

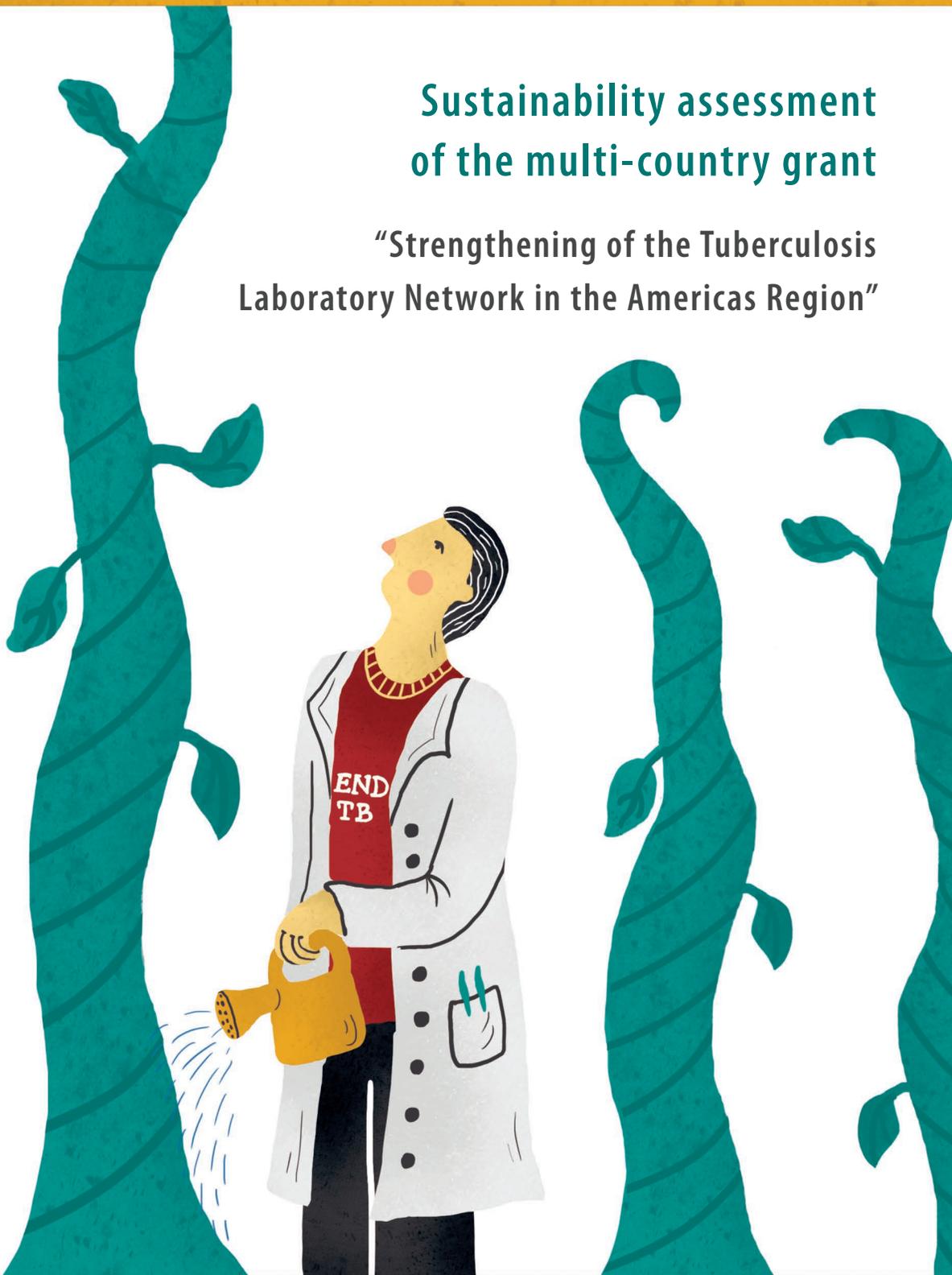


ORGANISMO ANDINO DE SALUD - CONVENIO HIPÓLITO UNANUE

PROGRAMA "FORTALECIMIENTO DE LAS REDES DE LABORATORIO DE TUBERCULOSIS EN LA REGIÓN DE LAS AMÉRICAS"

Sustainability assessment of the multi-country grant

"Strengthening of the Tuberculosis
Laboratory Network in the Americas Region"



Sustainability assessment of the multi-country grant

**“Strengthening of the Tuberculosis Laboratory
Network in the Americas Region”**

**Consultant: María del Carmen Navarro Lévano
2019**

SUSTAINABILITY ASSESSMENT OF THE MULTICOUNTRY GRANT: "STRENGTHENING THE TUBERCULOSIS LABORATORY NETWORK IN THE AMERICAS REGION" / Program: "Strengthening the Tuberculosis Laboratory Network In The Americas Region" -- Lima: ORAS - CONHU; 2019.

163 p.

SUSTAINABILITY/TUBERCULOSIS / LABORATORY / RESOURCES

Legal deposit done in the National Library of Peru No. 2019-11574

SUSTAINABILITY ASSESSMENT OF THE MULTICOUNTRY GRANT: "STRENGTHENING THE TUBERCULOSIS LABORATORY NETWORK IN THE AMERICAS REGION"

Principal Author

María del Carmen Navarro Lévano, Researcher, Indicators and Development Projects Center -INDICE. Lima, Perú.

Associated Consultant

Julio Acosta Polo, Researcher, Indicators and Development Projects Center -INDICE. Lima, Perú.

Technical coordination

Patricia Jiménez López, Coordinator of Monitoring and Evaluation TB – FM Program. Lima, Perú.

Technical Review

Lourdes Kusunoki Fuero, General Coordinator TB – FM Program. Lima, Perú.

Ernesto Montoro Cardoso, Technical Coordinator for TB Labs TB – FM Program. PAHO/WHO, WDC.

Colaborators

Sandro Macassi Lavander, Reseacher, Pontificia Universidad Católica del Perú, PUCP. Lima, Perú.

Forlly Chavelly Chávez Romero, Non-affiliated Reseacher

Carlos Saavedra Chávez, Non-affiliated Reseacher

Desing, layout, art:

Irma Beatriz Peniche Silva

ANDEAN HEALTH ORGANIZATION - HIPÓLITO UNANUE AGREEMENT, 2019

Av. Paseo de la República N° 3832, Lima 27 – Perú

Telf.: (00 51-1) 422-6862 / 611 3700

<http://www.orasconhu.org>

contacto@conhu.org.pe

Print run: 10 copies

Printed on: IMPRESION ARTE PERU SAC

First Edition, August 2019

The content of this document has been prepared by the consultants, within the framework of the Program "Strengthening the Tuberculosis Laboratory Network In The Americas Region" financed by the Global Fund, executed by the Andean Health Organization - Hipólito Unanue Agreement (ORAS-CONHU) as Principal Recipient and the Council of Ministers of Health of Central America and Dominican Republic (COMISCA) and the Pan American Health Organization (PAHO/WHO) as Sub-Recipients.

This document can be reviewed, summarized or translated, totally or partially without prior authorization, but specifically citing the source and not being used for commercial purposes. Right reserved according to law.

INDEX

List of Tables	2
List of Chart	3
List of Annex	4
Acronym	5
Executive Summary	7
A. Introduction	13
B. Background	13
C. Objectives of the Sustainability Assessment study	18
D. Conceptual framework	18
E. Methodology	21
F. Aspects identified for short, medium- and long-term sustainability	23
G. Contextual analysis	25
G.1. Evolution of tuberculosis in grant countries	26
G.2. Catastrophic cost due to TB and universal health coverage	27
G.3. Welfare indicators	31
G.4. TB budget in the 20 grant countries	35
H. Results obtained	37
H.1. The situation of institutional management with a view to sustainability	41
H.2. Budgetary and financial situation with a view to sustainability	44
H.3. Economic situation with a view to sustainability	47
H.4. Political situation with a view to sustainability	49
H.5. Analysis of Health Expenditure in the countries of the grant	52
H.6. Analysis of results by country	59
H.7. Critical processes for technical sustainability	66
I. Bibliography	76
J. Annexes	78

List of Tables

Table N° 1 -- Range per capita income for income years 1987,1997, 2007 and 2017, the number and distribution of the 20 countries participating in the Regional TB Grant GF	32
Table N° 2--HDI ranges in 1990, 2000 and 2017 years	33
Table N° 3 - Countries classified by per capita income and HDI	34
Table N° 4--Level of progress in sustainability by aspects evaluated	40
Table N° 5--Sustainability of Institutional Management: Organizational	41
Table N° 6--Sustainability of Institutional Management: Technical	42
Table N° 7--Sustainability of the Institutional Management: Operational	43
Table N° 8--Budget Sustainability	45
Table N° 9--Financial Sustainability	46
Table N° 10 - Economic Sustainability - Sectorial and Multisectoral	48
Table N° 11 - Institutional political sustainability	49
Table N° 12 - Fiscal Policy Sustainability	50
Table N° 13 - Political sustainability - Conjuncture	50
Table N° 14--Sustainability by countries (percentage level)	59
Table N° 15 --Contextual factors of sustainability by countries	63
Table N° 16 - Evolution of the shipping cost of panels	70
Table N° 17--Matrix of aspects of sustainability evaluated	82
Table N° 18--Estimation, notification, UHC and TB DR Care	88
Table N° 19 - Evolution of the World Bank classification according to per capita income from 1997 to 2017	93
Table N° 20 - List of grants for the Tuberculosis component in the countries of the Project	98
Table N° 21 - List of multi-country grants in the LAC region	103
Table N° 22 - Laboratories demonstrating acceptable performance in EQA 2009-2014	108
Table N° 23--Laboratories that demonstrate competence in panel tests	110
Table N° 24 - Percentage of laboratories demonstrating competence in panel tests	112

List of Chart

Chart N° 1 – Dimensions of sustainability _____	20
Chart N° 2–Identified aspects of the evaluation according to the effect _____	24
Chart N° 3 - Key dates for the Political Declaration on Tuberculosis _____	26
Chart N° 4–Incidence per 100 thousand inhabitants 2017 _____	27
Chart N° 5 - Indicators of the End TB Strategy _____	28
Table N° 6–Tuberculosis Budget - 2017 _____	36
Chart N° 7 - Health expenditure as% of gross domestic product - GDP. 2016 _____	53
Chart N° 8–Health expenditure per capita 2015-2016 (in US \$) _____	54
Chart N° 9 - Health expenditure as a percentage of total public expenditure _____	56
Chart N° 10 - Relationship between Public Health Expenditure % GDP and Health Expenditure% of Public Expenditure _____	58
Chart N° 11- Advances in the sustainability of institutional management: organizational, technical and operational _____	65
Chart N° 12 - Critical processes of technical sustainability _____	66
Chart N° 13–Regulations for the transport of dangerous goods _____	68
Chart N° 14–Responsibility in the process of transport of dangerous substances _____	69
Table N° 15 - Shipping cost of panels _____	70
Chart N° 16 - Global Fund Country grants in project countries (millions of US dollars)) _____	96
Chart N° 17 - Multi-country grants from the Global Fund in the LAC region _____	97
Chart N° 18–Route to determine fiscal space _____	156
Chart N° 19–Identification of the degree of incorporation of project activities in the budget _____	157
Chart N° 20 - Identification of the degree of incorporation of the activity in the mechanisms of the UHC Universal Health Coverage _____	158

List of Annex

Annex N° 1–Definitions _____	78
Annex N° 2–Matrix of aspects evaluated to determine the level of sustainability _____	82
Annex N° 3–Tuberculosis Profile in Grant Countries _____	88
Annex N° 4 - Evolution of tuberculosis in the countries of the grant _____	90
Annex N° 5–Evolution of the classification of countries by level of per capita income 1987-2017 _____	93
Annex N° 6–Financing of the Global Fund in the Project countries and LAC region. 2002-2019 _____	96
Annex N° 7–Quality tests in laboratories in the region 2009-2017 _____	108
Annex N° 8 - The health system in grant countries _____	113
Annex N° 9–Fiscal space for health for financial and budgetary sustainability _____	155
Annex N° 10–Resolution COMISCA 11-2019 - Regarding the sustainability of the PEED laboratories TB region SICA _____	159

Acronym

DB	Database
WB	World Bank
CAR-LAC	Regional Advisory Committee in Latin America and the Caribbean for Multi-Country Global Fund Grants
COMISCA	Council of Health Ministers of Central America and the Dominican Republic
UHC	Universal Health Coverage
DRS	Drug Resistance Surveillance (Surveillance of TB Drug Resistance)
EEC	External Quality Evaluation
EQA	External Quality Assessment
GFATM	Global Fund (Fight against AIDS, Tuberculosis and Malaria))
GF	The Global Fund
GDF	Global Drug Fund Facility- Stop TB
GLI	Global Laboratory Initiative
GTRL-TB	Regional Working Group of Tuberculosis Laboratory
HDI	Human Development Index
ITM	Institute of Tropical Medicine, Antwerp (Belgium)
Belgium	
GNI	Gross national income
InEDR	Institute of Epidemiological Diagnosis and Reference - Mexico
NIID	National Institute of Infectious Diseases - Argentina
PAIFPZ	Pan American Institute for Food Protection and Zoonoses
IUATLD	International Union Against Tuberculosis and Lung Disease
PHI	Public Health Institute of Chile
LAC	Latin America and the Caribbean
NRL	National Reference Laboratory
SNL	Supranational Laboratory
CCM	Country Coordination Mechanism
WHO	World Health Organization
PAHO	Pan American Health Organization
ORAS-CONHU	Andean Health Organization - Hipólito Unanue Agreement

PEED	External Performance Evaluation Program
PEN	Tuberculosis National Strategic Plan
GDP	Gross domestic product
NTP	National Tuberculosis Control Program
UNDP	United Nations Development Program
ST FL	Sensitivity test to first-line drugs
ST SL	Sensitivity test to second-line drugs
DST	Antituberculosis drug sensitivity test
NSNL	Network of Supranational Laboratories
NLN	National Laboratory Network
QMS	Quality management system
UHS	Universal Health System (in some cases Unique Universal Health System)
REMSAA	Meeting of Ministers of Health of the Andean Area
TB	Tuberculosis
TB-DR	Tuberculosis drug-resistant
TB-MDR	Multidrug-resistant tuberculosis
TB-XDR	Extremely resistant tuberculosis
TB-VIH	TB / HIV Coinfection
ToR	Terms of Reference
THE UNION	International Union against Tuberculosis and Respiratory Diseases
HIV	Human Immunodeficiency Virus

Executive Summary

1. The purpose of this document is to provide guidance on sustainability of the regional Global Fund (GF) grant to strengthen the network of tuberculosis laboratories in the Americas. This implies carrying out an analysis of the situation of the country health financing system and an assessment of the existing system in relation to the grant objective. The objective of the analysis of the current situation is to develop a sustainability strategy that will affect how health financing is carried out. This analysis will provide information on how the existing system is working, the assessment of reasons and challenges that countries face to ensure that the strengthening of tuberculosis laboratory networks remain over the time. The analysis is based on the description of how the objectives of the grant have contributed to the achievement of the goals achieved over time and the critical evaluation based on a clear understanding of the situation of national TB reference laboratories; its financing, relevant comparisons, and the lessons learned by the countries that participated in the grant. The document seeks to guide how to act by highlighting the key issues that should be considered and some specific questions that should be addressed.

2. Decrease the gap, among the numbers of new cases of TB estimated and reported annually in the continent, is the way that encouraged ministries or health secretaries of 20 countries of the Americas to participate in a regional grant focused on capacity building and the diagnostic quality of the tuberculosis reference laboratories. This grant has the Andean Health Organization-Hipolito Unanue Agreement (ORAS-CONHU) as Principal Recipient, and as sub-recipients to the Council of Health Ministers of Central America and the Dominican Republic (COMISCA) and the Pan American Health Organization (PAHO), which allows a close political and technical articulation. It includes countries considered ineligible for GF national financing in TB: Argentina, Colombia, Chile, Costa Rica, Cuba, Ecuador, Mexico, Uruguay and Venezuela, and others that do receive this external cooperation: Belize, Bolivia, El Salvador, Guatemala, Guyana, Honduras, Nicaragua, Panama, Paraguay, Peru and the Dominican Republic; several of them in the transition stage. The national reference laboratories (NRL) have as network heads to the supranational laboratories (SNL) of Argentina, Chile and Mexico, whose functions are established by the World Health Organization (WHO). Since January 2017 and for 3 years, work has been done to improve the quality of the

TB laboratory diagnosis, through the hiring of human resources and the purchase of equipment and supplies for the three SNL, and the improvement of capacities technical-management of all NRL and their networks.

3. Concerning short-term sustainability, a few months after concluding the grant for the TB laboratory network, the following is observed:

- The network dynamics are very active, due to the fluid and close coordination between the SNL and their NRL for supervision, for technical assistance and quality control.
- All countries have technically trained and better performing professionals, able to replicate knowledge to their national networks.
- Standardized technical documents for the diagnosis of TB in the Americas region have been updated and disseminated.
- The SNL was equipped with the latest technology for timely and accurate diagnosis of TB. They have also been strengthened with human resources where was necessary.
- Logistic procedures for sending and receiving strain panels for external quality control have been facilitated.
- The region has two new specialists for certification of biological safety cabins, committed to public service, an expensive resource with high expertise.
- The regional group of TB laboratory experts in the region increased their staff by training new consultants.
- The articulation between the Laboratory and the National TB Control Program has been consolidated in most countries.

- The role of the laboratory for the End of TB has been highlighted and the analysis, at the level of the high authorities, of the importance of the operation of the networks in the region.
 - Several countries with national GF grants carry out actions of confluence and continuity of the progress achieved by the regional grant, through the Country Coordination Mechanisms (CCM).
 - The frameworks for discussing the role of laboratory networks have been opened, involving representatives of civil society, the Parliamentary Front of the Americas against TB and the Central American Parliament.
 - The technical teams in the countries have discussed and identified strengths and weaknesses that exceed their decision power but affect their work. Among these are the difficulties of transferring samples, biosafety, information systems or the availability and stability of qualified human resources.
 - It has been achieved the positioning of the activities carried out by the grant. All these results are installed as a better “know-how” and a “reconditioning” that project per se durability in the medium term.
- 4.** About to the medium-term, economic sustainability will be decisive:
- The grant budget allocated to the networks has operated complementary to the budgets that the countries allocated before 2017. Except in the SNL where a significant point investment in equipment has been made, the grant has represented between 5 and 10% of the budget in the countries, so this would not be a conditioning factor of sustainability.
 - **Planning:** In most countries (95%) laboratories have participated in the elaboration of the National Strategic Plans (PEN) of TB or the TB indicators in their Health Plans, aligned with the objectives of the strategy End of the TB.
 - **Allocated budget:** Two of the SNLs have assumed the continuity of their activities as network heads committing a budget for the hiring of human resources, technical

assistance, equipment maintenance, purchase of inputs and preparation of sample panels for external quality control of sensitivity tests and fast molecular methods. The SNL Chile must still define if, once the grant is concluded, it will be able to carry out all activities as SNL and the assistance to all the countries of its network with no contracting additional human resources.

- **Budget advocacy:** All the technical teams of the NRL have carried out advocacy work or managed financing for the purchase of inputs and equipment, either with public funds (Guyana) or national grants (Peru, Dominican Republic, Paraguay). Also, nine countries have managed to incorporate a budget to participate in external quality control; however, very few stated that they can finance training trips and internships in SNL.

- **Mechanisms to ensure monitoring of TB laboratory spending, transparency and proper use of resources:** In the 20 countries of the grant, despite the existence of different management models, the main source of financing for TB laboratories is the public budget, by direct allocation (not by purchase of services), which allows the control of spending. There are particular cases in which part of the financing comes from specific public funds (Uruguay), from the private funds (Mexico), or sale of services (Argentina).

- **Promotion of alliances and cooperation:** A sustainability mechanism is constituted by CARLAC, which through its focal points has encouraged the mobilization of resources for actions complementary to the regional grant (Bolivia, Costa Rica). In Minister meetings, there is an agreement to establishment technical cooperation between institutes has been proposed to identify the strengths that laboratories have for the exchange of service provision.

- **Exploration of funding sources:** Additional funding sources that could come from national GF grants (in countries still eligible in the region) for financing internships and technical assistance of SNL have been identified, or complementary resources for the acquisition of inputs and hiring of personnel through the application to research resources.

- **Generation of data on costs, economic impact, catastrophic costs, for decision-making:** Only two countries have developed specific studies in this area (Peru and Chile), although the decrease in catastrophic cost to zero is one of the three goals of the End TB strategy. Costa Rica and Cuba are countries where studies on health expenditures are carried out periodically.

5. Political sustainability is the basis for long-term sustainability, in this regard it is observed:

- **Priority is given to TB and laboratory diagnosis on the agenda of the health authority and at the highest level:** The grant leaves positioned the issue of TB and the importance of the laboratory in disease control. In the 20 countries, it has been addressed as a matter of ministerial agenda, but only in six is it reflected as a priority.

- **Management and health care model:** The statistical data in tuberculosis are not directly related to the amount of investment made in the countries. Management and health care models have an important weight in the efficiency of the use of resources. The best results are observed in comprehensive, accessible, free health systems, sufficiently endowed with trained human resources, and with social participation. Countries with a high budget for TB, but fragmented health systems and with access barriers, show little progress in disease control.

- **Training and distribution of human resources:** The need to improve professional training is recognized so that TB is considered one of the possible diseases in all cases of respiratory symptoms, and to extend the detection of cases, including contacts. On the other hand, in some countries there is a deficit of trained professionals in places where the insecurity is a concern.

- **Legislation:** There are countries like Peru that have a specific TB law, but in the majority the protection of people with the disease is given in the framework of general provisions that apply to any health situation.

- **Public welfare policies and social protection systems:** Half of the countries claim to have social protection systems that cover people with TB.

- **Development of initiatives that seek to expand the diagnosis and treatment:** The Country Coordination Mechanisms (CCM) in countries with national GF grants for any of the three components (TB, AIDS or Malaria) are a strategic space for the confluence of actions that improve the detection of cases of TB and TB / HIV.
- **Promotion through technical and regional integration organizations:** The SNL and NRL highlight as a very positive to have a direct laboratory expert liaison in PAHO for the coordination of activities and they suggest to maintaining over time. The ORAS has TB as a strategic line and the health ministers ordered the development of the Andean Committee on Tuberculosis. COMISCA also has Tuberculosis as a line of work and RedLab, which is the network of laboratories in Central America, and TB is part of it. The exploration of financial mechanisms to maintain the benefits of networking is on the agenda of the countries. Thus, regional integration mechanisms have played an important role in the results of the grant. In the case of COMISCA, the issuance of the Resolution has been achieved to ensure the budget for the external evaluation of the quality of the national reference laboratories.
- **Participatory extension:** Civil society, The Regional Parliamentary Front of the Americas against Tuberculosis and the Central American Parliament play a fundamental role in the continuity of efforts in each country and the region. The grant has integrated them into several activities.

A. Introduction

➔ Currently, only a very low percentage of the estimated global burden of patients with multidrug-resistant tuberculosis (MDR-TB) is detected, since the lack of laboratory diagnostic capacity and the slow transfer of technology to places with few resources that represent an obstacle crucial for it. The expansion of laboratory services to address the diagnostic challenges of MDR-TB and HIV-associated tuberculosis (TB-HIV) requires a paradigm shift to formulate laboratory policies, establish standards and criteria, guide and coordinate assistance technique, and accelerate knowledge transfer.

The lack of diagnostic capacity is a crucial barrier that does not allow an effective response to the challenges of TB-HIV and MDR-TB. The global number of TB-RR / TB cases reported in 2017 was 32% of the almost 600,000 estimated cases.¹ Several operational research studies conducted in different environments have shown that the lack of laboratory capacity is also the main obstacle to the monitoring of resistance to anti-tuberculosis drugs (DRS), while estimation models and projections have confirmed that an Effective response to the diagnostic challenges of TB-HIV and TB-RR / MDR requires a massive and urgent expansion of laboratory services. However, establishing, equipping, financing and ensuring the sustainability of the appropriate laboratory networks is challenging, complex and expensive. Therefore, strong and customized interventions are needed to expand TB laboratory services and address different levels of laboratories with different levels of diagnostic testing.²

B. Background

Network of Supranational Tuberculosis Laboratories

➔ The WHO Network of Supranational Tuberculosis Laboratories (RSNL) was created in 1994 with the purpose of supporting the WHO-THE UNION World Project on the

¹ WHO figures updated according to Report Global TB 2018.

² <https://www.who.int/tb/areas-of-work/laboratory/srl-network/en/>

monitoring of drug resistance against tuberculosis (TB), with the following objectives: to estimate the magnitude of drug resistance worldwide, determine trends and provide data to inform WHO policy decisions.⁽³⁾ This network has become a key technical resource to support the strengthening of laboratory capacity in countries. Under the coordination and support of WHO, the current network has expanded to cover 28 SNL and 4 National Centers of Excellence, largely driven by regional initiatives and institutional interest.

Originally, 14 laboratories offered to form the SNL Network based on institutional capacity and their resources to support the Global Project. This resulted in a concentration of SNL in Europe. Between 1994 and 2015, the RSNL was expanded to 36 laboratories, mainly driven by regional initiatives and institutional interest in joining the network. Since 2010, new Terms of Reference have been developed, as well as new eligibility and inclusion criteria for the SNL network. Formal collaboration agreements must now be established between an SNL and the National Health Authority or the Ministry of Health acting as a National Reference Laboratory for TB (NRL). The WHO establishes the function of the SNL and their relationship with the NRL. ⁽⁴⁾

In Latin America, there is a long history in the use of bacteriological diagnosis of TB and the creation of national and international laboratory networks. From the 60s, in some countries of the region, NTP and RNL were created simultaneously. In the

³ ORAS-CONHU. Operating costs of supranational laboratories about the National Laboratory Network / Program "Strengthening tuberculosis laboratories in the Region of the Americas" - Lima 2018

⁴ The functions of the Supranational Laboratories are as follows:

- Provide technical assistance to National Reference Laboratories (LRN) and National Tuberculosis Programs (PNT) to implement WHO's normative guidelines on diagnoses, diagnostic algorithms and laboratory standards using standardized registration and notification systems as well as other tools from the laboratory.
- Disseminate WHO guidelines on biosafety requirements and quality management systems for reference laboratories and national TB laboratory networks.

70s, the Latin America Commission for TB Bacteriology (COLABACT) was created, under the leadership of the Pan American Zoonoses Center (PANZOCE), located in Argentina, then PINFPZ (Pan American Institute for Food Protection and Zoonoses).

Among the different activities carried out by COLABACT until the early 1990s, were the publication of technical standards of conventional methods (BK, culture, identification of Mycobacteria and DST), training for professionals in diagnosis of TB, the organization of meetings with the heads of the NRL of the region and the publication of operational research of RNL in your newsletter. Currently the region has five SNL, three of them are located in Latin America, and are the ones that have assumed the greatest responsibility in the Region: Argentina (National Institute of Infectious Diseases, Buenos Aires), Chile (Institute of Public Health, Santiago de Chile) and Mexico (Institute of Diagnosis and Epidemiological Reference InDRE, Mexico City). The other two are the Center for Disease Control and Prevention (CDC) and the Pasteur Institute on Guadalupe Island - France. In 2004, PAHO supported the creation of the Regional TB Laboratory Working Group (GTRL-TB) in order to complement the work of the SNL and coordinate their actions, through technical assistance to the Regional TB and NRL Program, as well as in monitoring and evaluation activities to the NRL, besides training, among other actions.

This working group has the following members: the Mycobacteria and Tuberculosis Laboratory of the Centers for Disease Control and Prevention of the United States

-
- Facilitate the exchange of standardized technical reports of all technical assistance missions to register with partners in the country and among LSNs.
 - Provide a standardized quality assessment for microscopy, culture, M. tuberculosis PSD and molecular methods as necessary.
 - Coordinate comparative evaluations of diagnostic tests among individual LSNs and define priorities for the evaluation of different tests as necessary;
 - Observe the pathways for the development and implementation of standardized protocols for sensitivity tests against new and existing antituberculosis drugs.
 - Advocate with NTP to ensure that the capacities for diagnosis and treatment of drug-resistant TB and tuberculosis are aligned.

(CDC) in Atlanta, United States (SNL); the Public Health Institute of Santiago de Chile, Chile (SNL); the National Institute of Infectious Diseases of Buenos Aires, Argentina (SNL); the Institute of Diagnosis and Epidemiological Reference of Mexico City, Mexico (SNL); the Pedro Kouri Institute of Havana, Cuba (PAHO / WHO Collaborating Center for TB Elimination) and the National Institute of Respiratory Diseases of Santa Fe, Argentina (PAHO / WHO Collaborating Center on TB Epidemiology). In addition, the regional laboratory experts of the GTRL-TB are part of the region. Since the creation of the GTRL-TB, annual planning and evaluation activities, technical assistance and training for the RNL and preparation of manuals and guides for the diagnosis of TB have been carried out. The systematicity in carrying out these activities has been limited by not having sufficient financial resources.

On the other hand, to respond to this need, in 2008 the Global Laboratory Initiative (GLI) was established as a working group of the Stop TB Alliance; The GLI secretariat is housed in the Stop TB Department of the WHO. The GLI has a central group consisting of 18 members and international partners who have joined forces to accelerate and expand access to quality diagnostic services for tuberculosis within integrated laboratory systems. Among its priorities is the expansion of the WHO Supranational Network of Reference Laboratories to reduce existing geographical differences and make it possible for SNL to assume greater responsibilities in strengthening laboratories in response to the call made by the World Health Assembly in 2009 for universal access to the diagnosis of tuberculosis and a greater capacity for global drug resistance surveillance.⁵

Multi-country grant “Strengthening of the Network of tuberculosis laboratories in the region of the Americas”

Taking into account the above considerations, the Regional TB Program (PAHO / WHO) and the GTRL-TB, in coordination with ORAS-CONHU, decided to submit a regional proposal to the Global Fund to Fight AIDS, TB and Malaria, preparing the Concept Note for the Strengthening of SNL and their NRL networks, which was presented approved

⁵ <https://www.who.int/tb/laboratory/gli/es/>

in 2015. The SNL of the World Network of Supranational Tuberculosis Laboratories (RSNL) participating in the grant is Argentina, Chile, and Mexico ⁽⁶⁾, whose job is to ensure that the laboratories of their respective networks comply with WHO standards (quality control, supervision, standards, training, among others).

The objectives of the grant are:

- Strengthen the technical-administrative capacities of the three Tuberculosis SNL located in Argentina, Chile, and Mexico to comply with their terms of reference in support of the national networks of the Tuberculosis laboratory.
- Strengthen national networks of tuberculosis laboratories in twenty countries of the Americas by generating technical-managerial capacities.
- Promote the self-sustainability of the supranational assistance of three SNL of Tuberculosis.

