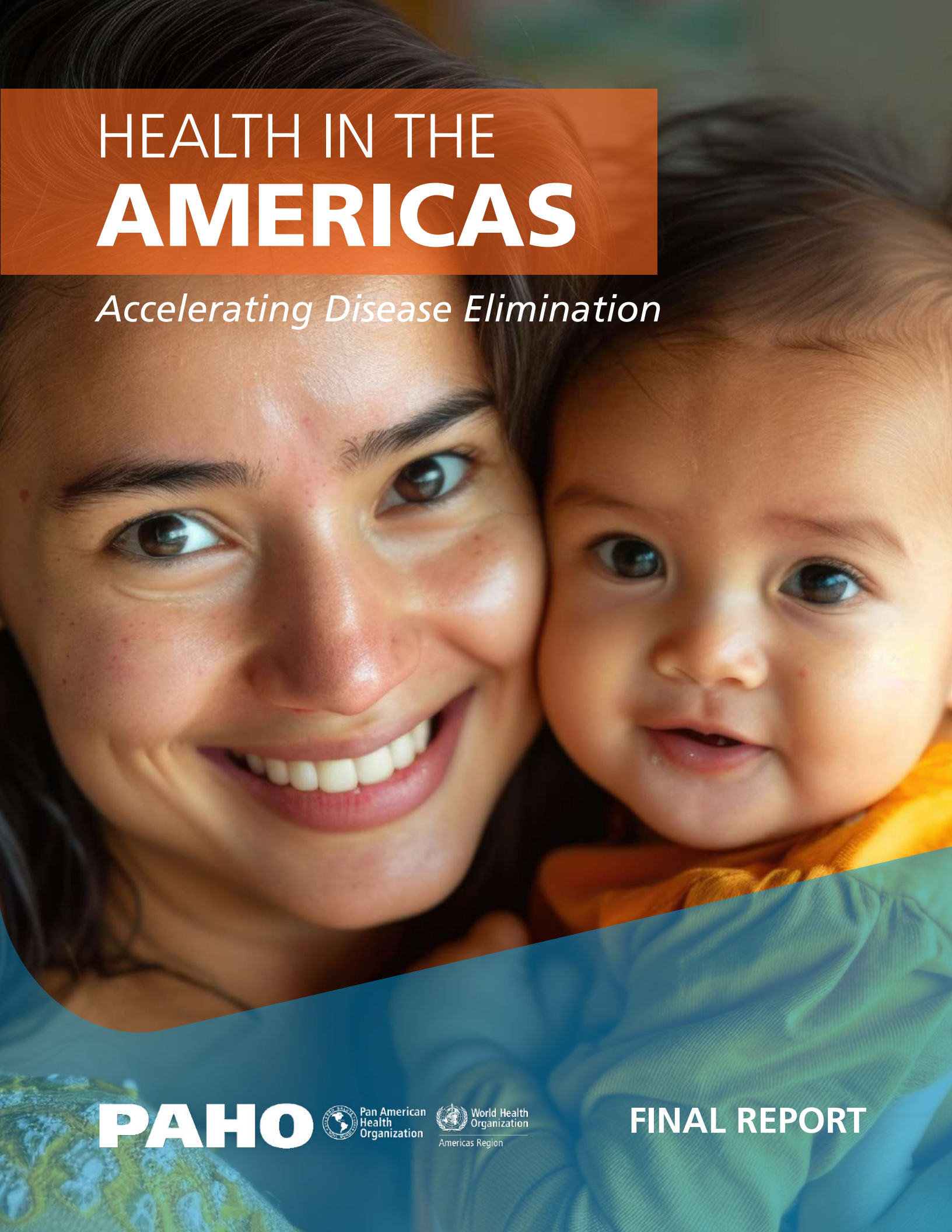

HEALTH IN THE AMERICAS

Accelerating Disease Elimination

PAHO Pan American Health Organization

World Health Organization Americas Region

FINAL REPORT

HEALTH IN THE **AMERICAS**

Accelerating Disease Elimination

Washington, D.C., 2024

PAHO Pan American Health Organization World Health Organization Americas Region

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FOREWORD

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In 2019, the Pan American Health Organization (PAHO) and its Member States approved the Elimination Initiative: an ambitious, comprehensive, community- and person-centered framework aimed at eliminating more than 30 communicable diseases and related conditions in the Americas by 2030. It builds on the Region's successes while addressing emerging challenges and further strengthening health systems. While the COVID-19 pandemic slowed the pace of the Elimination Initiative, programs developed many innovative approaches during this period to ensure the provision of quality healthcare services. These continue to be valuable strategies today.

In September 2023, PAHO relaunched the Elimination Initiative to stimulate a renewed, stronger, and more mature effort to complete its goal and implement lessons learned during the pandemic. This edition of Health in the Americas: Accelerating disease elimination examines why the Elimination Initiative is important at this moment in time, takes stock of progress toward its targets, and advances the discussion on what will accelerate actions necessary for achieving elimination targets.

The Elimination Initiative provides a common and sustainable framework to facilitate concerted efforts among countries, civil society organizations, communities, partners, and donors to work toward four fundamental lines of action required to achieve the elimination targets: (1) strengthening the integration of health systems and service delivery, (2) strengthening strategic health surveillance and information systems, (3) addressing the environmental and social determinants of health, and (4) strengthening governance, stewardship, and finance.

While the Region has made significant progress in disease elimination, its countries face ongoing challenges, and data reveal great disparities both among and within countries. Accelerating progress toward the initiative's targets requires urgent action to address social and environmental determinants of health. By focusing efforts on confronting the mechanisms that lead to inequities – and recognizing the needs of people in situations of vulnerability – disease elimination efforts will have a greater impact, leaving no one behind.

The Elimination Initiative is not just a possibility but also a call to action, promoting collaboration and innovation to transform health outcomes across the Region. Its framework is uniquely adaptable to the context of each country. Its tailored approach supports countries to create and implement specific action plans based on the endemic diseases and unique health challenges they face and customize strategies to local needs that maximize impact for countries to effectively eliminate targeted diseases and conditions.

Investing in disease elimination offers substantial benefits for both health and economic development in the Americas. Global estimates suggest high cost-effectiveness for interventions against neglected infectious diseases, with returns ranging from USD 25 to USD 115 per dollar invested across various diseases. The socioeconomic benefits of eliminating diseases like leprosy, leishmaniasis, and Chagas disease are estimated in the billions of dollars. Countries are called to action to tackle critical communicable diseases by harnessing regional expertise, driving high-level advocacy, forging partnerships, and integrating elimination efforts into primary health care. Cross-border collaboration, strategic alliances with donors, and community engagement are crucial for achieving and sustaining elimination targets, making a lasting impact in the fight against communicable diseases.

The Elimination Initiative presents a unique opportunity to foster collaboration among countries to overcome common challenges in their efforts to eliminate diseases and to share good practices, resources, and innovations. To accelerate disease elimination efforts in the Americas, Member States can continue to implement proven strategies, ensure access to health technologies, enhance data collection and use, emphasize intercultural approaches, and foster collaboration across sectors and stakeholders.

As the leading public health organization supporting countries in the Americas, PAHO – with historical roots firmly planted in controlling the spread of disease – remains steadfast in its commitment with Member States to achieve the targets of the Elimination Initiative.

Dr. Jarbas Barbosa da Silva Jr.
Director of the Pan American Health Organization

Acknowledgments

The Pan American Health Organization's *Health in the Americas* initiative is an organizational effort led by the Department of Evidence and Intelligence for Action in Health (EIH) under the direction of Sebástian García Saisó, EIH Department Director, and coordinated by Adrienne Cox, Health Analysis and Equity Metrics Unit Chief in collaboration with the Pan American Health Organization (PAHO) technical departments, PAHO/World Health Organization country offices, and Member States. This report is the result of collaboration among many individuals. The full report and additional material are available on the Health in the Americas portal (hia.paho.org).

