

TECHNICAL NOTES

Webinar series

Innovative Primary Health Care Models in Colombia

6

Sixth Webinar Innovations in the prevention and control of communicable diseases from Primary Care

Tuesday, September 27, 2022

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Webinar series
Innovative Primary
Health Care
Models in Colombia

Innovations in the prevention and control of communicable diseases from Primary Care

Tuesday, September 27, 2022

Schedule by countries
4:00 p.m. Colombia, Ecuador, Peru, Mexico
3:00 p.m. Costa Rica
5:00 p.m. Washington
6:00 p.m. Argentina, Uruguay, Chile, Brasil

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The new surveillance in public health for infectious diseases. Lessons from the pandemic

Martha Lucia Ospina

Director of the National Institute of Health – Colombia



Innovations in immunoprevention. Diagnosis and treatment of infectious diseases in Primary Care

Carlos Arturo Álvarez Moreno

Vice President Clínica Colsánitas and
Coordinator of COVID studies in Colombia - WHO



Model of care for Chagas disease: Colombia case

Andrea Marchiol

Senior Chagas Access Project Manager - DNDi
Drugs for Neglected Diseases Initiative



Manuel Alfonso Medina Camargo

Coordinator of the vector-borne diseases
program of the Department of Boyacá-Colombia



Challenges of the Expanded Immunization Program (PAI) of Colombia

José Alejandro Mojica

Pediatric infectologist. Division of Communicable
Diseases, Ministry of Health and Social Protection



Discussion panel

Moderator: Gabriel Carrasquilla

Director of ASIESALUD and Member of the
WHO/GMP Malaria Policy Advisory Group (MPAG)

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* This document was translated by Ethical Method Language Solutions

Introduction

The Primary Health Care Performance Initiative - PHCPI, has been working for several years with different countries around the world in the measurement of Primary Health Care (APS, by its initials in Spanish) performance. In the case of Colombia, PHCPI has been building with the Ministry of Health and Social Protection of Colombia the [profile of the country's vital signs in PHC](#).

In this context, PHCPI wants to create a national Community of Practice that allows to learn and document lessons learned about the innovative models of Primary Health Care developed in Colombia.

The webinar series *Innovative Primary Health Care Models in Colombia* seeks to promote discussion on this topic. This document reviews the sixth webinar of the series: *Innovations in the prevention and control of Communicable Diseases in Primary Care*, held on September 27, 2022.

Special thanks to the speakers of the sixth webinar, who with their experience and knowledge initiated this dialogue that we hope will enrich the reflection and the work of Primary Health Care in Colombia. We would also like to thank the team of leaders and organizers of the webinars and the community of practitioners: Luis Gabriel Bernal, Oscar Bernal, Janet Bonilla, Yulieth Rodríguez, and Juan Carlos Jiménez.

Manuela Villa Uribe

Health Specialist, World Bank



Key Messages

Innovations in the Prevention and Control of Communicable Diseases in Primary Care

“The International Health Regulations are a legally binding and obligatory document for all countries. It was adopted at the 58th Assembly of the United Nations and updated after the COVID 19 pandemic. The regulation seeks to ensure that there is capacity to prevent the spread of communicable diseases on the planet.” *Martha Ospina*

“Making available to the community the technologies and human resources needed to solve problems where they occur is the true philosophy of Primary Health Care. A health reform must take into account that tests must be where they are needed and must be done by those who are close to the people. For example, it is outlandish to think that a glycosylated hemoglobin is level 2 and that it cannot be at the health posts. So, where are the diabetics?” *Martha Ospina*

“Point-of-care testing and molecular testing are innovations at the first level that generate a timely diagnosis. Failure to have a correct early diagnosis can lead to inadequate treatment or a change in treatment and further costs in the future.” *Carlos Arturo Álvarez*

“Rapid tests are a very useful element, but they have to be modified at the rate at which microorganisms are modified. This is why it is important to maintain active surveillance so that the performance of rapid tests remains effective.” *Carlos Arturo Álvarez*

“Ideally, early diagnosis should be carried out in primary care. It is important to prioritize tests for multiple diagnoses that allow the detection of different microorganisms, whether they are respiratory, or microorganisms that cause diarrheal disease, diseases of the central nervous system, or cause other clinical conditions such as sexually transmitted diseases. In the case of Colombia, out of 180,000 people living with HIV, only 130,000 know their diagnosis. Rapid and point-of-care testing is needed.” *Carlos Arturo Álvarez*

“Chagas disease is a neglected and silent pathology. It presents multidimensional barriers that hinder its care; these include structural, clinical, systemic, and psychosocial obstacles. Hence, surveillance and treatment models should be adapted to the different circumstances and contexts, considering that they should be within the reach of patients.” *Andrea Marchiol*

“Chagas disease needs a model of care: less than 10% of people have been diagnosed and less than 1% have been treated.” *Andrea Marchiol*

“In the Boyacá experience, developed in conjunction with DNDi, fundamental factors have been identified to reduce barriers to diagnosis and treatment. The first has to do with informing the community. The population must be aware of the problems related to Chagas disease and what they are really facing. The second has to do with the fact that all medical personnel in endemic areas must have Chagas disease on their agenda. They must know what they are talking about.” *Manuel Medina*

“In Chagas disease, it was previously considered that treatment could be formulated from the level of specialization, that is, by the decision of the internal medicine specialist. One of the issues addressed by this training is that treatment and follow-up can begin at the first level. In Boyacá, the diagnosis of Chagas disease increased 220% and the number of positive cases detected increased by 1,100%.” *Manuel Medina*

“The worrying decline in immunization coverage for some of the most common communicable diseases puts the most vulnerable population groups at greater risk.” *Dr. Luis Gabriel Bernal*

**After drinking water, what has had the greatest impact on public health is vaccines
By 2031 Colombia must have vaccination coverage of more than 95%**

“Looking at the data for the last two years, coverage began to fall in the wake of the pandemic. By August 2022, BCG coverage was at 57%, DPT at 58%, pentavalent and MMR at 59%, measles, rubella, and mumps at 57%, and booster at 53%. In other words, a few points below the target of 66%.

In July 2022, only one-third of pregnant women who should have received the pertussis vaccine had it.

For the elimination of measles and rubella, 76% has been achieved. There are 7.5 million children, 5.7 million of whom have already been vaccinated.

All children in Colombia receive three doses of polio in the first year, this year the fourth dose was included. The idea is that there will be only one dose of oral polio at five years of age and that by 2026 there will be no cases of wild

polio, which has not existed since 1991, nor of vaccine-derived polio.

Since 2014, HPV vaccination figures have not improved, and worsened when the pandemic hit. For the two doses, which start at age nine, only 32% have been vaccinated for the first dose and 9% for the second.

This year, the first dose is at 10% and the second at 3%.

It is necessary to strengthen communication with clear messages addressed to the community, making them aware of the risks.

Communication must engage families by giving them the certainty and assurance that vaccines are efficient, effective, and lifesaving.”