⁶ LSNs must meet the following minimum criteria to belong to the WHO RLSN:

- Be officially recognized by the National Health Authority or the Ministry of Health acting as a National TB Reference Laboratory that supports a national or sub-national functional network of lower level laboratories.
- Demonstrate the technical capacity to perform microscopy, culture, identification, and drug sensitivity tests (PSD) of *M. tuberculosis* using phenotypic and molecular methods according to WHO recommendations.
- Being able to comply with national laboratory technical standards and comply with WHO biosecurity standards and other international standards to perform different tests for tuberculosis.
- Present proven DST proficiency (having successfully participated in 2 consecutive rounds of RLSN proficiency testing) with sufficient workload levels to maintain competence
- Have the capacity (including human resources, infrastructure, and equipment) to support laboratories in other countries (according to TDR of LSN established by WHO).

To be eligible, laboratories must be appointed by their LSN partner or the WHO country office, undergo a laboratory evaluation by WHO, and actively implement a quality management system for accreditation.

The grant aims to contribute to reducing the gap in the detection of cases of tuberculosis in the Americas by strengthening the diagnostic capacity of laboratory networks established in the region which should have an impact on reducing the incidence for the 20 countries. The budget allocated is US \$ 6,110,000 for the period between January 2017 and December 2019.

C. Objectives of the Sustainability Assessment study

Overall objective:

Collect, analyze and evaluate the actions carried out and those that need to be developed to guarantee the sustainability of the progress made in the implementation of the Project “Strengthening of the Tuberculosis Laboratory Network in the Region of the Americas”

Specific objectives:

1. Compound relevant information on the results obtained in the implementation of the grant and measure the economic and political support with which they have been achieved.
2. Identify and analyze the pending actions to support the effective functioning of the tuberculosis laboratory networks in the region.
3. Evaluate the current economic conditions and political contexts of integration, to propose possible strategies for the sustainability of the work of the tuberculosis laboratory networks in the Americas region.

D. Conceptual framework

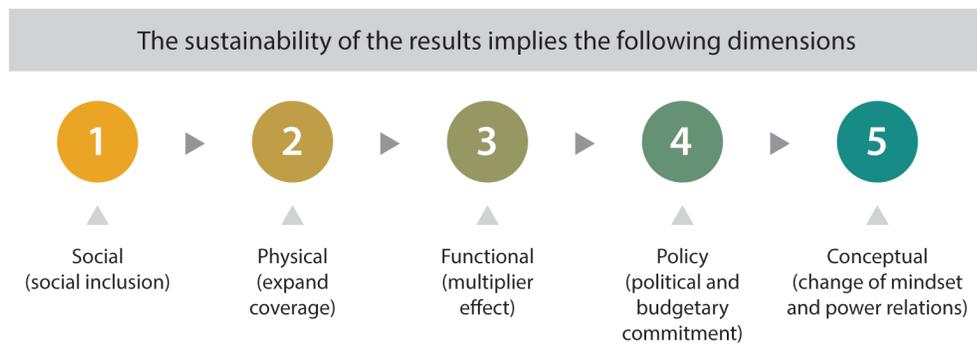
➔ Long-term sustainability is a fundamental aspect of development financing and global health. However, the programmatic and financial sustainability of global health investment faces considerable challenges. Economic growth does not guarantee equal access to health and health care, and there are significant inequalities within the broad group of middle-income countries. Furthermore, economic growth

also does not guarantee equity in responses for key and vulnerable populations disproportionately affected by the three diseases, in particular where stigmatization, discrimination, and criminalization abound. (GF, 2016).

The sustainability policy and the associated processes that the Global Fund establishes are based, among others, on the principle of differentiation: depending on the place that each country occupies in the continuous development process, the level of income, the epidemiological context, the burden of disease, the context of human rights and gender, as well as other regional, national or specific environmental factors. It is also based on the central premise that sustainability planning must be inherent in program design and taken into account by all countries, regardless of their position in the continuous development process. This is the reason why sustainability planning requires multiple approaches that include investing in robust, sustainable, relevant health systems; develop capacities, promotion interventions, and service delivery, while assessing options to increase national financing for health and, in particular, for the three diseases (GF, 2016).

Sustainability and transition planning to stop receiving support from the Global Fund involves addressing complex issues, such as changing legislation to allow the public sector to enter into contracts with non-public sector providers, such as civil society organizations; support the national promotion of health spending; and improve procurement processes and their access to allow countries to acquire key products, such as second-line anti-retroviral and medicines for multidrug-resistant tuberculosis, at affordable prices and to contract services such as strain transport. Since sustainability requires generating adequate policies and interventions based on the epidemiological characteristics of a country's disease and in some cases implementing legislative modifications so that they can be financed with the country's budgetary resources, among other aspects it is necessary to design a sustainability scheme that reflects the particular characteristics of each of the countries that make up the grant.

Chart N° 1 – Dimensions of sustainability



Adapted from UNDP. Promoting development innovations for transformative change. 2012 (cambiar mindset por mentality)

The sustainability of the results of the grant implies external dimensions to its scope and are related to increasing social inclusion in order to eliminate barriers so that everyone can access diagnostic tests and treatment (social dimension), expand current diagnostic coverage and of attention TB (physical dimension), generate a multiplier effect among all the agents and the expansion of the benefits of the project on a larger scale such as, for example, extend technical assistance and training to national networks (functional dimension), ensure the budget and political commitment and support (political dimension), and promote a change of mentality and power relations in order to allow, for example, the entry or modification of technologies rooted in the population or health personnel (conceptual dimension). (PNUD, 2012) Each of these dimensions depends on external factors that condition and determine the results that are intended to be achieved.

It should be noted that, based on a statistical analysis of projects completed in health, the World Bank's Evaluation Department (BM, 1999) found that the main determinant of results is the performance of the project executor (in this case the laboratories and country programs). However, this is not an independent factor; It is influenced by the effectiveness of supervision, the promotion of identification with the project and the adequacy of the design (about half of the World Bank projects that achieved their objectives significantly changed throughout their execution). Another

common feature was Good governance and a macroeconomic context conducive to institutional and organizational development.⁷ (Definitions in Annex N ° 1).

E. Methodology

➔ The study identified the actions carried out and those that need to be developed to guarantee the sustainability of the progress made in the implementation of the Project “Strengthening of the Tuberculosis Laboratory Network of the Region of the Americas”, taking into account that the process will be used to generate a communication scheme (document) for the authorities of the different levels of government of the advantages in relation to the strengthening of the Network of tuberculosis laboratories. For this purpose, the methodological aspects were developed based on the three specific objectives and the type of information collected. For the systematization of information, appropriate dynamic and graphic tables were used to facilitate the reading of the results.

Methodology for primary information:

- Interviews with officials of Ministries or Secretariats of Health and of the institutes to which the Tuberculosis laboratories belong, RP team, and suppliers (transport).
- Surveys of key agents according to the variables proposed for the study, were conducted using formats via the web and in some cases face to face or by phone.

⁷ *The same document refers to the importance of the determinants of health defined as the set of personal as well as social, economic and environmental factors that determine the health status of individuals or populations: “There are many factors, apart from health services, he, which determines morbidity, mortality, nutritional status, and fertility. The most important is the level of income, education and the quality of the environment, which includes access to safe housing, clean water, and sanitation. Also, important are individual and community practices interrelated to nutrition, sanitation, reproduction and consumption of tobacco and alcohol and other behaviors that affect health and depend on an economic and social level and culture.” (BM, 1999)*

- The evaluation methodology has been participatory and with face-to-face interviews or with web formats to the different actors, in various areas of the process (training, technical meetings, events).

Methodology for secondary information:

- Review and analysis of information from the principal recipient, subrecipients, SNL and NRL.
- Review and analysis of information related to the Health, economic and political sector of the different countries, published on the web pages of the World Bank, WHO, PAHO and others.

A matrix with the identified variables has been developed, and each factor has been evaluated by country. When the evaluated factor corresponds to an aspect that guides to sustainability (Yes), it is valued with "1" positive value, in case it is a factor contrary to sustainability (No) it is valued with "0" negative value. A total of 80 variables were analyzed and the results are disaggregated by variables and aggregated by the aspects of institutional management; budgetary, financial and economic; and politician.⁸

- In the analysis by the factor, the number of positive responses from all countries has been added and divided by the number of countries.
- In the analysis by country, the number of positive responses has been added and divided by the number of variables. The determined percentage has been compared by countries and a ranking has been established.

⁸To identify the level of sustainability by country, the results obtained in the interviews and the review of secondary information in the aspects of institutional, budgetary, financial, economic and political management were organized. Once the variables were identified, it was defined which were those that should be emphasized to guarantee the sustainability of the grant. There were 80 variables observed. No additional weighting has been given to any variable, only those relevant for each country have been accounted for according to functions such as LRN or LSN if they are eligible for Global Fund resources.

- In both cases, the determined percentage can take the value from 0% to 100%, if the value is close to 100% it corresponds to greater sustainability both by factor and by country.

F. Aspects identified for short, medium- and long-term sustainability

➔ There are different definitions of sustainability, however, they all agree that a project is sustainable if it can sustain itself; without outside help or reduction of existing resources. Sustainability is defined by some authors as the operational and financial ability to maintain after external resources have ended. Sustainability has also been defined as the set of possibilities for project benefits to be maintained or increased beyond the end of this (Lopez, 2011). Regardless of the definitions, sustainability includes all the actions carried out to ensure that the results last over time, must be addressed from the beginning (and during) the project and must be one of the main actions to which attention that management should pay attention to. This means, in principle, ensuring coverage and impact achieved are maintained and implies not only an expansion of results on a larger scale (nation networks) but also continue the strengthening of national capacities and the improvement of regional and national policies. (PNUD, 2012)

The aspects of the sustainability of the grant observed in the evaluation have been divided about: a) Institutional management; b) Budget and financial, Economic; and c) Political, to determine the indicators that allow us to measure sustainability in the short, medium and long term. We must bear in mind that the term is a methodological separation, sustainability is a continuum that depends on all activities being carried out and each one moving at its own pace. This rate is very varied; therefore, the prioritization of TB at the policy level in the country will be the basis for sustainability. Institutional, budgetary and financial management are directly related to the first two objectives of the grant: Strengthen the technical-administrative capacities of the three Tuberculosis SNL located in Argentina, Chile and Mexico to comply with their terms of reference in support of the national networks of the Tuberculosis laboratory and Strengthen the national networks of Tuberculosis laboratories in twenty countries of the Americas through the generation of technical-managerial capacities.

- Operational - Do human resources are trained? Is the equipment adequate (new technologies incorporated)? Do you have good infrastructure and adequate biosafety levels? Does your logistic system is efficient (how it handles panels and sample transport)?

b. The budgetary and financial aspect involves 2 fields:

- Budget - How the budget manages prioritization, programming and execution.
- Financial. - Related to internal and external resources.

The economic aspect involves two fields:

- The sector related to bend down towards cost-effective processes.
- The multisectoral related to the prioritization of national investment

c. The political aspect involves 2 fields:

- The institutional field: how the institution relates to the other actors in the health sector.
- The national field: Is TB a priority or not in the country agenda? Has the investment in health increased? What is the degree of stability of the situation?

G. Contextual analysis

➔ To get closer to defining the circumstances that determine sustainability, we must first identify the international context, how TB is evolving in countries in terms of health analysis and prioritization in the field of grant; observing the main variables such as: investment (expenditure) in health, the budget for TB (its deficit) and the type of financing, out-of-pocket expenditure, GDP per capita and the HDI. Needless to say, the context matters, but recognition of this reality is not enough. Context is something that is outside the direct control or influence of those responsible for laboratory or even decision makers in the health sector, but that has an important influence on the extent that it can contribute to or slow down the progress made. In this sense, the focus of the analysis refers to an understanding of the general context.

The international political moment is of great concern for tuberculosis and there are commitments to put an end to TB in 2035, a strategy that has been assumed in the countries of the grant and has been signed by their respective Heads of State on

10 October 2018, through the adoption of a Political Declaration at the High Level Meeting of the United Nations General Assembly on the end of tuberculosis.

Chart N° 3 - Key dates for the Political Declaration on Tuberculosis

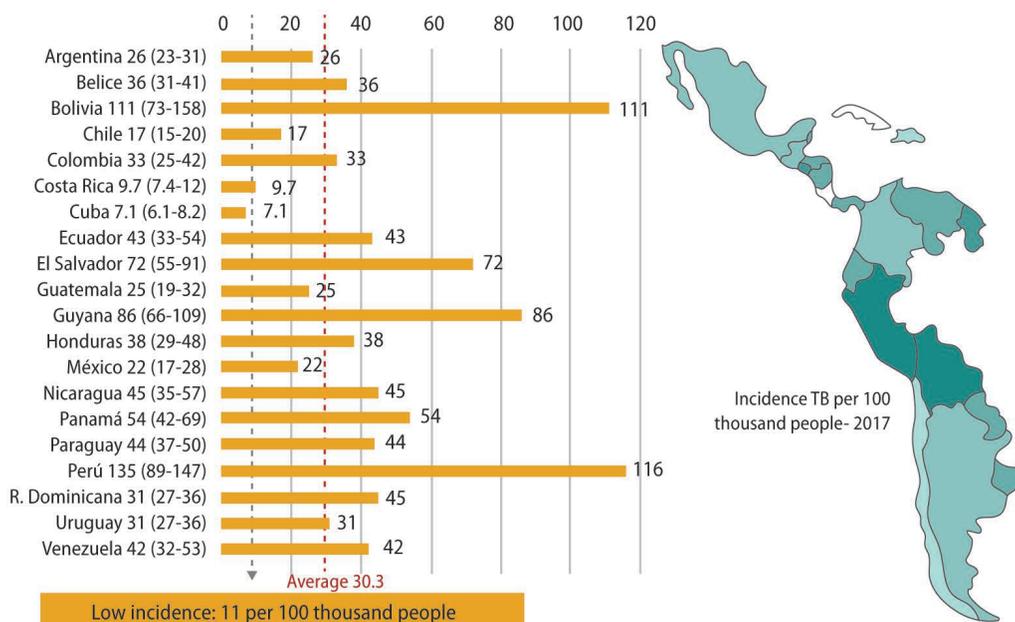


G.1. Evolution of tuberculosis in grant countries

➔ According to the WHO TB report in 2017, Peru is the country with the highest incidence of TB reaching 116 per 100 thousand inhabitants, followed by Bolivia with 111, Guyana with 86, El Salvador with 72 and Panama with 54. In the other countries within the scope of the grant, the incidence of TB was below 50. Those with the lowest incidence are Cuba with 7.1 and Costa Rica with 9.7. In the map of Figure 4, the 20 countries participating in the grant are colored in blue. The intensity of the color is proportional to the incidence.

We have the lowest TB case detection rates in Bolivia (62%) and Ecuador (79%). In the 20 countries, 33.6% of the new cases reported have been testing for susceptibility to rifampin, while the percentage treated was 49.9%. (Annexes No. 3 and 4).

Chart N° 4—Incidence per 100 thousand inhabitants 2017



Source: WHO Health Account Database

G.2. Catastrophic cost due to TB and universal health coverage

➔ The indicators related to the End TB Strategy, in addition to being focused on lowering mortality and the incidence of tuberculosis, and they are also aimed at protecting families so that they do not have to face catastrophic costs due to TB. In that sense, the countries in the area of the grant have signed as a commitment to implement measures to avoid the catastrophic cost.

People incur "catastrophic health costs" when out-of-pocket spending⁹ exceeds a threshold of effective income, after food expenditure. According to Xu (2005),

⁹ Out-of-pocket expenses are defined as disbursements made by families for health services that generally cover the payment of medications, hospitalizations and others such as consultations, which are not reimbursed by insurance or the health system.

catastrophic health costs occur when the out-of-pocket costs of a household's health account for 40% or more of its ability to pay; This percentage can be modified according to the specific situation of each country.

Chart N° 5 - Indicators of the End TB Strategy



By 2035, reduction of TB mortality by 95% compared to 2015.



By 2035, reduction of the incidence rate of TB by 90% compared to 2015.



By 2035, that there are no families that have to face catastrophic costs due to TB

The catastrophic cost can affect a wide range of economic strata and is generally associated with medications and, in the case of TB, hospitalization and diagnostic expenses as suggested by the WHO in the Global Tuberculosis Report 2017 that indicates:

"It is important to distinguish the - total catastrophic costs due to tuberculosis - indicator from the "catastrophic health expenditures" indicator that is used within the SDG monitoring framework and in the regional frameworks for universal health coverage. The latter is a population-based indicator, which measures the proportion of the population that incurs "catastrophic expenditures" on health, with a defined threshold based on the household's ability to pay. Expenses are defined as direct expenses in medical care.

The specific TB indicator incorporates not only direct medical payments for diagnosis and treatment but also direct non-medical payments (such as transportation and accommodation) and indirect costs (such as loss of income). The specific TB indicator is also restricted to a particular population: diagnosed TB patients treated by providers who are part of the National TB Programs networks (WHO, Global TB Report, 2017).

Catastrophic cost is produced due to TB, according to recent WHO definitions, if the costs for their assistance are greater than 20% of the person's economic income. The catastrophic cost indicator due to TB has been recently implementing, so the countries in the area of the grant do not have published figures in this regard.

On the other hand, among the mandates of the countries that make up WHO is universal access to health and universal health coverage, which implies that all people and communities have access, without discrimination, to comprehensive health services. Health, adequate, timely, quality, determined at the national level, according to the needs, as well as quality, safe, effective and affordable medicines, while ensuring that the use of these services does not expose users to financial difficulties, particularly vulnerable groups.¹⁰ However, it should be noted that according to WHO estimates (2017), although health coverage has increased and consequently the out-of-pocket expenditure should have decreased, it is not possible to specify in detail the magnitude of the decrease:

“The analysis of household survey data indicates that out-of-pocket costs remain relatively high in some countries, even in those with coverage and do not require cost sharing (at least on paper). A deeper exploration of the reasons behind the persistence of out-of-pocket spending is needed despite the increase in coverage, such as who continues with out-of-pocket costs and why”. (Daniel Cotlear, Somil Nagpal, Owen Smith, Ajay Tandon, Rafael Cortez, 2015)

“Although all countries have increased health coverage, the absence of regular information (updated surveys) prevents the most adequate follow-up. An obvious implication is that

¹⁰ Universal access to health and universal health coverage require the definition and implementation of policies and actions with a multi-sectoral approach to address the social determinants of health and foster the commitment of the entire society to promote health and well-being. Universal access to health and universal health coverage are the foundation of an equitable health system. Universal coverage is constructed from universal, timely, and effective access to services. Without universal, timely and effective access, universal coverage becomes an unattainable goal. Both constitute necessary conditions to achieve health and well-being. (CD53 / 5, Rev. 2 and CD53 / R14 PAHO / WHO, 2014).

countries must have rigorous monitoring mechanisms, that is to say, a specialized survey at least annually, given that it has been indicating that even with programs to increase coverage. pocket spending does not decrease proportionally” (Gonzales, 2017)

The continuity of policies aimed at universal health systems seems to lead to improving health indicators and reducing out-of-pocket costs but achieving this is a challenge for countries with fragmented health systems and access barriers, which show little progress in disease control, even if they have a bigger budget. On the other hand, in many of the countries of the grant, few could object to universal health coverage (UHC), the problem is what is meant by it.

“UHC is an ambiguous term that makes it difficult to detect the intentions behind it. With a pragmatic speech, the idea that lack of access is essentially a financial problem is appealed: people do not receive the required health services because they cannot afford them, and the State does not provide them due to lack of resources. To solve it, a mechanism is proposed to achieve it: the insurance, public and/or private to pay for the provision of services, private or public. This option of separation of functions between administration of funds/purchase of services and the provision of such services where the State only has a regulatory role is not accidental, it is the very basis of the opening of the health market. That is, this separation is the necessary condition to convert health services into a merchandise and fund management into a financial-commercial activity.”

“As the Latin America cases of the UHC instrumentation demonstrate, for example, in Colombia, Mexico, and Peru, the insurance model has restricted the right to health and strengthened inequality and inequality in access to services. Despite the implementation of the Universal Unified Health Systems and resistance struggles against the UHC, the latter is today the dominant or hegemonic model in health reforms. Its main promoter is the World Bank and is accepted by the WHO whose scheme of the three dimensions of coverage: population, services, and costs implicitly assume insurance.” (Laurell, 2014)

G.3. Welfare indicators

➔ **Gross Domestic Product (GDP) per capita:** GDP per capita is an economic indicator that measures the relationship between the level of income of a country and each of its inhabitants. GDP per capita is measure annually. Its increase is supposed to betray the growth of an economy during a certain period.

In theory, this data describes the average income based on the number of inhabitants, which would allow diagnosing the economic level of society. However, being just an average, this indicator does not explain clearly how this wealth is distributed among different individuals of a country so that economic inequalities do not become visible. In effect, the GDP per capita does not offer conclusive information on data related to education and health, fundamental in the evaluation of the distribution of wealth.

The World Bank classifies the world's economies into four income groups: high, medium high, medium low and low. This classification is based on the Gross National Income (GNI) per capita calculated using the Atlas method¹¹. GNI and thresholds are expressed in United States dollars in current value. A high-income economy is defined, by the World Bank, as a country with a gross national income per capita of US \$ 12,055 or more in 2017. While the World Bank indicates that the income category of a country does not It is one of the factors used that influence the decision making in terms of financing, this factor is still a credit rating. (Evolution of the classification from 1987 to 2017 in Annex N ° 5).

¹¹ The Atlas method softens exchange rate fluctuations by using a conversion factor adjusted to the three-year moving average price.

Table N° 1 – Range of income per capita by income level years 1987,1997, 2007 and 2017, the number and distribution of the 20 countries participating in the Regional TB Grant GF

Income level		1987		1997		2007		2017	
		Per capita income range	N°						
High	H	> 6,000	0	> 9,655	0	> 11,455	0	> 12,055	4
Medium high	MH	1,941-6,000	4	3,126-9,655	5	3,706-11,455	9	3,896-12,055	12
Medium low	ML	481-1,940	14	786-3,125	13	936-3,705	11	996-3,895	4
Low	L	<= 480	1	<= 785	2	<= 935	0	<= 995	0

The Human Development Index (HDI): The Human Development Index (HDI) is an indicator created by the United Nations Development Program (UNDP) in order to determine the level of human development that the countries of the world have; it measures the average of the advances in three basic dimensions: a long and healthy life, knowledge, and a decent standard of living. It was designed to know, not only the economic income of people in a country but also to assess whether the country provides its citizens with an environment where they can better or worse develop their project and living conditions. For this, the HDI takes into account three variables:

- 1.** Life expectancy at birth. Analyze the average age of the dead people in a year.
- 2.** Education. It includes the level of adult literacy and studies attained (primary, secondary, higher)
- 3.** GDP per Capita (at purchasing power parity). It considers the gross domestic product per capita and evaluates the access to the necessary economic resources so that people can have a decent standard of living.

The HDI index provides values between 0 and 1, with 0 being the lowest and 1 the highest. In this regard, UNDP classifies countries into the following large groups:

Table N° 2–HDI ranges in 1990, 2000 and 2017 years

Human development groups	1990	2000	2017
HDI very high	0.787	0.831	0.894
High HDI	0.571	0.635	0.757
Medium HDI	0.462	0.523	0.645
Low HDI	0.351	0.387	0.504

The following table shows the evolution of the HDI and the classification made by the World Bank specifically for the countries covered by the grant. In 1987, only four countries were considered as high middle income (UM). By 1997, two countries were considered low income (unlike only one in 1987). For the year 2007, nine countries were considered as of high average income and none as low income and by 2017, four countries were considered as high income.

About the HDI, all countries except Costa Rica (classified with very high HDI), continue with the classification of the year 1990, in which six countries have the average HDI. This allows us to conclude that the economic growth of the last decade (reflected in the increase in per capita income) in the countries of the grant has not meant an improvement in human development indicators.

Table N° 3 - Countries classified by per capita income and HDI

Country	GNI Per capita group				HDI group		
	1987	1997	2007	2017	1990	2000	2017
Argentina	MH	MH	MH	H	0.704	0.771	0.825
Belice	ML	ML	MH	MH	0.644	0.677	0.708
Bolivia	ML	ML	ML	ML	0.536	0.608	0.693
Chile	ML	ML	MH	H	0.701	0.759	0.843
Colombia	ML	ML	ML	UM	0.747	0.653	0.747
Costa Rica	ML	ML	MH	MH	0.656	0.711	0.974
Cuba	..	ML	MH	MH	0.676	0.686	0.777
Dominicana	ML	ML	ML	MH	0.598	0.657	0.736
Ecuador	ML	ML	ML	MH	0.643	0.670	0.752
El Salvador	ML	ML	ML	ML	0.529	0.615	0.674
Guatemala	ML	ML	ML	MH	0.478	0.546	0.650
Guyana	L	ML	ML	MH	0.538	0.604	0.654
Honduras	ML	L	ML	ML	0.506	0.554	0.617
México	ML	MH	MH	MH	0.650	0.702	0.774
Nicaragua	ML	L	ML	ML	0.489	0.570	0.658
Panamá	MH	ML	MH	H	0.659	0.719	0.789
Paraguay	ML	ML	ML	MH	0.580	0.624	0.702
Perú	ML	ML	ML	MH	0.611	0.678	0.750
Uruguay	MH	MH	MH	H	0.692	0.742	0.804
Venezuela	MH	MH	MH	MH	0.634	0.672	0.761

GNI Per capita	
High	H
Medium high	MH
Medium low	ML
Low	L

HDI group	
HDI very high	
High HDI	
Medium HDI	
Low HDI	

G.4. TB budget in the 20 grant countries

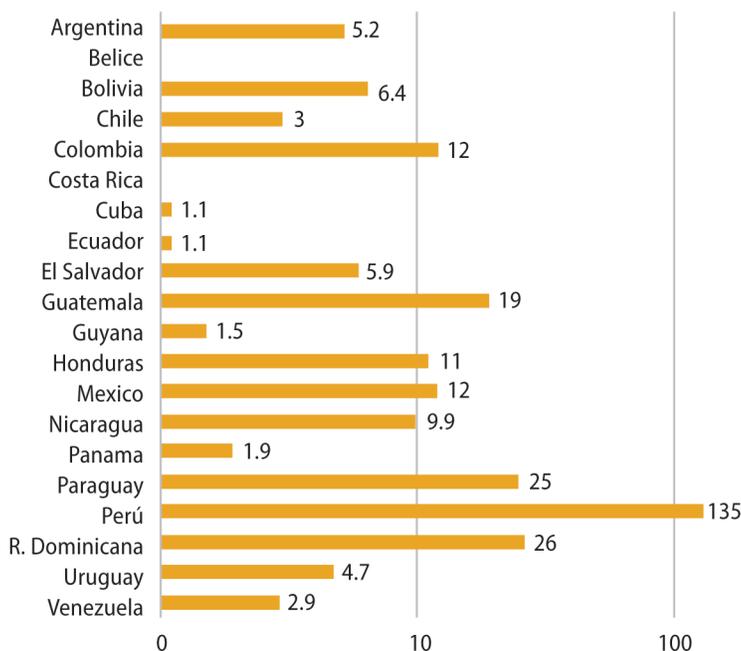
➔ According to the WHO TB report¹², the budget for TB in grant countries is very variable and responds to a budget allocation that in many cases in the implementation is not necessarily exclusively for TB. In this sense, the expenditure information is not strictly comparable, although most countries only report variable costs such as the purchase of medicines and supplies. The TB budget reported by Peru, of US \$135 million, is by far the largest in the entire scope of the grant; however, it is due to the result-based budget mechanism that distributes all health expenditures among 13 budget categories (programs) that include assistance, administrative, management expenses among others that are not considered by the other countries. They are followed, expressed in millions of dollars, Dominican Republic (26), Paraguay (25) and Guatemala (19). The other countries are below 15. The ones with the least budget are Belize, Ecuador, Guyana, and Panama, where the budget is below 2 million.

What is observed is that most countries reported a deficit in TB financing. Those with a major deficit are Chile, Guatemala, Paraguay, and Venezuela, as reported by the countries to WHO. On the other hand, those who do not report deficits are Argentina, Belize, Bolivia, El Salvador, and Uruguay. Belize has the highest external financing with 93%, followed by Bolivia with 83%, El Salvador with 75%, Panama with 44%, Nicaragua 35%, Honduras 27%, Guyana 20%, Dominican Republic 19%, Guatemala 9% and, finally, Peru and Paraguay with 6%. The other countries in the scope of the grant do not have external financing.

The budget for tuberculosis in several countries has been complementing with resources from the Global Fund. In the last 17 years, the country with the highest GF funding has been Peru (US \$84 million), followed by the Dominican Republic (US \$37 million). Then Paraguay, Nicaragua, El Salvador, Ecuador, and Bolivia have received financing between 22 and 24 million US \$. Between 2002 and 2019, only a multi-country grant with GF resources has been implementing for the tuberculosis component that corresponds to the Strengthening of the Tuberculosis Laboratory Network. (Amount approved by grants and countries in Annex N ° 6).

¹² TB Report - WHO - 2019. The TB budget figures are those reported to the year 2018.

Chart N° 6–Tuberculosis Budget – 2017



País	Source of funding
Argentina	100% internal, 0% external, 0% deficit
Belice	7% internal, 93% external, 0% deficit
Bolivia	17% internal, 83% external, 0% deficit
Chile	8% internal, 0% external, 92% deficit
Colombia	31% internal, 0% external, 69% deficit
Costa Rica	100% internal
Cuba	100% internal
Ecuador	45% internal, 0% external, 55% deficit
El Salvador	25% internal, 75% external, 0% deficit
Guatemala	7% internal, 9% external, 84% deficit
Guyana	49% internal, 20% external, 31% deficit
Honduras	25% internal, 27% external, 48% deficit
Mexico	100% internal, 0% external, 0% deficit
Nicaragua	46% internal, 35% external, 19% deficit
Panamá	6% internal, 44% external, 50% deficit
Paraguay	13% internal, 6% external, 81% deficit
Perú	93% internal, 6% external, 1% deficit
R. Dominicana	65% internal, 19% external, 16% deficit
Uruguay	100% internal, 0% external, 0% deficit
Venezuela	14% internal, 0% external, 86% deficit

Note: The horizontal axis is in logarithmic scale to incorporate data from all countries.

