruzi* by food contaminated by this agent, and the incidence of Chagas disease as a Foodborne Disease (FBD), both in the Amazon Basin and in areas of the humid Andes, it is agreed to proceed with the countries to synthesize and systematize all the information and experience accumulated in the past years, for the benefit of all endemic countries. Therefore, it is recommended that a roadmap for verification (surveillance) of the transmission of Chagas as a FBD be developed, with the participation of the areas responsible for food safety and protection in each country.

7

Recognize that cases of oral transmission, isolated or as an outbreak, given their severity and potential lethality, should be considered as high-priority emergencies in health services. Likewise, for the organization of the response with local social and political actors.

8

To congratulate and recognize Bolivia for the expansion of its surveillance and diagnostic capacities for Chagas throughout the country, with emphasis on the first level of care; and to recommend that this important development include and even prioritize its national endemic Amazonian territory, including IMTCTplus activities.

4

9

To give continuity to and strengthen the entomological surveillance that Bolivia is developing in its Amazonian area, with entomological and epidemiological research, which will require technical support from PAHO.

10

To recognize the advances in the surveillance of Chagas disease that Brazil is developing in its Amazonian area, constituting a tool of interest to share with the other AMCHA member countries.

11

Brazil's observation that Chagas disease can contribute as co-morbidity in morbidity and mortality due to COVID-19 infection is of special interest.

12

Brazil's effort to structure standardized care for Chagas disease in the national health system with several components, including the training of health human resources, is commended.

13

Highlight the priority and strengthening of Chagas surveillance in the Amazon area, which Colombia has been developing, with sero-epidemiological surveys (including pregnant women), decentralized diagnostic capacity and comprehensive interventions in the face of Chagas outbreaks such as ATE and isolated cases diagnosed and treated.

14

Recognize Ecuador's efforts to address the diagnosis and treatment of Chagas disease in its Amazonian area and make available the technical cooperation required to accompany these important processes.

15

To congratulate Guyana for the implementation of the Chagas Program within the approach to neglected diseases, with initial but well-defined actions in universal screening of blood donors and patients, with concurrent medical care of confirmed cases.

16

To emphasize the actions for the sustained maintenance of universal screening of blood donors in Peru, and to offer the country technical cooperation in the characterization of vector and oral transmission of Chagas disease in its Amazonian area.

17

To congratulate Suriname for the implementation and sustained maintenance of universal screening of blood donors, and to offer technical cooperation in the comprehensive medical care of confirmed cases.

5

18

Alternatives will be reviewed to solve eventual shortages of supplies for the diagnosis and treatment of Chagas disease in countries of the Subregion that request them.

19

Better document and analyze the use and development of telemedicine, with the use of information and communication technologies (ICTs) to support the care of cases of Chagas disease in the Amazon.

20

Consider that the care of neglected infectious diseases (NIDs), particularly Chagas disease, in all its forms and evolutionary stages, as well as at all levels of complexity in medical care, should be part of the systematic and regular services of each National Health System in its health care areas.

21

To promote the consideration of Chagas disease among the infectious pathologies that can be transmitted by organ transplantation, from infected donor to healthy recipient; proposing the design and implementation of regular diagnostic screening for Chagas disease in donors and recipients, as well as the corresponding measures for eventual diagnosis and treatment.

22

To generate the best information, education, and communication conditions in relation to the medical care of Chagas disease, taking as fundamental concepts:

- possible presence of Chagas disease in endemic and non-endemic areas; in urban, suburban, and rural areas; continental and extracontinental areas.
- consideration of Chagas disease among the differential diagnoses of clinical symptoms compatible with it, especially prolonged febrile syndromes with no etiologic diagnosis
- given the eco-epidemiological profile in the Amazon region, prevention and control actions related to vector and oral transmission should be included.
- consider pediatric Chagas disease as a priority for an early and effective approach.
- consider Chagas disease as a vertically transmitted disease in the Americas and extra-regionally due to migration.
- use etiological treatment in patients infected with *T. cruzi* whenever indicated in PAHO's regional guidelines for diagnosis and treatment
- do not forget the effective indications for treatment in patients in the chronic period
- promote universal access to the laboratory diagnostic tools necessary to establish the diagnosis of Chagas disease.