This edition of the report, *Health in the Americas: Accelerating Disease Elimination*, focuses on PAHO's initiative to eliminate communicable diseases, under the direction of Sylvain Aldighieri, Director of the Department of Communicable Disease, Prevention, Control, and Elimination, and coordinated by Martha Saboyá, Senior Advisor of the Elimination Initiative.
The report coordination team included Adrienne Cox, Martha Saboyá, Oscar Martinez, Yackelin Fuentes, and Paulina Pacheco. Johns Hopkins Center for Communication Programs (CCP) were collaborative partners who provided technical assistance in the development, information and content synthesis, writing, editing, design, and layout of the report. The CCP team was led by Sarah Harlan (Senior Program Officer II), Mariana Ortiz Barreto (Communication Specialist), Marcela Aguilar (Communications and Marketing Manager), Rebecca Pickard (Senior Editor), and Mark Beisser (Art Director).

The report methodology and content were developed in coordination with the Health in the Americas Working Group: Ana Amaris, Ashley Baldwin, Ana Elena Chévez, Amalia del Riego, Philip Dingwall, Vanesa García, Ursula Guthe, Patricia Najera Hamrick, Thiago Hernandes, Pablo Jiménez, Paulo Leite, Christopher Lim, Alma Morales, Oscar Mujica, Ana Ortigoza, Dionne Patz, Blanca Peñaloza, Antonio Sanhueza, Patricia Soliz, Gina Tambini, Martha Velandia, and Andrea Vicari. Gratitude is extended to the working group members for the coordinated insightful inputs from the various technical teams, countries, and territories throughout the Region of the Americas.

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Abbreviations and Acronyms

AMR	Antimicrobial resistance
ART	Antiretroviral therapy
CHW	Community health worker
CIEDDS	Interministerial Committee for the Elimination of Tuberculosis and other Socially Determined Diseases
CIx	Concentration index
EMTCT	Elimination of Mother-to-Child Transmission Plus initiative
EIH	Evidence and Intelligence for Action in Health
EPHF	Essential Public Health Functions
GHSS	Global Health Sector Strategies
HBV	Hepatitis B virus
HPV	Human papillomavirus
IHME	Institute for Health Metrics and Evaluation
IS4H	Information systems for health
LGBT	Lesbian, gay, bisexual, and transgender
MBA	Multiplex bead assay
MDA	Mass drug administration
MDR	Multidrug-resistant tuberculosis
MTCT	Mother-to-child transmission
PAHO	Pan American Health Organization
PHC	Primary health care
ReLAVRA	Latin American Network for Antimicrobial Resistance Surveillance
RR	Rifampicin-resistant tuberculosis
RRF	Regional Revolving Fund
SAFCI	National Intercultural Community Family Health (Plurinational State of Bolivia)
SDIx	Sociodemographic index
SII	Slope index of inequality
STI	Sexually transmitted infection
WASH	Water, sanitation, and hygiene
WHO	World Health Organization

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Executive Summary

What is the Elimination Initiative, and why was it launched?

Since the founding of the Pan American Health Organization (PAHO) in 1902, the Region has made significant progress toward disease elimination. The Americas eliminated smallpox in 1974 (with eradication in 1980). In 1994, the Region was certified as free from poliomyelitis. Over the last several decades, the Region has eliminated a number of other diseases, including rubella, congenital rubella syndrome, and neonatal tetanus.

By the 2010s, the Region of the Americas faced a complex landscape of communicable disease challenges. Despite successes in eliminating various vaccine-preventable diseases, certain issues became more urgent, including climate change, vaccine hesitancy, healthcare inequalities, and novel infectious diseases. Recognizing that existing siloed efforts were insufficient to address these multifaceted problems, PAHO, under the leadership of former Director Carissa Etienne, initiated a bold, comprehensive framework. This initiative integrated services on a broader scale, tackling more than 30 diseases and conditions under one umbrella, while emphasizing a community- and person-centered approach to leave no one behind in the effort to conquer communicable diseases.

In 2019, PAHO and its Member States launched the Elimination Initiative, a comprehensive framework addressing more than 30 diseases and conditions in the Americas. Developed through key regional consultations and expert input, the initiative aimed to tackle broad categories of diseases responsible for the greatest burdens in the Region. However, the COVID-19 pandemic severely disrupted healthcare systems and revealed existing inequalities. Despite these challenges, the pandemic also revealed opportunities for more comprehensive health services. In 2023, current PAHO Director Jarbas Barbosa da Silva Jr. relaunched the Elimination Initiative, viewing it as a critical opportunity to strengthen healthcare systems, recover from pandemic setbacks, and accelerate progress toward universal health in the Americas.

The Elimination Initiative targets selected diseases that represent a significant burden and can be combatted using existing tools and technologies. The initiative also tackles diseases that disproportionally affect communities living in situations of vulnerability due to complex social, economic, and systemic factors. These groups include women; Indigenous peoples; Afro-descendants; rural communities; lesbian, gay, bisexual, and transgender individuals; migrants; and prison populations. As countries progress toward disease elimination, the initiative works to understand and improve the underlying conditions that hinder efforts among these communities.

PAHO developed four lines of action to guide the Elimination Initiative:

1. Strengthening the integration of health systems and service delivery;
2. Strengthening health surveillance and information systems;
3. Addressing the environmental and social determinants of health;
4. Strengthening governance, stewardship, and finance.

STATUS OF ELIMINATION TARGETS IN THE AMERICAS

The presence of more than 30 diseases and conditions in the Elimination Initiative varies across the Region's diverse countries and territories. While some diseases like **sexually transmitted infections** and **viral hepatitis** are in all settings, others – like vector-borne, zoonotic, and neglected infectious diseases – affect specific areas and populations. Consequently, each country tailors its strategies based on the context of each disease.

PAHO is monitoring progress toward specific indicators and targets for each of the 30+ diseases and conditions. Seven diseases have been eliminated regionally – **guinea-worm disease** and six vaccine-preventable diseases: **smallpox, poliomyelitis, rubella, congenital rubella, measles**, and **neonatal tetanus**. Some diseases, while not eliminated regionally, have been eliminated in certain countries. **Malaria** has been eliminated in 19 countries, and **elimination of mother-to-child transmission (MTCT) of syphilis and HIV** has been achieved in 11 Caribbean countries and territories. Several neglected infectious and zoonotic diseases – including **foot-and-mouth disease, plague, onchocerciasis, lymphatic filariasis, Chagas disease, trachoma, human rabies transmitted by dogs,** and **cholera** – have also been eliminated in certain countries.

Some countries are very close to elimination targets, but many challenges remain before countries achieve elimination status. For **yaws**, transmission has halted across the Region, but no country except Ecuador has officially confirmed this. Also, while unconfirmed, **human rabies transmitted by dogs** is close to being eliminated in 37 countries and territories, and for **foot-and-mouth disease**, eight countries will contribute to the global eradication process. Health officials suspect nine countries and territories in the Caribbean have eliminated **schistosomiasis**. For some other diseases – **cervical cancer, tuberculosis, hepatitis C, hepatitis B, HIV/AIDS, bacterial meningitis,** and **sexually transmitted infections** – no countries in the Region have achieved elimination targets. Eliminating **MTCT of HIV, syphilis, hepatitis B**, and **Chagas disease** is

also a major challenge in several countries, along with the elimination of **malaria, cholera, open defecation**, and **use of polluting fuels in the household**. And neglected infectious and zoonotic diseases still affect millions across the Region, particularly those lacking access to basic services – including health, education, water, and sanitation.

The Elimination Initiative faces significant data gaps across various diseases, geographical areas, and populations, hindering full recognition of its potential and effective implementation. Improving data quality through enhanced accuracy, completeness, and specificity is crucial for effective monitoring, evaluation, and resource allocation, ultimately leading to increased accountability and more tailored strategies for reaching all populations.

www.paho.org/en/data-portal-elimination

Explore the Elimination Initiative Regional Data Portal for up-to-date insights on the progress toward eliminating over 30 communicable diseases in the Americas by 2030. Visit the "Indicators and Targets" tab for detailed information on end-point elimination indicators and specific targets for each disease and condition.

PERSPECTIVES AND ANALYSIS ON PROGRESS TOWARD ELIMINATION

The Elimination Initiative faces complex implementation challenges, including healthcare disparities; political, technological, and economic barriers; inadequate surveillance, and cultural and linguistic diversity. *Health in the Americas: Accelerating Disease Elimination* analyzes several diseases that have not yet achieved their targets, to review what strategies have worked, what challenges exist, and what remains to be done.