Source: Global Tuberculosis Report 2018, reported by countries

H. Results obtained

➔ About short-term sustainability, positioning of the activities carried out by the grant has been achieved. All these results are installed as a better "know-how to do" and a "reconditioning" that projects per se durability in the short term; months before concluding the grant to the TB laboratory network, the following is observed:

- The dynamics of the network are very active, due to the fluid and close coordination between the SNL and their NRL for supervision, technical assistance, and quality control. The grant has achieved a greater link between the SNL and the countries not only at a technical level but, most importantly, at a professional level by creating a network of technical and personal trust that speeds up the processing of many consultations hastily and facilitates activities that are performed routinely.
- All countries have technically trained and better performing professionals, able to replicate knowledge to their national networks. Training is one of the most recognized grant achievements by the different agents, many of the participants are the first time they have received training outside their country and say they would not have done it otherwise since in their respective countries they have administrative facilities (permits) or financing. The training through competition and compliance with requirements have ensured an adequate selection of professionals.
- Standardized technical documents for the diagnosis of TB in the Americas region have been updated and disseminated. The acceptance of these documents has been supporting mainly because they have directly participated in the laboratory technicians and have been presented in meetings to all countries of the grant. Likewise, the technical referents have achieved that the documents are more updated than in other international fields.
- The SNL were equipped with the latest technology for the timely and accurate diagnosis of TB (for sample analysis, information analysis, and booth certification). They have also been strengthened with human resources where necessary (in Chile and Argentina, the latter has already hired the staff initially hired by the grant).

- Logistic procedures for sending and receiving sample panels have been facilitated. This work has been directly managed by ORAS CONHU. The mechanisms of successful transfer and how to optimize the sending and receiving of the panels must be transferred from ORAS CONHU to the countries.
- The region has two new specialists for certification of biological safety cabins, committed to public service. They are an expensive resource with high expertise because its training requires practice and dedication.
- The regional group of TB laboratory experts in the region increased their numbers by training new consultants.
- The articulation between the Laboratory and the TB Control Program has been consolidated in most countries. The grant has strengthened coordination between TB programs and laboratories. In most countries, laboratories have been involved in the development of national plans or TB indicators.
- The role of the laboratory for the End of TB strategy has been highlighted and the analysis, at the level of the high authorities, of the importance of the operation of the networks in the region. The participation of ORAS CONHU and COMISCA facilitated the dissemination of grant activities and access to the highest-level health authorities.
- Several countries with national GF grants carry out actions of confluence and continuity of the progress achieved by the regional grant, through the CCMs.
- The frameworks for discussing the role of laboratory networks have been opened, involving representatives of civil society, the Parliamentary Front of the Americas against TB and the Central American Parliament. CARLAC, through its representatives and mechanisms, has contributed to mobilize resources and streamline processes.
- The technical teams in the countries have discussed and identified strengths and weaknesses that exceed their decision power but affect their work. Among these, the difficulties of samples transport, information systems or the availability of qualified human resources are particularly noted.

- The continuous need to improve professional training is to recognize so that they consider TB as one of the possible diseases in all cases of respiratory symptoms, and to expand the detection of cases, including contacts. On the other hand, in some countries, there is a deficit of trained professionals in areas where insecurity limits their access.

Advances in sustainability according to Evaluation Matrix

- ➔ According to the results of the matrix (Annex N° 2), the main aspect of sustainability where greater progress has been achieved refers to the technical aspect that has been covered with the grant, secondly, the organizational aspect of the SNL and NRL and thirdly, the political aspect.

The progress of sustainability in institutional management, according to the observed variables, reaches 85%, mainly based on the technical aspect that reaches 96%, due to the good professional level of the equipment and the documented processes (Guides implemented in internal regulations in the countries of the grant). Management and coordination reached 84%, taking into account that the level of coordination has gone from less to more, with good coordination as of the date of the evaluation despite 20 countries interacting with different administrative problems and procedures. About personnel, equipment, infrastructure, and logistics, a level of 83% was reached, because the requirement of new personnel is observed for additional activities and it is necessary to refine the logistics processes for critical activities such as the sample transport.

The progress of budgetary, financial and economic sustainability, according to the observed variables, reached 66%, a level reached mainly by the budgetary management and the prioritization in which an advance of 80% is evidenced. It should be noted that all the institutions of the countries have managed a greater budget and prioritization of the activities of the TB laboratories, but not all have achieved this materialize in the respective budget increase. About the provision of external resources and own resources, 58% is reached, most countries do not have external financing, nor do they have funds available for the sale of services or petty cash. About the cost-effective processes and the prioritization of the investment, only

51% have been reached, in most of the countries in the field it is observed that the resources for health are insufficient, but also that the investment or budget approval is not performed after a cost-effectiveness analysis regularly.

With regard to the advancement of political sustainability, it has reached 63%, mainly because most of the countries go through an internal situation, moderately stable, a few enjoy long-term policy stability (Cuba, Costa Rica) and there are Concern for Venezuela, so the observed variable related to the internal situation of the countries reaches 74%. The lowest observed variable is that related to Investment (expenditure) in health, for which only a value of 41% is obtained, the levels of public health expenditure of most of the countries in the scope of the grant are below than recommended by WHO. The relationship with health actors and the prioritization of TB reaches 71% since in the scope of the grant it has been possible to position the importance of laboratories in the fight against TB and the actions implemented to respond to the goals established in the Strategy End to WHO TB.

Table N° 4–Level of progress in sustainability by aspects evaluated

Aspects evaluated	Variables observed	N°	Yes	No	%
Organizational	Direction and coordination	194	162	32	84%
Technique	The technical level of equipment and documented processes	120	115	5	96%
Operational	Personnel, equipment, infrastructure and logistics	330	273	57	83%
% progress in sustainability of institutional management					85%
Budget	Budget management and prioritization	204	163	41	80%
Financial	External resources and own resources	140	81	59	58%
Economic	Effective cost processes and investment prioritization	120	61	59	51%
% of budget, financial and economic sustainability progress					66%
Institutional policy	Relationship with health actors and TB prioritization	159	113	46	71%
Fiscal policy	Investment (expenditure) in health	120	49	71	41%
Conjuncture	Country internal economic situation	117	86	31	74%
% progress in political sustainability					63%

Source: Consolidated of the sustainability matrix evaluated. Annex 2. Table No. 5

Note: N° corresponds to the number of responses obtained for each aspect evaluated in the countries.

H.1. The situation of institutional management with a view to sustainability

➔ According to the results of the sustainability matrix, the grant has achieved its objectives related to the institutional strengthening of the SNL and NRL in the main aspects: organizational, technical and operational.

Progress in the sustainability of institutional management: organizational, technical and operational, according to the Evaluation Matrix

In the aspect of institutional management, the highest level is found in the integration of grant activities in routine laboratory activities, and the coordination between grant agents. At the lowest level are the coordination between laboratory and national TB program and compliance with national counterparts during the grant.

Table N° 5–Sustainability of Institutional Management: Organizational

Aspects	Variables observed ¹³	N°	Yes	No	%
Direction	The interest of directors of the Institution in the activities of the grant.	20	17	3	85%
	Consolidation of the institutional management cast	20	18	2	90%
Coordination with TB strategy and others	Coordination with the TB program.	20	18	2	90%
	Coordination with the TB program (opinion NRL, RP, and SR)	20	13	7	65%
	Coordination with other programs with similar characteristics.	20	13	7	65%
	Strategic integration of grant activities with routine laboratories	20	20	0	100%

¹³ The construction of the percentage can be reviewed in the methodology.

Aspects	Variables observed	N°	Yes	No	%
Coordination with NRL network	Activities integrated with all its parts with the operation of NRL institution	17	17	0	100%
	NRL (country) are satisfied with their SNL.	17	15	2	88%
	Compliance with SNL counterpart activities	3	2	1	67%
	Compliance with counterpart activities of the NRL	17	11	6	65%
	Coordination between agents participating in the grant is good.	20	18	2	90%
					84%

In the technical aspect, there is an adequate level to continue with the actions of the grant, it is only necessary to refine the quality management systems of the institutions where the laboratories reside, both national and supranational reference, to have information on a timely manner.

Table N° 6–Sustainability of Institutional Management: Technical

Aspects	Variables observed	N°	Yes	No	%
The technical level of equipment	Training of existing personnel in the laboratory was carried out	20	20	0	100%
	Transfer experience and knowledge of the grant began	20	20	0	100%
	Personnel that carries out grant activities are technically trained.	20	20	0	100%
	Teamwork is consolidated (with procedures or guidelines)	20	20	0	100%
Documented processes (QMS)	Grant guides and manuals are used	20	20	0	100%
	Access to information is agile and efficient (QMS)	20	15	5	75%
	Manuals with grant work methodology available ¹⁴	0	0	0	
					96%

Concerning the progress in the operational field, the staff is training and can replicate that knowledge about the technology used, which is the latest generation.

¹⁴ The consultation was made to the laboratory managers but was not evaluated to determine the score. The responsibility for transferring documentation is from the PR, it has been proposed to be included in the grant closure process.

There is a lot of dispersion in the cost of sending the panels, which can be a barrier to the budgetary programming of the transport cost.

Table N° 7- Sustainability of the Institutional Management: Operational

Aspects	Variables observed	N°	Yes	No	%
Human resources	Adequate number of staff (once a grant is concluded)	20	14	6	70%
	National Network staff motivated in grant activities.	20	17	3	85%
	Staff trained and able to make replicas.	20	20	0	100%
	Specialist in certification of biological safety cabins in the country ¹⁵	20	8	12	40%
Equipment	The technology used in the laboratory is the latest generation.	20	20	0	100%
	Quantity of equipment suitable for their functions.	20	17	3	85%
	It has a budgeted equipment maintenance plan.	20	14	6	70%
Infrastructure	Adequate infrastructure for the operation of equipment.	20	17	3	85%
	Adequate infrastructure for technical assistance, training and internships	20	17	3	85%
Logistics	The process of sending and receiving panels is master.	20	18	2	90%
	Shipping cost panels below average	16	6	10	38%
	Participated in 2018 in EQA (External Quality Assessment)	17	15	2	88%
	At least one delivery or receipt of panels was made during the grant	17	16	1	94%
	EQA was performed in the last 2 years	20	18	2	90%
	Defined procurement mechanisms (although laboratory does not perform)	20	20	0	100%
	There is timely supply of inputs.	20	17	3	85%
	Adoption of quality management systems, even if they are not certified	20	19	1	95%
					83%

¹⁵ It was consulted if there were staff or there are external services in the country that can develop it, some countries with their national grants have trained certifiers of biological safety cabins

H.2. Budgetary and financial situation with a view to sustainability

➤ The grant budget allocated to the networks has operated in a way to the budgets that the countries allocated before 2017. Except in the SNL where an important timely investment in equipment and supplies has been made, the grant has represented between 5 and 10% of the budget in the countries, so this would not be a conditioning factor of sustainability. However, when asked how much the grant has contributed to the laboratory expenses, the laboratory representatives stated that the grant contributes 100%, referring to the expenditure on training, tickets, per diem because some countries do not have Regular budget for these items.

In most countries (95%) laboratories have participated in the development of the TB Plan or the TB indicators in their Health Plans, aligned with the objectives of the End of TB strategy. Two of the SNL have assumed the continuity of their activities as network heads, committing a budget for hiring human resources, technical assistance, equipment maintenance, purchase of supplies and panel preparation. In the SNL Chile, it must still be defined if once the grant is concluded, it will be able to fulfill all activities as SNL without additional contracting and if it continues with the assistance and distribution of assigned countries.

All the technical teams of the NRL have carried out advocacy work or managed financing for the purchase of supplies and equipment, either with public funds (Guyana), with national grants (Dominican Republic, Paraguay) or mixed financing (Peru). Also, 9 countries have managed to incorporate a budget to participate in external quality control, however, very few has stated that they can finance training trips and internships in SNL.

In the 20 countries of the grant, despite the existence of different management models, the main source of financing for TB laboratories in the public budget, by direct allocation (not by the purchase of services), which allows spending control. This constitutes a mechanism to ensure monitoring of TB laboratory spending, transparency and proper use of resources. There are particular cases in which part of the financing comes from specific public funds (Uruguay), in addition to private

funds (Mexico), or sale of services (Argentina, Peru and some other countries, but very few can dispose of the resources as they enter to the single public treasury box). Additional sources of funding have been identified that could come from national GF grants (in countries still eligible in the region) for financing internships and technical assistance of SNL; or complementary resources for the acquisition of inputs and hiring of personnel through the application to internal or external research resources. A sustainability mechanism is constituted by CARLAC, which, through its focal points, has encouraged the mobilization of financial resources for actions complementary to the regional grant (Bolivia, Costa Rica). In meetings of ministers, the establishment of international technical cooperation agreements between institutes has been proposing to identify the strengths that laboratories have for the exchange of service provision.

Progress in budgetary and financial sustainability, according to the Evaluation Matrix

➔ There is an advance of 80% in budgetary management and prioritization, and 58% of financial sustainability (financing capacity). Management has been carried out for external quality evaluations (in 75% of the countries) while only 25% have carried out the management for the financing of internships or technical assistance.

Table N° 8–Budget Sustainability

Aspects	Variables observed	N°	Yes	No	%
Budget management	Tuberculosis expenditure can be monitored (program and laboratory).	20	19	1	95%
	Ease of incorporating new spending concepts (not budgetary rigidity)	20	18	2	90%
	Participation in phases of formulation and budgetary programming.	20	18	2	90%
	Eligible for Global Fund grant (includes Transition mechanism)	11	11	0	100%

Aspects	Variables observed	N°	Yes	No	%
Budget management	Management to finance internships or technical assistance	20	5	15	25%
	Management to finance external quality assessment EEC	20	15	5	75%
	Identified sources of TB control funding	20	20	0	100%
Focus	Low impact of laboratory finance grant (% grant / TB expenditure)	20	17	3	85%
	Relationship of multi-country grant with national grants.	13	12	1	92%
	Prioritization of the TB identified during the grant (RP / SR)	20	15	5	75%
	Funds for operating expenses (laboratory budget independence)	20	13	7	65%
					80%

There is little availability of financial resources by laboratory managers, as well as a limitation for access to external financing resources. In all countries, the grant has operated as complementary financing.

Table N° 9–Financial Sustainability

Aspects	Variables observed	N°	Yes	No	%
External resources	Funds available for investment, operational improvements and attention to demand	20	9	11	45%
	Funds for information systems (maintenance, hardware update and software license renewal)	20	11	9	55%
	Existence of other sources of financing (only advisable public)	20	12	8	60%
	External and internal funds without considering public funds (grants, research)	20	5	15	25%
Own resources	Coverage of Operating Expenses (deficit less than 20%)	20	12	8	60%
	Monetary flows associated with charges for SNL services	3	2	1	67%
	Monetary flows associated with charges for NRL services	17	10	7	59%
	Grant funds concerning operating expenses (less than 50%)	20	20	0	100%
					58%

H.3. Economic situation with a view to sustainability

➔ For the region there are no engines of dynamism for economic growth, because emerging markets in the world, including Latin America, showed a significant reduction in external financing flows (2018), while increasing levels of sovereign risk¹⁶ and devalued their currencies relative to the dollar. The expected deceleration for China adds to the expected deceleration for the United States, the Eurozone and, in general, developed economies. Concerning fiscal policy in Latin America, both current expenses and capital expenditures (and therefore public investment), contracted 0.1 percent of GDP in 2017 compared to 2018. In the Caribbean, the fiscal policy continues to focus on the generation of surpluses to meet the high weight of public debt. In Latin America, there was a slight increase in inflation (not including Venezuela), while in Mexico and the Caribbean there was a decrease in the rate of inflation. (CEPAL, 2019)

About the economic policy of the countries as detailed above, they are focused on maintaining the economic balance, with a view to not producing inflationary risks, which leads to a contraction of "non-priority" expenses that in practice could result in social expenses. It should be taken into account that for prioritization of spending, there must be evidence on its profitability, data generation on costs and economic impact. In this regard, only two countries have developed specific studies of catastrophic health costs (Peru and Chile) for decision-making, despite the fact that the catastrophic cost is one of the three goals of the End TB Strategy. Likewise,

¹⁶ The sovereign risk is the possibility that a State, protected by the impossibility of being sued, decides to default or suspend the service of its debt, whether in private bonds or external debt with creditors, countries or external agencies.

Costa Rica¹⁷ and Cuba has developed studies where they have determined that the catastrophic cost is close to 0% due to the structure of their health systems.

On the other hand, the statistical figures on the incidence of tuberculosis are not directly related to the amount of investment made in the countries. Management and health care models have an important weight in the efficiency of the use of resources. The best results are observed in comprehensive, accessible, free health systems, sufficiently endowed with trained human resources, and with social participation. Countries with a high budget for TB, but fragmented health systems and with access barriers, show little progress in disease control.

For the economic factor related to the sustainability of the grant activities, an advance of 51% is observed.

Table N° 10 - Economic Sustainability - Sectorial and Multisectorial

Aspects	Variables observed	N°	Yes	No	%
Cost effective processes	Economic evaluations are carried out to enter new techniques	20	10	10	50%
	Cost reduction policy. (expense optimization)	20	6	14	30%
Investment Prioritization	Know the regime or regulations for investments in health.	20	10	10	50%
	Country classification by income level (medium high or more)	20	16	4	80%
	Per capita income above average	20	6	14	30%
	Free health care or universal insurance	20	13	7	65%
					51%

¹⁷ In the study carried out in Costa Rica, it was determined that the incidence of catastrophic cost increased slightly from 0.6% of households in 2004 to 0.8% in 2013. The study concludes that the incidence of catastrophic health costs Costa Rican households do not represent a problem for the Costa Rican health system, but it is an aspect that should focus on their structural characteristics. (Briceño, Rodrigo Vargas, Juan, 2017)

H.4. Political situation with a view to sustainability

➔ Political sustainability is the basis for long-term sustainability, through the priority accorded to TB and laboratory diagnosis on the agenda of the health authority and at the highest level. The grant leaves the issue of TB and the importance of the laboratory in disease control. In the 20 countries it has been addressed as a matter of ministerial agenda, but only in six is it reflected as a priority.

With regard to the political situation related to the sustainability of the grant activities, it is observed that the basis for ensuring the continuity of the activities has not yet been established, so that the progress in institutional political sustainability reaches 71%, in the aspect of fiscal policies (spending decision) 41%, and in the aspect of internal situation (stability) it reaches a percentage of 74%, however, it is superior to economic sustainability.

Table N° 11 - Institutional political sustainability

Aspects	Variables observed	N°	Yes	No	%
Relationship with health actors	Interinstitutional articulation	20	19	1	95%
	Inter-institutional positioning of the fight against TB.	20	15	5	75%
	Appropriation of the social problem that generates TB in different actors. TB PEN	20	18	2	90%
TB Prioritization	The fight against TB is on the political agenda.	20	19	1	95%
	Manifestation in integration mechanism in favor of the End TB Strategy	19	14	5	74%
	TB incidence per 100 thousand inhabitants (under 30)	20	7	13	35%
	Tuberculosis expenditure (higher than average) of the 20 countries	20	10	10	50%
	TB financing support (declared or committed)	20	11	9	55%
					71%

Table N° 12 - Fiscal Policy Sustainability

Aspects	Variables observed	N°	Yes	No	%
Health investment	Pocket spending (below average) of the 20 countries	20	7	13	35%
	Catastrophic cost study conducted (in health or TB)	20	4	16	20%
	Health expenditure as% of GDP (above average 7%)	20	13	7	65%
	Public health spending as% of GDP (above average 5%)	20	7	13	35%
	Health expenditure per capita (above average)	20	6	14	30%
	% Health expenditure on public spending (above average 15%)	20	12	8	60%
					41%

Table N° 13 - Political sustainability - Conjuncture

Aspects	Variables observed	Total	Yes	No	%
The internal situation of the country (stability)	Favorable socio-political environment to achieve greater impact (management support)	20	17	3	85%
	Participation of civil society in health or country coordination mechanisms	20	12	8	60%
	External mechanisms to mobilize resources (CARLAC, parliamentary front)	17	12	5	71%
	Period of government just started or is in the middle of management	20	12	8	60%
	It belongs to the regional integration mechanism (ORAS or COMISCA)	20	14	6	70%
	Public sector support in general institutional strengthening	20	19	1	95%
					74%

The advances are different according to the countries and their integration mechanisms. For example, the countries that makeup COMISCA have signed a Resolution where they commit to consider in their budgets the external quality assessment (by the SNL of Mexico) (Annex N°. 10). The countries that makeup ORAS CONHU are expected to promote a similar resolution.

About legislation, there are countries such as Peru that have a specific TB law, but in the majority, the protection of people with the disease is given in the framework of general provisions that apply to any health situation. About public welfare policies and social protection systems, half of the countries claim to have social protection systems that cover people with TB.

Initiatives have been developed that seek to expand diagnosis and treatment, such as the Country Coordination Mechanisms (CCM) in countries with national GF grants for any of the three components (TB, AIDS or Malaria), which are a strategic space for confluence of actions that improve the detection of cases of TB and TB / VHI.

A boost has been given through technical and regional integration agencies. The SNL and NRL stand out as a very positive to have a direct liaison expert in PAHO for the coordination of activities, suggest maintaining it and financing it with the resources of national PAHOs. The ORAS has TB as a strategic line and the ministers ordered the constitution of the Andean Committee on Tuberculosis. COMISCA also has TB as a line of work and RedLab, which is the network of laboratories in Central America, of which TB is a part. The exploration of financial mechanisms to maintain the benefits of networking is on the agenda of the countries.

The participation of civil society and the Parliamentary Front of the Americas against Tuberculosis have been expanded, both play a fundamental role in the continuity of efforts in each country and the region. The grant has integrated them into several activities.

A separate section is a political prioritization in health whose evidence is public spending, analyzed from different perspectives.

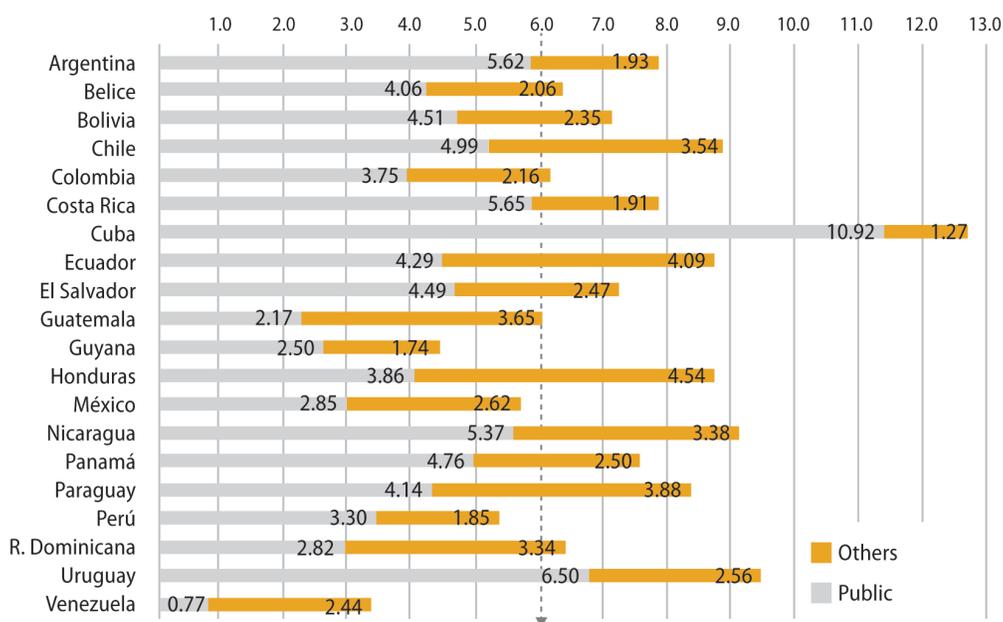
H.5. Analysis of Health Expenditure in the countries of the grant

Health spending as a percentage of GDP is a sign of prioritization of the sector in the country and the participation of the State is the political response to health problems. These public health expenditures show a significant variability between the countries in the scope of the grant and "insufficient progress", to reach the minimum goal recommended by the World Health Organization (WHO) (6%).

According to the information on WHO health accounts for 2017, only two countries in the scope of the grant invest in health over 6% of their Gross Domestic Product (GDP). It is Cuba and Uruguay that comply with this recommendation. Cuba is by far the country in the region that invests the most, with more than 10%, followed by Uruguay, with just over 6%. The countries that approach the 6% objective are Argentina (5.62%), Costa Rica (5.65%) and Nicaragua 5.37%.

The countries that are between 4 and 5% are Belize, Bolivia, Chile, Ecuador, El Salvador, Panama, and Paraguay. Countries in the scope of the grant that invest in health between 3 and 4% are Colombia, Honduras, Peru. And those whose investment does not reach 3% are Guatemala, Guyana, Mexico, and the Dominican Republic. In the map of Graphs No. 7, No. 8 and No. 9, the 20 countries participating in the grant are colored gray. The intensity of the color is proportional to health expenditure.

Chart N° 7 - Health expenditure as % of gross domestic product - GDP. 2016



WHO suggests public spending greater than 6% of GDP

Source: WHO Health Account Database. World Bank

Although health spending as a percentage of GDP is a sample of the sector's prioritization in the country¹⁸, public sector health spending (State participation) is the political response to health problems (gray bar in the graph) and reflects the combination of the government's fiscal capacity and its commitment to health to other users of public spending. It is an important determinant of the dependence

Health expenditure as % of GDP-2016

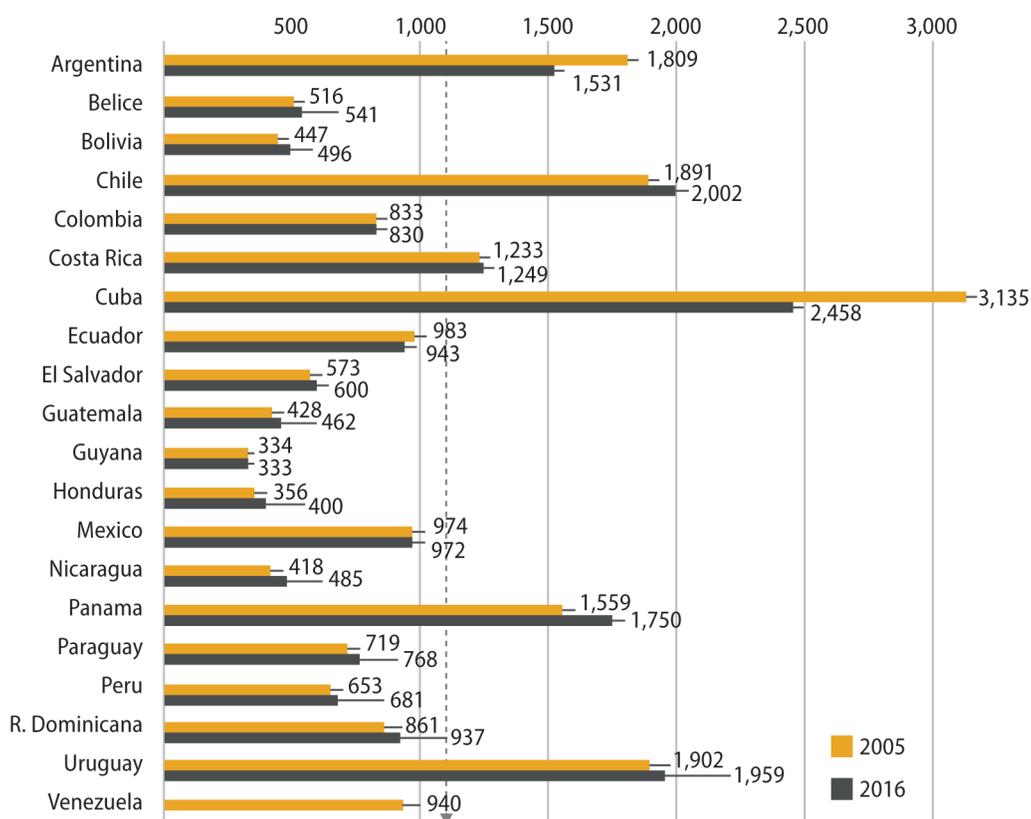


¹⁸ This indicates the level of expenditure of the health system within a country with the level of economic development of that country. Higher income countries tend to spend a greater proportion of their GDP than in lower income countries.

of the health system on out-of-pocket expenses (yellow bar on the chart). On the other hand, according to WHO, the use of health services, in particular, is strongly correlated with GDP per capita, with the probable explanation that higher income in the country translates into higher levels of public and private spending in health, which fuels a greater supply and demand for services.

When comparing the figures of the countries that invest the most with the least, the differences are quite evident. However, we must consider that there are countries that increase their public spending on health but have a historical debt of social accumulation that will take time to resolve. As an example, let's take three key indicators reported in 2017:

Chart N° 8—Health expenditure per capita 2015-2016 (in US \$)



Per capita expenditure on health: 1,027 US \$

Source: WHO Health Account Database. World Bank

- Life expectancy at birth in Cuba, Costa Rica and Uruguay is more than 77 years. In Venezuela, it is 74 and in Bolivia, it is 69.
- The infant mortality rate in the countries that invest the most does not exceed 8 children per 1,000 who are born alive. While in Venezuela, it is 14 and in Bolivia, it is 51.
- The maternal mortality rate, which in Uruguay is 18 women per 100,000 live births, in Cuba 38.3 in Venezuela is 68, and in Bolivia 160.



Per capita spending, on the other hand, is a strong predictor of the extent to which the health system depends on out-of-pocket expenses. Graph N ° 7 gives an idea of the proportion between public expenditure and other types of expenses (generally private), while graph N ° 8 shows the comparison of per capita expenditure in 2015 and 2016.

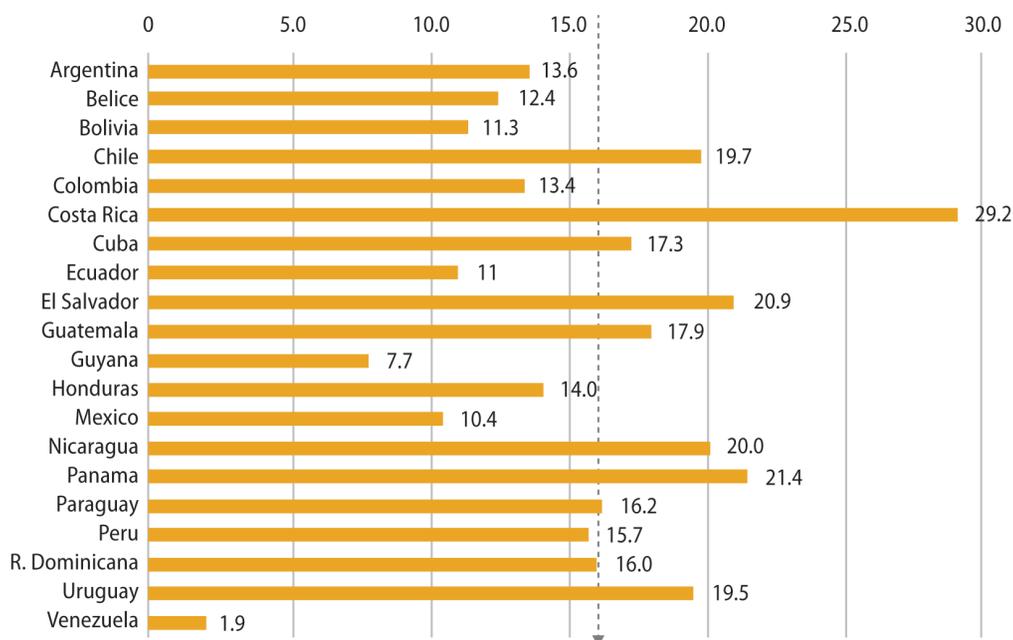
Cuba is the country with the highest per capita expenditure in the area of the grant, but according to the data recorded in WHO, spending has decreased from 2015 which was US \$ 3,135 to US \$ 2,458 in 2016. Another country that has decreased per capita spending Capita in health is Argentina from US \$ 1,809 to US \$ 1,531, explained by the contraction of economic growth. Also in Ecuador, it has decreased slightly. Venezuela does not have information of 2016, but due to the current economic situation, a considerable decrease in this indicator is expected. On the other hand, the other countries have slightly increased this indicator, highlighting Panama and Chile.