23

To promote the full, systematic, and disseminated use of the ETMI-plus initiative in the care of congenital Chagas disease for this AMCHA Subregion, in full coordination with sexual and reproductive health and maternal and child health programs.

24

The countries should continue to participate and support each other in PAHO's joint actions through the Strategic Fund and the Neglected, Tropical and Vector-Borne Diseases Unit (CDE/VT) for the provision of medicines and laboratory supplies for the diagnosis and etiological treatment of Chagas disease.

25

To recognize the efficient and effective results in knowledge management and in the prevention and control of Chagas disease achieved and projected from the collaborative work of the different cooperation agencies participating in the AMCHA meeting, the technical assistance of PAHO and the leadership of the countries. It is important to consolidate the work under the network model.

Resolutions:

1

To generate a subregional guide of procedures for the surveillance, prevention, control, and care of Chagas disease in the Amazon subregion (AMCHA), considering all its peculiarities and characteristics, as well as the details of the organization of preventive health services and health care.

2

Generate and implement a virtual library, with free and broad access, on the surveillance, prevention, control, treatment, and research on Chagas disease in the Amazon subregion (AMCHA).

3

Promote joint participation with other Amazonian health programs to achieve greater coordination of actions that will generate benefits of effectiveness, efficiency, and timeliness for the health of the population.

4

Create a working group to present to the countries at the upcoming Annual Meetings of the AMCHA Subregional Initiative an operational, practical and feasible definition of interruption of transfusion transmission of *Trypanosoma cruzi*, based on the transfusion safety strategies established in the PAHO guidelines for the diagnosis and treatment of Chagas disease.

5

The countries should continue working on voluntary donation and universal coverage of screening of blood donors for Chagas disease, as well as on the quality of the processes, with the necessary attention to the confirmation and diagnosis of reactive cases detected in the blood bank, and the clinical follow-up and corresponding treatment for each donor detected as positive.

6

Generate coordination and referral mechanisms in the countries between the blood and Chagas disease programs to strengthen the epidemiological surveillance of cases detected in blood banks so that they receive proper care and follow-up.

7

To commit the greatest possible effort of the countries to preserve the achievements made in prevention, control and care, as well as to advance towards new goals in this area within the framework of the resolution to eliminate communicable diseases, in spite of the epidemiological or economic situations that may arise.

8

Promote the actions of the countries for the screening of pregnant women for Chagas disease, the diagnosis of infected newborns and the follow-up of both for effective and timely etiological treatment.

9

Share through the appropriate channels the document “Decalogue of guidelines for behaviors to be followed in the face of Chagas disease and organ transplantation”, for its use, knowledge, and dissemination. Also, as far as possible, its inclusion in the surveillance and clinical care protocols of each country.

10

Establish the following goals for the countries in terms of surveillance/vector control of triatomines in Amazonian areas:

Bolivia

- Strengthen the “Epidemiological surveillance of febrile syndromes for the diagnosis of the acute phase of Chagas disease in the Amazon region of the Plurinational State of Bolivia” in health services networks of municipalities in the Amazon region.
- Strengthen capacities for the “Comprehensive care of the population with Chagas disease in the health Services Networks of municipalities in the Amazon region of the Plurinational State of Bolivia”.
- Develop entomological and epidemiological research on Chagas disease in the Amazon region of the Plurinational State of Bolivia.

8

Colombia

- Continue screening in the six Amazonian departments to strengthen seroprevalence studies in the general population and pregnant women, case detection, and adequate care.
- Implement the use of barrier methods (mosquito nets) to help prevent human-vector contact in departments in the Amazon region.
- Establishment mechanisms for training of the microscopy network on techniques for the parasitological diagnosis of *T. cruzi*.