Cervical cancer deaths in the Americas are projected to remain high by 2030. Comprehensive prevention strategies should include improving precancer screening, treatment of precancerous lesions, and providing universal access to the human papillomavirus vaccine. Despite no **cholera** cases in 2020 and 2021, a resurgence began in 2022 with thousands of cases reported in Haiti and the Dominican Republic. Because predicting future cases is difficult, cholera elimination efforts must focus on prevention, preparedness, and response alongside a strong surveillance system.

The Elimination Initiative is aiming for a 95% reduction in **open defecation** between 2020 and 2030. This behavior has been decreasing steadily; by 2026, the initiative forecasts that only 0.01% will be engaging in this practice, and in subsequent years, this value will reach close to 0. Similarly, the forecasting analysis indicates that by 2030, the estimated proportion of people relying on **polluting fuels in households** will be close to the Elimination Initiative target of 5%.

Syphilis rates are increasing in the Americas, leading to higher prevalence among pregnant women and increased congenital syphilis rates, with challenges including limited access to prenatal care, diagnostics, and treatment. Forecasts suggest that by 2030, the rate of **MTCT of syphilis** will

rise to nearly 3.7 per 1000 live births, diverging significantly from the elimination target of 0.5 per 1000 live births. The rate of **MTCT of HIV** in the Region has consistently decreased, but reaching the 2030 target (MTCT of HIV of 2% or less) requires scaling up access to HIV services for pregnant women. New **HIV** infections in the Region are decreasing, with projections indicating a rate of 0.14 cases per 1000 uninfected population by 2030, though this falls short of the 2030 target of 0.02 new cases per 1000 uninfected population.

Tuberculosis remains a leading infectious disease killer, globally. Projections indicate a possible increase of the incidence rate by 2030, underscoring the continued need for sustained efforts to combat tuberculosis in the Region. These projections indicate a need for tailored, information-based approaches to address disease foci in each country, particularly in mining areas and Indigenous communities where transmission rates remain high.

The Region faces deep-rooted structural inequalities that have an impact on health outcomes and opportunities. The diseases and conditions addressed by the Elimination Initiative disproportionately affect those living in situations of vulnerability, who face stigma, environmental challenges, and limited access to health care. For it to succeed, Member States must address underlying health inequities and identify social and environmental determinants of health. Rigorous health inequality assessments can help Member States implement culturally appropriate interventions to create lasting positive changes, prioritizing the most marginalized and underserved groups.

ACCELERATING ELIMINATION EFFORTS IN THE REGION

The cumulative experience of PAHO and Member States in disease elimination efforts has yielded valuable insights into integrated strategies for disease elimination. While implementation and context vary, all strategies listed below have potential for further acceleration.

Line of action 1 – strengthening the integration of health systems and service delivery:

- **Integrating multi-disease health services within primary care** at the local level can effectively reach communities where disease transmission persists. By incorporating successful practices from existing programs like the Elimination of Mother-to-Child Transmission Plus initiative, health services can offer comprehensive, integrated care during each patient interaction. This approach not only enhances the efficiency of healthcare delivery but also accelerates efforts to eliminate multiple diseases simultaneously.

- **Improved innovation and access to health technologies** can help combat communicable diseases. PAHO's Regional Revolving Funds provide affordable access to supplies, and its Special Program, Innovation and Regional Production Platform promotes innovation and to access to health technologies. Accelerating overall access to medicines, diagnostics and other essential health technologies, as well as the adoption of portable X-ray systems enhanced by artificial intelligence, can significantly improve the detection and treatment of tuberculosis. Additionally, innovative point-of-care diagnostics, like the dual test for HIV and syphilis, offer a powerful tool for countries to save lives and advance their progress toward disease elimination.

- **Water, sanitation, and hygiene (WASH)** programs help prevent and manage communicable communicable diseases, such as the case of the elimination of trachoma by increasing access to water for facial hygiene to prevent ocular infections or increasing access to water and sanitation to prevent intestinal parasitic infections in rural remote communities. Countries can expand existing WASH programs to integrate prevention and management of various diseases in the Elimination Initiative.

Line of action 2 – strengthening strategic health surveillance and information systems for health:

- **Enhancing surveillance and information systems for health** is crucial, particularly in underserved areas. Focusing on multi-disease surveillance efforts like the integrated serosurveillance or multi-disease molecular diagnostic platforms to improve efficiency and responsiveness in disease elimination efforts.
- **Data for decision-making at all levels** can be enhanced through disaggregated data, real-time data collection, interoperable platforms aligned with international standards, capacity-building in data science, and regional partnerships to harmonize surveillance efforts.
- **Addressing antimicrobial resistance** poses a significant threat to the prevention and treatment of infectious diseases. To meet this challenge, countries can improve data collection and sharing, advance access to diagnostics and laboratory techniques, and adopt a One Health approach.

Line of action 3 – addressing the environmental and social determinants of health:

- **Using available tools to measure and address equity** helps countries tailor interventions. Introducing simpler tools and accessing more community-level data would further enable strategies to address systemic barriers and needs of marginalized groups.
- **Using an intercultural perspective** can make disease elimination efforts more effective and sustainable. National strategies should include culturally appropriate health education materials, cultural practices, and local language materials.
- **One Health approaches** facilitate disease elimination at the local level by integrating human, animal, and environmental health services. To accelerate One Health programs, countries can improve surveillance, increase funding, and consider cultural factors.

- **Addressing climate change** is vital, as it has a significant impact on communicable diseases by expanding vector ranges and altering transmission patterns. Key strategies include enhancing cross-sector collaboration and building local capacity to improve resilience.

Line of action 4 – strengthening governance, stewardship, and finance:

- **Intergovernmental coordination** can ensure long-term sustainability of elimination programs. Key activities include integrating elimination goals into national health plans, coordinating cross-border health initiatives, and establishing high-level steering groups.
- **Public–private partnerships** provide essential resources, drive innovation, and enhance local capacity to implement comprehensive solutions. Countries can consider additional partnerships with private stakeholders, carefully considering local needs and context.
- **Civil society engagement** facilitates the use of local knowledge to enhance the effectiveness and cultural appropriateness of the elimination efforts. Scaling up this engagement across the Region is important, using flexible, community-led approaches.

Member States are encouraged to adopt and scale up these effective strategies to meet their disease elimination targets and provide more equitable, community- and person-centered care.

ACHIEVING ELIMINATION

The Elimination Initiative builds on past successes and utilizes available tools and strategies. The Region continues to see progress toward the Elimination Initiative's goal of eliminating more than 30 diseases and conditions by 2030. However, more remains to be done. To accelerate progress, PAHO and Member States are focusing on several areas: advocating for continued political and financial support, strengthening community engagement, improving intercultural services, implementing primary health care strategies, fostering cross-sector partnerships, embracing digital transformation, and ensuring access to new technologies. These efforts aim to create more resilient and efficient health systems.

In addition to setbacks exacerbated by COVID-19, key challenges in implementing the initiative have included funding constraints, health inequities, maintaining elimination status, engaging stakeholders across multiple disease treatment and prevention approaches, technological limitations, and migration-related issues. These obstacles require innovative solutions to overcome and ensure continued progress.

Looking toward 2030, the initiative emphasizes building more robust health systems and mitigating future disease threats. This involves enhancing disease surveillance, strengthening primary care, investing in research and development, scaling up One Health activities, and preparing communities through education. By integrating preparedness strategies for disease outbreaks into existing health systems, Member States can better support the Elimination Initiative while improving their ability to respond to future communicable disease threats. The ultimate goal is to ensure sustainable, consistent prioritization of enhanced surveillance, infrastructure, and community preparedness, even outside of crisis situations, thereby improving the well-being of individuals, communities, and economies across the Americas.

CHAPTER

1

Overview of the Elimination Initiative

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Summary

The Elimination Initiative is a comprehensive framework aimed at eliminating more than 30 communicable diseases and related conditions in the Americas by 2030. The Pan American Health Organization (PAHO) has deep roots in disease elimination, and the initiative builds on more than 120 years of public health efforts. Taking an integrated, multisectoral approach to address the complex patterns of disease transmission, the Elimination Initiative focuses on four key areas: (1) strengthening health systems and service delivery integration, (2) improving health surveillance and information systems, (3) addressing social and environmental determinants of health, and (4) enhancing governance and financing. The initiative emphasizes equity, targeting populations living in vulnerable conditions and considering the entire life course in its approach.