It should be noted that health spending as a percentage of public expenditure indicates the priority that the government gives to health financing concerning other public expenditures. It includes both revenues collected, and expenses incurred with mandatory contributions to social health insurance. The average in grant countries is 15.48% of public spending.

Costa Rica, Panama, El Salvador, Nicaragua, and Chile are the countries with the highest percentage of spending concerning total public spending. While Venezuela, Guyana, and Ecuador are the countries with the lowest percentage of health expenditure compared to the total expenditure made by the State. (Chart N ° 9)

According to the WHO, the share of public health spending in total health spending does not have a clear relationship with service coverage or equity in access to essential services, especially in low-income countries. This lack of relationship between the proportion of public spending in total health spending and performance in service coverage and equity in access to services suggests the need for deeper analysis, particularly among countries with income and levels of income. similar expense. There is also an urgent need to improve the performance of public spending.

Chart N° 9 - Health expenditure as a percentage of total public expenditure – 2016



Health Spending/Average Public Spending 15.48%

Source: WHO Health Account Database. World Bank

Despite this, Koivusalo M & Mackintosh M (2005) find that the increase in private expenditure in relation to total health expenditure, translates into a worse life expectancy adjusted according to the state of health while the increase in public expenditure and of social security systems in the health sector (in relation to GDP) is associated with a better life expectancy depending on the state of health. (OMS, *Subsanar las desigualdades en una generación. Alcanzar la equidad sanitaria actuando sobre los determinantes sociales de la salud. Informe final de la Comisión, 2008*)

Health expenditure as a % of Total Public Expenditure 2016

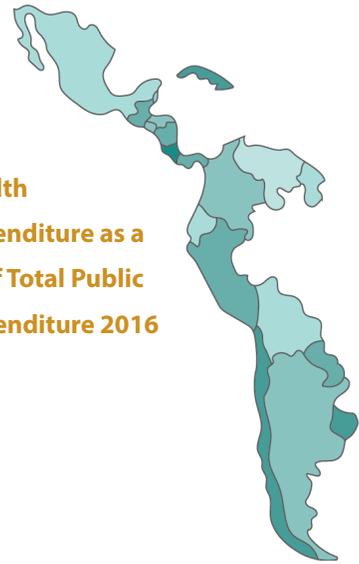
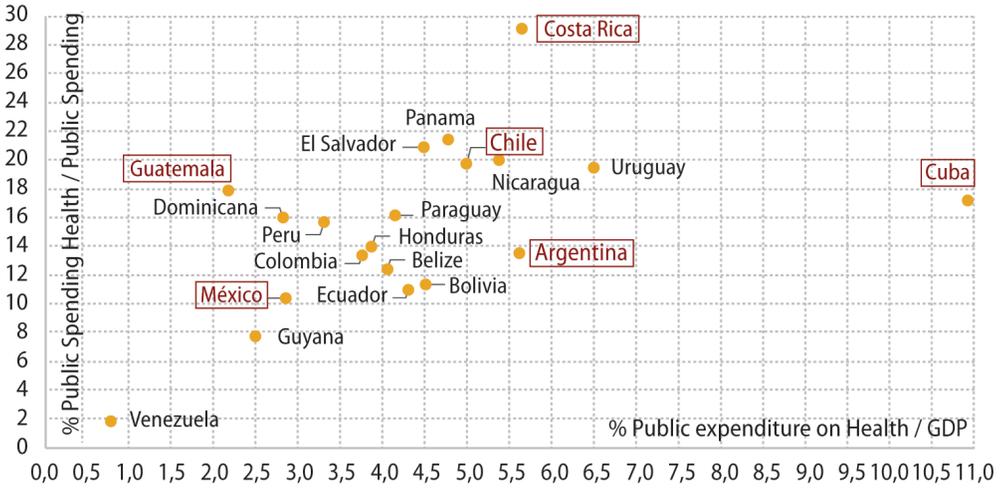


Chart N° 10 shows the relationship between "Health expenditure as a percentage of GDP" and "Health expenditure as a percentage of total public expenditure". It can be seen that countries with a lower incidence of TB such as Cuba and Costa Rica have a higher proportion of health expenditure about GDP and government spending. In second place are Chile and Argentina, and in third, Mexico and Guatemala.

Public spending on health is important for financial protection; however, many countries with similar levels of public spending on health show different levels of financial protection, suggesting that "health policies" make a difference. (Xu K, Soucat A Kutzin J et al., 2018). Public spending must be more effective in improving access to services, equity in access and financial protection.

Chart N° 10 - Relationship between Public Health Expenditure % GDP and Health Expenditure% of Public Expenditure



Source: WHO Health Account Database. World Bank

Note: countries with TB incidence less than 30 per 100 thousand inhabitants framed with red.

H.6. Analysis of results by country

➔ The following table presents the qualification of the variables observed according to the interviews carried out, the reports of the grant on the participation of countries and the review of secondary information from WHO. According to the variables observed for the sustainability of the SNL, Argentina would be the SNL with the greatest possibility of sustainability, secondly, Mexico and thirdly Chile. Concerning the NRL, the countries with a better sustainability indicator are Colombia, Uruguay, and Panama.

Table N° 14–Sustainability by countries (percentage level)

Ranking	Country		Variables observed			
			Institutional management	Budget, financial and economic	Political	Total
1	Argentina	SNL	100%	86%	63%	86%
2	Colombia		100%	77%	60%	83%
	Uruguay		97%	82%	60%	83%
	Panamá		88%	87%	70%	83%
3	México	SNL	100%	77%	58%	81%
4	Chile	SNL	86%	77%	74%	80%
5	Cuba		81%	73%	79%	78%
	Guatemala		88%	71%	70%	78%
	Peru		85%	71%	75%	78%
6	Costa Rica		85%	70%	65%	75%
	Paraguay		97%	58%	60%	75%
7	El Salvador		85%	63%	70%	74%
8	Dominicana		73%	67%	70%	70%
9	Ecuador		85%	54%	60%	69%
	Guyana		91%	63%	40%	69%
10	Honduras		79%	54%	65%	68%
	Nicaragua		73%	50%	80%	68%
11	Venezuela		85%	45%	35%	60%
12	Belize		67%	54%	45%	57%
	Bolivia		70%	42%	55%	57%
	Average		86%	66%	63%	74%

Argentina is the country that, despite the inflation of 2018¹⁹, has fulfilled the responsibilities assumed as SNL and is committed to continuing performing technical assistance and external quality assessment. Colombia also through its NRL has fulfilled 100% of its commitments. It should be noted that both countries have a greater number of laboratories in the region that have undergone, before the grant, an external quality assessment, as does Mexico. (Annex No. 7)

Regarding the SNL of Chile, the commitment to ensure that the human resources that they supported and were trained during the grant are not absorbed by the Chilean Public Health Institute (ISP) has not yet been signed),²⁰ therefore, it must still be defined if once the grant is concluded, it will be able to carry out all activities such as SNL without additional contracting and if it will continue with the technical assistance and distribution of assigned countries.

It should be noted that of the three SNL that have been strengthened with the purchase of equipment, Chile has been the SNL where the largest investment (\$197 thousand) has been made, both for the analysis of samples (42.9%) and for the analysis of information (57.1%, servers, laptop, projector, hard drives, among others). In Argentina, the investment was US \$ 159,000 (sample analysis 66.8%, information analysis 33.2%) and in Mexico it was US \$ 64,000 (sample analysis 54.3%, information analysis 7.4%, equipment for cab certification 38.3%).²¹

Uruguay and Panama also have significant progress to ensure sustainability through their NRL, due to the economic and political contexts of their countries. As for Panama, there is the possibility of internships and attendance at congresses with due support, through a scholarship fund, however, there is a risk of a modification in laboratory support due to recent government elections (May 2019).

¹⁹ Inflation in Argentina in 2018 was 47.6%, the highest figure in the last 27 years

²⁰ In the case of Chile, additional personnel could only be hired (increase places) through "Expansion Projects" prioritized by the head of the Ministry and then by the Ministry of Finance.

²¹ Information provided by the PR as of December 2018.

In the case of Uruguay, since December 2018 it is working on the conformation of its network of TB laboratories. Like several countries in the region, in recent decades the State had not sent personnel to train abroad (there was no training budget for this concept), and the training of workers was based on individual initiatives undertaken with a private budget (in congresses, seminars, and others). None of the SNL had visited Uruguay. Research is now being carried out with the Pasteur Institute of Montevideo, which has teams that the TB NRL currently does not have (sequencers).

For their part, those responsible for the NRL of the countries that make up COMISCA: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama and the Dominican Republic have managed and provided information to their respective Ministers in order to secure the budget that allows to continue with the strengthening of laboratory networks. These countries have different levels of sustainability.

Costa Rica and Cuba, the two countries with the lowest incidence, the highest health expenditure, and the best health indicators have different experiences.

With respect to Cuba, despite political and economic support and laboratory infrastructure, a determining factor that is attentive to sustainability is that, as of June 2019, it has not been possible to have an external quality assessment, due to that the companies in charge of transporting samples have not obtained airlines with availability to move the panels to Cuba. Internally, laboratory networks function as part of an integrated health system (sample transfer, etc.). In the opinion of SNL Chile, to which Cuba belongs, this country has a very good technical level in the tuberculosis laboratory.

In Costa Rica, a country with previous experience in quality control, some positions are permanently established which represents a problem due to the qualification of the personnel required, constantly updated by the new diagnostic techniques and the replicas of the quality assessment. This country is one of those that could change SNL (previously it belonged to the Chilean Network). The financing of tuberculosis control is completely public, but despite this, there is still out-of-pocket spending and it is necessary to boost political support for the laboratory to move towards new techniques.

For Guatemala, the rise of the head of the National TB Control Program towards a position of greater decision is a factor that points towards sustainability. For its part, the Dominican Republic currently has a grant from the Global Fund in transition, to reduce the gaps in different aspects, so that several fundamental elements for the laboratory are in the process, such as the infrastructure and the formation of a certifier of cabins.

The changes in authorities and government also put a strain on sustainability. Despite the advances, uncertainty is generated in all countries where there will be elections this year: Argentina, Bolivia, Uruguay; and the immediate year after the grant was completed. The Dominican Republic and Belize are the countries where the elections will take place after the end of the grant and with less chance of being disseminated the achievements and needs to the new authorities.

On the other hand, belonging to a regional integration mechanism influences that the authorities can make decisions based on a wider territorial scope, while the health commissions of their respective countries constitute on issues of common interest. Membership in a sub-regional or regional block integration area preserves the historical memory of the actions promoted in previous negotiations even when some authorities change. Also, the commitments are anchored through resolutions that provide stability to the work of the technical teams.

There is also a relationship between sustainability levels and the level of per capita income in the country.

Table N° 15 –Contextual factors of sustainability by countries

Ranking	% sustainability level	Country	Membership of a Regional Integration Mechanism	2017 GDP per capita level	Year of presidential elections			
					Latest	In 2019	2020-2021	2022-2024
1	86%	Argentina		H	2015	October 2019		
2	83%	Colombia	ORAS	MH	2018			2022
		Uruguay		H	2014	October 2019		
		Panama	COMISCA	H	2014	May 2019		
3	81%	Mexico		MH	2018			2024
4	80%	Chile	ORAS	H	2017		2021	
5	78%	Cuba		MH	2018			2023 ²²
		Guatemala	COMISCA	MH	2015	June 2019		
		Peru	ORAS	MH	2016		2021	
6	75%	Costa Rica	COMISCA	MH	2018			2022
		Paraguay		MH	2018			2023
7	74%	El Salvador	COMISCA	ML	2014	February 2019		
8	70%	Dominicana	COMISCA	MH	2016		2020	
9	69%	Ecuador	ORAS	MH	2017		2021	
		Guyana		MH	2015	March 2019		
10	68%	Honduras	COMISCA	ML	2017		2021	
		Nicaragua	COMISCA	ML	2016		2021	
11	60%	Venezuela	ORAS	MH	2018			2022
12	57%	Belize	COMISCA	MH	2015		2020 ²³	
		Bolivia	ORAS	ML	2014	October 2019		

On the other hand, the stability of the NRL officials during the grant has allowed the staff of the national laboratory network to benefit from training and technical assistance. However, Paraguay, Bolivia, Ecuador and Peru are the countries in which changes have been made to the NRL headquarters during the grant. In the last two,

²² State Council Elections

²³ Prime Minister Elections

at least two changes have been made within two years, which could have affected the better use of the grant benefits.

It should be noted that in some technical meetings, courses and workshops, some personnel have been selected by the health authorities that did not meet the appropriate profile, so it is important to refine the selection mechanisms through competitions (there was a very satisfactory experience in the selection by a contest of the participants to the course for the training of laboratory consultants) and the requirement by the OPS technical SR of the fulfillment of requirements to access specialized training.

Little participation of Bolivia has been found in the grant activities because the head of laboratory did not allow timely completion of the procedures to ensure staff participation (currently it has changed). However, in the opinion of the SNL to which Bolivia corresponds, its laboratory will have a significant qualitative improvement in the medium term, due to the strong investment in laboratory infrastructure in recent years. In some cases, the SNL has been able to support to make improvements in the biosecurity measures of the facilities. For its part, Belize in the second year decreased its participation, which had been very active in the first year.

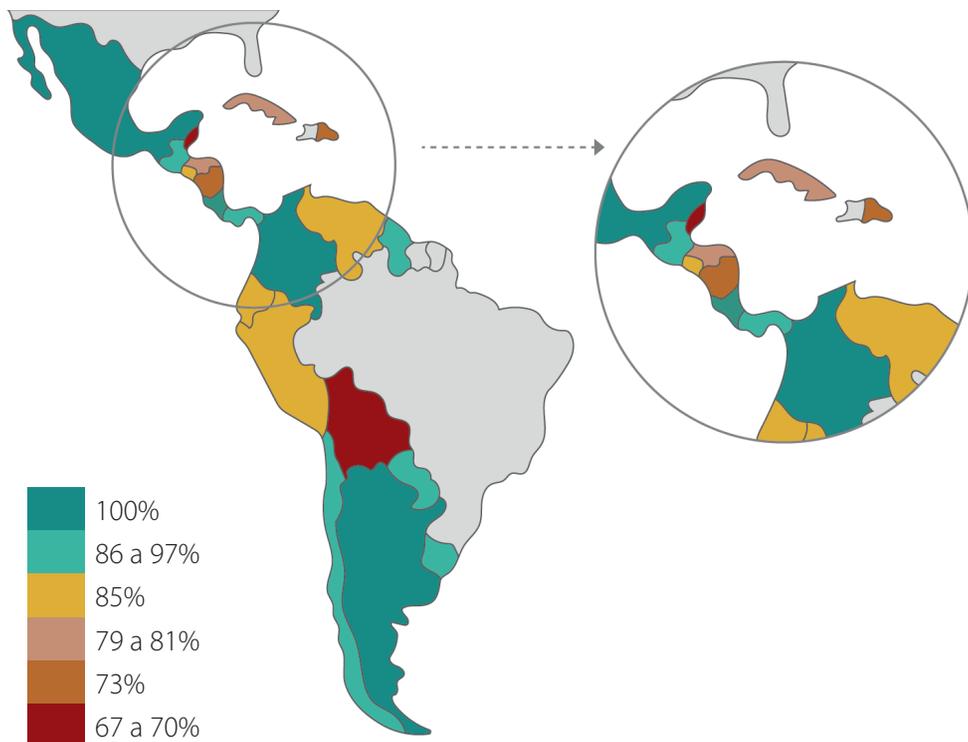
Important support for management and budgetary sustainability is due to proper coordination between national tuberculosis programs and TB laboratories, there are still countries where cohesion between them has not been achieved. In this aspect, as a positive experience, the Chilean model stands out for the close coordination between both of them for decision making and budget distribution. However, as expressed by the SNL, PR, and SR, the levels of coordination between national TB programs and the TB laboratory still need to be improved.

To have aspects not initially considered, Annex 8 summarizes the situation of the health systems of the grant countries, which serves to contextualize the results obtained.

In the aspect of institutional management, all countries have achieved an adequate achievement, so before the end of the grant, aspects of intra-institutional coordination

must be strengthened, encouraging the signing of agreements between laboratories where activities that the grant is carrying out are included. This should be part of the documentation included in the transfer and closing of the project.

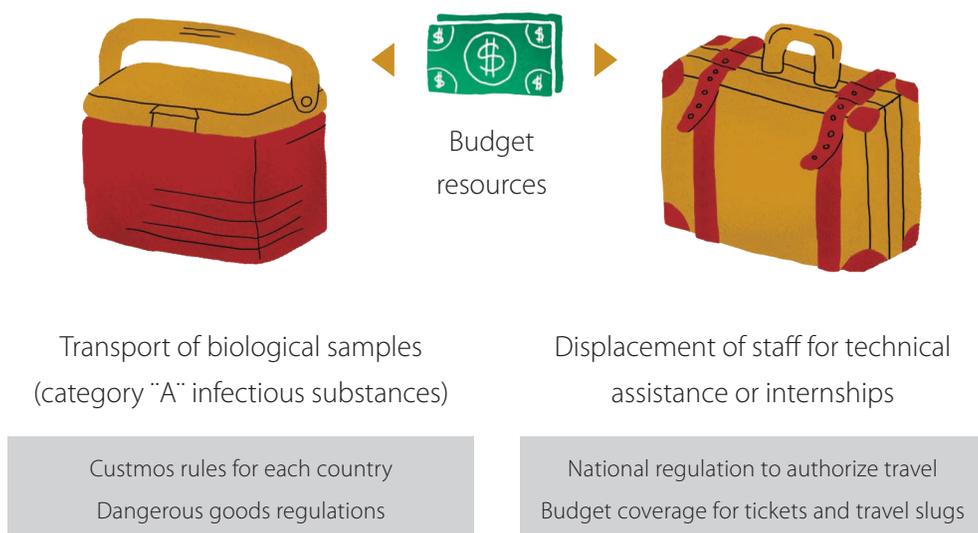
Chart N° 11- Advances in the sustainability of institutional management: organizational, technical and operational



H.7. Critical processes for technical sustainability

➔ Critical processes that can affect the technical sustainability are those corresponding to the transport of biological samples for the external evaluation of the quality and the displacement of qualified personnel for technical assistance and internships to and from the SNL. Both nodes are strongly conditioned by the budget allocation for laboratories.

Chart N° 12 - Critical processes of technical sustainability



Microorganism: Mycobacterium tuberculosis (cultures only). Official Transport Designation UN 2814: Infectious substances affecting humans

Displacement of personnel for technical assistance or internships

➔ For the displacement of personnel for technical assistance and internships, it is necessary to comply with the national regulation for the granting of permits and authorize international travel and also have a budget for tickets and per diem. Once the grant is completed, it is up to the national authorities to ensure financing and compliance with the procedures for this purpose.

It should be specified that when the technical assistance has been carried out, all the laboratory members of the visited country have benefited, however, it is also necessary that internships be carried out in the SNL to know the best practices and the different solutions to the same problems, according to the context. This is possible by joining representatives from several countries in the same period to maximize the benefits of sharing experiences (during the grant they have been programming in this way).

Specifically to ensure the participation of qualified laboratory personnel in internships in SNLs and the displacement of specialized personnel of SNLs for technical assistance, the support of national programs is required to consider them in the national budget and of the Global Fund support to allow the incorporation of this concept into national grants. Moreover, taking into account that almost all laboratories can generate income from the sale of services, however, almost none can dispose of the resources for their operational expenses, since the resources enter the countries' unique accounts of the Treasury.²⁴

Transport of biological samples

The other critical process identified corresponds to the transport of biological samples for external quality assessment. The regulation and requirements for the transport of biological samples are not within the scope of the health sector and involve customs authorities (dependent on the economic sector) and air transport authorities.

²⁴ The consolidation of the income (collection) of governments in a single account of the public treasury is a financial mechanism to provide financial coverage for temporary cash mismatches. It was established in the countries in the 1990s as part of the fiscal discipline mechanisms to overcome financial crises within a package of public reforms for countries within the scope of the International Monetary Fund-IMF and the World Bank.

Chart N° 13–Regulations for the transport of dangerous goods

INTERNATIONAL
<ul style="list-style-type: none"> • Recommendations of the Committee of Experts on the Transport of Dangerous Goods (UNCETDG) - United Nations Economic and Social Council (1956). Model Regulation. • Technical instructions for safe transportation of dangerous goods by air from the International Civil Aviation Organization (ICAO). Legally binding international regulation. • Dangerous Goods Regulation (DGR) International Air Transport Association (IATA) incorporates ICAO provision and may add other restrictions. • World Health Organization serves as an adviser to UNCETDG and ICAO
NATIONALS
<ul style="list-style-type: none"> • Many countries adopt the United Nations model regulation in its entirety. Some countries apply variations. • In case of discrepancies the most restrictive apply.

Many actors are involved in the transportation of the panels that are responsible for different processes, so it is convenient to support private sector companies (such as the grant) to complete the transfer of the samples safely and in the shortest possible time.

Chart N° 14 –Responsibility in the process of transport of dangerous substances



➔ **Sender:** Arranges with receiver, investigates need for import / export permits. Makes arrangements with carrier to ensure that the shipment will be accepted for proper transportation or that the shipment is taken by the most direct route. Prepare documents including permits, dispatch and shipping documents. Notify receiver of transportation arrangements in advance.

➔ **The carrier:** Advises the sender regarding necessary shipping documents and instructions for completion. Advises the sender about correct packaging. Help the sender to organize a more direct route and confirm the route. Maintains and archives shipping and transportation documentation.

➔ **The recipient:** Obtains the authorization of national authorities to import the material. Provides the sender with import permits, authorizations or other documents required by national authorities. Organize more timely and efficient collection upon arrival. Acknowledge the sender receipt.



➔ **Shipments should not be sent until:** (1) arrangements are made between sender, carrier and receiver (2) sender confirms with national authorities what material can be legally exported (3) recipient confirms with national authorities what material can be legally imported. (4) receiver has confirmed that there will be no delays in delivery to destination.

It should be considered that one of the main variables that could affect in the medium term the sustainability of the strengthening of the laboratory network, refers to the low predictability of the cost of sending panels and even as the case of Cuba to complete the transfer of samples. With regard to transport costs, for the region of

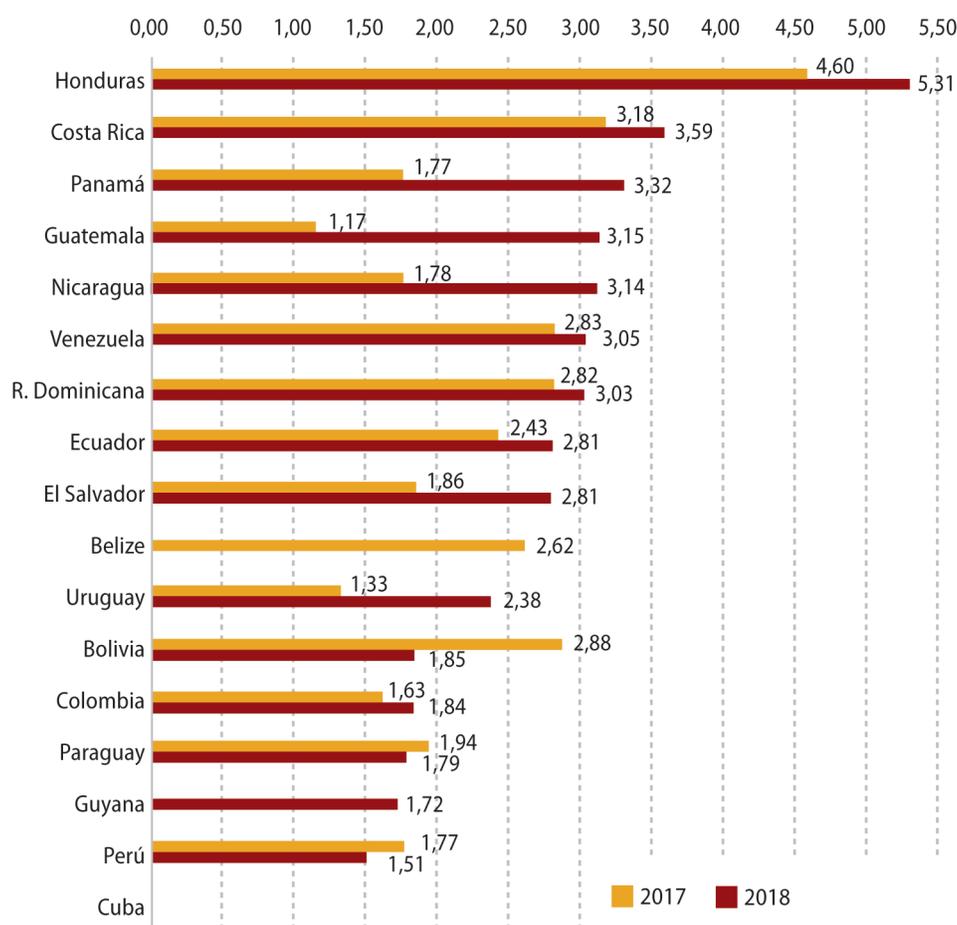
countries that make up COMISCA it has increased in 2018 with respect to 2017 by 41%, while for countries that make up ORAS CONHU it has decreased by 4%, in some cases for the number of days it takes to complete the transfer from the departure of the SNL to the NRL.

Table N° 16 - Evolution of the shipping cost of panels

	2017	2018	Average	Increase
COMISCA	\$2,475	\$3,478	\$2,943	41%
ORAS	\$2,308	\$2,212	\$2,260	-4%
All	\$2,307	\$2,753	\$2,530	19%

Source: Main Receiver

Chart N° 15 - Shipping cost of panels (dollars in thousands)



Notes: Countries have been ordered according to the shipping cost of panels of the year 2018

Conclusions

- The regional integration mechanisms have played an important role in the results of the grant, the Andean Health Organization - ORAS CONHU and the Council of Ministers of Health of Central America – COMISCA²⁵ through their respective Secretariats, have promoted in the countries that belong to its blocks, the importance of TB and the strengthening of the TB Laboratory Network be placed on the agenda. In the case of COMISCA, the issuance of the Resolution has been achieving to ensure the budget for the external evaluation of the quality of the national reference laboratories (Annex No. 10). In ORAS, the issue has been promoting in the different committees. In March 2019, the annual meeting of the Andean Health and Economy Commission, had the theme “The economic impact of tuberculosis” where the six countries of the region discussed the financing of tuberculosis control, social programs in support and studies on health expenditure and catastrophic cost due to tuberculosis; and on June 6, the TB Committee has prepared the Andean TB Plan

²⁵ Although the main antecedent of the Secretariat of the Council of Health Ministers (SE-COMISCA) was the First Meeting of Health Ministers of Central America and Panama (1956), the Council of Health Ministers came to be established in 1991 after the signing of the Declarations of San Salvador and the Protocol of Tegucigalpa and TISCA, with the purpose of exercising the leadership of the health sector at the regional level. In 2007, with the central impulse of the IDB, its Executive Secretariat was created, previously exercised by SISCA. This has focused its work on various topics related to epidemiology, the improvement of health services and one of the most successful items within the process of regional integration in the social field: the negotiation for the joint acquisition of medicines. The promotion of the joint purchase of medicines as a regional public good consolidated the functions of the SE-COMISCA. From these incipient efforts, in the 2000s the social integration process focuses on the implementation of specific projects, several of them related to education and health. According to the fourth report of the State of the Region in Sustainable Human Development (PEN, 2011), a difficulty encountered by these projects was that these plans and strategies lacked a normative background or references to national policies. Nor did they have monitoring or systematization elements to monitor their impacts. In response to these needs, normative documents initiated by the ministerial councils begin to be published in the late 2000s, in the form of regional strategies or agendas. (Martinez Piva, 2019)

that has a strengthening component of the TB laboratories and must be presented at the next REMSAA for approval.

- During the grant, national advocacy expanded to international advocacy. The experience of coordinating PAHO, SECOMISCA and the ORAS to strengthen the technical and political part meant facilitating the path to achieve the stated goals, processing permits, authorizations that would not otherwise have allowed the fulfillment of activities and events within the established period. Once the grant is concluded, the role of the integration mechanisms is to continue placing on the agenda of the meetings of Ministers the strengthening of laboratory networks and the generation of agreements for the exchange of services between countries in order to generate the legal framework that allows the displacement of SNL and NRL staff for technical assistance activities and internships.
- During, and even before, the start of the grant, the PAHO Regional TB Program played a key role in conducting the technical processes, which has been recognized by the countries that have been participating and which has allowed the approval of guidelines and manuals on a fast and concerted way. Thus, the proposal for a sustainability strategy given this recognition must take into account the requirements of the countries in the area of the grant. In the interviews carried out, the representatives of the SNL and NRL requested that, once the grant was concluded to provide continuity to the results achieved, the regional PAHO should continue monitoring the network and maintain a full-time focal point for support to TB labs.
- Instances such as CARLAC and CCMs must continue so that through their representatives and focal points the decision-making of national authorities is promoted. Similarly, the representation of the Parliamentary Front of the Americas against TB is an element of alert to the authorities about the economic and social impact of not acting in time to stop the progress of tuberculosis.
- It has been identified that the transport of biological samples for the external evaluation of the quality and the displacement of qualified personnel for technical assistance and internships are critical processes that can affect technical sustainability.

a. In the transport of biological samples, it is necessary to allocate a budget for this activity, in addition to coordinating the participation of many actors, so it would be convenient to hire external agents that support countries to facilitate the transfer. Likewise, generate national dissemination spaces with public customs and air transport actors with the sanitary authority in charge of processing permits for the transfer of biological samples.

b. With respect to the displacement of personnel, the support of national programs is required to ensure the inclusion in the budget and the timely processing of the national regulations required for travel abroad, as well as to ensure the correct selection of personnel (if possible, through applications to contest) for the maximum use of technical assistance and internships.