Ecuador

- In Ecuador, the “*Manual for the Surveillance and Control of Chagas Disease in Ecuador*” was published in 2020. This is intended to serve as a support tool for the different management areas directly involved in the control and entomological surveillance of the disease. The aim of this manual, together with the “*Technical Standard for Vector Surveillance and Control in Ecuador*” is to create a reference database mapping the presence or absence of triatomines, to identify the current distribution, and correlate this with the mapping of cases. This would enable risk scenarios for disease transmission to be established, allow potential areas for intervention to be defined, and facilitate the implementation of comprehensive disease control at all levels of the national health system.

Guyana

- The overall objective is to eliminate Chagas disease as a public health problem in Guyana. Our objectives are:
 - Interrupt the transmission of *T. cruzi* by domestic vectors, achieving a domestic triatomine infestation rate of less than 1%, and zero infection in children under 5 years.
 - interrupt transfusion *T. cruzi* transmission (100% blood screening coverage).
 - integrate the diagnosis of Chagas disease into the primary health care system to provide treatment and medical care to all patients in both the acute and chronic phases; strengthen the supply chain of existing treatments within the country to expand access and prevent the development of Chagas-related cardiomyopathies and gastrointestinal problems, and offer adequate care to all persons affected by the different stages of the disease [subject to change following the updated strategic plan by the end of the year].

Venezuela

- Establish and promote strategies for the prevention, control, treatment, and operational research of Chagas disease; planning, coordinating, advising, supervising, and evaluating epidemiological surveillance activities at the national level; and promoting mechanisms for community participation and intra- and inter-institutional integration.
- Activate the Chagas Disease National Reference Laboratory by making supplies (reagents) available and developing human talent.
- 348 blood banks report the tests conducted on a timely/weekly basis. Positive serology reports must be issued as individual records.
- Activation of two state reference laboratories, one in Portuguesa (western region) and the other in Sucre (eastern region), with the aim of strengthening the diagnostic system.
- Survey of the entomological map of triatomines in endemic areas in Venezuela.
- Permanent support for the Chagas Disease Prevention and Control Program in the different state directorates for environmental health, provided by the National Program for the Prevention and Control of Chagas Disease.

11

The countries call for greater support and priority in the prevention, control, and care of Chagas disease, to ensure results obtained and achievements to be obtained, in the face of negative economic situations and the COVID-19 pandemic. In any case, despite all the difficulties generated by this global situation, the work that the countries have accomplished with full quality and coverage is highlighted and valued.

12

Strengthen the approach to epidemiological field research, case management and prevention of oral transmission in the Region. To this end, it is necessary to consolidate experiences and define criteria for monitoring and evaluating control actions with a view to elimination.

13

Approve the document “*Care of Chagas disease, strategies to optimize the care of people infected by T. cruzi*”, for its dissemination and strategic use in the Region.

ANEXX 1

Progress by country

Bolivia

Epidemiological situation of Chagas disease In the Amazon region of Bolivia

Background

The Amazon region of the Plurinational State of Bolivia includes the departments of Pando, Beni, Norte de La Paz, Cochabamba, and Santa Cruz, in which there are 88 municipalities.

Figure 1. Situation in the Amazon region of Bolivia



- **Territorial size:**
475,278 km² (43% of Bolivia)
- **Population:**
1,266,379 inhabitants (15% of total population of Bolivia)
- **Population density:**
3 inhabitants per km²
- **Human Development Index:**
0.42 to 0.71
- In the Bolivian Amazon region, there are 29 native populations that live mainly from hunting and fishing.