José Alejandro Mojica

Presentation

Innovations in the Prevention and Control of Communicable Diseases in Primary Care

Increasing early diagnosis and implementing appropriate education and communication strategies are key to the prevention of communicable diseases such as Chagas disease, HIV, or influenza



The Colombian and Argentinean speakers of the webinar: *Innovations in the Prevention and Control of Communicable Diseases in Primary Care*, agree on the urgency of improving early diagnosis with rapid tests, molecular technology, routine testing, patient search, and in general, elimination of social and clinical barriers against these diseases. The implementation of new community-based public health surveillance strategies, as well as increased access to technologies for prevention, diagnosis, and treatment, contribute to modifying the natural course of the most common and prevalent communicable diseases. The panelists stated.

One of the main challenges in the management of Chagas disease, HIV, and other communicable diseases is the lack of knowledge of the diagnosis on the part of those affected and the barriers to the management and care of these conditions. In the case of Chagas disease, according to the speakers, a model of care is needed, given that less than 10% of people have been diagnosed and less than 1% have been treated.

The work developed in Chagas by DNDi in several countries of the region, including Colombia, shows very positive results. In the pilot of the model of care performed in Soata (Boyacá), the diagnosis of positive cases increased by 1100% and the timely initiation of treatment by 63%. In the case of HIV in Colombia, more than 30% of people affected have not been diagnosed.

The webinar also provided an insight into Colombia's vaccination challenges in view of the worrying decline in immunization coverage for some of the most common communicable diseases, which puts the most vulnerable population groups at greater risk. In this regard, the speakers pointed out, it is necessary to strengthen communication with clear messages aimed at the community, making the risks known. It is necessary for the population to identify that, after drinking water, the thing that has had the greatest impact on public health is vaccines. Communication must engage families by giving them the certainty and assurance that vaccines are efficient, effective, and lifesaving.

Watch [video](#) in Spanish

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Context Interventions The New Surveillance in Public Health for Communicable Diseases. Lessons from the Pandemic



Martha Lucía Ospina

General director of the Instituto Nacional de Salud de Colombia - INS
(National Health Institute of Colombia)

Physician. PhD candidate in public policy modeling.

Specialist in public health management. Master in epidemiology.

Master in health economics and field epidemiologist.

With more than 25 years of experience in the health sector.

Former Director of the Cuenta de Alto Costo de Colombia (High Cost Account of Colombia), Director of Epidemiology of the Ministerio de Salud y Protección Social (Ministry of Health and Social Protection), and Vice Minister of Health of Colombia.

Has worked as a university professor for more than 15 years.

Updating the International Health Regulations: Epidemiology highlights the importance of transmission chains across the globe

Dr. Martha Lucia Ospina began her presentation with a historical account of the importance and significance of the International Health Regulations, which are a central element in addressing public health in the context of Communicable Diseases. Before the pandemic, says Dr. Ospina, this regulation seemed irrelevant, but it began to gain increasing visibility.

Since the IV World Health Assembly of the United Nations in 1951, a document was already in circulation that sought to bring countries into agreement to carry out actions for the control of some specific communicable diseases, in particular at ports of entry and exit for international trade. In 1969, these regulations were updated to define how to combat six diseases. The United Nations member countries are responsible for ensuring that these conditions are recognized throughout the world and are quarantinable, in order to prevent their spread from one territory to another, explains Dr. Martha Lucia. New revisions were made in 1973 and 1981. The regulation defined a group of three diseases.

Since 1995, with an unstoppable globalization, abundant commercial exchange and a constant flow of travelers -mainly using air transport-, epidemiology has provided evidence of the importance of transmission chains throughout the planet. In 2005, a complete and definitive version of the regulations was drawn up which is still in force, but after the COVID 19 pandemic it has been amended, says Dr. Ospina. The regulations were adopted at the 58th Assembly of the United Nations. It seeks to ensure that there are capacities to prevent the spread of communicable diseases on the planet. It is a legally binding and mandatory document for all countries.

Dr. Ospina points out that this regulation has a national scope, in that it must be applied within the countries. She points out that, at a given moment, all countries, departments, and municipalities turn out to be weak. For this reason, it is necessary to deploy basic control and prevention capabilities to the maximum.

The five capabilities established in the Regulations

The International Health Regulations establish five capacities. Countries, departments, or municipalities must have the powers indicated in the regulations, explains Dr. Ospina in her presentation.

1. *Monitor and identify something abnormal:* abnormal refers to epidemiological behavior that is not what it used to be. It is also an emerging event that is arriving or has never been seen before.
2. *Diagnose:* it consists of identifying the event, understanding what it is and what its characteristics are.
3. *Respond and prevent the spread:* in addition to recognizing the event, it is necessary to know what to do, according to its nature, seeking to prevent or mitigate the spread.
4. *Collect, organize, analyze, interpret, and disclose information:* so that those who must have an impact on prevention or mitigation have a

thorough understanding of the situation and its implications and can act in accordance with their functions.

5. *Communicate*: information about what is happening must circulate and reach different points.

Dr. Martha Ospina points out that the regulation has been socialized in multiple national and international workshops and conferences. The COVID 19 pandemic led to an update. In it, the lessons learned by high, middle, and low income countries that were very affected have been included.

Update of the International Health Regulations after COVID 19

Dr. Ospina explains how each of the capabilities have had post-pandemic adjustments and refinements.

1. **Monitor and identify anything abnormal.** This capability has the following updates:
 - a. *High-complexity healthcare providers survey*: These institutions have a natural ability to identify emerging events that were previously wasted, says Dr. Ospina. There is evidence of COVID 19 cases that occurred prior to December 2019 outside of China. If the Intensive Care Units had done the respective isolations of the virus that the patients had, they would have been able to identify the agent in a timely manner. The diagnostic capacity of high complexity healthcare providers is the first line of defense for a country to become aware of an event, before it has an overflow of cases. When, from surveillance, the deviation of a behavior was identified, it was because there was an excess of cases, explains Dr. Martha. Today we know that it is important for any patient in an Intensive Care Unit to have a diagnosis. There cannot be patients without a diagnosis. That is why isolations are important.
 - b. *Laboratory-based surveillance reengineering*: Surveillance by laboratories has traditionally been passive, explains Dr. Martha Lucia. Departmental public health laboratories used to wait for samples to arrive from the territories. Now, the laboratories must have two systems engineers who handle data and not paper records. It is powerful data that has all the clinical information. But, in addition, there must be those who make probabilistic samples in the national territory. The laboratory is in charge of ensuring that representative samples arrive to give an account of how the possible events are behaving and to give timely warning to surveillance.