Mere months after the Elimination Initiative launched, the COVID-19 pandemic began and slowed the initiative's efforts. Even though progress has resumed post-pandemic, a number of other barriers still threaten to slow the progress of disease elimination efforts, including migration, the rise of noncommunicable diseases, health inequities, climate change, and resource constraints. Despite these obstacles, opportunities exist in the form of improved technology, increased awareness of social determinants of health, and innovations in service delivery accelerated by the COVID-19 pandemic. The Elimination Initiative provides a structured framework for countries to leverage these opportunities and address their specific contexts and priorities in the fight against communicable diseases.

Why the Elimination Initiative, and why now?

In the 2010s, the Region of the Americas was at a crossroads when it came to communicable disease elimination. While PAHO and its member states saw great success confronting certain diseases – particularly vaccine-preventable diseases like rubella and measles – new issues were emerging or becoming even more urgent. And despite progress improving health systems, developing new technologies, and strengthening multisectoral partnerships, there were more setbacks and challenges than ever. Climate change, vaccine hesitancy, inequalities accessing healthcare services, and new infectious diseases were just a few of the critical areas the Region was facing by the end of the 2010s. Clearly, the status quo disease elimination efforts were insufficient to tackle the complex patterns of disease transmission that continued to burden the Region.

While some programs tackled multiple diseases together, many diseases were still addressed in silos. PAHO and Member States recognized the need for a more ambitious, overarching framework to integrate services on a broader scale. Within this context, PAHO – under the leadership of Former Director Carissa Etienne – enacted a bold new initiative, one that brought structure and pragmatism to the complex problem of communicable disease elimination. It leveraged the structures that existed–systems, technology, integrated programs, and broad coalitions of stakeholders – and added a comprehensive framework that tied systems together to tackle more than 30 diseases and conditions under one umbrella framework. It also brought a community- and person-centered approach to the fore, ensuring that Member States leave no one behind in their efforts to conquer communicable diseases throughout the Region.

THE **AMERICAS**

Anguilla
Antigua and Barbuda
Argentina
Aruba
Bahamas
Barbados
Belize
Bermuda
British Virgin Islands
Bolivia
Brazil
Canada
Cayman Islands
Chile
Colombia

Costa Rica
Cuba
Curacao
Dominica
Dominican Republic
Ecuador
El Salvador
French Guiana
Grenada
Guadeloupe
Guatemala
Guyana
Haiti
Honduras
Jamaica
Martinique
Mexico
Montserrat
Nicaragua
Panama
Paraguay
Peru
Puerto Rico
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Sint Maarten
Suriname
Trinidad and Tobago
Turks and Caicos Islands
United States
United States Virgin Islands
Uruguay
Venezuela

How the Elimination Initiative was established

Key convenings – including a 2015 Regional Consultation on Disease Elimination in the Americas – helped make the case and build momentum for multi-disease elimination efforts. With PAHO's leadership, regional experts then developed the blueprint for what would become the Elimination Initiative. Unlike previous programs, this initiative was designed to not only combine diseases with similar modes of transmission (for example, syphilis and HIV), but to address broad categories of diseases and conditions responsible for the greatest disease burdens in the Region.

Ultimately, PAHO and Member States included more than 30 diseases and conditions in the Elimination Initiative, which was approved by PAHO's Directing Council in September 2019. The ratification of the initiative aligned with PAHO Member States' commitments towards related development and health policies, including the 2030 Agenda for Sustainable Development (which created the Sustainable Development Goals) and the Sustainable Health Agenda for the Americas 2018–2030 *(1, 2)*.

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In March 2020 – just six months after the launch of the Elimination Initiative – the World Health Organization (WHO) declared COVID-19 a global emergency. The pandemic's sudden escalation caused severe disruptions to daily life, overwhelmed healthcare systems in many countries (reducing the access and availability of non-COVID-19 health services), interrupted supply chains, and triggered an economic crisis as businesses closed and unemployment soared. With high case numbers and death tolls across the Americas, COVID-19 also exposed and exacerbated existing inequalities.

While COVID-19 highlighted gaps in healthcare systems, it also presented new opportunities to deliver more comprehensive services. With this in mind, current PAHO Director Jarbas Barbosa da Silva Jr. ratified and re-launched the Elimination Initiative in 2023. This re-focus on the Elimination Initiative became a critical opportunity to encourage Member States, not only to strengthen systems to better confront the issue of communicable disease elimination but also to recover from the setbacks caused during the pandemic. In the wake of the pandemic, integrated, multi-disease elimination efforts can ultimately help countries resume and accelerate progress towards universal health in the wake of the pandemic.

Box 1. What is an "Integrated Approach" to disease elimination?

The term "integrated approach" is used throughout this report. In practical terms, this means approaching multiple health areas and services together to maximize health outcomes. The World Health Organization defines integrated health services as those that are "managed and delivered so that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease-management, rehabilitation and palliative care services, coordinated across the different levels and sites of care within and beyond the health sector, and according to their needs throughout the life course."[a]

Integrated approaches can manifest in various ways and can include combining delivery of services under one roof, promoting referrals and linkages among providers, combining monitoring and surveillance efforts, and promoting multi-sectoral policies focused on people's needs in the context in which they live.

Below are some examples of integrated approaches related to disease elimination:

- Defining the contents and prioritizing the "single-visit" screen-and-treat approach for primary health care, and strengthening referral systems;
- Combining monitoring and surveillance for different diseases and health topics;
- Leveraging interventions in maternity hospitals to vaccinate or screen newborns and/or screen and treat pregnant women and newborns for mother-to-child transmitted diseases;
- Training staff at sexual and reproductive health clinics to screen, treat, and prevent HIV, syphilis and other sexually transmitted infections (STIs), hepatitis B and C, human papillomavirus (HPV)-related cancers, and tuberculosis;
- Integrating water, sanitation, and hygiene (WASH) into housing initiatives to improve living conditions that impact multiple diseases;
- Using cost-effective integrated vector management approaches to control vector-borne diseases;
- Considering the impact of chronic communicable disease management within the elimination of communicable diseases;
- Recognizing the connections among the health of people, animals, and our shared environment by using the One Health approach;
- Deploying mobile health clinics and medical teams to address transportation issues that may prevent individuals from reaching health centers;
- Incorporate traditional healing practices into health systems to recognize and address intercultural issues.

[a] World Health Organization. Framework on integrated, people-centred health services: report by the Secretariat [Document A69/39]. 69th World Health Assembly. Geneva: WHO; 2016. Available from: https://iris.who.int/handle/10665/252698.

Why is an "integrated approach" important to disease elimination?

The Elimination Initiative framework involves mobilizing the entire health system so that health programs and services are not carried out in silos. The Elimination Initiative approach also considers the specific needs of each setting and population, while contextualizing cross-border and regional issues that impact health programs and disease elimination efforts. Finally, one of the most important reasons to use an integrated approach is to ensure more community- and person-centered care – focusing not on the diseases themselves but the people and communities most affected by them.

The number and scope of communicable diseases and related conditions in the Americas is vast. Therefore, the Elimination Initiative includes selected diseases that represent a significant burden and disproportionally affect communities living in vulnerable situations: among them, Indigenous and Afro-descendant populations; lesbian, gay, bisexual, and transgender (LGBT) persons; and migrants. When developing the policy, PAHO also prioritized diseases that can readily be combatted using existing tools and technologies.

The Elimination Initiative recognizes and promotes linkages and synergies within the health system – as well as with other sectors. Multisectoral interventions are paramount for many of the diseases in the initiative. For successful implementation of this integrated framework, a range of stakeholders must be involved, including multiple government sectors, sponsors, donors, and funders, civil society representatives and organizations, and the private sector.

Diseases and conditions designated in the Elimination Initiative

Table 1 lists the diseases and related conditions included in the Elimination Initiative as candidates for elimination by 2030.