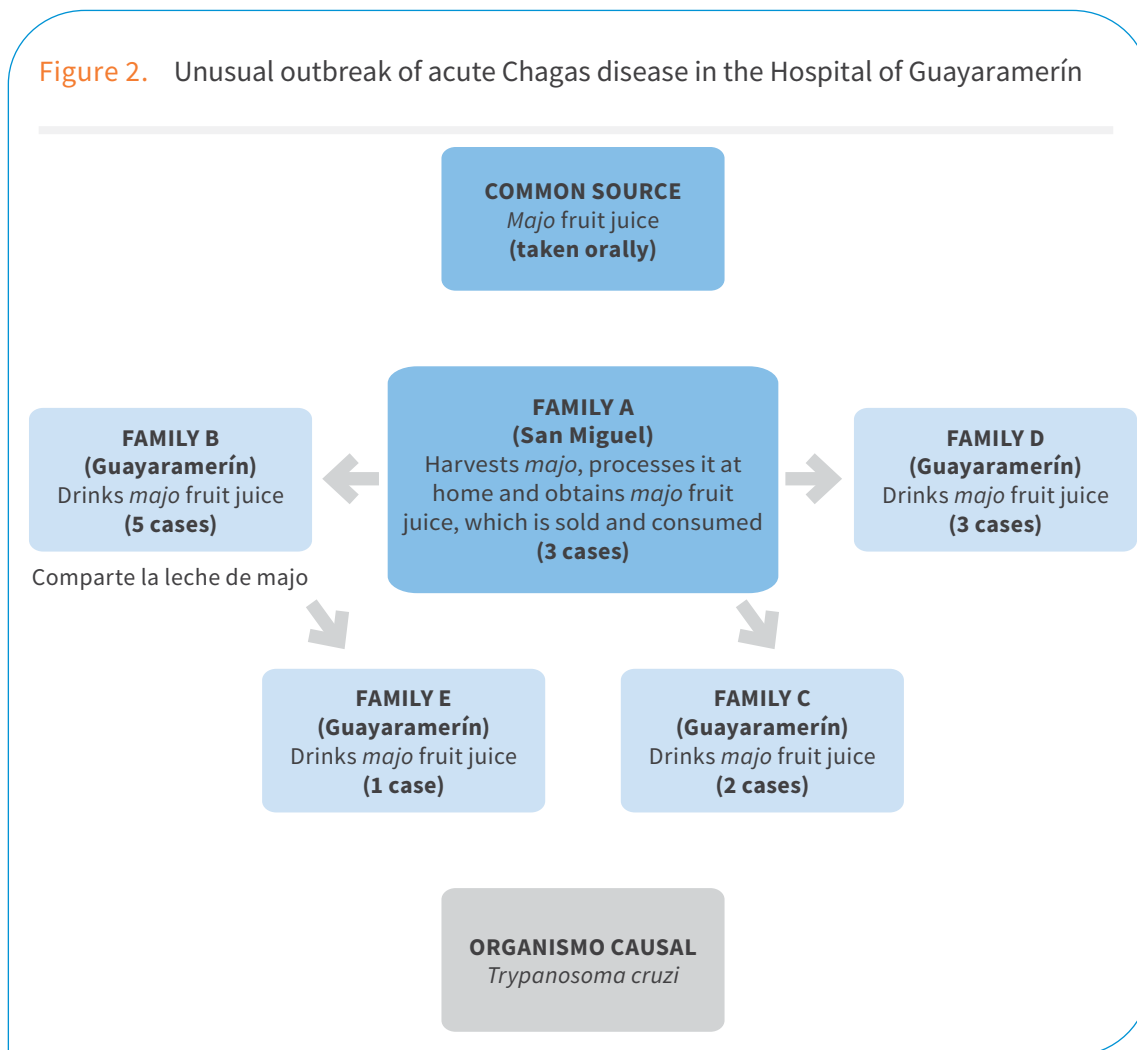
Source: Ministry of Health and Sports, National Program of Surveillance and Control of Chagas disease.

Emerging epidemiological situation

There was an unusual outbreak of acute Chagas disease in October 2010, the first to be transmitted orally, probably caused by drinking contaminated *majo* fruit juice. Fourteen cases were confirmed, both by laboratory and clinically. All patients were treated successfully with etiological medicine for Chagas disease in the Hospital of Guayaramerín, with no deaths.