- c. *Human epidemiological surveillance based on animal surveillance:* This is an important lesson for Colombia, Dr. Ospina points out. There is no national animal authority in this country. The ICA (Agricultural Colombian Institute) is the national authority for production animals and the Ministry of Environment has an area for wild animals; there is a lack for an institution for pets. Routine animal surveillance gives some very early alerts, which allow for an intervention in the animal world before the pathologies jump to the human world. This surveillance must be integrated: pets, production animals, and wild animals. In this case, it is not about animal welfare, it is about integrating the three animal foci in order to carry out human surveillance.
 - d. *Expansion of the type of notifiers:* Today, any person is a civil notifier. It can be a geneticist in a laboratory or a physician in a private practice. In the case of Colombia, Dr. Ospina points out, it is enough to enter the website of the National Institute of Health and notify an alert. This alert is collected and confirmed. Patient associations, community leaders, parents, school principals, or teachers, anyone can do it. In this way, a large base of rumors, messages, or news is gathered, which makes it possible to expand the notification base. Everything follows a confirmation path. The world is no longer the laboratory notification, it has changed. The large volume of data replaces the lack of precision that the laboratory may have, says Dr. Ospina.
2. **Diagnose.** This capability has the following updates:
- a. *Replacement of old diagnostic techniques by molecular techniques,* which are here to stay. The COVID 19 pandemic transformed the way of diagnosing, with a significant increase in PCR tests.
 - b. *Expansion of the molecular laboratory network* with a public-private strategy. Dr. Martha Ospina points out that, in Colombia, each departmental laboratory is being asked to have three in public-private networks, ready for when an emergency arises. Public-private networks are needed with laboratories that deal with three types of threats: enterohemorrhagic, exanthematic and respiratory. Alliances and networks must be alive and up to date so that, in the event of a new event, all the rings are activated, and diagnostic capacity continues to grow at the speed required.
 - c. *Metagenomics:* this change leads to overcoming the practice of making a blind diagnosis. Metagenomics makes it possible to extract the nucleic acids in the sample, reconstruct a genome, and send the information to a worldwide database to determine what it is and identify it.

3. **Respond and prevent the spread.** This capability has the following updates:
 - a. *Expanding the human resources of field and frontline epidemiologists:* Dr. Ospina points out that there are few field epidemiologists in the country. We have, she says, 140 field epidemiologists plus a new cohort of 19. The country needs at least 1,400. It is a basis that has to be increased and it is necessary to ensure their recruitment and permanence. Territorial entities must modify the hiring structure of these professionals and it is necessary to ensure their permanence. In a system in which the electoral dynamics define the hiring process, there is a risk of losing human resources. You cannot imagine, says Dr. Ospina, what it was like to deal with the pandemic in March 2020 with new professionals who had been hired in January 2020. Those who were trained in the battle against measles had already left.
 - b. *Risk Analysis Rooms and territorial Emergency Operation Centers:* It is new that there are Risk Analysis Rooms in all territorial entities. Today there are more than 18 permanent rooms. These are epidemiological analysis rooms. These rooms examine the data and report alerts. The Emergency Operations Centers must be able to collect rumors, gather information from everywhere, and thus build their own conclusions in an early manner.
 - c. *Expand and stabilize the human resources in the Health Departments in order to have immediate response teams on 24/7 shifts.* The National Institute of Health arrives within eight hours to any point in the country, but this does not replace territorial responsibility. Dr. Ospina stresses that it is a matter of the Primary Health Care field. Making available to the community the technologies and human resources necessary to solve problems where they occur is the true philosophy of Primary Health Care.
4. **Collect, organize, analyze, interpret, and disclose information.** This capability has the following updates:
 - a. *Boards for public use:* The publication of bulletins for epidemiologists continues, says Dr. Ospina, but now there are also news pages, and it is taken into account that users want quick readings. The novelty is in the presentation of public use boards in which there is also graphic information that is easier to understand.
 - b. *Open Data - Downloadable Datasets:* In addition to the bulletins, we offer the State's open data, explains Dr. Ospina. These datasets (downloadable datasets) are the best way to combine the contributions of different experts. These Datasets are also a record

of history, they remain published permanently. They are a snapshot of what was happening at a specific time.

5. Communicate. This capability has the following updates:

Addressing mass media and social networks: Dr. Ospina emphasizes how during the COVID 19 pandemic, everyone experienced an outpouring of communications from experts and influencers who, with mass messages, created an “infodemic” around the world through social networks. Now, this is the main focus of communication, and messages must be classified according to their origin, relevance, interference, and even the damage they can cause. Careful management of this information helps to ensure that the population is aligned with the actions that we know can be strategic, says the director of the National Institute of Health. From the orientation given to the messages, it is possible to obtain the collaboration of the citizenship with behaviors that help to face communicable diseases. It is known that there is no success without the help and participation of the community.

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Main Interventions Innovations in Immunoprevention, Diagnosis, and Treatment of Communicable Diseases from PHC



Carlos Arturo Álvarez Moreno

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Infectious Diseases Physician. Master in HIV and clinical epidemiology.

Doctor in Biological Sciences. Professor of Medicine at the Universidad Nacional de Colombia (National University of Colombia). Member of the National Academy of Medicine. Honorary Fellow of the American Society of Infectious Diseases.

Coordinator of the COVID 19 study in Colombia for WHO.

Point-of-care testing and molecular testing are innovations that generate a timely diagnosis at the first level of care

Dr. Carlos Álvarez focuses his presentation on the subject of diagnosis and takes as reference scientific publications that offer keys for the strategic approach to the diagnosis and immunoprevention of communicable diseases. He begins by pointing out that there is a change in the approach to disease diagnosis. There are traditional methods that have helped the development of mankind, but at this time, a timely diagnosis built with technologies that guarantee speed and precision and replace traditional methods is a priority.

The value of point-of-care testing

Dr. Álvarez explains what appears in one of the publications of the European Center for Disease Prevention and Control, ECDC, on “point-of-care testing.” These tests are designed so that patients do not have to go from one place to another or jump from a first level hospital to a second or third level hospital to have a diagnosis, but that the tests can be done in offices and first level hospitals.

Dr. Álvarez shows the results of a survey conducted in European Union countries by the ECDC that shows how they have replaced classic tests with point-of-care testing (POCT). Tests for communicable diseases or sexually transmitted infections are some examples of this practice in countries of the old continent, says Dr. Carlos Álvarez. Point-of-care testing prevents the patient from returning to the office. These tests are used to diagnose respiratory diseases, dengue or cholera. Although Malaria is not frequent in Europe, it is also diagnosed in this way, says Dr. Álvarez.

In the survey, Dr. Carlos Arturo said they ask what they use the tests for. The results indicate that they are used for surveillance systems, national reporting of communicable diseases, observing outbreaks and infection control problems, for diagnostic purposes and others related to resistance monitoring. Dr. Álvarez points out that these tests help to have diagnoses in less than an hour, even in ten minutes or less, which facilitates timely diagnosis. He adds that one of the public health problems, in the case of communicable diseases, is antimicrobial resistance. One of the difficulties in prescribing antimicrobials, says Dr. Álvarez, is precisely not having a diagnosis with good certainty. Timely diagnosis can facilitate the reduced use of antimicrobials.

Dr. Álvarez presents data from the *Journal of Clinical Microbiology* on testing with different techniques at the first levels of care that are used for the diagnosis of streptococcus, mononucleosis, and helicobacter. These are lateral flow methods and molecular methods that can facilitate timely diagnosis. The latter were used with COVID 19 and for detection of the infection caused by Sars Cov 2.

Dr. Álvarez goes on to show data from a *Taylor and Francis Group* molecular diagnostics expert review that refers to the inclusion of antigen testing for COVID 19 as one of the cases that definitely shorten times. Other technologies such as PCR or RT-PCR, which were unthinkable two decades ago, can now be used at the point of care to facilitate timely diagnosis.