- For all countries, the project has been like an energy injection, which is driving the budget increase management. In laboratories, progress has been made with ISO standards, with protocols, algorithms, the internal and external quality system, unlike the clinical part. In previous years it was difficult to convince staff to work in TB laboratories, now with the new technology that molecular biology applies this situation has been reversed. This constitutes a strength for the technical part.

- The implementation of new technologies such as Gene Xpert has reduced the diagnostic time, but it is also exerting strong pressure on the budget of national programs, which in the limit could lead to inoperative machines due to lack of inputs. One of the concerns of the NRL is the price differences of these inputs, according to the interviewees, the coverage could be extended if the prices were homogeneous for the countries of the region. This would require a joint price negotiation, centralized purchases through the PAHO Strategic Fund, previous market studies since it is not necessarily cheaper to buy centrally.

- Of the countries in the scope of the grant, only Cuba has a public system. In the other countries the health system is fragmented, in some more than others, basically a social health system for the sector that has formal work and a public system that gives attention to the rest of the population, the advancement of social security. It is different in each country and depends on the formalization of the work (Annex N ° 8).

Private participation has increased in recent years in the other 19 countries, both for private insurance and for direct attention to families, which means that the out-of-pocket cost of the grant is high. There is also an increase in health insurance, whether public or private, however, for social security, its increase is not significant because countries maintain high rates of informal employment. We can conclude that there is progress, but not enough to meet current and future internal demands arising from demographic change (higher standard of living) and change in the epidemiological profile with an increase, first, of inequalities, as well as of chronic and high-cost diseases that will put pressure on financing, to the detriment of infectious diseases.

- Coincidentally, the countries that are in a better position concerning sustainability have a higher per capita income (according to World Bank credit classification) and those with a worse sustainability position are those with the lowest income. However, although these years have been of economic growth, the incidence of tuberculosis increased, so it is necessary to resume the initiative to generate a fiscal space for health that was promoted by PAHO a few years ago (Annex N ° 9).
- In the aspect of institutional management, all countries have achieved an adequate achievement, so before the end of the grant, aspects of intra-institutional coordination must be strengthened, encouraging the signing of agreements between laboratories where activities that the grant is carrying out are included. This should be part of the documentation included in the transfer and closing of the project.
- In the last quarter of this grant, the information of some main activities that are being implemented (operating mechanisms, contacts, good practices) must be consolidated, explaining the transfer mechanisms: what are they used for each level of decision in each country? and those responsible for the NRL, and that the continuity of the activities carried out by the national authorities be carried out in the most orderly way possible.
- The 2030 Agenda for Sustainable Development agreed by the Member States of the United Nations in 2015 proposes a roadmap for countries to move towards achieving sustainable development. This international commitment is presented as a good opportunity to advance in health and specifically in the End of TB (a strategy

also assumed by the Heads of State), in the countries of the scope of the grant since all are committed to the SDG, for therefore, aligning actions, policies, economic, budgetary, institutional and social to the SDGs is a challenge that must specifically involve the decision makers in the health sector²⁶.

- The effectiveness of the institutional management led by ORAS CONHU with the accompaniment of PAHO and SECOMISCA, as well as the framework of articulations at the technical and political level reached by the Grant to build sustainability, has had as a strategic pillar the Communication and dissemination. Although it is not an explicitly highlighted component of the Concept Note or having a large budget, Communication through print and audiovisuals has been key to advocacy at all levels and to support the positioning of TB laboratory networks in the Americas for its importance for the Global End TB Strategy.

²⁶ Latin America and the Caribbean is not the poorest region in the world, but the most unequal. Although inequality exists throughout the world, it constitutes a special limitation to reach the potential of the region. The gaps they face are structural, in terms of health are segregation and lags in the quality of health services, territorial inequalities, poor productivity and poor infrastructure. (CEPAL, Guía metodológica: Planificación para la Agenda 2030 en América Latina y el Caribe, 2018).

I. Bibliography

- BM. (1999). *La salud en el mundo: la respuesta al desafío. Précis N° 186*. PRECIS - Departamento de evaluación de operaciones del Banco Mundial.
- Briceño, Rodrigo Vargas, Juan. (julio- diciembre de 2017). Incidencia del gasto catastrófico en salud de los hogares costarricenses 2004 y 2013. *Población y salud en Mesoamérica*, 15(1).
- CEPAL. (2018). *Guía metodológica: Planificación para la Agenda 2030 en América Latina y el Caribe*. Santiago de Chile: Comisión Económica para América Latina y el Caribe.
- CEPAL. (2019). *Balance preliminar de las Economías de América Latina y el Caribe, 2018*. Santiago: Comisión Económica para América Latina y el Caribe (CEPAL).
- Clavijo, C. V. (2018). Claves para una política pública sostenible en educación y TIC en Uruguay- Estudio Exploratorio. Uruguay: MEC, UNESCO, AGESIC, PLAN CEIBAL, ANEP.
- Daniel Cotlear, Somil Nagpal, Owen Smith, Ajay Tandon, Rafael Cortez. (2015). *Going Universal. How 25 Developing Countries are implementing Universal Health coverage reforms from the bottom up*. Washington: Banco Mundial.
- GF. (2016). 35° Reunión de la Junta Directiva. *Política de sostenibilidad, transición y cofinanciamiento del Fondo Mundial*. The Global Fund.
- Gonzales, M. (2017). Gasto de bolsillo en salud en América Latina (1995-2013): evolución e implicaciones de políticas. En D. B. A., & L. L. E.. Caracas: Editorial Ateproca.
- Laurell, A. C. (mayo-agosto de 2014). Editorial ¿Cobertura universal en salud en América Latina? *Medicina Social/Social Medicine*, 9(1), 60-61.
- Lopez, J. C. (2011). *Como lograr la sostenibilidad de un proyecto BID/FOMIN*. Argentina.
- Martinez Piva, J. (2019). *Logros y desafíos de la integración centroamericana: aportes de la CEPAL. Libros de la CEPAL N° 156*. Santiago: Comisión Económica para América Latina y el Caribe (CEPAL).
- MEF-UP. (2011). *Cálculo de la tasa social de descuento para proyectos de inversión pública ambientales*. Lima: Ministerio de Economía y Finanzas.
- OMS. (2008). *Subsanar las desigualdades en una generación. Alcanzar la equidad sanitaria actuando sobre los determinantes sociales de la salud. Informe final de la Comisión*. Ginebra: Comisión sobre Determinantes Sociales de la Salud-

Organización Mundial de la Salud.

- OMS. (2016). *Implementación de la estrategia Fin de la TB: Aspectos esenciales*. Ginebra: Organización Mundial de la Salud.
- OMS. (2017). Cheryl Casgin, Danielle Bloom, Susan Sparkes, Helene Barroy, Joseph Kutzin and Shella ODougherty. *Aligning Public Financial Management and Health Financing - Sustaining Progress Toward Universal Health Coverage*. Switzerland: World Health Organization .
- OMS-BM. (2014). *Monitoreo del progreso hacia la cobertura universal de salud a nivel nacional y global*. Ginebra: Organización Mundial de la Salud y Banco Internacional de Reconstrucción y Fomento/Banco Mundial .
- ORAS-CONHU. (2018). Costos de funcionamiento de los Laboratorios supranacionales en el marco de su relación con la Red de laboratorios nacionales. Lima: Organismo Andino de Salud - Convenio Hipolito Unanue.
- ORAS-CONHU, 2. (2018). *Costo efectividad en el diagnóstico de la Tuberculosis/Programa “Fortalecimiento de la Red de Laboratorios de Tuberculosis en la Región de las Américas”*. Lima: Organismo Andino de Salud - Convenio Hipolito Unanue.
- PNUD. (2012). *Preguntas para crear programas de fomento. Fomento de las innovaciones en materia de desarrollo para un cambio transformador*. New York.
- Red-DESC. (2000). *Observación general N° 14: El derecho al disfrute del más alto nivel posible de salud (artículo 12)*. 11/08/2000. E/C.12/2000/4, CESCR Observación general 14. Red internacional para los Derechos Económicos, Sociales y Culturales.
- Rosales, O. (2014). *Integración Regional: hacia una estrategia de cadenas de valor inclusivas*. Chile: CEPAL.
- Xu K, Soucat A Kutzin J et al. (2018). *Public Spendign on Health: A closer look at Global Trends*. Geneva: World Health Organization.

J. Annexes

Annex N° 1–Definitions

a. Co-financing: in the context of the Global Fund, it refers to all national public resources and national private contributions that finance the health sector and the National Strategic Plans (PEN) that are supported by the Global Fund. National public resources may include, among others, public income, public loans, social health insurance or debt relief, including Debt2Health agreements with the Global Fund. Except for loans and debt relief, all other forms of international assistance, even if channeled through government budgets, are not considered co-financing. (GF, 2016).

b. Universal Health Coverage: Universal health coverage is defined as the desired result of the functioning of the health system, a context in which anyone who needs access to health services (promotion, prevention, treatment, rehabilitation, and palliative services) I can do it without financial difficulties. Universal health coverage has two interrelated components: on the one hand, all those factors involved in essential and quality health services according to needs; on the other, financial protection against health needs, including situations of poverty caused by direct payments at the time the service is needed. The entire population should be able to benefit from both components. There are two measures of universal health coverage (which are used for monitoring): the coverage of essential health services and financial protection. (OMS-BM, 2014)

c. Right to Health: Health is a fundamental and indispensable human right for the exercise of other human rights. Every human being has the right to enjoy the highest possible level of health that allows him to live in dignity. The effectiveness of the right to health can be achieved through numerous complementary procedures, such as the formulation of health policies, the implementation of health programs developed by the World Health Organization (WHO) or the adoption of specific legal instruments. Also, the right to health encompasses certain components applicable under the law. (...) In preparing article 12 of the Covenant, the Third Committee of the United Nations General Assembly did not adopt the definition of health contained in the preamble

of the WHO Constitution, which conceives of health as "a state of complete physical, mental and social well-being, and not only as the absence of conditions or diseases. " The Committee is aware that for millions of people worldwide, the full enjoyment of the right to health remains a remote objective. Moreover, in many cases, especially about people living in poverty, that goal is increasingly remote. (Red-DESC, 2000)

d. Regional integration: It is a multidimensional process, whose expressions include initiatives for coordination, cooperation, convergence, and deep integration, and whose scope covers not only economic and commercial issues but also political, social, cultural and environmental issues. (Rosales, 2014)

e. Sustainability: The Global Fund defines sustainability, as the ability of a health program or of a country to maintain and expand service coverage at a level, in line with its epidemiological context, that provides constant control of a public health problem and support efforts to eliminate all three diseases, even after withdrawing external funding from the Global Fund and other major external donors (GF, 2016).

f. Political sustainability: In the context of this study, it refers to the establishment and consolidation of public policies that are maintained over time. To make a sustainable policy requires the development of three dimensions: financing, social appropriation made by the social entities of the strategy (public policy) and inter-institutional articulation (sustained practice in the generation of consensus) (Clavijo, 2018). Economic resources are required for this purpose; support from the target group and the group in charge of implementing said policy, confirmation of committed and forward-looking work teams, convinced that the impact will be positive. On the other hand, public institutions may be subject to organizational changes such as consequences of the change of government, electoral stages, or institutional reforms at the level of general government or other levels.

g. Economic sustainability: For the study, it implies a social context in which there are well-being and economic growth (of per capita income and employment) that benefits the entire community and guarantees equality. It assumes that the State efficiently distributes public resources, ensuring access to basic services, including health. Theoretically, the decision to finance a public project (in this case the

investment in Tuberculosis) are the result of a social contract between citizens to increase their total savings so that they are invested in projects that produce net benefits for future generations (MEF-UP, 2011), the State channels or obliges the sacrifice of present consumption to carry out investments in which it considers equally the members of the current society as future ones. The size of the State does not matter but its capacity, efficiency, effectiveness, and strength. The lack of economic resources hinders the sustainability of public policy.

h. Budgetary sustainability (budgetary): Examines what concerns the legal basis (legal and regulatory aspects), the budgetary behavior of expenses, the per capita budget, the costs of tuberculosis laboratory services in the framework of programs (strategies) tuberculosis nationals and the interrelation with other programs.²⁷ It is sustained when the activities of the GF-funded Programs are incorporated into national systems through the implementation of national health strategies; national strategic health plans; operational plans and health financing plans.

i. Financial sustainability: analyzes the sources of financing (financing) including the insurance mechanisms. According to the End TB Strategy, the diagnosis, treatment, and prevention of TB should be appropriate and free. This can be achieved through a national health services package or a national health insurance plan.²⁸

²⁷ The End TB Strategy (OMS, 2016) notes that: “joint programming for TB and HIV is needed in order to identify opportunities to guide the plans, optimize support systems and increase efficiencies that contribute to the provision of services for high-quality TB and HIV quality, sustained and integrated, particularly in relation to community activities”.

²⁸ The End TB Strategy refers to plans for universal health coverage, considering comprehensive coverage according to the social security model: “There are great opportunities for countries to implement or expand plans for universal health coverage. In the early stages of defining these plans, TB care should be specifically addressed and included within the basic health service packages. *The End TB Strategy recommends applying social security models that seek to serve all people, especially low-income populations and other vulnerable populations.*”. (OMS, 2016) Page 76, referring to Pillar 2: Bold policies and support systems, Component 2C. Universal health coverage policy and regulatory frameworks for the notification of cases, vital records, the quality and rational use of medicines, and infection control.

j. Logistical sustainability: It refers to identifying and proposing the most appropriate logistics strategies according to the analysis of data on the transport processes (of strains) and acquisition of equipment and reagents that in most cases involves the relationship of the state with operator’s private logistics.

k. Transition: The Global Fund defines transition as the mechanism by which a country, or a country component, moves towards financing and implementing its health programs without the support of the Global Fund while maintaining and expanding the benefits, as appropriate.

Annex N° 2– Matrix of aspects evaluated to determine the level of sustainability

➔ To identify the level of sustainability by country and the elements that should be emphasized to ensure the sustainability of the grant, the results obtained in the interviews and the review of secondary information were organized in the aspects of institutional, budgetary management, financial, economic and political.

The following are the 80 variables observed. The sum of the number of positive answers that support sustainability is done (Yes) and divided by the total number of questions depending on whether it is SNL or NRL. The final result fluctuates between 0 and 100%.

No additional weighting has been given to any variable, however, only those relevant to each country or factor have been accounted for according to functions such as NRL or SNL and if they are eligible for Global Fund resources. (The number of responses by variables is presented in the “N” column of the table)

Table N° 17–Matrix of aspects of sustainability evaluated

Sustainability Aspects		Variables observed	N°
Institutional management	Direction	Interest of directors of the Institution in the activities of the grant.	20
		Consolidation of the institutional management cast	20
	Coordination with TB strategy and others	Coordination with the TB program.	20
		Coordination with the TB program (opinion RP / SR)	20
		Coordination with other programs with similar characteristics.	20
		Strategic integration of grant activities with routines of the LN	20
	Coordination with NRL network	Activities integrated in all its parts with institution operation	17
		NRL (country) are satisfied with their SNL.	17
		Compliance with SNL counterpart activities	3

Sustainability Aspects			Variables observed	N°	
Institucional		Coordination with NRL network	Compliance with counterpart activities of the NRL	17	
			Coordination between agents participating in the grant is good.	20	
	Técnica	Technical level of equipment	Training of existing personnel in the laboratory was carried out	20	
			Transfer experience and knowledge of the grant began	20	
			Personnel that carry out grant activities are technically trained.	20	
			Teamwork is consolidated (with procedures or guidelines)	20	
		Documented processes (QMS)	Grant guides and manuals are used	20	
			Access to information is agile and efficient (QMS)	20	
			Manuals with grant work methodology available	0	
		Operational	Human Resources	Adequate number of staff (once a grant is concluded)	20
				National Network staff motivated in grant activities.	20
				Staff trained and able to make replicas.	20
	Specialist in certification of biological safety cabins in the country ²⁹			20	
	Equipment		The technology used in the laboratory is the latest generation.	20	
			Quantity of equipment suitable for their functions.	20	
			It has a budgeted equipment maintenance plan.	20	
	Infrastructure		Adequate infrastructure for the operation of equipment.	20	
			Adequate infrastructure for technical assistance, training and internships.	20	

²⁹ Includes the 2 specialists trained by the grant

Sustainability Aspects			Variables observed	N°
Institutional management	Operational	Logistics	The process of sending and receiving panels is mastered.	20
			Shipping cost panels below average	16
			Participated in 2018 in EEC	17
			At least one delivery or receipt of panels was made	17
			EEC were performed in the last 2 years	20
			Defined procurement mechanisms (although laboratory does not perform them)	20
			There is timely supply of inputs.	20
			Adoption of quality management systems, even if they are not certified	20
Budget and financial	Budget	Budget management	Tuberculosis Expenditure can be monitored (program and laboratory).	20
			Ease of incorporating new spending concepts (not budgetary rigidity)	20
			Participation in phases of formulation and budgetary programming.	20
			Eligible for Global Fund grant (includes Transition mechanism)	11
			Management to finance internships or technical assistance	20
			Management to finance external quality assessment	20
			Clearly identified sources of TB control funding	20
		Focus	Low impact of laboratory finance grant (% grant / TB expenditure)	20
			Relationship of multi-country grant with national grants.	13
			Prioritization of the TB identified during the grant (RP / SR)	20
			Funds for operating expenses (laboratory budget independence)	20

Sustainability Aspects			Variables observed	N°
Budget and financial	Financial	External resources	Funds available for investment, operational improvements and attention to demand	20
			Funds for information systems (maintenance, hardware update and software license renewal)	20
			Existence of other sources of financing (only advisable public)	20
			External and internal funds without considering public funds (grants)	20
		Recursos propios	Coverage of Operating Expenses (deficit less than 20%)	20
			Monetary flows associated with charges for SNL services	3
			Monetary flows associated with charges for NRL services	17
			Grant funds with respect to operating expenses (less than 50%)	20
Economic	Sector	Cost effective processes	Economic evaluations are carried out to enter new techniques	20
			Cost reduction policy. (expense optimization)	20
	Multi sector	Investment Prioritization	Know the regime or regulations for investments in health.	20
			Country classification by income level (medium high or more)	20
			Per capita income above average	20
			Free health care or universal health insurance.	20
	Politics	Institutional	Relationship with health actors	Interinstitutional articulation
Inter-institutional positioning of the fight against TB.				20
Appropriation of the social problem that generates TB in different actors. PEM				20
National		TB Prioritization	The fight against TB is on the political agenda.	20
			Manifestation in integration mechanism in favor of ending TB	19
			TB incidence per 100 thousand inhabitants (under 30)	20

Sustainability Aspects		Variables observed	N°	
Politics	National	TB Prioritization	Tuberculosis expenditure (higher than average)	20
			TB financing support (declared or committed)	20
		Health investment	Out-of-pocket expenditure (below average)	20
			Catastrophic cost study conducted (in health or in TB)	20
			Health expenditure as% of GDP (above average 7%)	20
			Public health spending as% of GDP (above average 5%)	20
			Health expenditure per capita (above average)	20
			% Health expenditure of public spending (above average 15%)	20
		Internal situation of the country (stability)	Favorable socio-political environment to achieve greater impact (management support)	20
			Participation of civil society in health or country coordination mechanisms	20
			External mechanisms to mobilize resources (CARLAC, parliamentary front)	17
			Period of government just started or is in the middle of management	20
			It belongs to regional integration mechanism (ORAS or COMISCA)	20
			Public sector support in general institutional strengthening	20

Annex N° 3 – Tuberculosis Profile in Grant Countries

➔ The data come from the information recorded by the countries in the WHO application and the estimates made by the latter of disease burden.

Table N° 18–Estimation, notification, UHC and TB DR Care

Countries	Population	TB Load Estimates 2017		Notifications TB 2017		
		Incidence (includes TB / HIV)	Incidence (TB-MDR / RR)	TB all forms	New cases and relapses	% lung
Argentina	44,271,041	26	1.22	11,503	10,170	83.5%
Belize	374,681	36	4.00	122	117	97.4%
Bolivia	11,051,600	111	3.17	7,658	7,576	77.5%
Chile	18,054,726	17	0.41	2,806	2,740	81.1%
Colombia	49,065,615	33	1.16	13,870	13,007	82.8%
Costa Rica	4,905,769	10	0.12	384	379	84.2%
Cuba	11,484,636	7	0.17	774	712	87.6%
Dominicana	10,766,998	45	2.14	4,093	3,851	88.2%
Ecuador	16,624,858	43	3.73	5,815	5,721	82.1%
El Salvador	6,377,853	72	1.72	3,683	3,666	90.2%
Guatemala	16,913,503	25	0.77	3,505	3,445	94.3%
Guyana	777,859	86	4.37	579	524	92.9%
Honduras	9,265,067	38	0.87	2,813	2,798	89.0%
Mexico	129,163,276	22	0.72	23,520	22,757	79.4%
Nicaragua	6,217,581	45	0.68	2,328	2,255	88.0%
Panamá	4,098,587	54	2.05	1,968	1,874	87.2%
Paraguay	6,811,297	44	0.98	2,770	2,579	90.5%
Perú	32,165,485	116	9.33	31,120	29,840	80.7%
Uruguay	3,456,750	31	0.17	933	933	90.0%
Venezuela	31,977,065	42	1.31	10,952	10,647	88.6%
Total	413,824,247	30	1.77	131,196	125,591	83.1%

Source: WHO Global Tuberculosis Report 2017. Accessed June 15, 2019.

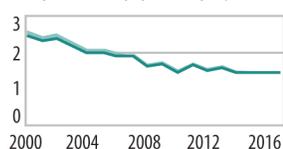
	Universal health coverage (UHC)		TB DR attention		% success in treatment 2016
	% Detection	Lethality	Estimated cases among lung cases	% DST RIF in notified	
% bacteriological confirmation among lung cases					
70.8%	87	0.08	520	16.3%	54
66.0%	87	0.11	18	41.9%	62
92.2% UHC	62	0.11	180	20.0%	87
91.3%	87	0.16	53	63.8%	79
80.1%	80	0.11	420	17.4%	61
98.3%	80	0.11	4	97.4%	84
82.1%	87	0.07	18	50.4%	84
62.0%	80	0.12	270	10.9%	75
91.3%	80	0.10	390	25.0%	72
90.8%	80	0.03	81	33.9%	90
84.4%	80	0.09	98	30.1%	87
71.6%	78	0.28	26	59.9%	69
87.8%	80	0.13	59	45.5%	88
82.2%	80	0.10	630	8.8%	79
84.1%	80	0.05	38	70.3%	86
64.2%	84	0.14	69	19.5%	81
77.5%	87	0.11	79	51.6%	67
82.6%	80	0.07	2,100	73.3%	86
73.2%	87	0.10	7	55.2%	73
76.0%	80	0.08	300	7.9%	82
81.1%		0.00	5,360	33.6%	

Annex N° 4 - Evolution of tuberculosis in the countries of the grant

➔ Evolution of TB in SNL countries: TB mortality in SNL countries has declined significantly, arriving in 2017 in Argentina and Mexico below 2 per 100,000 inhabitants, and in Chile slightly above 2 per 100,000 population. The incidence in Argentina from 2000 to 2009 shows a considerable decrease. From 2010 to 2016 the incidence has been maintained with a very small increase. In Chile from 2000 to 2003 the incidence dropped, in 2004 it increases slightly and remains until 2016, ending with a very small increase. In Mexico, the incidence from 2000 to 2016 has been maintained and a small decrease is observed in 2004 and then returns to its historical level. In all three countries it is observed that the incidence of TB / HIV has only increased in recent years.

Argentina

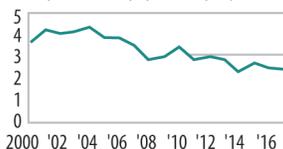
Rate per 100 000 population per year



■ Mortality (excludes HIV+TB)

Chile

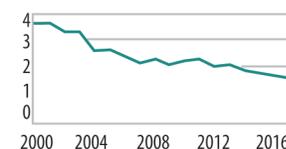
Rate per 100 000 population per year



— Mortality (excludes HIV+TB)

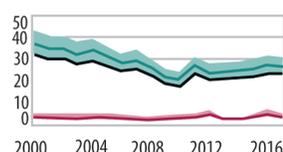
Mexico

Rate per 100 000 population per year



■ Mortality (excludes HIV+TB)

Rate per 100 000 population per year

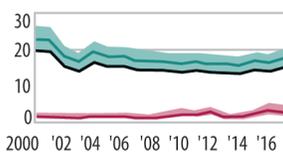


■ Incidence

— Notified (new and relapse)

■ Incidence (HIV+TB only)

Rate per 100 000 population per year

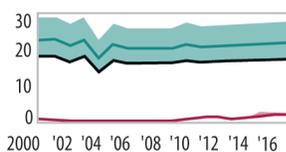


— Incidence

— Notified (new and relapse)

— Incidence (HIV+TB only)

Rate per 100 000 population per year



■ Incidence

— Notified (new and relapse)

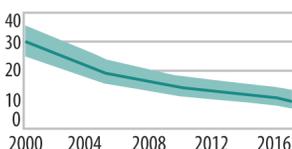
■ Incidence (HIV+TB only)

Evolution of TB in countries with the highest incidence: Mortality due to TB in Bolivia, El Salvador and Peru in the period from 2000 to 2016 has been declining, the biggest decrease being that observed in Bolivia. On the other hand, in Guyana it has increased. The incidence in Bolivia and Peru from 2000 to 2016 shows a considerable decline. In El Salvador the incidence has increased throughout the period and this increase is accentuated in 2016. In Guyana from 2000 to 2009 the incidence of TB increased,

from 2010 to 2016 the incidence has been decreasing. In Bolivia, El Salvador and Peru it is observed that the incidence of TB / HIV has only remained, however, in Guyana there is a continuous increase in the period.

Bolivia

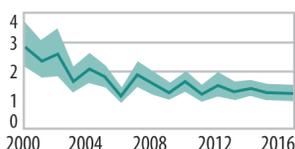
Rate per 100 000 population per year



Mortality (excludes HIV+TB)

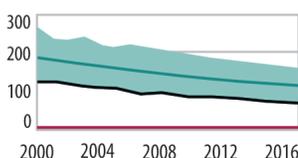
El Salvador

Rate per 100 000 population per year



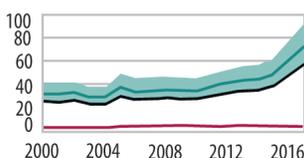
Mortality (excludes HIV+TB)

Tasa por 100 000 habitantes por año



Incidence
Notified (new and relapse)
Incidence (HIV+TB only)

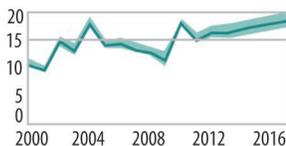
Tasa por 100 000 habitantes por año



Incidence
Notified (new and relapse)
Incidence (HIV+TB only)

Guyana

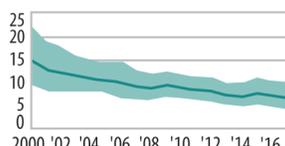
Rate per 100 000 population per year



Mortality (excludes HIV+TB)

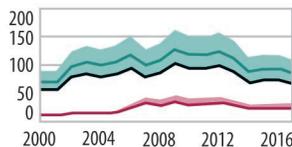
Perú

Rate per 100 000 population per year



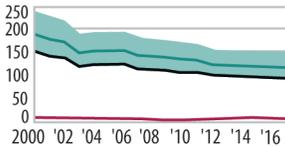
Mortality (excludes HIV+TB)

Tasa por 100 000 habitantes por año



Incidence
Notified (new and relapse)
Incidence (HIV+TB only)

Tasa por 100 000 habitantes por año



Incidence
Notified (new and relapse)
Incidence (HIV+TB only)

Evolution of TB in the countries with the lowest incidence: TB mortality in Chile and Costa Rica has decreased in the period 2000 to 2016. In Cuba this indicator has remained (it is very low, around 0.4). In all three countries, the incidence of TB / HIV has increased in recent years.

Chile

Rate per 100 000 population per year



■ Mortality (excludes HIV+TB)

Costa Rica

Rate per 100 000 population per year



■ Mortality (excludes HIV+TB)

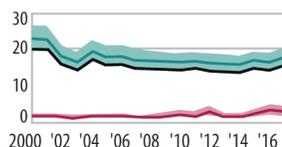
Cuba

Rate per 100 000 population per year



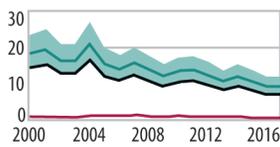
■ Mortality (excludes HIV+TB)

Tasa por 100 000 habitantes por año



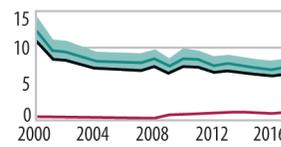
■ Incidence
 — Notified (new and relapse)
 ■ Incidence (HIV+TB only)

Tasa por 100 000 habitantes por año



■ Incidence
 — Notified (new and relapse)
 ■ Incidence (HIV+TB only)

Tasa por 100 000 habitantes por año



■ Incidence
 — Notified (new and relapse)
 ■ Incidence (HIV+TB only)

Annex N° 5 - Evolution of the classification of countries by level of per capita income 1987-2017

Table N° 19 - Evolution of the World Bank classification according to per capita income from 1997 to 2017

Countries	L.C.	Others	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Argentina	IBRD		MH	MH	ML	ML	MH	MH	MH	MH	MH	MH
Belize	IBRD		ML									
Bolivia	IBRD	HIPC	ML									
Chile	IBRD		ML	ML	ML	ML	ML	ML	MH	MH	MH	MH
Colombia	IBRD		ML									
Costa Rica	IBRD		ML									
Cuba	ML						
Dominicana	IBRD		ML									
Ecuador	IBRD		ML									
El Salvador	IBRD		ML									
Guatemala	IBRD		ML									
Guyana	IDA	HIPC	L	L	L	L	L	L	L	L	L	L
Honduras	IDA	HIPC	ML	ML	ML	L	L	L	L	L	L	L
Mexico	IBRD		ML	ML	ML	MH						
Nicaragua	IDA	HIPC	ML	ML	ML	ML	L	L	L	L	L	L
Panama	IBRD		MH	ML								
Paraguay	IBRD		ML									
Peru	IBRD		ML									
Uruguay	IBRD		MH									
Venezuela	IBRD		MH	ML	ML	ML						
Decrease income		8		1	1	1	1			1		
Increase income		26				2	1		1			

Country	L.C.	Others	1997	1998	1999	2000	2001	2002	2003	2004	2005
Argentina	IBRD		MH								
Belize	IBRD		ML	ML	ML	ML	ML	MH	MH	MH	MH
Bolivia	IBRD	HIPC	ML								
Chile	IBRD		MH								
Colombia	IBRD		ML								
Costa Rica	IBRD		ML	ML	ML	MH	MH	MH	MH	MH	MH
Cuba	..		ML								
Dominicana	IBRD		ML								
Ecuador	IBRD		ML								
El Salvador	IBRD		ML								
Guatemala	IBRD		ML								
Guyana	IDA	HIPC	ML								
Honduras	IDA	HIPC	L	L	ML						
Mexico	IBRD		MH								
Nicaragua	IDA	HIPC	L	L	L	L	L	L	L	L	ML
Panama	IBRD		ML	MH							
Paraguay	IBRD		ML								
Peru	IBRD		ML								
Uruguay	IBRD		MH								
Venezuela	IBRD		MH								
Decrease income		8									
Increase income		26	2	1	1	1		1			1

Note: the changes in income groups have been marked.