Table 1. Diseases and conditions designated in the Elimination initiative

Elimination of disease	▸ Bacterial meningitis epidemics ▸ Cervical cancer ▸ Chagas disease ▸ Cholera ▸ Congenital Chagas ▸ Congenital syphilis ▸ Cystic echinococcosis/ hydatidosis ▸ Fascioliasis ▸ Hepatitis B and C ▸ Hepatitis B (HBV), mother-to-child-transmission (MTCT) ▸ HIV-MTCT	▸ HIV/AIDS ▸ Human rabies transmitted by dogs ▸ Leprosy ▸ Lymphatic filariasis ▸ Malaria ▸ Onchocerciasis ▸ Plague ▸ Schistosomiasis ▸ Sexually transmitted diseases (STIs) ▸ Soil-transmitted helminthiasis ▸ Trachoma ▸ Tuberculosis
Elimination of environmental determinants of health	▸ Open defecation ▸ Polluting fuels within households	
Maintain elimination	▸ Congenital rubella ▸ Measles ▸ Neonatal tetanus ▸ Poliomyelitis ▸ Rubella ▸ Yellow fever epidemics	
Eradication	▸ Foot-and-mouth disease ▸ Yaws	

Figure 1. A renewed effort to accelerate elimination

The concept of elimination involves many techniques and modalities, depending on the disease in question. Box 2 provides definitions of the different levels of disease elimination *(3)*.

Box 2. Definitions of different levels of disease elimination

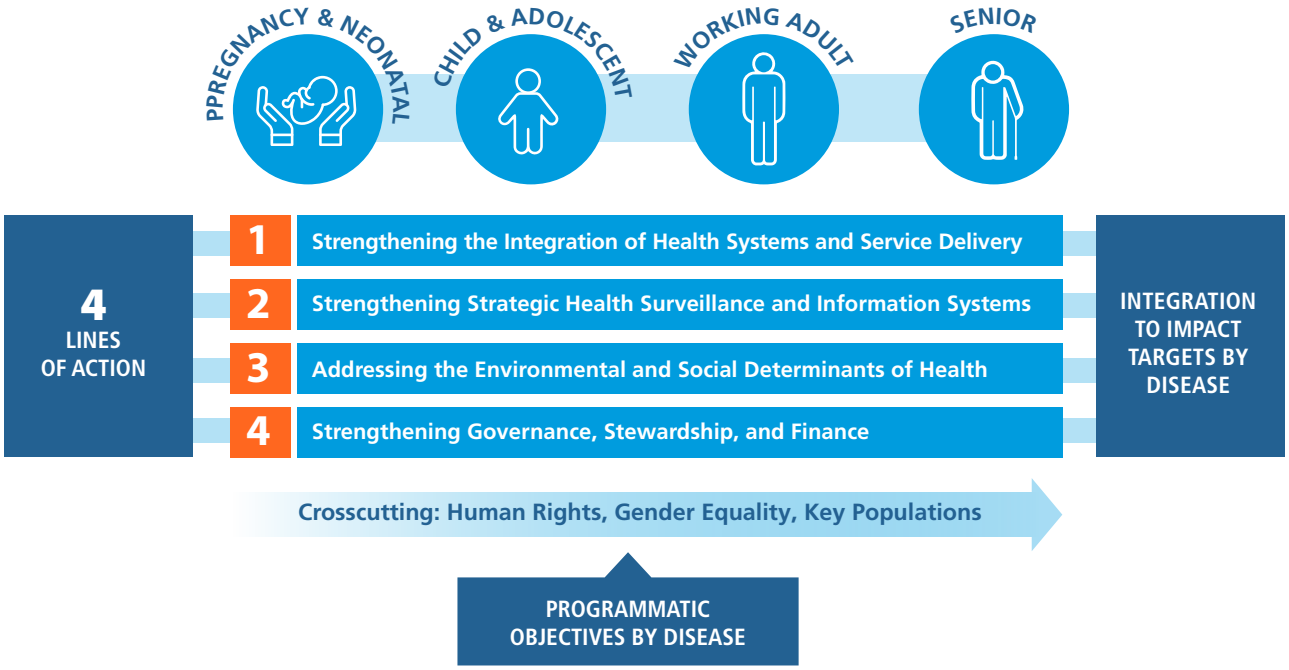
Elimination as a public health problem	Elimination of transmission	Eradication	Extinction
is defined by the achievement of measurable global targets set by WHO in relation to a specific disease. When these are reached, continued actions are required to maintain the achievements of the targets or to advance toward elimination of transmission.	(also referred to as interruption of transmission) is the reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, as a result of deliberate efforts.	is the permanent reduction to zero of a specific pathogen, as a result of deliberate efforts, with no more risk of reintroduction.	is the eradication of a specific pathogen so that it no longer exists in nature or the laboratory, which may occur with or without deliberate efforts.

A bold blueprint for elimination

The Elimination Initiative's conceptual framework (see Figure 2) can be adapted and implemented by Member States. In addition to presenting the four lines of action (detailed below), it recognizes that disease elimination efforts often require interventions targeted to specific life course phases, for example: pregnancy, preschoolers, school-age children, adolescents, adult workers, or older adults.

The Elimination Initiative also prioritizes approaches from the perspectives of gender equality, human rights, and populations in situations of vulnerability, addressing social determinants of health as defined by WHO ("the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life") *(4)*. The initiative focuses on groups experiencing a greater disease burden due to complex social, economic, and systemic factors, including women, Indigenous peoples, Afro-descendants, rural communities, LGBT individuals, migrants, and prisoners. As countries progress toward disease elimination, the initiative works to understand and improve the underlying conditions that hinder efforts among these communities.

Figure 2. Conceptual framework: Line of action for integrated communicable disease elimination in the Americas through the life course



The four lines of action

Four lines of action were developed to guide the Elimination Initiative, strengthen countries' capacities, and ensure that the initiative is sustainable. Each line of action is described below:

1 Strengthening the integration of health systems and service delivery

Vertical health programs, while effective for specific targets, can create barriers to comprehensive healthcare. The Elimination Initiative addresses this by combining multiple disease interventions into existing services and developing innovative approaches, focusing on strengthening primary healthcare at the community level. This comprehensive strategy improves service integration across various health areas, enhances demand for health services, and strengthens community–health service linkages, while ensuring access to essential medicines and health technologies. By promoting high-quality and integrated health services, this approach supports the achievement and maintenance of elimination targets for multiple diseases, improving overall health outcomes for individuals and communities.

2 Strengthening strategic health surveillance and information systems

Health information systems often operate in silos, with fragmented surveillance across sectors and limited communication between community, regional, and national levels. Integrating these systems can create efficiencies and synergies for addressing multiple diseases and conditions in the Elimination Initiative. This integration requires strengthening countries' capacity to upgrade and unify surveillance systems, enabling more effective detection, assessment, monitoring, and reporting of health data across all relevant programmatic areas. Also, the interoperability of health information systems is vital for disease elimination; this helps support enhanced information flow for better decision-making, improved continuity of care, and cross-border collaboration necessary for effective regional disease elimination efforts.

3 Addressing the environmental and social determinants of health

Communicable diseases have a disproportionate impact on resource-constrained communities and other marginalized groups. Overall, the diseases in the Elimination Initiative are linked to diverse social determinants of health, including access to safe drinking water and basic sanitation, housing conditions, climate change risks, gender inequity, stigma and discrimination, sociocultural factors, and poverty, among others. Even evidence-based, cost-effective communicable disease interventions – for example, vaccines – are limited in their impact if health inequities related to social and environmental determinants are not addressed. People-centered interventions therefore require targeting the root causes of disparities. Addressing these mechanisms can help break the cycles of poverty (and other sources of inequity) while more effectively targeting the elimination of multiple diseases.

4 Strengthening governance, stewardship, and finance

To fully implement integrated health programming, it is essential to promote and normalize intersectoral collaboration-not only among different government institutions (for example health, education, and finance institutions) but nongovernmental sectors as well. To coordinate diverse partners, this process needs to involve dialogue with the private sector and civil society, as well as a range of government sectors. This will allow health authorities define clear roles and responsibilities to each actor engaged in the agenda to eliminate communicable diseases. In particular, strengthening the leadership of provincial/departmental and municipal jurisdictions – as well as civil society through government arrangements – in the decision-making process is crucial to ensure that health initiatives and interventions are adapted to the community context.

Box 3. Examples of action in the elimination initiative

Strengthening the integration of health systems and service delivery:

- Build capacity of primary health care workers on a range of health topics, so they can detect and resolve multiple health issues (screening, diagnosis, and treatment) in a single visit;
- Strengthen laboratory and diagnostic services at the community level;
- Enhance planning, procurement, and supply of public health supplies – like vaccines and antivirals – for national programs.