With the autochthonous outbreak of acute cases, Chagas disease is endemic to the Amazon region. There are natural foci of infection in enzootic cycles characteristic of the region where the vector is non-domiciled and found in wild ecotopes. After the outbreak in the San Miguel community, *Rhodnius robustus* infected with TcI were identified.

Figure 2. Unusual outbreak of acute Chagas disease in the Hospital of Guayaramerín



Formation of the outbreak intervention team

- **MINISTRY OF HEALTH**-National Chagas Program, Dr. Justo Chungara Monzon; Entomologist Enzo Gamarra; Geographer Dafner Velkys Pérez U.
- **INLASA**: Dr. José Santalla Vargas; Entomologist Eda Siñani.
- **HEALTH NETWORK 08 Guayaramerín Municipality**: Dr. Edgar Paredes Maldonado; Dr. Aida Torrez L.; Dr. Juan Carlos Ávila; Dr. Silvia J. Accounts and Technical Staff of the Malaria Program of the Health Network 08.

Progress made

a) Investigation of vectors in enzootic cycle in Amazon region.

After the acute Chagas outbreak, the National Chagas Disease Surveillance and Control Program is investigating the possible presence of secondary vectors in enzootic and peri-urban cycles.

Entomological study Amazon region of Bolivia, 2011 to 2018

The results of the research carried out in the Amazon region confirm the presence of autochthonous vectors in enzootic cycles such as *Rhodnius robustus* and *Rhodnius stali*, in which natural infection by *Trypanosoma cruzi* ranges from 14.3 to 58.0%. From a public health and epidemiological point of view, this high level of natural infection represents a high risk for the population.

Table 1. Results of the research carried out in the Amazon region

Institution	Department	Captured in	Year	Area	Triatomines captured	Natural infection (%)	Species
National Program for Surveillance and Control of Chagas Disease	Beni	San Miguel y Riberalta	2011	Palm forest	One adult and 10 nymphs	14.3	<i>Rhodnius robustus</i>
National Program for Surveillance and Control of Chagas Disease	Pando	Cobija (zona periurbana)	2016	Residential area	One adult and 27 nymphs	58.0	<i>R. robustus</i>
Universidad Mayor de San Andrés (thesis)	Beni	Yucumo	2018	Forest	One adult and 31 nymphs	20.0	<i>R. stali</i>
Departmental Chagas Program, La Paz	La Paz	Alto Beni	2018	Forest	One adult and 22 nymphs	15.1	<i>R. stali</i>

Source: Ministry of Health and Sports, National Program for the Surveillance and Control of Chagas disease.

b) Implementation of capacities for diagnosis and treatment of Chagas disease

Vertical or congenital transmission of Chagas disease

Based on management in 2019, within the framework of the Unified Health System and SAFCI Health Policy, this has been implemented in the Health Services Network of the Municipality of Riberalta of the Department of Beni.

Diagnostic tests are free for pregnant women as part of their prenatal care, with follow-up for children born of mothers infected with *T. cruzi* to ensure timely diagnosis and etiological treatment of congenital transmission.

In 2019 and 2020, 8,180 pregnant women received serology testing for Chagas disease, of whom 64 tested positive for *T. cruzi*, indicating a prevalence of 0.78%. The 64 children born of mothers with Chagas disease were monitored; parasitological screening was conducted at birth and, if negative, a second serology control from the age of 8 months using two different methods. One child tested positive for *T. cruzi* and received etiological treatment for Chagas disease.