L.C.: Loan category

IBRD: International Bank for Reconstruction and Development. It is the largest development bank in the world, the IBRD supports the mission of the World Bank Group, providing loans, and advisory services to middle-income countries and low-income countries with credit capacity.

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MH	H	MH	MH	H							
MH	MH	ML	ML	ML	ML	MH	MH	MH	MH	MH	MH
ML											
MH	MH	MH	MH	MH	MH	H	H	H	H	H	H
ML	ML	MH									
MH											
ML	MH										
ML	ML	MH									
ML	ML	ML	ML	MH							
ML											
ML	MH										
ML	MH	MH	MH								
ML											
MH											
ML											
MH	H										
ML	MH	MH	MH	MH							
ML	ML	MH									
MH	MH	MH	MH	MH	MH	H	H	H	H	H	H
MH	H	MH	MH	MH							
		1							2		
	1	3		1		3		3	1		3

IDA: International Development Association. Part of the World Bank, that helps the world most impoverished countries through loans (called "credits") and grants for programs that boost economic growth, reduce inequalities and improve people living conditions.

HIPC: Heavily Indebted Poor Countries

Source: www.bancomundial.org

Annex N° 6– Financing of the Global Fund in the Project countries and LAC region. 2002-2019

➔ The following graphs and charts show the financing of the GF to the countries of the grant from 2002 to 2019.

Chart N° 16 - Global Fund Country grants in project countries (millions of US dollars))

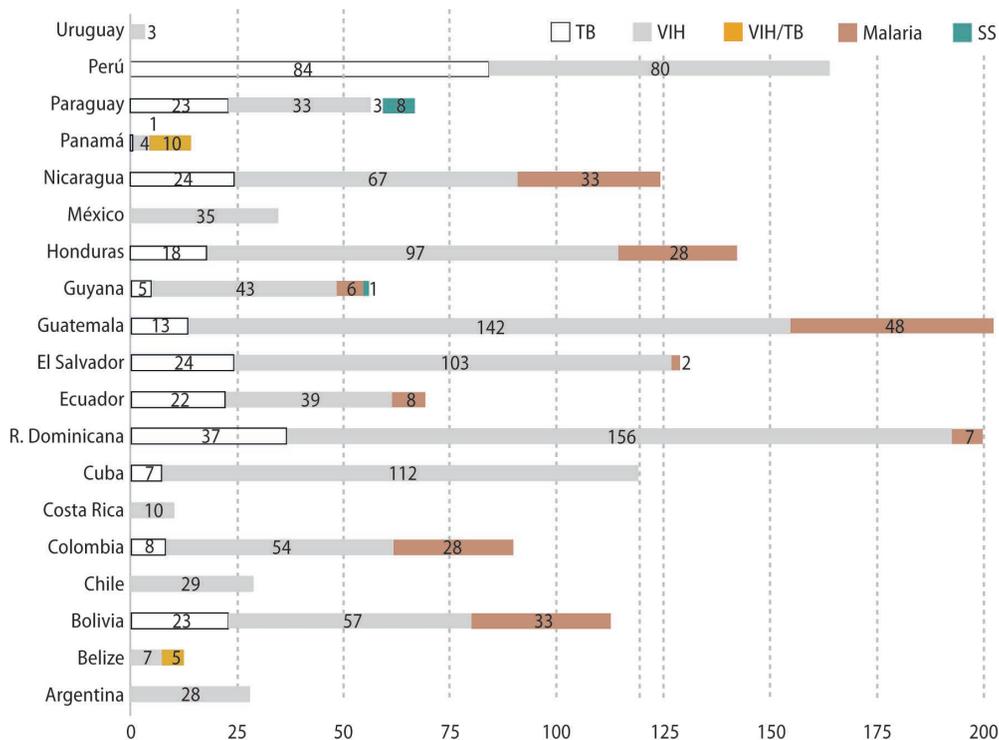


Chart N° 17 - Multi-country grants from the Global Fund in the LAC region

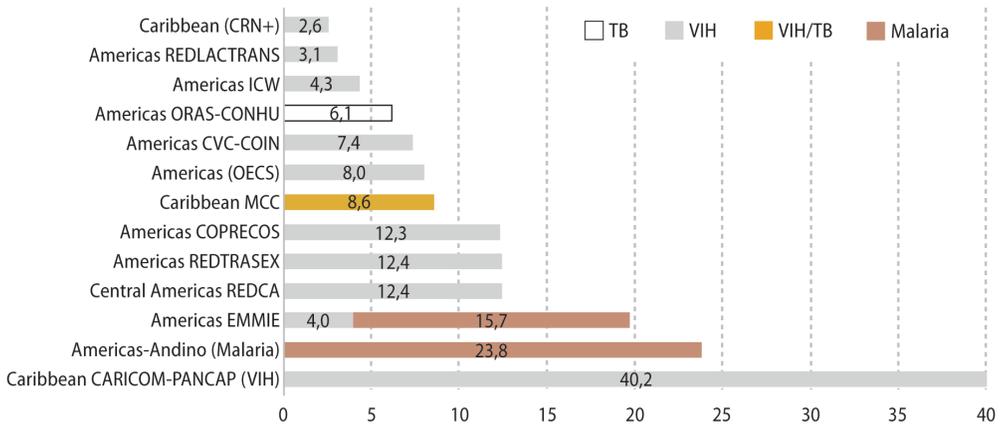


Table N° 20 - List of grants for the Tuberculosis component in the countries of the Project

Country	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)
Bolivia	BOL-304-G03-T	Bolivia - Tuberculosis - Center for Research, Education and Services (CRES)	Culminated	Center for Research, Education and Services (CRES)	1,084,486	1,084,486	1,084,486
	BOL-306-G06-T	Bolivia - Tuberculosis - PNUD	Culminated	PNUD	4,193,397	4,193,397	4,193,397
	BOL-910-G10-T	Bolivia- Tuberculosis - PNUD	Culminated	PNUD	3,379,243	3,379,243	3,379,243
Bolivia	BOL-913-G11-T	RP transfers BOL-910-G10-T phase 2 grant	Culminated	Health Protection Association	3,612,146	3,612,146	3,612,146
	BOL-T-UNDP	Bolivia - Tuberculosis - PNUD	Active	PNUD	10,710,756	8,277,686	7,618,950
Colombia	COL-011-G05-T	Strengthening of the STOP TB strategy in 46 priority municipalities in Colombia	Culminated	National Enterprise for Territorial Development	3,404,081	3,404,081	3,404,081
	COL-011-G06-T	Strengthening of the STOP TB strategy in 46 priority municipalities in Colombia	Culminated	OIM	4,747,860	4,747,860	4,747,860
Cuba	CUB-708-G03-T	Cuba - Tuberculosis - PNUD	Culminated	PNUD	7,426,442	7,426,442	7,426,442
Dominican Republic	DMR-309-G07-T	Dominican Republic - Tuberculosis - Ministry of Public Health and Social Assistance of the Dominican Republic	Culminated	The Ministry of Health	10,614,000	10,614,000	10,614,000

	DOM-304-G02-T	Dominican Republic - Tuberculosis - Dominican Association for Family Welfare (PROFAMILIA)	Culminated	Dominican Association for Family Welfare (PROFAMILIA)	4,603,398	4,603,398	4,603,398
	DOM-708-G03-T	Dominican Republic - Tuberculosis - Dominican Association for Family Welfare (PROFAMILIA)	Culminated	Dominican Association for Family Welfare (PROFAMILIA)	2,945,772	2,945,772	2,945,772
	DOM-708-G08-T	Dominican Republic - Tuberculosis - Ministry of Public Health and Social Assistance of Dominican Republic	Culminated	The Ministry of Health	6,300,354	6,300,354	6,300,354
	DOM-T-MSPAS	Reduction of the incidence and mortality due to tuberculosis in the Dominican Republic, focusing interventions on key populations and risk groups to end the epidemic in the country	Active	The Ministry of Health	12,233,782	10,227,237	7,989,818
	ECU-405-G02-T	Ecuador - Tuberculosis - CARE International	Culminated	CARE International	15,216,771	15,216,771	15,216,771
Ecuador	ECU-910-G08-T	Ecuador response to HIV: a multisectoral approach to universal access and prevention in the highest risk population	Culminated	The Ministry of Health	1,740,108	1,740,108	1,740,108
	ECU-910-G09-T	State and Civil Society Response to Tuberculosis: Strengthening Tuberculosis Control in Ecuador with an emphasis on vulnerable populations	Culminated	CARE International	5,297,904	5,297,904	5,297,904

Country	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)
El Salvador	SLV-202-G02-T-00	El Salvador - Tuberculosis - PNUD	Culminated	PNUD	2,229,891	2,229,891	2,229,891
	SLV-202-G04-T-00	El Salvador - Tuberculosis - Ministry of Health of the Republic of El Salvador	Culminated	The Ministry of Health	1,542,015	1,542,015	1,542,015
	SLV-910-G07-T	El Salvador - Tuberculosis - PNUD	Culminated	PNUD	1,919,028	1,919,028	1,919,028
	SLV-910-G08-T	Prevention and control of tuberculosis in high-risk populations in 26 municipalities of El Salvador	Culminated	The Ministry of Health	4,436,873	4,436,873	4,436,873
Guatemala	SLV-T-MOH	Support for the National Multisectoral Strategic Plan for the Control of Tuberculosis 2017-2021 (PENMTB) in El Salvador	Active	The Ministry of Health	14,043,657	12,777,080	11,061,755
	GTM-607-G03-T	Guatemala - Tuberculosis - WORLD VISION International	Culminated	WORLD VISION International	3,469,308	3,469,308	3,469,308
	GTM-610-G04-T	Guatemala - Tuberculosis - Ministry of Health and Social Assistance of the Republic of Guatemala	Culminated	The Ministry of Health	3,383,258	3,383,258	3,383,258
Guyana	GTM-T-MSPAS	Strengthen the DOTS Strategy in the framework of the New Strategy: Stop Tuberculosis	Active	The Ministry of Health	6,522,671	4,953,793	4,465,288
	GUY-405-G03-T	Guyana - Tuberculosis - Ministry of Health of the Republic of Guyana	Culminated	The Ministry of Health	1,104,480	1,104,480	1,104,480
	GUY-T-MOH	Improve and strengthen tuberculosis services in key populations of Guyana	Active	The Ministry of Health	1,556,594	1,006,489	726,433
Guyana	GYA-810-G06-T	Improve the implementation of tuberculosis strategies through partnerships	Culminated	The Ministry of Health	2,222,555	2,222,555	2,222,555

Honduras	HND-102-G02-T-00	Honduras - Tuberculosis - PNUD	Culminated	PNUD	6,094,900	6,094,900	6,094,900
	HND-T-UAFCE	Strengthening the End TB Strategy in Honduras	Active	The Ministry of Health	11,828,949	9,623,972	9,598,972
Nicaragua	NIC-202-G02-T-00	Nicaragua - Tuberculosis - NICASALUD Network Federation	Culminated	Network Federation NICASALUD	2,622,701	2,622,701	2,622,701
	NIC-202-G05-T-00	Nicaragua Commitment and Action in Tuberculosis Control for a Healthy Community	Culminated	Nicaraguan Institute of Social Security	9,538,942	9,538,942	9,538,942
	NIC-T-INSS	Nicaragua joined for a sustainable national response in the reduction of tuberculosis and mortality, with emphasis on vulnerable populations and based on a family and community health model	Active	Nicaraguan Institute of Social Security	12,045,893	8,936,445	7,013,639
Panama	PAN-102-G01-T-00	Panama - Tuberculosis – UNDP	Culminated	PNUD	553,817	553,817	553,817
Paraguay	PRY-304-G01-T	Paraguay - Tuberculosis - Alter Vida - Center for Studies and Training for Ecodevelopment	Culminated	Alter Vida - Center for Studies and Training for Ecodevelopment	3,329,200	3,329,200	3,329,200

Country	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)
Paraguay	PRY-708-G03-T	Paraguay - Tuberculosis - Alter Vida - Center for Studies and Training for Ecodevelopment	Culminated	Alter Vida - Center for Studies and Training for Ecodevelopment	2,149,206	2,149,206	2,149,206
	PRY-T-AV	Comprehensive care with an intersectoral commitment towards the elimination of tuberculosis in Paraguay.	Active	Alter Vida - Center for Studies and Training for Ecodevelopment	17,640,811	15,965,588	14,987,445
Peru	PER-202-G02-T-00	Peru - Tuberculosis - CARE International	Culminated	CARE International	25,027,182	25,027,182	25,027,182
	PER-506-G04-T	Peru - Tuberculosis - CARE International	Culminated	CARE International	27,182,550	27,182,550	27,182,550
	PER-809-G06-T	Making a difference: promoting a comprehensive response to tuberculosis and Peru	Culminated	Pathfinder International	8,052,011	8,052,011	8,007,008
	PER-809-G07-T	Making a difference: promoting a comprehensive response to tuberculosis and Peru	Culminated	Ministry of Health-PARSALUD II	9,824,154	9,824,154	9,824,856
	PER-T-SES	Improve the national response to tuberculosis in priority groups (prisoners, TB-DR, TB / HIV) and strengthen the community system	Active	Partners in Health Peru	13,858,066	11,978,949	11,928,949
Total					289,689,214	272,995,272	264,594,982

Table N° 21 - List of multi-country grants in the LAC region

Group	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)	Country
Multi-country Americas (Andean)	QRD-305-G01-M	Multi-country Americas (Andean) - Malaria - Andean Health Organization - Hipólito Unanue Agreement	Malaria	Culminated	Andean Health Organization - Hipólito Unanue Agreement	23,776,914	23,776,914	23,776,914
Multi-country Americas (CRN+)	QRA-405-G01-H-CRN	Multi-country Americas. (CRN +) - HIV - the Caribbean regional network of people living with HIV (CRN +)	VIH	Culminated	The Caribbean regional network of people living with HIV (CRN +)	2,560,825	2,560,825	2,560,825
Multi-country Americas (OECS)	QRB-305-G01-H	Multi-country Americas (OECS) - HIV - The Organization of Eastern Caribbean States.	VIH	Culminated	The Organization of Eastern Caribbean States	8,008,679	8,008,679	8,008,679
Multi-country Americas COPRECOS	QRA-911-G01-H	Multi-country Americas COPRECOS - VIH - Cicatelli Associates Inc.	VIH	Culminated	Cicatelli Associates Inc.	12,322,673	12,322,673	12,322,673
Multi-country Americas CVC-COIN	QRA-H-CVC	Challenge stigma and discrimination to improve access and quality of HIV services in the Caribbean	VIH	Active	Coalition of vulnerable communities in the Caribbean	2,374,134	2,374,134	1,924,782

Group	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)	Country
	QRA-H-UNDP	Challenge stigma and discrimination to improve access and quality of HIV services in the Caribbean		Closed	PNUD	5,006,153	4,728,217	4,728,217
Multi-country Americas EMMIE	QMG-M-PSI	QMG-M-PSI	VIH	Culminated	International Population Services	9,738,874	9,738,874	9,738,874
	QRA-405-G01-H-INSP	Multicountry Américas EMMIE - VIH - National Institute of Public Health (INSP)	Malaria	Culminated	NATIONAL INSTITUTE OF PUBLIC HEALTH (INSP)	3,979,034	3,979,034	3,979,034
	QRA-M-IDB	Regional Malaria Elimination Initiative		Active	Inter-American Development Bank	6,000,000	6,000,000	6,000,000
Multi-country Americas ICW	QRA-H-HIVOS	Accelerating regional action in favor of Human, Sexual and Reproductive Rights and Non-Violence towards Women with HIV	VIH	Closed	Humanist Institute for Cooperation with Developing Countries	4,330,296	4,330,296	4,330,296
Multi-country Americas ORAS-CONHU	QRA-T-ORAS	Strengthening of the Network of TB Laboratories of the Americas	TB	Active	Andean Health Organization - Hipólito Unzué Agreement	6,110,000	5,605,716	5,299,259

Multi-country Americas REDLACTRANS	QRA-H-IOM	Trans women without borders against transphobia and HIV	VIH	Closed	OIM	3,082,319	3,082,319	2,865,879
Multi-country Americas REDTRASEX	MAT-011-G01-H	Sex workers in Latin America and the Caribbean who work to create alternatives that reduce vulnerability to HIV: a regional strategy with genuine impact	VIH	Culminated	OIM	12,417,126	12,023,208	12,023,208
Multi-country Americas Caribbean CARICOM-PANCAP	MAC-910-G02-H	Fight against HIV in the Caribbean: a regional strategic approach	VIH	Culminated	Caribbean Community Secretariat	24,776,855	24,776,855	24,776,855
	QRA-304-G01-H	Caribbean Multi-Country CARICOM-PANCAP - HIV - Caribbean Community Secretariat		Culminated	Caribbean Community Secretariat	10,316,732	10,316,732	10,316,732
	QRA-H-CARICOM	Caribbean Multi-Country CARICOM-PANCAP - HIV - Caribbean Community Secretariat		Active	Caribbean Community Secretariat	5,075,234	5,075,234	4,351,021
Caribbean multi-country MCC	QRB-C-OECS	OECS Strategic response of several countries towards the elimination of HIV / TB	VIH/TB	Active	Organization of Eastern Caribbean States	8,573,999	6,559,491	5,176,389

Group	Number	Name	Condition	Receptor	Signed (USD)	Engaged (USD)	Distributed (USD)	Country
Central Americas multi-country REDCA	QRC-708-G01-H	Multi-country Central Americas REDCA - HIV - Secretariat of Central American Social Integration	VIH	Culminated	Central American Social Integration Secretariat	2,888,208	2,888,208	2,888,208
	QRC-H-SISCA	Guarantee, through promotional actions, universal access to health care and respect for human rights in the response to HIV for Central America to improve the quality of life of people living with HIV		Active	Central American Social Integration Secretariat	9,557,398	8,953,354	8,953,354
Total						160,895,454	157,100,763	154,021,199

Annex N° 7 – Quality tests in laboratories in the region 2009-2017

➔ The following tables show the statistics of the laboratories of the grant countries that participate in external quality assessments (EQA) and demonstrated acceptable performance.

Table N° 22 - Laboratories demonstrating acceptable performance in EQA 2009-2014

Laboratories providing diagnostic services for tuberculosis through drug susceptibility tests 2009-2014

Source: WHO Global Tuberculosis Report 2017

	Number										% with External Quality Assessment (EQA)										% with EQA who demonstrated acceptable performance															
	2009		2010		2011		2012		2013		2014		2009		2010		2011		2012		2013		2014		2009		2010		2011		2012		2013		2014	
Argentina	16	17	17	16	17	17	17	17	17	17	17	17	75%	88%	88%	47%	75%	65%	82%	92%	93%	100%	100%	100%	92%	93%	100%	25%	82%	57%						
Belize	0	0	0	0	0	0	0	0	0	0	0																									
Bolivia	1	1	1	1	2	2	2	2	2	2	2	100%	100%	100%	100%	100%	100%	50%	50%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Chile	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Colombia	4	7	5	4	4	4	4	4	4	4	5	100%	100%	100%	100%	100%	100%	100%	100%	100%	71%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Costa Rica	0	0	1	1	1	1	1	1	1	1	1				100%	0%	0%	100%	100%																	
Cuba	0	0	0	0	0	0	0	0	0	0	0																									
Dominicana	1	1	1	2	2	2	2	2	2	2	2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Ecuador	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	
El Salvador	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Guatemala	1	1	3	3	1	1	3	1	1	3	3	100%	100%	100%	33%	33%	100%	33%	33%	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Guyana	0	1	1	1	1	1	1	1	1	0	0				100%	100%	100%	100%																		
Honduras	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Mexico	13	16	16	15	16	16	15	16	16	15	15	8%	31%	88%	80%	80%	88%	87%	87%	100%	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%	100%	100%		
Nicaragua	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Panama	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Paraguay	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Peru	0	6	7	11	8	8	7	8	8	7	7		100%	64%	64%	88%	100%	100%	100%	100%							0%	0%	0%	0%	0%	0%	0%	0%		
Uruguay	0	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Venezuela	1	1	1	1	1	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Total	44	59	61	63	61	61	61	61	61	61	61	64%	76%	76%	57%	76%	82%	84%	84%	93%	91%	94%	94%	93%	91%	91%	58%	96%	86%	86%	86%	86%	86%	86%		

Table N° 23–Laboratories that demonstrate competence in panel tests

Country	% of sites that demonstrated proficiency through panel tests												% of sites that provide a diagnosis of TB using Xpert MTB / RIF covered by a comprehensive EQA system			NRL with national or international accreditation in accordance with ISO 15189 (some process)					
	% Offering phenotypic evidence of drug susceptibility for first-line medications				% Offering LPA for rifampicin, isoniazid, fluoroquinolone, second-line injectables				% Offering LPA				% Offering phenotypic evidence of drug susceptibility for first and second line medications								
	2015	2016	2017		2016	2017			2015	2016	2017		2015	2016	2017	2015	2016	2017			
Argentina	53	50	73						0				50	33	33	0	0	33			
Belize																					
Bolivia	100	100	100										50	100	100		0	0	1		
Chile	100	100	100		100	100			100	100	100		100	100	100	0	0	0	1	1	1
Colombia	100	100	100		100	83			71	100	92		100	100	100	0	0	100	1	1	1
Costa Rica	100		100		100	100			0	100	100		100	100	100	0	100	100	1	1	1
Cuba	0	0			0	0			0	0	0		0	0	100	100	0	100			
Dominicana		100	100										100	100	100	100	0	100	1	1	1
Ecuador	0	0	0										0	0	0	0	0	0	1	1	
El Salvador	100	100	100													0	0	0			
Guatemala	33	33	100			0			0	0	0		33		100	0	0	0			
Guyana																0	100	100	1	1	1
Honduras	0	0	0													0	0	0			
Mexico	63	61	6		100	0			100				33	67	50	0	18	0	1	1	1
Nicaragua	0	0	0											0		0	0	0	1	1	

➔ The following table shows the percentage of sites in the 20 countries of the grant, which offer phenotypic evidence of susceptibility to first-line drugs that demonstrated competence through panel tests

Table N° 24 - Percentage of laboratories demonstrating competence in panel tests

Country	Number of laboratories offering tests			% that demonstrated proficiency in panel tests		
	2015	2016	2017	2015	2016	2017
Argentina	17	16	15	53%	50%	73%
Belize	0	0				
Bolivia	3	3	1	100%	100%	100%
Chile	1	1	1	100%	100%	100%
Colombia	2	2	5	100%	100%	100%
Costa Rica	1	0	1	100%		100%
Cuba	1	1	0	0%	0%	
Dominicana	0	3	3		100%	100%
Ecuador	1	1	1	0%	0%	0%
El Salvador	1	1	1	100%	100%	100%
Guatemala	3	3	1	33%	33%	100%
Guyana	0	0	0			
Honduras	1	1	1	0%	0%	0%
México	16	23	18	63%	61%	6%
Nicaragua	1	1	1	0%	0%	0%
Panama	1	1	1	100%	100%	100%
Paraguay	0	0	1			0%
Perú	11	9	6	100%	100%	83%
Uruguay	1	1	1	100%	100%	0%
Venezuela	1	1	0	100%	0%	
Total	62	68	58	68%	65%	53%

Source: WHO Global Tuberculosis Report 2017

Annex N° 8 – The health system in grant countries

ARGENTINA

The Argentine health system is based on a deeply decentralized federal political structure in the provision and administration of health services. The financing of services is shared between the public, social security and prepaid medicine subsectors. The public subsector finances and provides health services from 24 decentralized institutions, which are the Ministries of Health of the provinces of Argentina and the Ministry of Health of the Nation - MSAL. Although formally this coverage is universal, the population that uses public health services is the population that does not have health insurance. In general, these are workers about dependency or unregistered, unemployed and inactive self-employed people without purchasing power.

Social security includes formal workers in an activity with their respective family groups and retirees. Management is in charge of numerous entities, the social works, which operate as health insurance and that do not constitute a homogeneous group but several highly segmented subgroups. The subsector of social security institutions is made up of 298 national social works (SSS, 2008) 24 provincial and the Institute of Social Services for Retirees and Pensioners (INSSJP), which finance services provided mostly by private institutions and contracted doctors.

The National Social Works compulsorily group all workers within its branch of activity. However, since 1997 this principle was relativized allowing free choice. The Institute of Social Services for Retirees and Pensioners (INSSJP) is the institution that provides coverage to the retired and pensioned population. It is the most important in the country, and as such, it constitutes a key piece in the definition of contracts and payment mechanisms to providers. The Superintendence of Health Services (SSS) is the entity of regulation and control of the actors of the National Health Insurance System (social security). The private sector includes insurers that mainly serve middle and high-income citizens and their families. These three subgroups maintain strong interrelationships both at the level of the provision of health services and in terms of financing and coordination in social insurance.

Finally, it should be mentioned that between 1995 and 1996 a new system for protection against occupational hazards was designed, based on the operation of private operators, called Work Risk Insurers, that address the needs of prevention and repair of damages labor. The system is supervised by the Superintendence of Labor Risks, linked to the Ministry of Labor and Social Security.

Challenges:³⁰

- There is a dual situation of coexistence of infectious and contagious diseases together with a sustained increase in noncommunicable diseases and their risk factors. Overweight and obesity are considered a challenge for the development and implementation of public policies such as food advertising regulation, fiscal policies and frontal labeling, among others.
- As an important challenge, it is still necessary to generate strategies to deal with HIV / AIDS and tuberculosis.
- The interruption of the vector transmission of Chagas disease has already been achieved in eight of the 19 endemic provinces: Entre Ríos, Jujuy, La Pampa, Misiones, Neuquén, Rio Negro, San Luis and Santa Fe.
- It is necessary to establish a human development agenda to overcome the conditions associated with poverty and achieve better results in the implementation of public health programs.
- The project Towards the Universal Health of the Population of the South American Chaco 2016-2019, co-participated by Argentina, Bolivia, Brazil and Paraguay, is a remarkable initiative in this regard.
- To make possible better prevention and control of chronic noncommunicable diseases, it is necessary to improve the existing preventive programs that focus on the control of risk factors. It is also necessary to update the set of health benefits (Mandatory Medical Program), according to the evidence of impact and effectiveness.

³⁰ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

The main health-related indicators registered in WHO³¹ according to the DB consultation in June 2019 are:

Argentina	
Total population (2016)	43,847,000
Gross national income per capita (in international dollars)	no available
Life expectancy at birth m/w (years, 2016)	74/80
Probability of dying under five (per 1000 live births, 2017)	10
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	143/80
Total expenditure on health per capita (Intl \$, 2014)	1,137
Total health expenditure as a percentage of GDP (2014)	4.8

BOLIVIA

➔ The National Health System is the set of entities, institutions and public and private organizations that provide health services, regulated by the Ministry of Health. It is made up of:

- The public subsector, headed by the Ministry of Health, is currently regulatory, regulating and conducting national policies and strategies. At the regional level, there are the governorates, which are responsible for the administration of human resources through the Departmental Health Services.

At the local level, municipal governments are responsible for the administration of health facilities through the Local Health Directories.

- The social security subsector serves organized wage workers. The employer contribution is equivalent to 10% of the total earned per worker and the contribution of 3% of the rent of the rentiers and retirees. Covers 30.6% of the population

- It is made up of nine managing bodies (Health Savings Banks) and delegated insurance. It is supervised by the National Institute of Health Insurance.

³¹ <https://www.who.int/countries/es/>

- Insurance companies, prepaid medicine companies and non-governmental organizations are included in the private subsector. The regulation of this subsector is insufficient.
- The subsector of traditional medicine is under the responsibility of the Vice Ministry of Traditional Medicine and Inter-culturally aims to facilitate access to health programs and projects to indigenous, native, peasant and Afro-Bolivian peoples.

Health management is shared between the different levels of system management. Within each Municipality the highest authority is the Local Health Directory - DILOS, whose task is the fulfillment, implementation and application of health policies and programs considered a priority in the municipality. The DILOS is made up of the Municipal Mayor, the Technical Director of the Departmental Health Service - SEDES and the chairman of the Supervisory Committee. And at the local level it is up to the area health establishments and the mobile brigades to take over the provision of services.

Challenges:³²

- The country has tried consolidating health, economic and social policies, in line with the reforms and legal advances achieved since 2006.
- In 2016, the 2016-2020 Economic and Social Development Plan for Living Well was established, which sets health outcomes and actions.
- The country continues to face the persistence of chronic malnutrition, maternal and infant mortality, and communicable and chronic non-communicable diseases.
- It is expected to continue advancing in maternal and child health, in the treatment of tuberculosis, in HIV infection, in Chagas disease, and the improvement of health information systems.

³² Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

- Work is being done to better protect the population against the effects of climate change and natural disasters, as well as their impact on health.
- Consistent with the Government's integrated approach to development and equity issues, conditions have been creating to implement the sustainable development agenda.

The main indicators related to health registered in WHO³³ According to the DB consultation in June 2019 they are:

Bolivia	
Total population (2016)	10,888,000
Gross national income per capita (in international dollars, 2013)	5,750
Life expectancy at birth m/w (years, 2016)	69/74
Probability of dying under five (per 1000 live births, 2017)	35
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	214/150
Total health expenditure per capita (Intl \$, 2014)	427
Total expenditure on health as% of GDP (2014)	6.3

CHILE

➔ The Chilean health system is composed of a mixed system of care integrated by public insurance, called FONASA, which is the National Health Fund, and a private one called ISAPRE, Pension Health Institutions. In FONASA there are 4 classification groups, classified by their income and family burden.

In FONASA there are 2 Modalities of attention

- Institutional Attention Modality (MAI).
- Free Modality Choice (MLE)

³³ <https://www.who.int/countries/es/>

The ISAPRES are Private Pension Health Institutions, in charge of financing health benefits and benefits to people who contribute 7% or an agreed higher amount of their monthly health income.

- Modalities of attention in ISAPRE
- Modality Providers in Agreement or Preferred.
- Free Modality Choice.
- Closed Modality or Family Doctor.