Dr. Álvarez details the usual pathway of a traditional versus point-of-care test based on information from an article in the *BioChip Journal*. The traditional test requires, says Dr. Carlos Arturo, that after the consultation with the primary care physician who requests a laboratory test and the collection of the sample, the patient must wait for the sample to be transported to a higher level of care laboratory to make a molecular diagnosis or a classic culture diagnosis, and

it is not that I am suggesting that cultures should not be done, they should be maintained in some cases, Dr. Álvarez specifies. Testing at the point-of-care shortens times, reaching a ratio of less than one hour versus 24 hours for traditional testing in European times. In our territory, the time gap may be even greater, says Dr. Álvarez.

Traditional culture-based vs. molecular methods in diagnostic tests

The comparison between traditional culture methods and molecular methods involves different aspects, explains Dr. Álvarez:

- *Response time*: The traditional method may take days; the molecular, minutes or hours.
- *Sensitivity*: Low average for the traditional method and high for the molecular ones.
- *Cost*: Low for traditional, can be relatively expensive for molecular methods.
- *Expertise*: High for traditional methods and medium for molecular methods. This may be debatable, says Dr. Álvarez.
- *Number of pathogens that can be identified*: One with traditional; several in parallel with molecular.
- *Accuracy*: Can be subjective in the traditional method and high in the molecular method.

Failure to have a correct early diagnosis can lead to inadequate treatment or change of treatment and future expenses.

The cost factor, Dr. Álvarez notes, turns out to be very relative. Many times, not having a correct early diagnosis can lead to inadequate treatment or to changing the treatment and, in the future, more expenses.

Dr. Álvarez brings to the presentation an example of the management of pneumonia, which may occur differently if the empirical or the directed method is used in its diagnosis. In the first case, it is diagnosed and treated according to the recommendations of the clinical practice guidelines, the patient receives a combined therapy, at least two antibiotics are prescribed, an antiviral is started, another antibiotic is added if there are risk factors, and there is little possibility of identifying microorganisms by classical methods. If done the other way, Dr. Alvarez points out, there is a rapid de-escalation of antibiotics, a targeted management of viral infections, a high possibility of identifying microorganisms, as well as less antibiotic pressure and, therefore, less antimicrobial resistance.

Molecular testing, a paradigm shift in different scenarios

The advantages of molecular testing, Dr. Carlos Arturo explains, can also be seen in other scenarios such as tuberculosis. Although, for many years we have encouraged, promoted, and taught the use of culture tests despite the sensitivity that we know these tests have. But today the recommendation from the World Health Organization is to move towards the use of molecular tests instead of culture tests for the initial diagnosis of this disease. This initiative may seem an outburst, he says, but it is necessary to start demystifying the use of rapid molecular tests, not only for reference laboratories or tertiary care hospitals, but as the INS did in different parts of the territory with Sars Cov 2. The recommendation in the new WHO guideline notes that these paradigm shifts also apply to pap smears, which are starting to be performed with rapid molecular tests for the detection of human papillomavirus. We have a lot of progress to make in this field, says Dr. Alvarez.

Ideally, early diagnosis should be made in primary care

When Sars Cov 2 is circulating and about 5 or 7 respiratory viruses are still circulating, it becomes necessary to know the etiologic agents, says Dr. Carlos Álvarez. This is not only important for epidemiological surveillance, but also for the clinical management of patients in a health institution. It is ideal for early diagnosis to be carried out from primary care itself. It is important to prioritize tests for multiple diagnoses that allow the detection of different microorganisms, whether they are respiratory, or microorganisms that cause diarrheal disease, diseases of the central nervous system or cause other clinical conditions such as sexually transmitted diseases.

At this point, Dr. Álvarez emphasizes the importance of a correct diagnosis at the first level, as it helps to avoid what has been seen with COVID 19: 3.5% of patients had coinfection, but 71% of patients received antimicrobials. This explains the excessive use of antimicrobials at the beginning of the pandemic.

In the case of Sars Cov 2, in addition to molecular testing, antigen testing improved the timeliness of diagnosis and facilitated access to outpatient therapies at the first levels of care.

Colombia was a leader in the use of this type of tests and had the possibility of having the combination of antigen and molecular tests in different parts of the territory.

In the case of Colombia, out of 180,000 people living with HIV, only 130,000 know their diagnosis. Rapid and point-of-care testing is required

Dr. Álvarez explains that the use of rapid tests in Primary Care also contributes to the case of sexually transmitted diseases, which include individual or combined diagnoses for chlamydia, treponema, and others. This facilitates treatment decisions. In the case of people living with HIV, Dr. Álvarez points out, only 81% know their diagnosis. A significant percentage remains to reach the WHO goal of 90 or 95%. In the case of Colombia, out of 180,000 people living with the disease, only 130,000 know their diagnosis. This gap is present in different Latin American countries and, specifically, in Colombia, being even greater than 33%. This may be due to a low supply of rapid tests in places where people consult, but also because of the early initiation of sexual relations, which in some cases leads to infection.

Globally, the recommendation is, therefore, to increase diagnosis in order to decrease transmission. Just as in the case of Sars CoV 2, if diagnosed early, the possibility of transmission is reduced; the same happens with HIV. If people know their diagnosis early and start antiretroviral therapies of viral suppression status, transmission decreases very quickly and this means that the diagnostic strategy not only achieves a personal benefit but also a global one, explains Dr. Álvarez, an expert in HIV.

Although strategies based on first level institutions have prevailed in Colombia, the recommendation is to design tactics based on the community. Individuals, community leaders, and key groups should contribute to interventions in homes and similar settings to facilitate diagnosis and, in this way, reduce transmission.

Molecular tests are not less efficient just because they are fast

Molecular tests are not less efficient just because they are fast, stresses Dr. Carlos Álvarez. There are rapid tests that have the same or even higher performance than classical tests. The important thing is that these tests are applied and that the appropriate controls and follow-up are carried out.

Rapid tests in primary care and in the community are already being used. For example, in Canada there is a level of acceptance for these to be distributed in places such as pharmacies, kiosks, public events, or in rapid testing machines, among others. In Colombia there is still a limitation and a certain timidity in the development of these strategies.

Dr. Álvarez indicates that outbreaks such as those of smallpox make it necessary to keep in mind that rapid tests are needed in a timely manner in order to reach an early diagnosis and help avoid the impact of this manifestation of communicable diseases.

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Implementation of an Intervention Strategy to Improve Access to Care for Chagas Disease in Colombia



Andrea Marchiol

Senior Manager of the Chagas Access Project - DNDi

Physician. Argentina. Coordinator of Doctors without Borders in Bolivia.
Works in the medical and access management of DNDi,
Drugs for Neglected Diseases Initiative.

Chagas disease needs a model of care: Less than 10% of people have been diagnosed and less than 1% have been treated

To begin with, Dr. Andrea Marchiol presents an overview of the purposes and characteristics of DNDi (Drugs for Neglected Diseases Initiative). It is an international organization whose mandate is to research new therapeutic tools for neglected diseases. To this end, it has made a selection of these diseases, explains Dr. Marcholi. Today it has ten in its portfolio.

DNDi was created in 2003 by several public and private institutions. It is permanently supported by the World Health Organization and Médecins Sans Frontières. Since its creation, DNDi has launched nine treatments for neglected diseases. These treatments are adapted to the contexts of those who need them, seeking ease of use. DNDi works in a networked research process, with more than 120 institutions around the world. It has more than eighty partners from public health platforms.