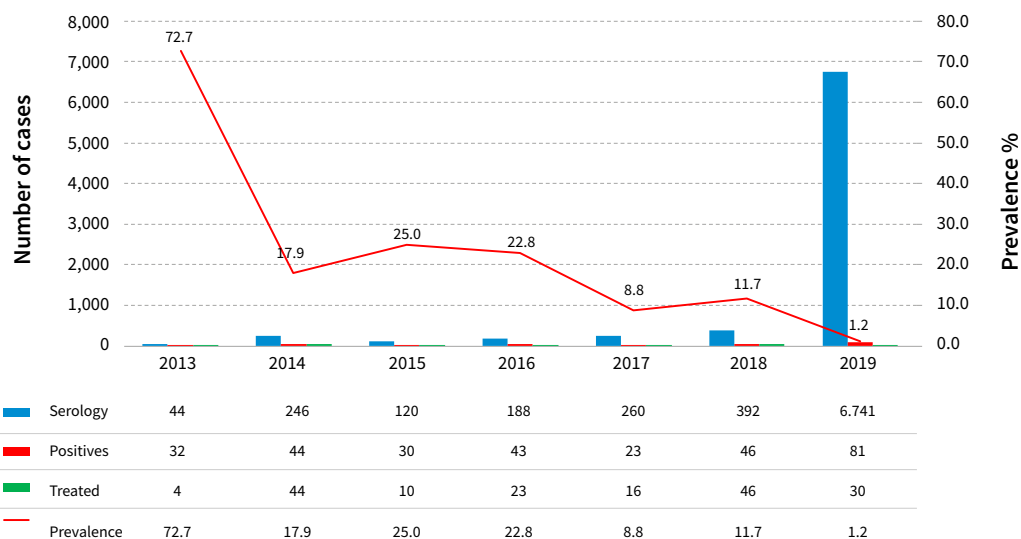
Table 2. Serology for Chagas disease in pregnant women and prevalence of congenital transmission of *Trypanosoma cruzi* in children of women with Chagas, Riberalta municipality, Department of Beni, 2019-2020

Year	Pregnant women who received perinatal card at Reidum Roine Maternity Hospital			Children born to mothers with Chagas disease at Reidum Roine Maternity Hospital			
	Serology	Positive	Prevalence (%)	Parasitology an serology	Positives	Treatment	Mother-to-child transmission rate
2019	3,482	40	1.1	40	0	0	0.0
2020	4,698	24	0.51	24	1	1	4.1
Total	8,180	64	0.78	64	1	1	1.5

Source: Ministerio de Salud y Deportes. Programa Nacional de Vigilancia y Control de Chagas.

Chronic Chagas disease

Figure 3. Number of visits to health facilities for diagnosis and treatment of Chagas disease. Population living in the Amazon Region, Beni, and Pando departments Bolivia, 2013 to 2019



Source: Ministry of Health and Sports, National Program for Surveillance and Control of Chagas Disease.

Public health services networks have implemented free care for the diagnosis and treatment of Chagas disease in municipalities in the Bolivian Amazon region within the framework of the Unified Health System and Health Policy (SAFCI).

From 2013 to 2019, medical care and laboratory support for Chagas disease were provided for 13,862 people; 395 people were identified as *T. cruzi*-positive, with an average prevalence of 2.8%, and etiological treatment provided for 204 (52%) people infected with *T. cruzi*.

ECUADOR

Chagas disease is endemic in Ecuador. Between 2013 and 2019, the Epidemiological Surveillance System (SIVE) of the Ministry of Public Health of Ecuador recorded 439 confirmed cases of Chagas disease. During this period, the number of chronic Chagas cases (n = 331, 75.40%) was higher than the number of acute cases (n = 108, 24.60%).

The prevalence of the disease is slightly higher in women (n = 231, 51.79%) than in men (n = 215, 48.21%), although this trend was reversed in the initial period of the series under study. Chagas is more prevalent in the 20-to-49-years age bracket (n = 182, 40.81%), followed by those over 65 years (n = 110, 24.66%), and the 50-to-64-years group (n = 89, 19.96%), which may be related to the fact that notifications are higher for chronic cases of the disease.

The disease is reported in 20 of the 24 provinces of the country, with the highest number of reported cases in the provinces of El Oro (n = 104, 23.69%), Guayas (n = 64, 14.58%), Loja (n = 60, 13.67%), Sucumbíos (n = 39, 8.88%), Pichincha (n = 36, 8.20%), and Manabí (n = 34, 7.74%).