Strengthening strategic health surveillance and information systems

- Undertake combined mapping of all diseases and conditions in the Elimination Initiative to better identify patterns, target resources effectively, and coordinate multi-disease strategies effectively;
- Conduct training and consultation for those managing health information and environmental monitoring systems;
- Provide periodic feedback to all stakeholders about advances in the elimination road map.

Addressing the environmental and social determinants of health

- Promote civil society participation in governance and local participatory planning and mapping, for determining the key pathways to elimination of communicable diseases;
- Foster multicultural approaches as part of community empowerment;
- Improve intersectoral collaboration to address a range of issues, from basic water and sanitation access to solid waste management to housing improvement and more.

Strengthening governance, stewardship, and finance

- Strengthen trust and partnerships with municipal governments and civil society toward Elimination Initiative targets;
- Mobilize local, subregional, and regional resources to ensure sustainability for communicable disease efforts;
- Improve financial commitments to increase access to cost-effective and innovative health technologies.

Landmark hemispheric milestones and accomplishments: 1902 to present

Box 4. PAHO is rooted in disease elimination

In 1870, a yellow fever epidemic struck Argentina, Brazil, Paraguay, and Uruguay and within eight years had reached the United States, where it killed more than 20 000 people. Maritime transport, which was expanding rapidly along with international trade, was the main channel for the international spread of disease at the end of the nineteenth century. This need to protect people's health and countries' economies by controlling yellow fever transmission in the region led to the creation in December 1902 of what today is known as PAHO.

PAHO's rich history tackling communicable diseases

Since PAHO's founding in 1902, the Region has made significant progress toward disease elimination. Notable early achievements included substantial progress against yellow fever, particularly after the discovery of its mosquito-borne transmission in the early 1900s. Another early milestone was the Organization's recognition of health as a right of all countries and all people through the Pan American Sanitary Code, ratified in 1924 and still in force today.

While rabies and smallpox vaccines had already been introduced to the Region in the nineteenth century, several additional vaccines were available by the middle of the twentieth century, including diphtheria, tetanus, and pertussis (available in the 1920s); yellow fever (1930s); influenza (1940s); and polio (1950s). Although availability and adoption varied widely, the Region started seeing dramatic reductions in some communicable diseases by the middle of the twentieth century.
Other significant accomplishments during PAHO's early decades included successful vector control campaigns starting in the 1940s. In 1946, a resolution was approved to eradicate the *Aedes aegypti* mosquito (a vector for yellow fever and other diseases) in the Region – it was eliminated from several countries by the 1960s. There were also major reductions in malaria prevalence, thanks largely to mosquito control efforts starting in the 1940s and the launch of an ambitious campaign in 1954. While not fully eliminated, control efforts also made considerable headway against Chagas disease through improved housing and insecticide use.

In the early 1950s, the concept of eradication of certain infectious diseases took hold in the Americas – particularly applied to malaria, yellow fever, and even tuberculosis. Additionally, campaigns against yaws in the 1950s and 1960s brought the disease close to elimination in many countries. In the 1960s, PAHO leaders began talking about the importance of integrating and strengthening health services, which had a great impact on the disease elimination campaigns that would follow.

Renewed efforts to accelerate disease elimination

Eventually, the Americas eliminated smallpox in 1974 (with eradication in 1980). In 1994, the Region was certified as free from poliomyelitis, after decades of working to control the epidemic. Over the last several

decades, the Region continued to make progress towards eliminating malaria and several neglected infectious diseases including leprosy, lymphatic filariasis, and onchocerciasis (river blindness). Many countries also achieved substantial reductions in Chagas disease, soil-transmitted helminthiasis, schistosomiasis, and fascioliasis in children and other populations at risk. Additionally, one of the best global success stories of eliminating mother-to-child transmission (MTCT) comes from the Americas. In 2015, Cuba was validated by PAHO/WHO as the first country in the world to have eliminated MTCT of HIV and syphilis *(5)*. Also within the past decade, rubella, congenital rubella syndrome, and neonatal tetanus have also been eliminated from the Region.

Since its founding, PAHO's technical support and convening power have been crucial in uniting diverse stakeholders around a common mission of disease elimination. However, these achievements resulted from collaborative efforts between PAHO and Member States, with strong commitments from governments, health workers, communities, partners, and donors. Based on over a century of sound scientific evidence, PAHO made a strong call to action and built on past achievements via the launch of the Elimination Initiative.

Box 5. Commitments leading up to the elimination initiative

The Elimination Initiative was by no means the first pledge to eliminate diseases in the Americas. Particularly in the last several decades, PAHO Member States approved dozens of resolutions to eliminate diseases, and some of them covered multiple diseases. The following are just a few examples of such resolutions and commitments in the Region:

- A 1990 PAHO resolution was passed to eliminate several diseases – including polio, measles, neonatal tetanus, rabies, and foot-and-mouth disease – by the year 2000;
- Beginning in 2000, PAHO and Member States' efforts to meet the Millenium Development Goals were key to continued progress towards disease elimination;
- A 2009 PAHO resolution called for the elimination or control of 12 neglected diseases in the Americas by 2015;
- In 2010, PAHO Member States approved a resolution to eliminate the transmission of HIV from mother to child and congenital syphilis;
- In 2015, the Regional Consultation Disease Elimination in the Americas mobilized Member States around this issue and formed the blueprint of the Elimination Initiative;
- A 2016 plan of action called for the prevention, control, and reduction of disease burdens associated with neglected infectious diseases.

Due to these continued commitments – along with enormous efforts throughout the Region to increase vaccination rates, reinforce country capacities, strengthen health systems, and increase domestic funding – momentum for disease elimination efforts was building by 2019 when the Elimination Initiative launched. However, these resolutions only offered part of the solution and only included certain groups of diseases. The Elimination Initiative presented a bigger, bolder framework for multi-disease elimination on multiple fronts.

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Approaches brought forward from earlier disease elimination efforts

Over time, PAHO and Member States have documented experiences and practical knowledge related to disease elimination – this serves as the foundation of the Elimination Initiative, including the lines of action. Some key learnings and approaches incorporated into the initiative are summarized below.

Benefits of integrated programs

Traditionally, disease elimination efforts concentrated on single diseases. While each disease does indeed need to be understood separately – looking at modes of transmission, effective treatment, vaccines, etc. – viewing each disease in a silo can be limiting. In looking at multiple diseases at the same time, Member States have identified common challenges related to policies, programs, and services. For example, vaccine-preventable diseases often share common risk factors, modes of transmission, supplies, and prevention measures. Health systems with a more integrated approach to manage disease programs, may be more effective to achieve common goals.

Over time, PAHO and its Member States grew to appreciate the need to find solutions and plan programs to fight multiple diseases together. In 2015 PAHO convened the Regional Consultation on Disease Elimination in the Americas to discuss advancing elimination efforts in the Region and bundle various mandates and strategies focusing on individual communicable diseases into an integrated package. The consultation highlighted numerous synergies and opportunities for collaboration and integration of disease elimination programs, to reduce fragmentation, improve cost-

effectiveness, and better serve communities' needs. For example, programs can leverage shared diagnostics, using the same sampling and testing platforms to diagnose multiple diseases efficiently (which not only reduces costs but also ensures timely and accurate diagnoses across various conditions). In short, experts at this consultation recognized the importance of integration at every level – services, laboratory and diagnostic services, training of providers, information systems, and more *(6)*. This meeting served as the cornerstone of the Elimination Initiative.

This knowledge informed the Elimination Initiative's Strategic Line of Action 1: Strengthening the integration of health systems and service delivery.

Need for stronger systems for knowledge and information exchange

Over the decades, as PAHO and Member States tracked diseases and conditions, they realized the need for strong data collection systems to effectively share and exchange information and knowledge. The 2015 Regional Consultation identified the need for a research agenda focused on overcoming obstacles-they pointed to the need for "immediately usable solutions in the field" that would help countries achieve elimination goals. They also pointed to the need for quality surveillance data *(6)*.

Without timely and efficient surveillance systems spanning all levels of the health system – from local to the national and regional levels – Member States cannot make informed decisions related to policy, financing, and services. Stronger data systems can help ensure that we know where the gaps are: we can see which groups are being left behind, which diseases are falling short, and where additional resources are needed. Technology is constantly advancing, and Member States now have access to more sophisticated digital health and data sharing systems. The Elimination Initiative is helping ensure that these systems are being strengthened so evidence can be used more effectively.