Dr. Andrea Marchiol explains some of the reasons for the design of a specific model of care for Chagas disease.

1. ***It is a neglected disease:*** Despite some progress in the control of Chagas disease in Latin America, it is estimated that less than 10% of people have been diagnosed, and less than 1% have been treated with specific antiparasitic drugs. In the Colombian epidemiological profile, the figures are at the same level as in the region.
2. ***It is a silent disease:*** Its evolution is stealthy and chronic. This makes health services take less account of it than other diseases. Finding patients can be very difficult.
3. ***Multidimensional barriers hinder their care:*** Structural, clinical, systemic, and psychosocial obstacles. Hence, surveillance and treatment models must be adapted to the different circumstances and contexts, so that they are within the reach of patients.

Among the multidimensional barriers that hinder care, Dr. Andrea points out:

- ***Systemic barriers:*** There are regulatory impediments to access medications and diagnostic tests; there are supply problems; lack of routine testing, which translates into insufficient screening of patients; low awareness of Chagas disease; communication problems, and lack of visibility of the disease.
- ***Structural barriers:*** These are related to poverty, rurality, migration, unemployment, and informal employment.
- ***Clinical barriers:*** These are reflected in the lack of updated guidelines, in medications that have safety limitations, in problems in healing the disease, and in the complexity of achieving diagnoses.
- ***Psychosocial barriers:*** Fear and stigma persist, as well as normalization and acceptance of Chagas disease.

Model 4 D: Intervention in Colombia for Chagas disease.

In Colombia, DNDi, says Dr. Andrea, began working with partners, stakeholders, responsible authorities, programs, and territorial entities to create a strategy to identify and define an area of intervention based on a networking model. A pilot was proposed to start on a smaller scale and demonstrate the feasibility of implementation, successes, and lessons learned. It started with a low investment in the hope that, if the results are successful, the strategy can be replicated, expanded, and scaled up. This guarantees sustainability from the

outset since it is implemented within the framework of the country's own health system.

The 4D Model consists of four steps, explains Dr. Marcholi:

- 1. Diagnostic phase**, which includes a barrier seminar in which, collectively, the difficulties that exist in health care for Chagas disease are identified.
- 2. Design of the model**, based on the identification of obstacles, solutions aimed at eliminating them are proposed; care pathways are designed with partners and counterparts (health system, ministries, vector control programs for Chagas disease). A monitoring and evaluation plan is included, as well as a plan focused on information, education, and communication aimed at both the health system and the community. In the case of Colombia, the design of the care pathway is aligned with the priorities of the Ministry of Health and Social Protection and the recommendations of the Pan American Health Organization and WHO.
- 3. Implementation of the care route**, which triggers the access plan, the information, education, and training plan. Work is also being done to strengthen local capacities to ensure sustainability. These capacities correspond to different areas: human resources, laboratory network, and management network. In this step, the training of health personnel, the strengthening of data recording, surveillance, and the possibility of having *trainers of trainers* for the future sustainability of the actions stand out. In addition, there is the accompaniment and technical support in the updating of guides, manuals, and guidelines.
- 4. Impact demonstration**, which is based on the analysis of pre- and post-intervention data and the compilation of lessons learned, in order to make visible and share experiences. The factors underpinning the demonstration are total number of patients screened, patients confirmed per year, days waiting for results, and days waiting to initiate treatment.

On this subject, Dr. Marchiol notes that Dr. Manuel Medina's presentation will include data from the department of Boyacá (Colombia), which can be summarized as an exponential increase in the number of patients screened and confirmed, and a reduction in the number of days waiting to confirm the diagnosis and initiate treatment.

Access milestones in Colombia

Dr. Andrea Marchiol closes her presentation by mentioning the stages applied in Colombia:

- Identification of access barriers.
- Assistance to the National Institute of Health – INS in the design of a new serological diagnostic algorithm.

- Implementation of five pilot projects in the most endemic areas of the country, with a successful impact.
- Replication of the simplified model to be much more effective in terms of implementation at the primary care level. This is expected to lead to an expansion and scaling up of the comprehensive care routes. All this goes hand in hand with the strategy of eliminating not only Chagas disease, but also hepatitis B, HIV, and syphilis in the maternal and infant population.

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Implementation of an Intervention Strategy to Improve Access to Care for Chagas Disease. The Experience of the Department of Boyacá



Manuel Alfonso Medina Camargo

Coordinator of the Vector-Borne Disease Control Program of the Secretariat of Health of Boyacá.

Veterinary Doctor from UDCA.

Second year student of the Master of Public Health at the Juan N Corpas University.

In Boyacá, the diagnosis of Chagas disease increased 220% and the number of positive cases detected increased by 1,100%.

Dr. Manuel Medina's presentation focuses on the implementation of the model of care for Chagas disease in the department of Boyacá, Colombia. Dr. Medina explains how the implementation of the pilot was aimed at reducing barriers to access and treatment at a collective level that are made at a national level articulated with individual actions.

Soatá, the pilot implementation site, is an endemic territory.

The municipality of Soatá is located in the north of the department of Boyacá in the center of the country. It has a high demand for diagnosis of cases in pregnant women and chronic cases, explains Dr. Medina. It is an endemic

territory in which the barriers to confirmation and authorization in all procedures had already been studied. Soatá is a second level regional center that concentrates eight nearby municipalities. It is a municipality certified under a home transmission interruption plan. Soatá is part of five municipalities directly associated with the hospital from the administrative and financial point of view, and there are three municipalities that are independent.

Following the structure of the model presented by Dr. Andrea Marchiol, Dr. Manuela Medina explains how it was implemented at the local level.

- 1. Diagnosis:** This was the first step, explains Dr. Medina; an update workshop was held in 2017. There, the community, the actors of the health system, the public, and private network of the municipality and surrounding municipalities were integrated. The workshop sought to inform and socialize the different aspects of the disease, seeking to empower people to learn about and face it.
- 2. Implementation:** Dr. Medina points out that the pilot program in Soatá was designed so that with just one sample taken, the diagnosis could be made from the outpatient clinic, passing through the laboratory and the Public Health Office of the municipality of Soatá, which was aware of each case in order to carry out the treatment in each of the municipalities where the patients were located.
- 3. Results of the implementation:** After the implementation of the pilot, it was found that around 2,000 people were diagnosed in a period of 32 months, which meant an increase of 220% in access to diagnosis, explains Dr. Manuel. The number of positive cases detected increased by 1,100% over the baseline. In addition, the time from medical order to diagnosis was reduced by 64% and by 63% between diagnosis and initiation of treatment.

Dr. Medina emphasizes that these results led to the conclusion that the comprehensive care route for Chagas disease had positive results, which is why we proceeded to the stage of scaling up to other municipalities, such as Moniquirá and Garagoa. In this process, some barriers were identified, such as the lack of equipment for diagnosis and treatment. In response, DNDi, with the support of the Department of Boyacá, donated this equipment, strengthening the installed capacity. In the same way, action was taken to address other barriers encountered. This ensured the success of the project, says Dr. Medina.

In the Tenza Valley, testing increased by 347%

Following the implementation of the pilot, the diagnostic network and access to treatment in the department of Boyacá have increased. Dr. Medina specifies that before 2017 there was only testing capacity in Tunja, the capital of the

department, and in Bogotá. Today, the network is strengthened in other municipalities.