Challenges:³⁴

- In the coming years, the health sector will face the new epidemics associated with risk factors such as tobacco, alcohol and poor nutrition due to excess caloric intake, the latter with the consequent effects of overweight and obesity.
- Important advances have been made since the last decade, such as sectoral policies enshrined through laws on Explicit Health Guarantees, new regulations for the regulation of the pharmaceutical sector and the financial protection law for high-cost diagnoses and treatments.
- Since 2002 there is a cardiovascular health program in the country for people 55 years and older in primary care (atherosclerotic cardiovascular disease, diabetes mellitus, arterial hypertension, dyslipidemia and smoking).
- The public system has tried to respond to these challenges by improving integrated health service networks and establishing the family health model in primary care. A National Mental Health Plan has been implemented, which includes a national alcohol strategy and a national suicide prevention program.
- The challenges in the public sector include responding to the deficit of medical specialists and infrastructure, and to the need to improve management and increase efficiency at the first level of care, also ensuring the adequate supply of medicines. However, the greatest challenge for the coming years will be to reduce socioeconomic inequalities that prevent more equitable, comprehensive and inclusive development.

³⁴ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

The main health-related indicators registered in WHO³⁵ according to the DB consultation in June 2019 are:

Chile	
Total population (2016)	17,910,000
Gross national income per capita (PPP international \$, 2013)	21,030
Life expectancy at birth m/w (years, 2016)	76/82
Probability of dying under five (per 1000 live births, 2017)	7
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	114/60
Total health expenditure per capita (Intl \$, 2014)	1,749
Total expenditure on health as% of GDP (2014)	7.8

COLOMBIA

➔ The Colombian health system corresponds to a system organized as a public service, where the guarantee of access to services and financial protection of the population is given through social insurance. Individual attention in Colombia is mainly provided through health insurance, which is composed of three regimes that respond to the following characteristics and architecture:

- The contributory regime aimed at workers and their families or population with payment capacity. Funded based on contributions from companies and workers. The contributions are linked to the payroll or value of income in the case of independent workers.
- The subsidized regime aimed at providing coverage to the poor and vulnerable population without payment capacity. Financed by a cross contribution from workers in the formal sector of the economy and contributions from the national and territorial government through taxes. Resources are prosecuted through demand grants. The selection of beneficiaries is carried out through a targeting process that uses the survey called the Beneficiary Identification System and the census lists to identify special populations, such as indigenous and displaced persons, among others.

³⁵ <https://www.who.int/countries/es/>

- Special regimes, which include health systems independent of military forces, teachers' employees, the Colombian Petroleum Company and other organizations with the autonomy to establish their coverage and service structures.

The Colombian health system offers a lot to its users, in particular, it gives access to relatively recent treatments, although they are expensive treatments and that, on the other hand, Colombians pay a very low fraction directly from their pockets. But at the same time in the daily reality that many users of the health system face administrative obstacles, generally as harmful as unnecessary, imposed by some Health Promoting Entities - EPS to their users, or the denial of treatments they should cover, Waiting times that are too long for an appointment that may be urgent make users to be dissatisfied in different surveys with the quality of care received and the health system as a whole.

Challenges:³⁶

- Within the framework of the Comprehensive Health Care Model - MIAS, the family and community health, and medicine approaches are being developed, aimed at improving the skills of human talent.
- Both the policy and the comprehensive health care model seek to improve quality, sustainability, and health equity. They propose a framework of actions and benefits from health promotion, disease prevention and treatment, rehabilitation and social reintegration at all stages of life, as close as possible to their daily lives.
- The 2012-2021 Ten-Year Public Health Plan established achieving equity in health, positively affecting social determinants of health and mitigating the impacts of disease burden.
- In 2015, the Government promised to reduce premature mortality caused by cardiovascular diseases, diabetes, cancer and chronic respiratory diseases by 8% in the population aged 30 to 70.

³⁶ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

- The Ten-Year Plan for Cancer Control 2012-2021 tries to reduce mortality by 30% in this period, integrating control of risk factors, such as smoking, sedentary lifestyle, high levels of sugar consumption and obesity.

The main indicators related to health registered in WHO³⁷ according to the DB consultation in June 2019 they are:

Colombia	
Total population (2016)	48,653,000
Gross national income per capita (PPP international \$, 2013)	11,890
Life expectancy at birth m/w (years, 2016)	72/79
Probability of dying under five (per 1000 live births, 2017)	15
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	182/92
Total health expenditure per capita (Intl \$, 2014)	962
Total expenditure on health as% of GDP (2014)	7.2

ECUADOR

➔ The Health System of Ecuador is a mixed system, composed of the public and private sectors. The public sector includes the Ministry of Public Health-MSP with its lending entities and the actors of the National Social Security System oriented to the formal sector of the labor market, integrated by the Ecuadorian Social Security Institute, which includes the Peasant Social Security; the Social Security Institute of the Armed Forces, under the Ministry of National Defense and the Social Security Institute of the National Police, under the Ministry of Interior. Frequently, the Ministry of Public Health operates as an implicit reinsurer for those insured who cannot continue financing their health care in the other subsystems.

The private health sector is made up of both for-profit entities (prepaid medicine companies, private insurance providers, clinics, clinics, clinics, hospitals), and non-profit organizations, such as NGOs, society organizations civil or social associations.

³⁷ <https://www.who.int/countries/es/>

Private entities, duly certified by social security entities, also intervene as service providers for members of the Social Security System under the modality of service provision contracts. Both private insurance companies and prepaid medicine companies are supervised by the Superintendence of Companies.

The highest instance of coordination, sectoral coordination, inter-institutional and intersectoral articulation in health is the National Health Council (CONASA), which constitutes a legal person under public law with administrative and financial autonomy. The Ministry of Public Health (MSP) is the National Health Authority with the capacity to issue regulations and exercise leadership and control over the system. The MSP is also the main service provider in the country, both for collective and individual health services.

Challenges:³⁸

- The promotion of healthy habits, control of determinants, access to education and preventive medicine should be improved. For this, the first level of services will require improving the quality of its management and performance.
- In 2014, the availability of doctors and nurses was 20.4 and 10.1 per 10 000 inhabitants, respectively. Despite this, the availability of specialists is low and there is inequality in its distribution.

The main indicators related to health registered in WHO³⁹ according to the DB consultation in June 2019 they are:

³⁸ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

Ecuador	
Total population (2016)	16,385,000
Gross national income per capita (PPP international \$, 2013)	10,310
Life expectancy at birth m/w (years, 2016)	74/79
Probability of dying under five (per 1000 live births, 2017)	14
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	142/86
Total health expenditure per capita (Intl \$, 2014)	1,040
Total expenditure on health as % of GDP (2014)	9.2

PARAGUAY

➔ The Health System is made up of the public, private and mixed sectors. As part of the public sector we have the central administration, made up of the Ministry of Public Health and Social Welfare- MSPBS, the Military, Police and Navy Sanities. For its part, the Social Security Institute-IPS; the National University of Asunción, with the Clinic Hospital and the Maternal and Child Center; the Governments and Municipalities; make up the decentralized administration. The private sector has non-profit entities such as non-governmental organizations and cooperatives. Those for profit include prepaid medicine and private providers. Finally, the Paraguayan Red Cross is a mixed non-profit entity, with funding from the ministry and a private foundation.

Within the public sector, health care coverage for 95% of the total population of the country is in charge of the Ministry of Public Health and Social Welfare - MSPBS and the Social Security Institute - IPS, becoming the two most important institutions important for the health care of the population. Both have health facilities of varying complexity, distributed throughout the national territory, although primary care only exists in the network of the Ministry of Public Health and Social Welfare. According to the 2010 Permanent Household Survey, 16.4% of the population is covered in health by the IPS and 7% by some other type of medical insurance (private, military or labor). Thus the MSPBS would be in charge of 76% of the uninsured population.

Challenges: ⁴⁰

- Although by law the health authority is the Ministry of Public Health and Social Welfare, the rectory it exercises is weak and, in practice, the National Health System works in an uncoordinated and fragmented manner, with various financing, regulation, affiliation modalities and service provision.
- The growing direct out-of-pocket expenditure (60%) related to health care is being considered in the strategies of the National Health Policy 2015-2030. These should be extended throughout the national territory until a substantial transformation is achieved that guarantees citizens the right to health.
- The increased prevalence of non-communicable diseases and their risk factors represents a challenge. To respond to this, policies, legal instruments and strategic plans aimed at the prevention of risk factors and disease care have been created. This effort should be aimed at emphasizing and guaranteeing an intersectoral and integral national response, with strong citizen participation.

The main indicators related to health registered in WHO according to the DB consultation in June 2019 they are:

Paraguay	
Total population (2016)	6,725,000
Gross national income per capita (PPP international \$, 2013)	7,640
Life expectancy at birth m/w (years, 2016)	72/76
Probability of dying under five (per 1000 live births, 2017)	21
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	165/125
Total health expenditure per capita (Intl \$, 2014)	873
Total expenditure on health as % of GDP (2014)	9.8

⁴⁰ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

PERU

➔ The health system Peru includes public and private service providers, each of which incorporates a set of financing mechanisms and provision of vertically integrated services:

- The Ministry of Health- MINSA, which includes the Comprehensive Health Insurance-SIS as a public insurer with autonomy
- Health Social Security-EsSalud, attached to the Ministry of Labor and Employment Promotion - MTPE
- The Sanities of the Armed Forces-Navy, Aviation and Army, attached to the Ministry of Defense.
- The Health of the National Police of Peru-PNP, attached to the Ministry of Interior
- Private sector institutions: health providers, private insurers, clinics and society organizations

There are three major public providers: Regional Governments, the Ministry of Health (Metropolitan Lima) and Social Security Health-EsSalud. Other public providers (Health of Armed Forces and Police and Municipalities) have very limited participation. Private providers correspond to private clinics (companies), NGOs, parishes, private medical offices, etc. On the other hand, different experiences of public-private partnerships and other similar modalities have been observed.

Health facilities, including those of the first level of care, are classified by categories. A category is a classification group that characterizes health facilities based on levels of complexity and common characteristics, for which they have units that produce health services that, together, determine their resolution capacity responding to similar social-sanitary realities and designed to meet equivalent demands.

⁴¹ <https://www.who.int/countries/es/>

Challenges: ⁴²

- The Health Reform is a process that has continued to be implemented from 1990 to 2016. Among its most important milestones is the approval of the Universal Health Insurance Framework Law in 2009 and the enactment of 23 legislative decrees in 2013. This The law is an important regulatory framework for the structuring and operation of the health system and includes issues such as financing, remuneration and access, and even the functional reorganization of the Ministry of Health.
- Eradicating the exclusion of a significant part of the population from access to some level of health insurance is a pending challenge. The increase in the articulation of the system, having primary health as its first link, requires greater efforts. Those at the primary level still have low-resolution capacity and face the difficulty of the increasing territorial coverage to cope, for example, with the aging of the population in the country.
- Standardization of vocational training systems should also be strengthened and adequate incentives generated for the exercise of such professionals in the public health sector.
- The instruments and quality of health records in the country must continue to improve, especially in terms of timing and better registration of mortality and other relevant health indicators.
- Violence against women and human trafficking are phenomena that require a comprehensive approach through specific public policies.

The main indicators related to health registered in WHO⁴³ according to the DB consultation in June 2019 they are:

⁴² Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

⁴³ <https://www.who.int/countries/es/>

Perú	
Total population (2016)	31,774,000
Gross national income per capita (PPP international \$, 2013)	11,360
Life expectancy at birth m/w (years, 2016)	73/78
Probability of dying under five (per 1000 live births, 2017)	15
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	154/94
Total health expenditure per capita (Intl \$, 2014)	656
Total expenditure on health as % of GDP (2014)	5.5

URUGUAY

Before the reform of the creation of the National Integrated Health System-SNIS, the health system was segmented. The care provided by hospitals and polyclinics of the public subsystem was aimed at the population with lower incomes, that is, those who could not afford to pay the fees of private institutions. On the other hand, the private sector—constituted by the Collective Medical Assistance Institutions-IAMC and by the entirely private health care insurance was oriented to the attention of the middle and high income groups that pay the mutual quotas from their pocket and to provide coverage to private and public workers in the formal sector, for which there was a state office (the Social Security Bank) responsible for acting as an intermediary, receiving input from workers and employers and hiring IAMC.

With the creation of SNIS, the system is integrated with the progressive incorporation of the population into the National Health Insurance and guaranteeing a Comprehensive Health Care Plan. The Comprehensive Health Care Plan (PIAS) constitutes the set of benefits that must be guaranteed to its beneficiaries by institutions accredited as integral providers of the National Integrated Health System. The Law for the creation of SNIS, in its Art. 5, refers within the powers of the Ministry of Health: "approve the programs of comprehensive health benefits that must be provided to its users by public and private providers that integrate the National Integrated System of Health, and keep them updated in accordance with the scientific advances and epidemiological reality of the population ". On the other hand, Article 15 of Law 18.211 that creates the SNIS establishes that "the National

Health Board will sign a management contract with each of the providers that are integrated into the National Integrated Health System, to facilitate the comptroller of compliance with the obligations imposed by them by law". This is a change from the universality of its application, given that, up to that time, the rules issued on benefit coverage only referred to collective medical assistance institutions (IAMC).

From the Decree of the Comprehensive Health Care Plan (PIAS), the obligations are identical for any integral provider, public or private in the country, a relevant aspect since the system opts for a spectrum of mixed providers to which the insured user you can choose your affiliation.

Challenges: ⁴⁴

- The strengthening of the health system through the reform process has contributed to better healthcare and health conditions. However, it faces challenges of the system itself and those that demand the change of epidemiological profile and aging.
- Among the main challenges are climate change and human security, with a prominent place of violence and food security.
- Complications and mortality from HIV / AIDS, despite the availability of antiretroviral therapy, remain a relevant challenge. In 2012, the project "Towards social inclusion and universal access to prevention and comprehensive care for HIV / AIDS in the most vulnerable populations in Uruguay" began.

The main indicators related to health registered in WHO⁴⁵ according to the DB consultation in June 2019 they are:

⁴⁴ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

⁴⁵ <https://www.who.int/countries/es/>

Uruguay	
Total population (2016)	3,444,000
Gross national income per capita (PPP international \$, 2013)	18,930
Life expectancy at birth m/w (years, 2016)	73/81
Probability of dying under five (per 1000 live births, 2017)	8
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	149/79
Total health expenditure per capita (Intl \$, 2014)	1,792
Total expenditure on health as % of GDP (2014)	8.6

VENEZUELA

➔ The health system of the Bolivarian Republic of Venezuela is made up of two subsystems classified based on the source of the financing source: the public health and the private subsystem. The public health subsystem is made up of the institutions providing health services attached to the Public Administration whose financing comes from public resources, namely:

- The Ministry of Popular Power for Health, the governing body of the health sector and the main provider and financier of health services.
- The Venezuelan Institute of Social Security, an autonomous body attached to the Ministry of Popular Power for Work, was created to provide health services to formal workers at the national level, whether from the public or private sector, and their families. However, by the decision of the National Executive, since 2000 this agency provides health services to the entire population that requires it.
- The Social Security and Welfare Institute of the Ministry of Education and the Social Security Institute of the Armed Forces are bodies of the decentralized administration attached to the Ministry of Popular Power for Education and Defense, respectively. They provide health services to the affiliated population and their families.

The private subsystem is formed by the institutions that provide health services, whose financing comes from private sources, such as direct pocket payments or insurance companies.

The Ministry of Popular Power for Health-MPPS, the governing body of the health sector in Venezuela, is responsible for developing, formulating, regulating and monitoring comprehensive health policies, including health promotion and quality of life, prevention, restitution of health and rehabilitation; control, monitoring and control of health services, programs and actions, national, state and municipal public and private sectors and all contained in Decree No. 6732 (published in Official Gazette 369.817 of June 17, 2009) on organization and operation of the National Public Administration.

Challenges: ⁴⁶

- Reduction of maternal mortality and malaria control have become priority issues on the national health agenda.
- The objective of preventing and controlling chronic non-communicable diseases has led to the formulation of intersectoral policies that integrate the promotion of healthy practices, quality of care, regulation and legislation.
- Given the rapid increase in the group of older adults, the priority arises to maintain their functional capacity, with the support of specialized services in caring for the elderly, and that include the sustainability of long-term care.
- The National Agreement towards the Universalization of Health Services reflects the political will to improve access for the entire population.

The main indicators related to health registered in WHO⁴⁷ According to the DB consultation in June 2019 they are:

⁴⁶ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

⁴⁷ <https://www.who.int/countries/es/>

Venezuela	
Total population (2016)	31,568,000
Gross national income per capita (PPP international \$, 2013)	17,890
Life expectancy at birth m/w (years, 2016)	70/79
Probability of dying under five (per 1000 live births, 2017)	31
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	217/93
Total health expenditure per capita (Intl \$, 2014)	923
Total expenditure on health as % of GDP (2014)	5.3

MÉXICO

➔ The Mexican health system comprises two sectors, public and private. Within the public sector are the social security institutions [Mexican Institute of Social Security-IMSS, Institute of Social Security and Services of State Workers-ISSSTE, Petróleos Mexicanos-PEMEX, Secretariat of Defense-SEDENA, Secretariat of Navy- SEMAR and others] and institutions and programs that serve the population without social security (Ministry of Health-SSa, State Health Services-SESA, IMSS-Opportunities Program IMSS-O, Popular Health Insurance-SPS). The private sector includes insurance companies and service providers working in private offices, clinics and hospitals, including alternative medicine service providers.

The Mexican health system offers very different health benefits depending on the population in question.

In the country there are three different groups of beneficiaries of health institutions:

- Salaried workers, retirees and their families;
- Self-employed, informal sector workers, unemployed and people outside the labor market, and their families, and
- The population with payment capacity.

Workers in the formal sector of the economy, active and retired, and their families are the beneficiaries of social security institutions, which cover 48.3 million people. The IMSS covers more than 80% of this population and serves it in its units with its doctors and nurses. The ISSSTE covers another 18% of the insured population, also in units and with their human resources. For their part, medical services for PEMEX, SEDEÑA

and SEMAR employees together are responsible for providing health services to 1% of the population with social security in clinics and hospitals of PEMEX and the Armed Forces, and with doctors and own nurses.

The second group of users includes the self-employed, workers in the informal sector of the economy, the unemployed and people outside the labor market, as well as their families and dependents.

In 2003, the Social Protection in Health System (SPSS) and its operational arm, the SPS, were created. This would cover those who had been excluded from conventional social security. Together with their families, these Mexicans represented approximately half of the country's population. In 2008, the SPS had more than 27 million members.

Challenges:⁴⁸

- Maternal mortality will remain a priority problem and the evaluation and control of existing programs, such as community transport brigades, maternal shelters, access and coverage of family planning methods, good practices in prenatal care and childbirth, and surveillance of births by cesarean section. This will also require applying an intercultural approach to obstetric problems, gender equality and the execution of actions that affect empowerment and the pursuit of health as a human right.
- As a result of the efforts made, and the trends observed, the elimination of some neglected diseases, such as leprosy, malaria and rabies, is expected to be achieved, thanks to the conclusion of common objectives among the sectors involved in addressing the determinants social health, and the fulfillment of national development goals and the Sustainable Development Goals.
- Intersectoral policies have been formulated to prevent and control chronic noncommunicable diseases. These policies integrate the promotion of healthy practices, quality of care, regulation, and legislation.

⁴⁸ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

- The National Agreement against Obesity and Overweight; the National Strategy for the Prevention and Control of Overweight, Obesity and Diabetes; the implementation of frontal labeling in high-calorie foods; and the regulation of advertising of unhealthy foods in the media during children's hours requires mechanisms that evaluate its operation and development, as well as strengthening the regulatory framework that allows punitive actions to be established for non-compliance

The main indicators related to health registered in WHO⁴⁹ according to the DB consultation in June 2019 they are:

Mexico	
Total population (2016)	127,540,000
Gross national income per capita (PPP international \$, 2013)	16,110
Life expectancy at birth m/w (years, 2016)	74/79
Probability of dying under five (per 1000 live births, 2017)	13
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	164/89
Total health expenditure per capita (Intl \$, 2014)	1,122
Total expenditure on health as % of GDP (2014)	6.3

BELIZE

➔ In 1998, the Ministry of Health carried out the health system reform, reorganizing its services in four health regions (northern, central, western and southern), headed by regional health managers. All regional hospitals are in urban areas and the rural population has a network of clinics, health posts and mobile clinics. Through the introduction of the National Health Insurance Plan, care services are provided through a network of primary care professionals who have focused on the health of a specific geographic base and population defined by their condition as poor.

The Belize health system depends mostly on the contribution of public funds. The Government has allocated a budget of around 11% of the national budget to the Ministry of Health, corresponding to 3.5% of GDP.

⁴⁹ <https://www.who.int/countries/es/>

The issue of human resources in health is the critical element of the system. This shortage is aggravated by its geographical distribution, since most of it is located in urban areas, especially in Belize City.

The country does not have training centers where doctors are trained. However, several categories of nurses, laboratory technicians, pharmacists and social workers receive regulated education at the University of Belize.

The Ministry of Health uses a health information system to record patient data and to integrate data sources electronically, facilitating data analysis and health information. The system covers the entire country and is considered updated and accurate. The Ministry recognizes that, despite the existence of its information system, there is still a gap in the quantity and quality of the registry, originating in doctors and officials.

Challenges:⁵⁰

- The Belize health system faces significant challenges in the short and medium-term. These include the increase in chronic diseases as the main causes of mortality, the threats posed by emerging viral diseases, the escalation of costs resulting from urban violence, the high rate of HIV infections and the difficulties in attracting and retaining personnel in The health sector. Given the high vulnerability of Belize, climate change poses additional risks to health and other sectors.
- The structure of the country's economy, in particular the growing predominance of tourism in the economic profile and the continued dependence on export industries, which employ numerous seasonal migrant workers, implies the continuous cross-border movement of people who can require health system services. The continued influx of seasonal immigrants parallels the movement of undocumented immigrants who settle in remote communities where access to medical care remains problematic.
- The chronic shortage of certain categories of health professionals and their low retention rate makes it necessary for Belize to bring these professionals from abroad, which generates recurring expenses for the adaptation of newcomers.

⁵⁰ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

- Problems derived from chronic non-communicable diseases, particularly diabetes, and threats of viral infections are considered urgent action priorities. It should also be assessed whether the allocation and administration of public funds to the Ministry of Health are being optimized to address these priorities effectively.
- A great challenge for the country is to consolidate the achievements and reduce the social and health vulnerability of some population groups.
- The negative evolution of government revenues caused by adverse macroeconomic circumstances and a rapid increase in public debt represents a primary threat to the health system due to its substantial dependence on public funding.

The main indicators related to health registered in WHO⁵¹ according to the DB consultation in June 2019 they are:

Belize	
Total population (2016)	367,000
Gross national income per capita (PPP international \$, 2013)	8,160
Life expectancy at birth m/w (years, 2016)	68/73
Probability of dying under five (per 1000 live births, 2017)	14
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	225/132
Total health expenditure per capita (Intl \$, 2014)	489
Total expenditure on health as % of GDP (2014)	5.8

COSTA RICA

➔ Personal health services are provided in the public sector, the private sector and a diffuse mixed sector. The public sector is dominated by the Costa Rican Social Security Fund-CCSS, the main provider of personal services. The Ministry of Health-MS, as the governing body of the system, and the institutions attached to it, such as the Centers for Education and Nutrition -CEN, the Children's Centers for Nutrition and Food-CINAI

⁵¹ <https://www.who.int/countries/es/>

and the Institute for Alcoholism and Drug Dependence -IAFA, attend to populations with nutritional deficiencies and problems of addiction to psychoactive substances, respectively.

The private subsector includes private medical services, five insurance companies, cooperatives (non-profit organizations hired by the CCSS), self-management companies, clinics, and private hospitals.

The National Institute of Insurance-INS operates in both the public and private sectors and is responsible for coverage of occupational and traffic risks, and for providing hospital-related medical and trauma rehabilitation services.

Health insurance was established for the working population and over the years it has been extended to new beneficiaries closely linked to the category of taxpayers and non-contributors to the system. These are classified according to various types of insurance, namely: a) direct insured (salaried workers; pensioners and retirees of the state systems; people who individually or collectively benefit from the voluntary insurance modality; independent workers, who quote insurance individually or collectively; population in poverty, insured For the state); b) indirect insured (family members and dependents of the direct insured to whom the family benefit has been granted), and c) uninsured (people with contributory capacity who do not contribute to social security and undocumented migrants).

Challenges: ⁵²

- As the main health problems, there are also nutritional deficits in girls and boys, overweight in adults, the prevalence of chronic diseases and increases in their care costs.
- Inequalities remain between the various population groups. The health system faces the challenge of contributing to generate higher levels of equity and solidarity.

⁵² Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

- Another major challenge is the weakening of the rectory of the Ministry of Health, among other reasons, due to problems of organization, monitoring and evaluation, unfinished separation of functions and fragile coordination with the Costa Rican Social Security Fund.
- In recent years there has been concern about the quality and productivity of health services, as well as the financial situation and the risk of an eventual lack of sustainability of the Costa Rican Social Security Fund.
- The increase in violence and its implications on health and the demand for health services will require not only actions against criminal crime, but initiatives to improve coexistence, such as protecting the exercise of the rights of vulnerable groups, guaranteeing income decent to all citizens, promote an education that respects diversity and generate safe meeting spaces for people.
- The aging of the population and the increase in chronic non-communicable diseases will require the implementation of suitable strategies to promote healthy lifestyles, improve urban centers and strengthen the social protection of the elderly.

The main indicators related to health registered in WHO⁵³ according to the DB consultation in June 2019 they are:

Costa Rica	
Total population (2016)	4,857,000
Gross national income per capita (PPP international \$, 2013)	13,570
Life expectancy at birth m/w (years, 2016)	77/82
Probability of dying under five (per 1000 live births, 2017)	9
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	126/66
Total health expenditure per capita (Intl \$, 2014)	1,389
Total expenditure on health as % of GDP (2014)	9.3

⁵³ <https://www.who.int/countries/es/>

CUBA

➔ In Cuba, the State regulates, finances and provides health services. These services operate under the principle that health is an inalienable social right, which defines the Cuban health system like a true National Health System-SNS.

The Ministry of Public Health-MINSAP is the governing body of the SNS and, therefore, is responsible for directing, executing and controlling the application of State and Government policies in the field of public health, development of medical sciences and industry medical-pharmaceutical.

The Cuban health system has three administrative levels (national, provincial and municipal) and four services (national, provincial, municipal and sector). Provincial and municipal health directorates are administratively subordinated to provincial and municipal assemblies of local government agencies, from which they receive the budget, supplies, labor force and maintenance. Each province forms local health systems in its municipalities.

The guiding principles of the Cuban health system are the following: character, state and social medicine; accessibility and free services; prophylactic orientation; proper application of advances in science and technology; community participation and intersectionality; international collaboration, regulatory centralization and executive decentralization.

The SNS of Cuba has a set of institutions that must guarantee free and equal access to all health programs and services and provide 100% coverage of the population. Such access is not determined by the level of income, occupation in the economy or membership in a public or private insurance system.

Challenges: ⁵⁴

- The dynamics and demographic characteristics of the country occupy priority attention. These characteristics include the low fertility of the population, aging

⁵⁴ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

and the consequent loss of the replacement rate, with an increase in chronic non-communicable diseases.

- Chronic diseases, in addition to their high mortality, cause significant burdens characterized by recurrent exacerbations with increasing disability, and these conditions exert greater pressure on demand for health services. For this, a greater allocation of human, material and financial resources is required to meet health needs.
- It is important to improve the resilience and responsiveness of the health sector to the relationship between climate change and human health. This requirement appeals to the need for new key actions to be developed. A great challenge for the coming years is to respond to the need to adopt the mechanisms to ensure the sustainability and projection of their achievements in a framework characterized by a new demographic, epidemiological, economic, social and political reality.

The main indicators related to health registered in WHO⁵⁵ according to the DB consultation in June 2019 they are:

Cuba	
Total population (2016)	11,476,000
Gross national income per capita (PPP international \$, 2011)	18,520
Life expectancy at birth m/w (years, 2016)	77/81
Probability of dying under five (per 1000 live births, 2017)	5
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	116/68
Total health expenditure per capita (Intl \$, 2014)	2,475
Total expenditure on health as % of GDP (2014)	11.1

⁵⁵ <https://www.who.int/countries/es/>

EL SALVADOR

➔ The Salvadoran health system is composed of two sectors, the public and the private. The public sector includes the Ministry of Public Health and Social Assistance-MSPAS, the Salvadoran Institute of Social Security-ISSS, the Salvadoran Institute of Invalid Rehabilitation-ISRI, Military Health, the Salvadoran Institute of Teacher Welfare-ISBM and the Solidarity Fund for Health-FOSALUD. The private sector includes lucrative and non-profit private entities.

The ISSS and the MSPAS cover most of the Salvadoran population. The ISSS is an autonomous entity and aims at the social security of workers in the formal sector of the economy, while the MSPAS, in addition to offering health services to the population without social security, is the regulatory body of the sector. The ISRI is an autonomous institution whose purpose is the provision of specialized rehabilitation services to people with disabilities. Military Health offers social protection in health to the armed forces. Finally, the ISBM is an autonomous official public law entity that covers the teaching population and their families.

FOSALUD, is a public law entity in force since 2004 that has full autonomy in both financial and administrative and budgetary terms attached to the MSPAS. The purpose of this instance is: to promote the creation of special programs to expand the coverage of health services; formulate and implement comprehensive programs that address the basic health needs of the most vulnerable population in the country and promote health education campaigns.

The private sector is mainly composed of lucrative organizations established in the main Salvadoran cities. These organizations offer services in the private market and sell services to the Salvadoran Institute of Social Security - ISSS and the Salvadoran Institute of Teacher Welfare - ISBM. Non-profit organizations (NGOs, churches, and others), meanwhile, operate primarily in rural areas of El Salvador.

The Political Constitution of El Salvador provides that the health of the inhabitants is a public good and that the State will give free assistance to patients who lack resources and inhabitants in general in the prevention of communicable diseases. However,

many Salvadorans do not have regular access to health services, particularly the rural poor.

Challenges: ⁵⁶

- More effective integration of the institutions of the National Health System is imperative, with the centralization of budgetary management and human resources. Also, the global legal framework needs to be consolidated consistently.
- The health system faces the challenge of improving its response capacity to deal effectively with the increase in morbidity, mortality, and disability, caused by both communicable diseases and chronic noncommunicable diseases.
- Surveillance, prevention, and treatment of chronic noncommunicable diseases are necessary for their effective control and prevention, as well as having intersectoral actions that influence social determinants and risk factors.
- The consolidation of the Single National Health Information System will allow obtaining useful information for decision making.
- According to the 2015-2019 Five-Year Development Plan, it is expected to reduce maternal mortality to a level of fewer than 35 deaths per 100,000 live births, maintain infant mortality below 8 deaths per 1 000 live births, preserve coverage of vaccination over 95% and reduce by 3% the direct out-of-pocket expenditure of households.
- The problem of gangs is a challenge for Salvadorans, as it is the fundamental obstacle to the implementation of sustainable development initiatives and threatens the health of the population.