This knowledge informed the Elimination Initiative's Strategic Line of Action 2: Strengthening strategic health surveillance and information systems.

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Importance of addressing health comprehensively

Member States have learned over time that variations in disease burden are often linked to social determinants of health. Specifically, many diseases and conditions have their greatest impact on populations that live in situations of vulnerability, are marginalized socioeconomically, and/or experience difficulties in accessing health services. One such example is trachoma, which most often affects those living in extreme poverty. Its transmission is driven by social and environmental determinants such as sanitary conditions, hygiene, and overcrowding *(7)*. Another example is tuberculosis: crowded and poorly ventilated environments and undernutrition – all factors associated with poverty – are direct risk factors for tuberculosis

transmission *(8)*. By tailoring interventions to specific groups, health systems can ensure that disease elimination efforts are inclusive, accessible, and responsive to the diverse needs of all community members, particularly those often overlooked by traditional healthcare systems.

In addition to considering social and environmental determinants of health, the initiative was informed by years of program data showing the importance of considering different stages of the life course. For example, pregnant women are at increased risk of severity of symptoms when infected with certain diseases like measles or malaria.

This knowledge informed the Elimination Initiative's Strategic Line of Action 3: Addressing the environmental and social determinants of health.

Benefits of a multisectoral approach

PAHO is uniquely positioned to convene stakeholders and continue momentum towards disease elimination. Over the years, PAHO and its partners have brought together coalitions of scientists and technical advisory groups related to a range of diseases-from tuberculosis to HIV to Chagas. In addition, PAHO facilitates multisectoral collaboration among governments, funders, the private sector, communities, civil society organizations, and others. Among other benefits, this collaboration helps reduce the costs of supplies and vaccines for Member States. For example, through the Regional Revolving Fund (RRF), PAHO improved access to the human papillomavirus vaccine (HPV), which is crucial for preventing cervical cancer. Working with private manufacturers in the late 2000s, PAHO negotiated on behalf of participating countries to reduce the price of the HPV vaccine from more than USD 120 per dose in 2007 to under USD 10 per dose *(9)*.

This achievement exemplified the impact of multisectoral efforts to improve the accessibility and affordability of essential health supplies for PAHO's Member States.

Other multisectoral partnerships within Member States also have proved essential to disease elimination efforts. For example, in the area of HIV prevention and treatment, multisectoral partnerships brought together diverse stakeholders including governments, nongovernmental organizations (NGOs), businesses, healthcare providers, educational institutions, and faith-based organizations. These collaborations enabled a more comprehensive approach by combining resources, expertise, and reach to address various aspects of the epidemic simultaneously. Over the last few decades, these partnerships facilitated wider dissemination of prevention information, improved access to testing and treatment, and helped combat stigma through coordinated efforts across different sectors of society.

This knowledge formed the basis of the Elimination Initiative's Strategic Line of Action 4: Strengthening governance, stewardship, and finance.

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Barriers and gaps

The Elimination Initiative builds upon years of experience in improving health systems and fostering cooperation across different sectors. However, several obstacles could impede progress towards the Initiative's objectives:

- **Migration**: The movement of people – both within and among countries in the Region – can significantly impact disease elimination. Key issues include the potential for disease transmission across borders, reduced healthcare access for migrants, lack of culturally sensitive healthcare services, and difficulties in tracking and managing prevention and treatment efforts in mobile and cross-border communities.

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- **The rise of noncommunicable diseases**: The increase in noncommunicable diseases (NCDs) has become one of the most pressing issues facing the Americas in recent years *(10)*. Examples of NCDs are diabetes, heart disease, stroke, cancer, and chronic lung disease *(11)*. In addition to competing for limited funding, NCDs can often present complications to the treatment of communicable diseases, particularly chronic infections.

- **Existing health inequities**: Literature strongly suggests that groups facing social and economic inequalities are consistently at higher risk of communicable diseases *(12)*. Marginalized communities are more susceptible to communicable diseases due to a complex interplay of factors including limited healthcare access, poor living conditions, economic disparities, lower health literacy, and systemic neglect stemming from discrimination and lack of political representation. Further, when these communities are affected by these diseases, they can exacerbate conditions of inequality, leading to a vicious cycle.

- **Stigma and discrimination**: Groups that often face healthcare-related stigma and discrimination include LGBT individuals (particularly transgender people), indigenous communities, undocumented immigrants, sex workers, and those living with certain communicable diseases (for example, HIV, tuberculosis, and hepatitis), as well as a range of other groups. Stigma and discrimination in healthcare settings can hinder broader elimination efforts by discouraging affected individuals from seeking care (or not treating

them effectively when they do seek care), leading to delayed diagnosis and treatment, reduced adherence to medication regimens, and incomplete disclosure of health information to providers.

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- **Impact of climate change**: Climate change can impact the efforts of the Elimination Initiative in a number of ways. Changes in temperature, precipitation, and humidity can affect the transmission of vector-borne diseases. It can also lead to the emergence of new pathogens by altering weather patterns and habitats. Climate change can impact the range, period, and intensity of infectious diseases *(13, 14)*. Further, climate change can exacerbate conditions of inequality, which can add to the risk for communicable diseases.

- **Human–animal–environment interactions**: The elimination of zoonotic neglected diseases, like rabies, and the characterization of sylvatic reservoirs and vectors of epidemic prone diseases, like yellow fever and plague, require integrated surveillance and coordinated interventions. A One Health approach can address this.

- **Resource constraints**: Sustaining disease elimination efforts can be difficult in already resource-constrained settings. Funding can be siloed and stretched thin, and communicable diseases present significant challenges to already-strained government health budgets as they face a growing range of health threats, including the rising incidence of NCDs and the health impacts of climate change. In addition, much of the global agenda and funding has been directed to certain "high profile" diseases like HIV, tuberculosis, and malaria – while leaving others, like neglected and zoonotic diseases, out of focus.

- **New communicable diseases, including COVID-19**: As was the case globally, the COVID-19 pandemic highlighted and amplified the need for stronger health systems and services in the Americas. When new diseases emerge, countries often must divert resources and efforts to focus on the new diseases, offsetting progress towards the elimination of existing diseases *(15)*. Further, new diseases can often contribute to a "syndemic" – a situation in which two or more disease states or health conditions interact synergistically, contributing to an excess burden of disease in a population.

- **Antimicrobial resistance**: Antimicrobial resistance (AMR) threatens effective prevention and treatment of a range of infectious diseases caused by bacteria,

parasites, viruses, and fungi (including many of the 30+ diseases included in the Elimination Initiative). Specifically, AMR reduces the effectiveness of drugs used to treat infections, potentially making previously manageable or curable diseases more difficult or impossible to control – and allows resistant disease strains to spread. This can greatly undermine progress towards elimination targets.

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Opportunities

Despite facing challenges, the Region is also presented with many opportunities in achieving the elimination of communicable diseases. Integrating health services – through an emphasis on primary health care – is a priority for governments overall (beyond communicable diseases) but can be leveraged as countries work towards elimination of communicable diseases. Crosscutting capacity building strategies – including mechanisms like the RRF – offer critical support in ensuring the timely and efficient distribution of medicines and health technologies within the Region. Relatedly, a focus on health sovereignty in the Region of the Americas is helping to strengthen regional production of vaccines, medicines, and public health inputs – which helps ensure access to these critical products.

The growing recognition of community engagement and community participatory research offers potential solutions to current challenges, particularly related to meeting the needs of marginalized groups and creating demand of services related to the targeted diseases. Improved technology also presents an important and innovative tool for surveillance, treatment, integration, and disease management. As governments become more aware of social determinants of health, they can more effectively meet the holistic needs of individuals, helping to break the vicious cycle of disease risk among marginalized communities.

Also, the concept of the Elimination Initiative itself presents a great opportunity. "Elimination" is a strong message that can appeal to governments and politicians and present a way for them to show results and create real change. This can lead to interest and political commitments.

Finally, while the COVID-19 pandemic presented significant challenges to health systems throughout the Region, it also presented unique opportunities. For one, it dramatically increased awareness of the importance of health to social, economic, and political stability. It also accelerated the uptake of certain innovations related to service delivery. This created unique opportunities to apply these innovations to future health challenges as well *(15)*.

The Elimination Initiative provides structure to countries as they build on these opportunities in a strategic, multisectoral, staged manner to address their national and local contexts and priorities.