Regarding the progress made in the department, Dr. Medina pointed out the results of the scaling up in the Tenza Valley, where the variable of tests performed for the general population went from 47 in 2018 to 201 in 2019, which implied an increase of 347%. For Elisa tests in pregnant women, it went from 159 in 2018 to 252 in 2019, with an increase of 60% over the baseline. Despite the limitations during the pandemic, the data suggest a trend towards strengthening screening in pregnant women and an increase in the general population, compared to previous periods, says Medina.

Despite the pandemic, access to treatment has been maintained and improved

In regard to access to treatment, Dr. Medina points out that in both the pilot and the staging, it is possible to confirm that in the municipalities of Soatá, Moniquirá, Garagoa, and Cubará, 78, 9, 15, and 89 diagnoses were made in 2020, respectively, for a total of 191.

In relation to adherence to treatment, Dr. Medina emphasizes that it is not close to 100%, so it is an aspect to be strengthened, although it exceeds the national level, which is 1% of the population. However, he also emphasizes that, despite the limitations during the pandemic, access to treatment was maintained and improved compared to the two previous years.

Chagas disease with a differential approach: U'wa indigenous population

Dr. Medina presents a project being developed with the U'wa indigenous community. Since 2014, more than 4,500 people have been screened. This work is done in coordination with DNDi and with several organizations, public and private entities at the national and departmental level, as well as with WHO, PAHO and the Pedagogical University of Tunja. More than 200 people with Chagas disease have been identified. For treatment, they have been transferred to the same site for a period of two months. This has been done with the support of healthcare providers and insurance companies. This experience, says Dr. Medina, should be highlighted and imitated in other places.

Challenges to improve the model and its application.

To close the presentation, Dr. Manuel mentions the major challenges arising from the implemented model:

1. To have administrative processes that facilitate access and contribute to the reduction of time.
2. To promote, from general medicine, the initiation of etiological treatment, follow-up, and pharmacovigilance.
3. To develop new simplified technologies for diagnosis and care from the first level of care. Dr. Medina takes up what Dr. Álvarez said and reiterates the need to use rapid tests, for which he points out that there are already advanced studies.

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Challenges of the Expanded Program of Immunization -PAI- in Colombia



José Alejandro Mojica

Subdirection of Communicable Diseases of the Ministerio de Salud y Protección Social of Colombia (Ministry of Health and Social Protection)

Pediatrician from the Universidad Militar (Military University).

Infectologist from the Universidad Autónoma de México (Autonomous University of Mexico). Specialist in clinical epidemiology.

He has been linked to the Subred Sur and Clínica del Country in Bogotá.

University professor. Former medical director of Sanofi Pasteur.

By 2031 Colombia should reach a vaccination coverage of more than 95%.

Dr. José Alejandro Mojica began his presentation by saying that the Ten-Year Public Health Plan 2022- 2031 establishes that by 2031 the country must have vaccination coverage of over 95%. Colombia has international commitments such as the eradication of polio, the elimination of measles, and the control of other diseases. It has the responsibility to ensure vaccination without barriers for the entire population of the country, regardless of their origin or migratory status; people arriving in the country have the same vaccination rights as Colombians. Based on these major goals, Dr. Mojica presents the current status of vaccination in Colombia, the plans that are being advanced, the commitments that exist at the international level, and their challenges.

General strategic actions

Achieving the goals, says Dr. Mojica, requires a set of actions ranging from the sufficient purchase of biologicals, the introduction of new vaccines in the scheme, and the analysis of the impact of vaccines already implemented, to the strengthening of the articulation processes between the areas of public

health, surveillance and PAI (Expanded Program of Immunization, by its initials in Spanish), including the strengthening of the logistics operation, monitoring, and evaluation of indicators, among others.

Currently, Dr. José Mojica explains, Colombia has 21 biologics for 29 diseases and has the immunoglobulins to deal with rabies, diphtheria -which is now a threat-, and hepatitis.

Vaccination schedule in Colombia

Parents, says Dr. Mojica, are clear about the importance of having their children vaccinated eight times before the age of five: at birth, 2 months, 4 months, 6 months, 7 months, 1 year, 18 months, and 5 years. In addition, girls receive HPV vaccines at age 9. Women of childbearing age are vaccinated against diphtheria and as a result they have not been affected. Pregnant women receive three vaccines: influenza vaccine since 2005; the vaccine in the 14th week of gestation; pertussis vaccine in the 26th week. Now they receive the COVID vaccine at week 12. Older adults receive the influenza vaccine at 60 years of age.

Vaccination coverage began to decline in 2020 and in 2021, it stood at 86%

The country has been above 95% in vaccination coverage. There has been acceptable coverage for vaccines such as pentavalent, MMR, annual or booster vaccines. However, there is room for improvement. If you look at the data for the last two years, says Dr. Mojica, these coverages began to fall as a result of the pandemic. In 2020 they started to drop and, in 2021, they were at 86%. By August 2022, BCG coverage was at 57%, DPT at 58%, pentavalent and MMR at 59%, measles, rubella and mumps at 57%, and booster at 53%. That is, a few points below the target of 66%. At that time, the aspiration was to reach 86% or 87% coverage by December, says the representative of the Subdirection of communicable diseases of the Ministry of Health and Social Protection.

There are major challenges in the prevention of pertussis: only one third of pregnant women had received the vaccine.

In light of these indicators, Dr. Mojica says, there is a big coverage challenge in Colombia. One example is Tdap (pertussis) in pregnant women, which is the primary strategy to prevent pertussis in infants by vaccinating pregnant women. This was implemented around 2012. As of July 2022, coverage was supposed to be at 57% but was at 39%, meaning that barely a third of pregnant women had received pertussis vaccination. Dr. Mojica points out that with these indicators, a great challenge is looming because cases of pertussis and mumps are occurring in children under five years of age.

Only four out of ten seniors have received the seasonal influenza vaccine

In Colombia there are two epidemiological peaks, says Dr. Mojica, one in May-June and the other in September-December. Of all the viruses circulating, influenza is the most preventable, as is COVID 19. The vaccination strategy gives priority to a group of people: children from 6 to 23 months, pregnant women from the 14th week of pregnancy, people over 60 years of age, people with risk diagnoses (particularly those with chronic diseases), and health sector personnel.

In the specific case of children, Dr. José Mojica continues, nine out of ten have received a dose of influenza. But the second dose, which is important because it guarantees efficacy, barely reaches half of them. A new dose comes every year and only 7 out of 10 have received it. On the other hand, coverage in pregnant women reaches 75%, and only half of the human resources in the health sector has received the vaccines. Dr. Mojica stresses that in 2021 health personnel were reluctant to get vaccinated. But what is most worrisome, considering that this is a population more likely to get sick and become complicated, is that only four out of ten seniors have received the seasonal influenza vaccine; the same happens with 70% of the population at risk.

If coverage is reviewed by territory, in about half of the country, older adults, persons at risk and children have not received the second dose of vaccination.