The time series decomposition of Chagas disease in Ecuador presents a pattern with seasonal peaks from November to February and April to June; with an increasing trend from January 2013 to December 2019. The increasing trend in case reporting has been observed since September 2016 and the expected peaks with the highest number of cases recorded are in January and June; the highest reported number in this series of analyses was in June 2019.

One of the advances worth mentioning is the publication of the *Manual for the Surveillance and Control of Chagas disease in Ecuador*. This is designed to serve as a support tool for the different management areas directly involved in disease control and entomological surveillance. It also contributes to the planning, execution, and monitoring of established procedures to help prevent and eliminate Chagas disease in the national territory.

GUIANA

Currently, the Neglected Infectious Diseases (NIDs) program has initiated administrative processes to initiate the development and drafting of the Integrated Plan of Action for the Control and Elimination of NIDs (including Chagas disease) by the end of 2021. The plan is to align these with national priorities backed by recognized international goals, such as those of PAHO/WHO, to ultimately improve patient health outcomes and quality of life.

BOLIVARIAN REPUBLIC OF VENEZUELA

In Venezuela, Chagas disease currently remains endemic in the Andean mountains and foothills, in the north-central regions, and in the plains, at altitudes between 0 and 1,500 meters above sea level, affecting approximately 164 municipalities in 12 states. It is estimated that over 8,500,000 inhabitants are at risk of infection, which represents 37.57% of the national population, 60–80% of whom live in poverty. However, with population migrations and the risk of transfusion transmission, together with recent outbreaks of acute Chagas disease associated with oral transmission in urban areas, the area of risk of this pathology is now expanding to the entire national territory. The main vectors are *Rhodnius prolixus*, *Triatoma maculata* and *Panstrongylus geniculatus*, with domestic, peri-domestic, and wild cycles, respectively.

The chronic form of the disease (due to vector-borne infections) is predominant and its distribution shapes the endemic area defined basically by vector activity. In addition to vector-borne transmission, the National Program for Prevention and Control of Chagas Disease (PNPCECh) monitors transfusion transmission by liaising with blood banks. PNPCECh promotes management of the spread of the disease resulting from population migrations from endemic areas, which increases the risk of this mode of transmission in all entities in the country. The comprehensive diagnosis of Chagas disease is based on epidemiological research, clinical manifestations expressed by the patient (signs and symptoms), and laboratory results. The alignment of these three elements leads to an accurate diagnosis of this pathology. It is important to note that laboratory testing plays an important role in detecting the presence of the *T. cruzi* parasite (pathogen) in human blood. Three assays are required: indirect hemagglutination assay (IHA), indirect immunofluorescence assay (IFA), and enzyme immunoassay (ELISA). These have been in use for over 50 years and are designed and used to capture a series of serological reactions using specific *T. cruzi* serum antibodies of suspected cases. They are necessary for a definitive confirmatory diagnosis.

It is worth highlighting that in the last quarter of 2020, the State Directorate of Environmental Health in the Barinas state tested 161 blood samples taken from four populations within the state. The results revealed a seroprevalence of 48% and positivity of 11% for this disease in people over 30 years of age in this federal entity. This is a significant finding, of particular relevance from an epidemiological viewpoint at the national level. Prevention, control, treatment, management, and monitoring of this clinical phase are expanding beyond routine measures to encompass oral transmission due to acute Chagas outbreaks outside the areas traditionally defined as endemic. This has activated the specific integrated system of surveillance in populations from endemic areas, which increases the risk via this transmission route, in any entity. Since 2004, the epidemiology of this endemic has drawn attention to oral transmission due to reported outbreaks of acute Chagas disease in areas not traditionally defined as endemic. This has activated the specific integrated system for surveillance, prevention, control, treatment, management, and monitoring of this clinical phase on an exceptional scale.

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