The main indicators related to health registered in WHO⁵⁷ according to the DB consultation in June 2019 they are:

⁵⁷ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

El Salvador	
Total population (2016)	6,345,000
Gross national income per capita (PPP international \$, 2013)	7,490
Life expectancy at birth m/w (years, 2016)	69/78
Probability of dying under five (per 1000 live births, 2017)	14
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	261/103
Total health expenditure per capita (Intl \$, 2014)	565
Total expenditure on health as % of GDP (2014)	6.8

GUATEMALA

➔ The Guatemalan health system is made up of a public and a private sector. The public sector comprises, first, the Ministry of Public Health and Social Assistance-MSPAS, which formally provides care to 70% of the population. Second, there is the Guatemalan Social Security Institute-IGSS, which offers coverage to less than 17.45% of the population linked to formal employment. Finally, Military Health covers members of the armed forces and the police, including their families, less than 0.5% of the population. Other government institutions participate marginally in certain healthy activities.

12% of Guatemalans turn to the private sector for health care. In this sector, civil society organizations-CSOs and/or religious organizations that operate non-profit organizations participate. There is also a little significant private health insurance sector. According to estimates from the MSPAS, non-governmental organizations offer coverage to about 18% of the population. Private insurance covers less than 8% of the population, mainly belonging to the two richest and predominantly urban quintiles.

The resources of the MSPAS come from the State's fiscal income, from external resources in the form of assistance, loans and international donations and, in a non-significant way, from fees for services, whose tariffs are very low. In 2008, the government promoted the free services in a scenario characterized by the deficit of hospital supplies and lack of budget for the payment of human resources. The IGSS

obtains resources from the contributions of affiliated employees, employers and the State.

The private sector, subdivided into a lucrative and nonprofit, is financed at 86% with pocket payments. Only 14% of its financing corresponds to the purchase of health plans from insurance companies. The nonprofit private sector can be subdivided into a variety of secular CSOs and religious associations, both with an important presence in rural areas, which offer education, prevention and care plans in clinics, health centers and hospitals.

Challenges:⁵⁸

- The main challenges of the health system are focused on structuring policies and plans that are feasible, that can be implemented progressively and that in turn consider the real possibilities of development, according to the available resource, the national context and the global financial conditions of the country.
- A model that favors access and universal health coverage must be implemented, with special attention to addressing social, economic and environmental determinants of health.
- Solving language-related access barriers, due to the monolingualism of a large part of the indigenous population, is an aspect of concern.
- In health policies, mechanisms and tools that address health determinants must be integrated in an intersectoral manner, linking the sector to the global social and economic agenda, and improving the leading role of the health authority.
- Similarly, appropriate inter-sectoral coordination is required to address actions in response to the Sustainable Development Goals.

The main indicators related to health registered in WHO⁵⁹ according to the DB consultation in June 2019 they are:

⁵⁹ <https://www.who.int/countries/es/>

Guatemala	
Total population (2016)	16,582,000
Gross national income per capita (PPP international \$, 2013)	7,130
Life expectancy at birth m/w (years, 2016)	70/76
Probability of dying under five (per 1000 live births, 2017)	28
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	208/119
Total health expenditure per capita (Intl \$, 2014)	473
Total expenditure on health as % of GDP (2014)	6.2

GUYANA

The Ministry of Health provides services directly through a Health Services Package with Public Guarantee, in collaboration with the ten regional health departments of the Subnational Regional Democratic Councils, the Georgetown Public Hospital Corporation and the regional health authorities.

The Guyana health system is highly decentralized and the responsibility for financing, directing and providing health services rests with the Ministry of Local Government and Regional Development, who acts at the regional level through the Regional Democratic Councils and Regional Health Authorities. Guyana is divided into ten health regions that provide primary, secondary and tertiary health care. Together, these regions comprise a total of 375 health centers distributed in five care levels.

The private health sector in Guyana provides some primary health services through private medicine and various health professionals. Various private providers provide medical services in regulated institutions by paying a fee from the client. The Ministry of Health works together with these institutions to offer a set of health services that are not available in the Public Guaranteed Health Services Package, such as cardiac surgery, dialysis, chemotherapy for cancer treatment, diagnostic imaging and transplantation of organs. Besides, the Ministry of Health manages more complex services abroad for patients who need it (for example, retinal surgery, neurosurgery and others), when these services are not available in the public or private sectors in the country.

Challenges: ⁶⁰

- The main problems facing Guyana are noncommunicable diseases, mental disorders (suicide), HIV infection and tuberculosis, vector-borne diseases and insufficient numbers of trained health personnel.
- Malaria generates a great concern in Guyana. Its transmission has always been linked to the movement of people from the coast to the interior regions, given their participation in economic activities associated with extractive industries (mining and wood).
- In 2016, various instances were created to discuss and prioritize the health challenges and limitations facing the country in the context of inequities and multisectoral participation. Different-term strategies aim to expand access to equitable, quality and comprehensive health services.
- Another objective is to reorient health financing modalities, to increase efficiency and public and multisectoral investments in health-related matters.
- Administration and governance should be improved to redefine the functions and structure of the Ministry of Public Health to address health inequalities in the best possible way.
- Intersectoral collaboration (strategic partnerships) must also be improved by formalizing health commissions in the government cabinet, in addition to establishing interministerial technical groups that contemplate regional administrative level participation.

The main indicators related to health registered in WHO⁶¹ according to the DB consultation in June 2019 they are:

⁶⁰ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

⁶¹ <https://www.who.int/countries/es/>

Guyana	
Total population (2016)	773,000
Gross national income per capita (PPP international \$, 2013)	6,550
Life expectancy at birth m/w (years, 2016)	64/69
Probability of dying under five (per 1000 live births, 2017)	31
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	313/210
Total health expenditure per capita (Intl \$, 2014)	379
Total expenditure on health as % of GDP (2014)	5.2

HONDURAS

➔ El sistema de salud de Honduras está compuesto por un sector público y un sector privado. De acuerdo con el Código de Salud, el primero está constituido por las Secretarías de Salud-The health system in Honduras is made up of a public sector and a private sector. According to the Health Code, the first is constituted by the Secretariats of Health-SS, Government and Justice, Labor and Social Welfare, Public Education, Natural Resources, Planning, Coordination and Budget, Honduran Institute of Social Security-IHSS, Service National Autonomous Aqueducts and Sewers, and municipalities.

Two institutions stand out in the provision of health services, the SS, which exerts a double function to be the rector of the system and service provider, and the IHSS. The first offer attention to the entire population. However, it is estimated that only about 60% of Hondurans access these services regularly. The second covers less than half of the salaried population in the formal sector of the economy, which is equivalent to approximately 18% of the Honduran population. Both institutions have health centers and hospitals and are complemented at the local level through facilities of the National Welfare Board and the Ministry of Labor and Social Security-STSS or with the hiring of private providers. The Ministry of Defense also has health units, such as the Military Hospital.

The Honduran Institute for Children and the Family contributes to the health system through programs of childcare, nutritional care, and early stimulation activities, and care for children and adolescents with disabilities, as well as with the development of

Family Counseling Offices that promote psychological care for people who exercise domestic violence.

The private sector has lenders with and without profit. Among the first are hospitals, clinics, and independent professionals and eleven companies that offer health insurance. The latter include civil society organizations such as CARE, HOGASA World Vision, Mundi Doctors, Global Village, Pastors Associations, ASHONPLAFA, and MOPAWI, among others.

Challenges:⁶²

- Efforts are being made to promote and improve multisectoral partnerships and the generation of evidence to apply the health approach in all policies, and in particular about non-communicable diseases and injuries due to external causes. The further development of national capacities and competencies to measure equity and inequalities in health, as well as to apply human rights, gender equality, and ethnicity approaches is also considered relevant and necessary.
- The Government has identified a set of health challenges: i) restructure the Ministry of Health to strengthen its leading role and implement the separation of functions; ii) implement the Monitoring and Evaluation System for Results Management, thus strengthening the Integrated Health Information System; iii) develop public policies that promote healthy lifestyles and lifestyles; iv) implement the International Health Regulations; v) monitor compliance with the Framework Convention for Tobacco Control; vi) readjust the infrastructure for the proper functioning of the health services network; vii) conduct research on indigenous and Afro-descendant populations that provide information for evidence-based interventions; viii) incorporate human talent in quantity, quality and relevance, especially to strengthen the first level of care and ensure the continuity of the model, and ix) strengthen the actions of quality of care and patient safety in establishments.

⁶² Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

The main indicators related to health registered in WHO⁶³ according to the DB consultation in June 2019 they are:

Honduras	
Total population (2016)	9,113,000
Gross national income per capita (PPP international \$, 2013)	4,270
Life expectancy at birth m/f (years, 2016)	73/78
Probability of dying under five (per 1000 live births, 2017)	18
Probability of dying between 15 and 60 years, m/f (per 1000 population, 2016)	172/119
Total health expenditure per capita (Intl \$, 2014)	400
Total expenditure on health as % of GDP (2014)	8.7

NICARAGUA

➔ The Ministry of Health-MINSA is responsible for guaranteeing access to health services to the entire population according to the General Health Law 2002. To achieve universal coverage, three regimes were established: contributory, non-contributory and voluntary. The contributory regime is implemented by the Nicaraguan Institute of Social Security (INSS), which administers, among others, compulsory and optional health insurance for workers in the formal sector, the Ministries of Governance-MIGOB and Defense-MIDDEF, which cover the members of the armed forces and public administration, and, since 2007, the Ministry of Education. The non-contributory regime is in charge of the MINSA. The services of the voluntary regime are provided by the private sector.

The MINSA, MIGOB, and MIDDEF have their facilities. The MINSA establishments are organized in the form of a reference network and are distinguished as follows: Family and Community Health Post, Family Health Center, Primary Hospitals, Polyclinics, Departmental Hospitals, Regional Hospitals (with their High Diagnosis Centers Technology), Hospitals with National Reference Services and Third Level National Services.

The INSS contracts services from Health Service provider Institutions (IPSS), both from the public and private sectors, certified by MINSA.

In 2007, the Nicaraguan government adopted a new model of health care called the Family and Community Health Model-MOSAFC. The objectives of this model are the following: 1) build effective, effective and efficient health services that generate an equitable improvement of the population's health situation; 2) achieve higher levels of user satisfaction and 3) achieve improvements in the level of financial protection in health.

Challenges:⁶⁴

- Regarding the living conditions of the most vulnerable sectors, health policy focuses on restoring the right to a healthy environment, through preventive health, and receiving comprehensive and integrated, free and quality services, through the implementation of the Family and Community Health Model.
- The Family and Community Health Model guides the sectorial health action through the insertion of people, families, communities and other social actors, allowing a systematic and comprehensive approach to the social response to endemic and epidemic problems.
- Continuous training of human resources is key to respond to technology transfers, health demands and the execution of the national health strategy. The lack of human resources dedicated exclusively to software development limits the progress of the construction of the health information system; Among the pending challenges, the articulation of the platforms and the coding of the Epidemiological Surveillance System in the National Center for Diagnostics and References can be mentioned.
- Capacity development for intersectoral intervention in the integrated management strategy of arbovirus, for the control of dengue, Zika virus and chikungunya should be improved.
- To address these challenges, better information systems, health analysis, documentation of good practices, evidence generation and knowledge management, based on cooperation networks, are required.

⁶⁴ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

The main indicators related to health registered in WHO⁶⁵ according to the DB consultation in June 2019 they are:

Nicaragua	
Total population (2016)	6,150,000
Gross national income per capita (PPP international \$, 2013)	4,440
Life expectancy at birth m/w (years, 2016)	72/78
Probability of dying under five (per 1000 live births, 2017)	17
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	190/103
Total health expenditure per capita (Intl \$, 2014)	445
Total expenditure on health as % of GDP (2014)	9

PANAMÁ

➔ The Panama Health System. It is a two-head system (Social Security Fund-CSS and Ministry of Health of the Republic of Panama -MINSAs as suppliers). The government called the dialogue for the transformation of the health system (July 2014) and in December 2015 the roadmap or white paper was presented that highlights the diagnosis of the health situation and the way to improve it, based on, the strengthening of primary health care (as professed by the Alma Ata Declaration). After this, the High-Level Commission was formed (integrated by the health and patient unions), which has provided necessary inputs for laws and dissemination of the need for coordination between the CSS and the MINSA.

The MINSA and the CSS have already approved most of the administrative distortions (salaries, regulations, programs, care protocols). Also, the National Drug Commission of Panama-CONAMEP was activated whose function is to make a unique list of medicines for Panama (already delivered). On the other hand, the planning directions of both institutions have divided the construction of health facilities and thus avoid the duplication of these.

⁶⁵ <https://www.who.int/countries/es/>

The health system of Panama is characterized by a fragmented system, where inefficiency and inefficiency persist, with poor use and provision of services, which is deepened by the lack of a continuous process of evaluation of expenditure or investment, to provide feedback on-budget execution.

Challenges: ⁶⁶

- Currently, chronic non-communicable diseases (especially those of the circulatory system) are the leading causes of death, both in men and women. Since its prevalence increases with age and since the aging process of the population will continue, chronic diseases are expected to continue to an increase in the future.
- The country must face the marked inequalities between the urban and rural population, both in terms of social determinants and the health situation of the various population groups.
- It is necessary to resolve differences in service coverage and access to quality integrated health services, which requires greater availability and better distribution of human resources, health infrastructure of all kinds, health technology, medicines, and other medical supplies.

The main indicators related to health registered in WHO⁶⁷ according to the BD consultation in June 2019 they are:

Panama	
Total population (2016)	4,034,000
Gross national income per capita (PPP international \$, 2013)	19,290
Life expectancy at birth m/w (years, 2016)	75/81
Probability of dying under five (per 1000 live births, 2017)	16
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	145/76
Total health expenditure per capita (Intl \$, 2014)	1,677
Total expenditure on health as % of GDP (2014)	8

⁶⁶ Health in the Americas. Regional overview and country profiles. PAHO - WHO, 2017

⁶⁷ <https://www.who.int/countries/es/>

DOMINICAN REPUBLIC

➔ As of 2001, a new legal framework for the health system is created, composed of a broad set of laws, regulations, norms and administrative provisions from different state institutions and institutions. The two fundamental legal tools are the General Health Law (Law 42-01) and the law that creates the Dominican Social Security System-SDSS (Law 87-01). Both regulations establish a complex system of institutions of public, private and non-profit nature, specialized in specific functions.

In terms of coverage, at the end of 2009, 34% of the population was affiliated with the new social security system. Of this total, 61% was affiliated through the contributory scheme and 39% through the subsidized regime. All of these people are affiliated with an ARS health risk manager who receives a per capita from the Social Security Treasury-TSS for each one. The user of the tax system can choose between the private providers offered by the ARS of their choice. The user of the subsidized regime can only be affiliated with the public ARS, which is called National Health Insurance-SENASA and uses the services of the public provision network or specialized private nonprofit hospitals. When there are no services in the public sector, SENASA pays for them in the private sector. These users have a preference when using hospitals and public clinics, as their waiting list is lower, and they have access to medications.

54% of the total population does not yet have health coverage and, therefore, remains in the old system, that is, it is served in the integrated public provision network administered by the Ministry of Public Health-MSP or pays with money from your pocket to private sector providers.

Social security funds increased substantially between 2007 and 2008, from 8 to 17% of national health spending as a result of the application of the social security contributory scheme. This transformed an important part of private voluntary insurance and private prepaid plans in ARS.

Challenges:⁶⁸

- The prevention and reduction of non-communicable diseases require an intersectoral approach to the adoption of norms and actions against the main risk factors in the population, in aspects such as those related to smoking and food labeling.
- Some social and health determinants of adolescents imply the need to adopt State policies regarding marriages between minors, therapeutic abortions and the absence of sexual education.
- Outbreaks of cholera and tuberculosis are resistant part of the challenges that require joint work with other countries in the region.
- The care of injuries due to external causes, disorders related to substance use, social violence and the prevention of murders of women have been consolidated as important problems for collective health.
- It is critical to improving the structure and systems of birth records, specifically in areas with higher poverty levels and border areas. It is estimated that 20.8% of the population between 0 and 5 years of age is not present in the registries, which constitutes an obstacle for the provision of basic services and health planning.

The main indicators related to health registered in WHO⁶⁹ according to the DB consultation in June 2019 they are:

⁶⁸ Salud en las Américas. Panorama regional y perfiles de países. OPS – OMS, 2017

⁶⁹ <https://www.who.int/countries/es/>

Dominican Republic	
Total population (2016)	10,649,000
Gross national income per capita (PPP international \$, 2013)	11,150
Life expectancy at birth m/w (years, 2016)	71/77
Probability of dying under five (per 1000 live births, 2017)	30
Probability of dying between 15 and 60 years, m/w (per 1000 population, 2016)	202/117
Total health expenditure per capita (Intl \$, 2014)	580
Total expenditure on health as % of GDP (2014)	4.4

Annex N° 9 – Fiscal space for health for financial and budgetary sustainability

➤ The political commitment to move towards universal health must be accompanied by a consistent fiscal commitment. In this sense, the concept of fiscal space for health refers to the ability of governments to allocate additional budgetary resources for the health system, without affecting the financial situation of the public sector or displacing other socially necessary expenses.

The fiscal space for health focuses on the capacity and viability of these additional sources of financing but does not answer all questions and aspects related to health spending. In cases where the path of transformation of the health system is defined in advance or the process of definition, studies of fiscal space can acquire crucial importance and effectively respond to whether interventions can be financed in a sustainably way. The volume of resources needed to move effectively towards universal health will depend on the costs of care, infrastructure and national prices and, therefore, may involve different efforts between countries.

The economy of the Region has stagnated in recent years, and there is some uncertainty about the future direction. Also, countries do not always follow the recommendation to develop an anti-cyclical fiscal policy, and governments face significant pressures to contain public spending. In this context, and if there is no return to the previous economic growth trajectories that favor in themselves an increase in revenue, a tension between social priorities is created that hinders efforts to increase health budgets.

Chart N° 18–Route to determine fiscal space



(1) *Espacio fiscal para la salud en América Latina y el Caribe -OPS.OMS -2018*

The conclusions reached by the PAHO-WHO Fiscal Space for Health study for Latin America in 2018⁷⁰ are:

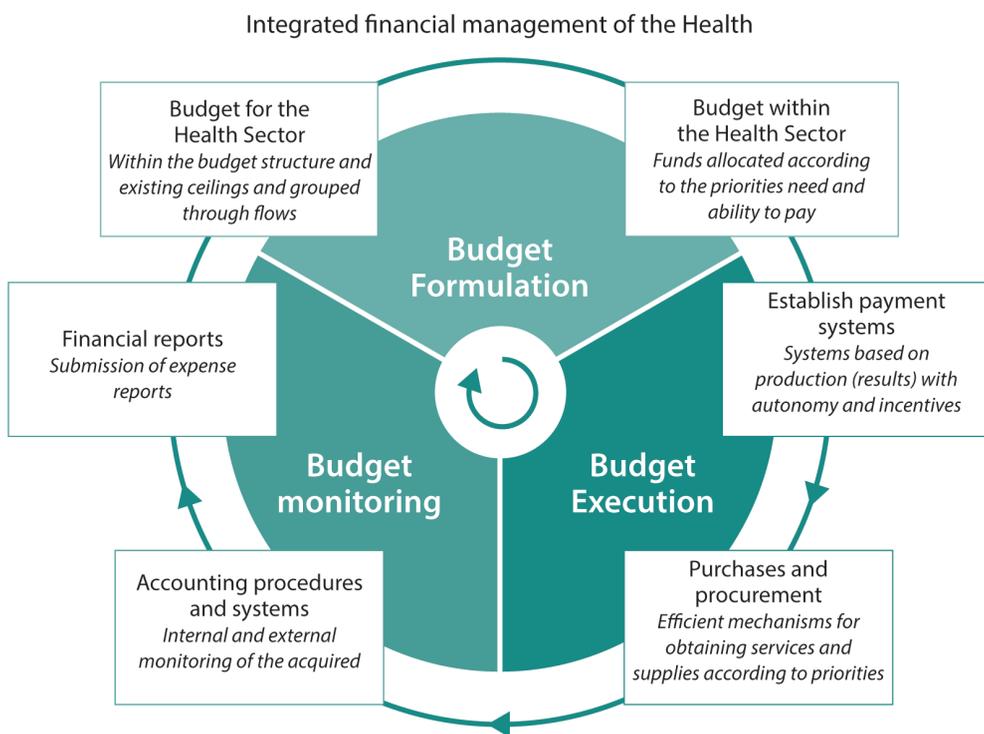
- In general, there is fiscal space for health in countries, and economic growth is not enough to occupy that space and respond to the need for financing.
- It is necessary to collect more and better fiscal resources.
- It is convenient to review tax expenditures to identify unfair or no benefit exemptions for countries.
- There are arguments and space to increase specific health taxes (mainly on alcohol and tobacco). Although the collection is low in these cases, the foreseeable savings for the system can be high.
- Politically, credits and donations are not a viable source for governments in the medium and long term.

⁷⁰ Fiscal space for health in Latin America and the Caribbean - PAHO-WHO - 2018

- Efficiency improvement measures must accompany these efforts, with the impetus of the principles established in the strategy for universal access to health and universal health coverage.

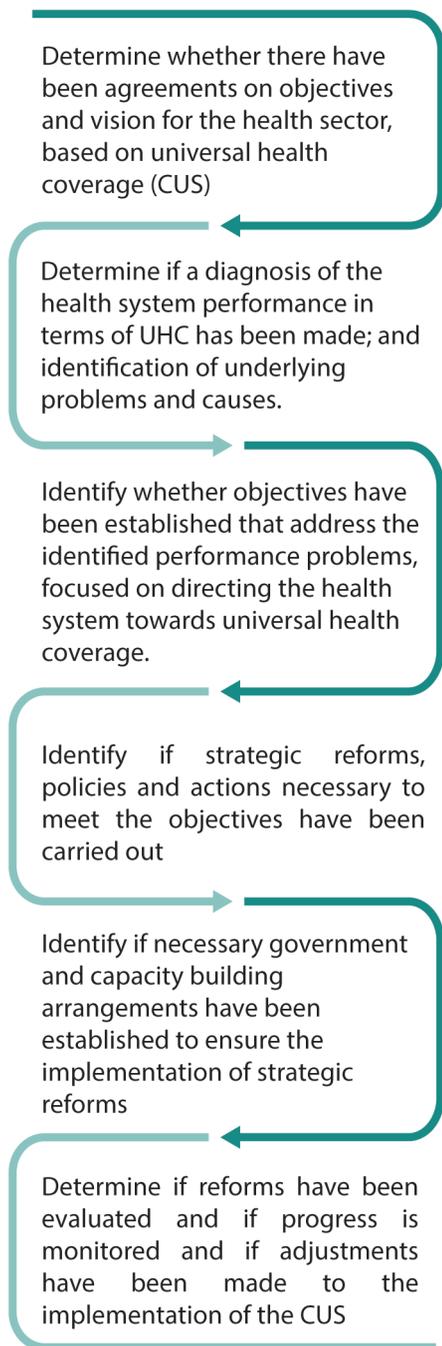
On the other hand, to achieve financial and budgetary sustainability, the resources required for tuberculosis laboratory networks must be ensured in the formulation and execution stages of the budget which can then be verified in the budget monitoring. If this is incorporated into reforms or guidelines to ensure universal health coverage, both mechanisms should be reinforced for the same purpose. That is, according to the financial structure and health coverage of the country, each Tuberculosis laboratory must require resources either through the program (free of diagnosis and treatment) or by including in the universal protection benefits all necessary diagnoses or treatments.

Chart N° 19–Identification of the degree of incorporation of project activities in the budget



Source: (WHO, 2017)

Chart N° 20 - Identification of the degree of incorporation of the activity in the mechanisms of the UHC Universal Health Coverage



Source: (WHO, 2017)

Annex N°10 – Resolution COMISCA 11-2019 - Regarding the sustainability of the PEED laboratories TB region SICA

CONSEJO DE MINISTROS DE SALUD DE CENTROAMÉRICA Y REPÚBLICA DOMINICANA



CONSEJO DE MINISTROS DE SALUD DE CENTROAMÉRICA Y REPÚBLICA DOMINICANA

RESOLUCIÓN COMISCA 11-2019

Relativa a la Sostenibilidad del Programa de Evaluación Externa del Desempeño (PEED), en los Laboratorios de Tuberculosis de la región SICA, en el marco de la Estrategia Fin a la Tuberculosis 2035
La Antigua Guatemala, Guatemala, 12 de junio de 2019

El Consejo de Ministros de Salud de Centroamérica y República Dominicana

VISTOS:

Los artículos 19 y 22 del Protocolo de Tegucigalpa a la Carta de la Organización de Estados Centroamericanos (ODECA); y los artículos 8, 15, 20, 21 y 22 del Reglamento para la Adopción de Decisiones del SICA.

CONSIDERANDO:

- I. Que de conformidad al Art. 19 y 22 del Protocolo de Tegucigalpa, los Consejos de Ministros responsables de otros sectores tendrán la responsabilidad del tratamiento de los asuntos de su competencia y sus decisiones serán de obligatorio cumplimiento.
- II. Que de conformidad al Art. 9 literal d) del Reglamento COMISCA 01-2017 denominado Reglamento de organización y funcionamiento del Consejo de Ministros de Salud de Centroamérica y República Dominicana (COMISCA) y su Secretaría Ejecutiva (SE-COMISCA), corresponde al Consejo de Ministros adoptar las decisiones que fueran necesarias para el cumplimiento de los objetivos de COMISCA e instruir a las demás instancias del sector salud sobre su cumplimiento.
- III. Que en la XLIX Reunión ordinaria del COMISCA, Resolución COMISCA 9-2018 relativa a la sostenibilidad de los Laboratorios Supranacionales para fortalecer los Laboratorios Nacionales de Referencia en materia de tuberculosis, se reconoció la importancia de la eliminación de la Tuberculosis y la sostenibilidad de los Laboratorios Supranacionales, instruyendo a la SE-COMISCA, la RedLAB y los Jefes de Programa de Tuberculosis un posicionamiento sobre el tema.

CONSEJO DE MINISTROS DE SALUD DE CENTROAMÉRICA Y REPÚBLICA DOMINICANA



- IV. Que en la XLIX Reunión ordinaria del COMISCA, Resolución COMISCA 14-2018 relativa al posicionamiento político sobre eliminación de la tuberculosis, enfermedades Crónicas No Transmisibles y 40 años de la Atención Primaria en salud, se reiteró el compromiso de la declaración política para la eliminación de la Tuberculosis, instruyendo a la SE-COMISCA a identificar mecanismos de articulación con los Estados Miembros para materializar los compromisos de las Declaraciones Políticas y lograr el fin a la Tuberculosis.
- V. Que en la Declaración del COMISCA para lograr el fin a la tuberculosis al 2035 declaramos avanzar en la lucha contra la eliminación de la tuberculosis en el marco de la Agenda 2030 para el Desarrollo Sostenible.
- VI. Que la Agenda de Salud de Centroamérica y República Dominicana (ASCARD) 2019-2030 establece como línea de acción reducir los riesgos y la carga de las enfermedades transmisibles, destacando poner fin a la Tuberculosis. B
- VII. Que el InDRE, de acuerdo con sus Términos de Referencia como LSN, debe garantizar el control de calidad externa de los métodos de diagnóstico (envío de paneles de evaluación externa de la calidad), Visitas de Asistencia Técnica (VAT), Pasantías en el área de Tuberculosis en el LSN.
- VIII. Que la RedLAB y los Jefes de Programa de TB, reconocen la necesidad de mantener el Programa de Evaluación Externa del Desempeño (PEED): visitas de asistencia técnica, Pasantías y el envío de Paneles, que garanticen la calidad del diagnóstico de Tuberculosis en la Región, apoyado por el Laboratorio Supranacional INDRE de México y solicita que se gestionen los mecanismos para alcanzar la sostenibilidad financiera del PEED de Tuberculosis. C

POR TANTO, Resuelven:

- I. Aprobar el mecanismo de sostenibilidad del Programa de Evaluación Externa del Desempeño (PEED) en el marco de la Estrategia Fin a la Tuberculosis 2035, asegurando la asignación de recursos financieros en los presupuestos nacionales de los Estados miembros del SICA, para garantizar la calidad del diagnóstico de Tuberculosis en la Región, mediante el apoyo establecido en los Términos de Referencia (TDR) del Laboratorio Supranacional (LSN) del Instituto Diagnóstico y Referencia Epidemiológicos Dr. Manuel Martínez Báez (InDRE) de México, sin afectar los actuales fondos de los Laboratorios de Referencia Nacional (LRN). D

CONSEJO DE MINISTROS DE SALUD DE CENTROAMÉRICA Y REPÚBLICA DOMINICANA



- II. Instruir a la SE-COMISCA gestionar ante la Secretaría de Salud de México se mantenga la asistencia del InDRE como Laboratorio Supranacional para los Laboratorios de Referencia Nacional (LRN) de Tuberculosis de los Estados Miembros del SICA.
- III. La presente resolución es obligatoria para los Estados miembros y entrará en vigencia en la fecha de su firma, deberá ser depositada en original en la Secretaría General del SICA para su registro y publicación en la Gaceta Oficial Digital del SICA.

Adoptada en La Antigua Guatemala, Guatemala, a los doce días del mes de junio de dos mil diecinueve.

Dr. Carlos Enrique Soto Menegazzo
Ministro de Salud Pública y Asistencia Social de Guatemala
Presidente Pro – Tempore del COMISCA

Dra. Alejandra Acuña
Viceministra de Salud de la República
de Costa Rica

Dr. Óscar Hernández
Representante Adhóc Ministerio de
Salud de la República de El Salvador



Hon. Pablo Saúl Marín
Ministro de Salud Pública de Belize

Dra. Marina Janette Aguilar
Representante Adhoc de la Secretaria
de Estado de Salud de la República de
Honduras

Dr. Enrique Beteta Acevedo
Viceministro de Salud de la República
de Nicaragua

Dr. Miguel Mayo Di Bello
Ministro de Salud de la República de
Panamá

Lic. Luis Cruz Holguín
Representante Adhoc del Ministerio de
Salud Pública de la República
Dominicana



Andean Health Organization Hipólito Unanue Agreement

Av. Paseo de la República N° 3832, Lima 27 – Perú

Tel.: (00 51-1) 422-6862 / 611 3700

<http://www.orasconhu.org> contacto@conhu.org.pe