Challenges of COVID 19 vaccination

According to the National Vaccination Plan, Dr. Mojica explains, in Colombia 84% of the population has received at least one dose. 71% have received at least two doses. The first booster, he says, has been received by 42%, especially by the elderly; and only 13% have received the second booster. This situation raises several challenges in the field of vaccination against COVID 19. In the case of children, 66% have received one dose and 46%, the second, despite the fact that vaccination has been underway since October 2021 for children aged three to eleven years, with Sinovac. Of children 12 years and older, only 68% have received two doses and 26% have received the booster.

When reviewing the situation in the territories, vaccination is concentrated in the Andean region. The periphery, which is the most difficult area in Colombia, is in the red. The first booster has been effective in the Andean region and in the Amazon.

Challenges and international commitments

Colombia has international commitments in vaccination that are translated into plans. Dr. Mojica mentions them in detail:

Sustainability plan for the elimination of measles-rubella and RSV, 2021-2031. The challenge comes because of vaccination gaps, as well as the geographical proximity, border, and migratory movements with Brazil, which, since 2017, has had measles outbreaks. For this reason, an additional dose of measles-rubella is being given in Colombia. This measure has also been taken in the Americas, where there are thirty million children to be vaccinated. Mexico has already done so. In Colombia it is an additional dose at five years of age. Seventy-six percent has been reached. There are 7.5 million children, of which 5.7 million have already been vaccinated.

Polio elimination plan 2019 -2026. It is a major challenge for the country. Colombia has been certified since 1994. The country is in the process of phasing out oral polio and seeks to have coverage above 95%. In the last ten years, coverage has been above 90%. However, surveillance for flaccid paralysis, which is one of the important indicators, has been partially achieved, explains Dr. Mojica. He says that 15 days ago an alert was issued by the United States due to a case of polio in a 20-year-old unvaccinated young man. Dr. Mojica explains that in Colombia the fourth dose was included this year. All children in Colombia, he says, receive three doses of polio in the first year and this year the fourth dose was included, and the idea is that there will be only one dose of oral polio at five years of age, and that in 2026 there will be no cases of wild polio, which has not existed since 1991, nor derived from the vaccine.

Yellow fever elimination plan, 2026. This plan is strategic in a region like Latin America, where there is now an active outbreak in Brazil, Bolivia, Peru, and Venezuela. This requires catch-up vaccination of all children and adults up to 59 years of age. Also, migrants and people traveling to areas where the vector is present.

HPV control plan. It is a distressing situation, says Dr. Mojica. The episode that took place in the municipality of Carmen de Bolívar (department of Sucre) in 2014 was a milestone. Since that time, the figures have not improved and even worsened when the pandemic arrived. For the two doses, which start at nine years of age, only 32% have been vaccinated for the first dose and 9% for the second. This year, he says, the first dose is 10% and the second dose is 3%.

2030 Hepatitis A and B elimination plan. By 2030, the idea is to eliminate hepatitis B, says Dr. Mojica. Colombia began universal vaccination in 1994. Today, priority is given to a group of people who are determinant in seroprevalence: men who have sex with men, transgender women, sex workers, people who inject drugs, and street dwellers. Vaccination is done in a 0-1 form

and at 2 months to update and impact this population. In this strategy, we work with the World Bank.

2030 Meningitis elimination plan. In Colombia, vaccination with PCV10 started in 2012. Then another vaccine, PCV13, was applied at two, four, and twelve months. We hope that this impact will be seen in the future.

Dr. Mojica also mentions the *Tetanus Elimination Plan by 2030*.

PAI 2022 - 2024 Challenges

Dr. Mojica presents the projection with which it is hoped to advance towards the major goals based on specific actions:

- Eradicate polio with all four doses and aim for a fifth dose by 2026.
- Maintain the measles-rubella campaign and in 2023 introduce a measles booster, not at five years of age but at 18 months.
- Eliminate hepatitis B including other groups. That was initiated in 2021 with the difficulties that the pandemic has entailed.
- Advance in the control of yellow fever.
- Defeat meningitis by switching from PVC10 to PCV13. This goes hand in hand with the application of an additional dose of haemophilus influenzae at 18 months.
- Continue the pilot hexavalent plan for premature babies in nine new centers in Bogota.
- Vaccinate against meningococcus.

Permanent challenges

Dr. José Alejandro Mojica presents the set of objectives and strategies that are being advanced in terms of vaccination to face the permanent challenges that the country faces in this area.

- To recover vaccination coverage in the population within the framework of the COVID 19 pandemic, considering vaccination as an essential health service.
- Strengthen communication directed to the family regarding access to vaccination and thus increase the population's confidence in the vaccination program, access to vaccines and safety profile.
- Strengthen extra-mural vaccination actions, developing inter-institutional, house-to-house vaccination tactics and strategies.

- Integrate vaccination against COVID 19 into the permanent program and guarantee its application in the 3,000 centers in the country. 2,000 have already incorporated it.
- Continue the response to the migratory phenomenon.
- Strengthen the nominal information system Paiweb.
- Implement the fourth dose of polio and PCV13.
- Strengthen the technical capacity of the health sector personnel.

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Discussion Panel

Innovations in the Prevention and Control of Communicable Diseases in Primary Care



Martha Lucía Ospina

Director of the National Health Institute of Colombia



Carlos Arturo Álvarez Moreno

Vice President of Innovation and Scientific Development, Colsanitas Clinic



Andrea Marchiol

Senior Manager of the Chagas Access Project - DNDi



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Coordinator of the Vector-Borne Disease Control Program of the Secretariat of Health of Boyacá



José Alejandro Mojica

Subdirection of Communicable Diseases of the Ministry of Health and Social Protection

Modera: Gabriel Carrasquilla



Physician. Master and PhD in Public Health from Harvard University. Former Secretary of Health of Valle del Cauca, Director of Health of the FES Foundation, Director of the Research Center of the Santafé Foundation of Bogotá, founder and director of ASIESALUD, Vice President of the National Academy of Medicine of Colombia, foreign corresponding member of the Academy of Medicine of Venezuela, member of the Malaria WHO policy advisory committee, emeritus researcher of Colciencias, advisor of the national health program of Colciencias and of the independent committee of proposals of Gaby; university professor. He has conducted and directed national and international research and projects. He has more than 100 publications in national and international journals.

The panel moderated by Dr. Gabriel Carrasquilla addresses the topics of reporting strategy, rapid tests, their evolution and access, the need to include some new vaccines in the country's Expanded Program of Immunization, and the importance of education, information, and communication in all health prevention strategies in both Chagas and vaccination.

A paradigm shift in the reporting strategy

Dr. Gabriel Carrasquilla points out that Primary Health Care is one of the central aspects of the next country health reform and, along these lines, asks Dr. Martha Ospina how to implement the reporting strategy she referred to in her presentation, taking into account that multiple actors such as communities and social leaders, among others, are expected to participate in this strategy.

Dr. Martha Lucía Ospina, director of the INS (National Institute of Health), explains that when different sources of information are mentioned in a reporting strategy, such as those already used in Colombia in various instances (in emergency operations centers, for example), it is necessary to consider that they work by drawing on different sources. These sources can contribute to build paths to the truth, although there are other paths.

It is possible, for example, to use trends in social networks today to find clues about specific situations. In Colombia, at the National Institute of Health, says Dr. Ospina, it is a type of information that is taken into account to track situations. Before the COVID 19 pandemic, during the second respiratory epidemic peak, there was a predominance of H1N1 in Cali; this was identified thanks to WhatsApp networks that grouped parents. We used these entry routes, says Dr. Martha Lucía.

To understand the relevance of the information found in social networks, Dr. Ospina explains, one could think of a Cartesian plane in which on the Y-axis there is a greater degree of diagnostic prediction, because there is access to laboratory tests (from prescriptive, antibody tests to very accurate molecular tests), and on the X-axis there is a volume of data. What the map shows is that it is possible to have a volume of data such as trends in social networks (Y-axis) while having very little diagnostic prediction (X-axis). Giving sensitivity to that measure is the same as having a cluster of cases identified with PCR.

The orthodoxy of the case, Dr. Martha Lucía points out, finding something suspicious that requires confirmation is not necessary in all events. With the notifications we feed ourselves daily, she says. In addition, we already know that there are families of notifiers, including independent professionals who are people through whose hands important information passes, but since they were not part of the notification system before, we were left without their information. Now we have that information. It was, then, a matter of alleviating that orthodoxy a bit and accepting these types of notifications, explains Dr. Ospina. You have

to rely on the apps to notify. Then there is the confirmation exercise. This is not only happening in Colombia, says the INS director, it is operating in surveillance systems around the world. Rapid tests, for example, says Dr. Martha Lucia, have a use in a context. Steps in hospital services can be bypassed if tests from emergency departments are used appropriately. Knowing how to use these algorithms even saves money. In short, it is a paradigm shift. In this type of “new surveillance,” she concludes.

Tests have to be adapted to the needs of each territory

Dr. Carrasquilla wonders how to ensure that rapid tests do not fail to identify parasites, viruses, or bacteriae that are not always easy to detect. Considering that at the first level these difficulties can be resolved if they occur. This is an issue, says Dr. Gabriel, that can happen, for example, with malaria.

Dr. Carlos Álvarez points out that addressing the difficulties of testing is emerging and that means continuing to learn, both in cases such as malaria and in cases of Sars Cov 2 and other diseases. There may be changes that cause yields to change, but that does not mean that tests cannot be taken where they are needed. They must be adjusted technologically and innovatively for different realities. It is clear that these tests are a good alternative, but when there is a resistance greater than 10%, they are not recommended. The diagnosis of malaria with rapid tests, says Dr. Álvarez, obliges us to modify them at the speed with which the microorganisms can be modified, and in this sense, it is important to maintain active surveillance so that the performance of the rapid tests continues to be effective. Rapid tests also have to be updated according to epidemiology, Dr. Álvarez points out.

On this aspect, Dr. Martha Ospina says that it is absurd to confuse the operational needs in health services with the payment structure for certain services. For this reason, she says, a healthcare reform should take into account that tests should be where they are needed and should be performed by those who are close to the people. For example, Dr. Ospina explains, it is absurd to think that a glycosylated hemoglobin is level 2 and therefore cannot be at the health posts. Where are the diabetics? In that sense, she continues, Chagas tests, including ultrasound scans for Chagas, have to be where the population is. The cost structure has confused the real routes of healthcare to the service of people.

Actions on education, information, and communication are relevant

Dr. Gabriel Carrasquilla wonders how to ensure that in the departments with the highest prevalence of Chagas disease in Colombia, such as Santander,

Arauca, and Boyacá, there is an adequate response on the part of the insurance companies responsible for health promotion.

Dr. Manuel Medina points out that the pilot project began in the departments of Arauca, Casanare, Santander, and Boyacá. Each one, with some municipalities in which the operational aspects were validated. Now, the intention is to scale up to the departments of Norte de Santander and Cundinamarca.

Dr. Manuel Medina points out that, in the Boyacá experience, developed in conjunction with DNDi, several key factors have been identified to reduce barriers to diagnosis and treatment. The first factor has to do with informing the community. The population must be aware of the problems related to Chagas disease and what they are facing. Actions in education, information, and communication are relevant.

In Chagas disease, treatment and follow-up can be started at the first level.

All medical personnel in endemic areas, says Dr. Medina, should have Chagas disease on their agenda and in their minds, and know what they are talking about. To achieve this, it has been important to socialize guidelines that explain its variants, forms of transmission, and presentation of the disease. In this task, we have gone from training 10 or 20 people to training 450 people directly in the endemic municipalities. Part of the content of this training has to do with the initiation of treatment. In the past, it was considered that treatment could be formulated from the level of specialization, i.e., by the internist's decision. One of the issues addressed by this training is that treatment and follow-up can be initiated at the first level of care.

Dr. Andrea Marchiol adds that there is a consensus that when care is strengthened at the first level, there is a greater capacity to reduce the barriers to it. To achieve this, she says, it is necessary to simplify procedures. In the case of diagnosis, rapid tests have been discussed in this webinar. Progress is being made with the National Institute of Health of Colombia for the evaluation of the performance of serological tests and the validation of rapid tests in the field is being monitored. In addition, DNDi is studying the reduction of treatment time. For this reason, a clinical trial is underway in which new times and new dosages are being tested, which would make it possible to simplify treatment with greater safety, less time, and greater adherence.

Territories must have the capacity to respond to timely diagnoses

Dr. Medina explains that the territories must have the necessary response capacity to carry out timely diagnosis. Until recently, he says, the tests had to

go to the National Health Institute and then to the departmental public health laboratories. Today, with a single sample, Chagas disease can be diagnosed directly in each of the territories, facilitating access.

Administrative barriers and paperwork for authorization were difficult to overcome. With the model that has been implemented, this aspect is simplified, given the clarity of roles at the departmental and national levels. Providers and insurers have obligations related to promotion and prevention. It is a model that adapts to the particularities of each territory in order to overcome scientific obstacles, which, although transversal in some places, are different in others.

After drinking water, vaccines have had the greatest impact on public health

Dr. Gabriel Carrasquilla asks about the plan of the Ministry of Health and Social Protection regarding the vaccination of the elderly for Pneumococcus and Herpes Zoster, which is a more painful disease than cancer. He points out that there are studies that show that vaccines such as Haemophilus influenzae, Hepatitis b, and Rotavirus entered the schedule very late.

Dr. José Alejandro Mojica explains that WHO recommendations are taken into account when introducing a vaccine. For Herpes, the data is being collected, but there is already data for pneumococcus. The other aspect that is being considered is the cost-effectiveness study. This study exists for pneumococcus in children; now it has to be done for the elderly, as well as for Herpes, says Dr. Mojica. In almost all the region, Mexico, Costa Rica, Panama, Peru, and Brazil, there is vaccination for Pneumococcus in the elderly. Colombia is awaiting the change from children to adults.

In the case of Herpes, the study, the disease burden, the budget and, in addition, the national and international political will must be brought together, Dr. Mojica points out.

In relation to coverage, the Expanded Program of Immunization (PAI) must be positioned, says the representative of the Direction of Communicable Diseases. COVID 19 has gained prominence, but we must continue to insist on the entire PAI and the diseases it includes. To this end, he says, it is necessary to strengthen communication with clear messages aimed at the community, making them aware of the risks. It is necessary for people to identify that after drinking water, what has had the greatest impact on public health are vaccines. Communication must engage families by giving them the certainty and guarantee that vaccines are efficient, effective, and lifesaving.

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