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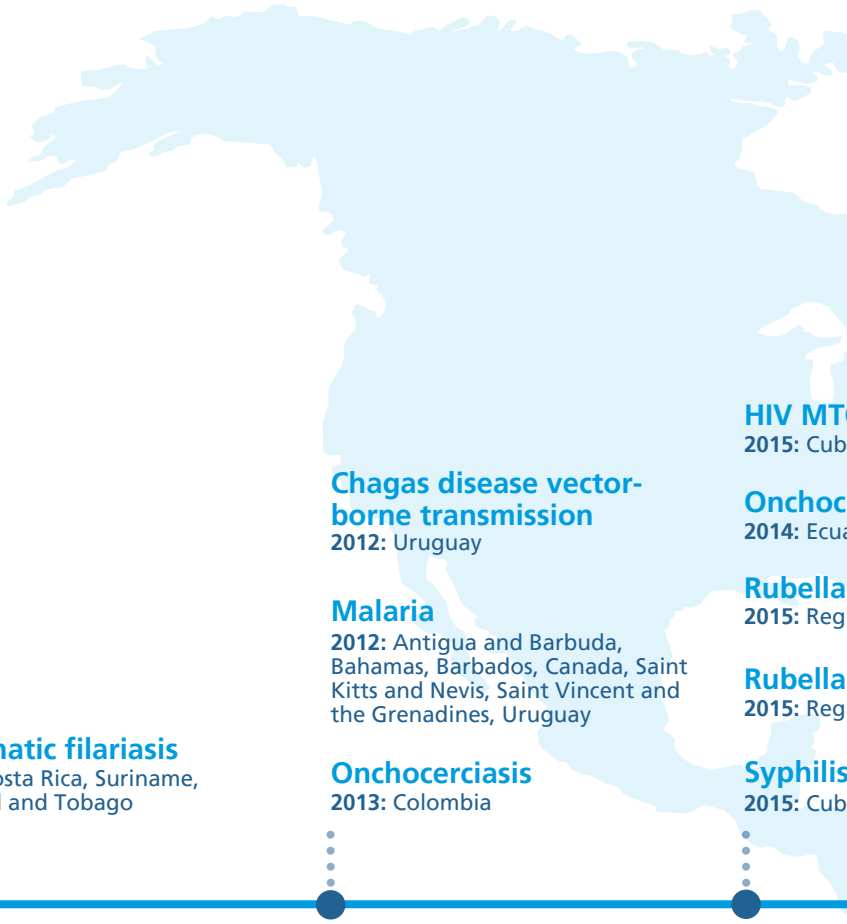
Figure 3

MILESTONES OF DISEASE ELIMINAT

- Elimination targets achieved
- Projection of elimination targets to achieve



Malaria
1962: Grenada, Saint Lucia, **1965:** Trinidad and Tobago, **1966:** Dominica, Jamaica, **1970:** United States of America, **1973:** Cuba

Foot-and-mouth disease
1924: Jamaica, **1929:** United States of America, **1952:** Canada, Guadeloupe, Martinique, **1953:** French Guiana, **1954:** Mexico, **1957:** Aruba, **1976:** Curaçao, **1978:** Guyana, **1987:** Chile

Smallpox
1973: Regional

Poliomyelitis
1994: Regional

Guinea worm
2004: Regional

Chagas disease vector-borne transmission
1999: Chile

Lymphatic filariasis
2011: Costa Rica, Suriname, Trinidad and Tobago

Chagas disease vector-borne transmission
2012: Uruguay

Malaria
2012: Antigua and Barbuda, Bahamas, Barbados, Canada, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Uruguay

Onchocerciasis
2013: Colombia

HIV MT
2015: Cub

Onchoc
2014: Ecua

Rubella
2015: Reg

Rubella
2015: Reg

Syphilis
2015: Cub

1900 — 2010 — 2012 — 2014

Hepatitis B MTCT
2023: Belize

HIV MTCT
2024: Belize, Jamaica, Saint Vincent and the Grenadines

Malaria
2023: Belize

Syphilis MTCT
2024: Belize, Jamaica, Saint Vincent and the Grenadines

Foot-and-mouth disease
2025: Bolivia, Brazil

Hepatitis B
2025: Cuba

Hepatitis B MTCT
2024: Saint Kitts and Nevis, **2025:** Chile, Cuba, Saint Vincent and the Grenadines

Hepatitis C
2025: Cuba

HIV MTCT
2025: Chile, Guyana, Puerto Rico, Turks and Caicos Islands, Uruguay

Human rabies (dog-transmitted)
2024: Nicaragua, Uruguay, **2025:** Bolivia, Chile, El Salvador, Honduras, Peru

Lymphatic filariasis
2024: Brazil, **2025:** Dominican Republic

Malaria
2025: Suriname

Syphillis MTCT
2025: Chile, Guyana, Puerto Rico, Turks and Caicos Islands, Uruguay

Trachoma
2025: Brazil, Guatemala

Yaws
2025: Chile

Chagas disease MTCT
2026: Chile

Cystic echinococcosis/hydatidosis
2026: Chile

Foot-and-mouth disease
2027: Ecuador, Paraguay

HIV MTCT
2026: Brazil, Ecuador

Human rabies (dog-transmitted)
2026: Argentina, Brazil, Costa Rica, Ecuador, Jamaica, Trinidad and Tobago, **2027:** Belize, Cuba, Guatemala, Panama

Syphilis MTCT
2026: Ecuador

Schistosomiasis
2026: Saint Lucia

Yaws
2026: Ecuador, **2027:** Nicaragua, Paraguay

2022–JUNE 2024 — JULY 2024–2025 — 2026 — 2

Forecasting of elimination targets to be achieved by 2030 based on the best inform

TION IN THE AMERICAS, 1900–2030

Hepatitis B MTCT
2017: Anguilla, Antigua and Barbuda, Cayman Islands, Montserrat

HIV MTCT
2017: Anguilla, Antigua and Barbuda, Bermuda, Cayman Islands, Montserrat, Saint Kitts and Nevis

Measles
2016: Regional

Neonatal tetanus
2017: Regional

Onchocerciasis
2016: Guatemala

Syphilis MTCT
2017: Anguilla, Antigua and Barbuda, Bermuda, Cayman Islands, Montserrat, Saint Kitts and Nevis

Trachoma
2017: Mexico

Chagas disease vector-borne transmission
2018: Paraguay

Foot-and-mouth disease
2018: Peru

Human rabies (dog-transmitted)
2019: Mexico

Malaria
2018: Paraguay, **2019:** Argentina

Hepatitis B MTCT
2020: Dominica

HIV MTCT
2020: Dominica

Malaria
2021: El Salvador

Syphilis MTCT
2020: Dominica

2016 **2018** **2020**

Bacterial meningitis
2030: Regional

Cervical cancer
2030: Chile

Fascioliasis (human)
2030: Peru

Foot-and-mouth disease
2030: Argentina, Colombia, Uruguay, Venezuela

Hepatitis B
2030: Brazil, Chile, Mexico

Hepatitis C
2030: Brazil, Chile, Mexico

HIV/AIDS
2030: Chile

Human rabies (dog-transmitted)
2030: Colombia

Leprosy
2030: Aruba, Belize, Chile, Costa Rica, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Saint Lucia, Uruguay

Lymphatic filariasis
2030: Haiti

Malaria
2030: Guatemala, Honduras

Onchocerciasis
2030: Brazil, Venezuela

Plague
2030: Bolivia, Brazil, Ecuador, Peru, United States of America

Schistosomiasis
2030: Antigua and Barbuda, Guadeloupe, Martinique, Montserrat, Puerto Rico, Suriname

Sexually transmitted infections
2030: Chile

Tuberculosis
2030: Chile

Open defecation
2030: Regional

Polluting fuels in the houlsehold
2030: Regional

Yaws
2030: Argentina, Panama, Uruguay

2028 **2030**

ation available at the regional programs of the Pan American Health Organization.

CHAPTER

2

Regional Progress Toward Elimination Targets

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Summary

As of 2022, significant disease burdens persist in the Region, including millions at risk for the more than 30 diseases and conditions targeted by the Elimination Initiative. Progress toward elimination targets varies widely across diseases and countries. Seven diseases have been eliminated region-wide, including polio and several other vaccine-preventable diseases. Other diseases like malaria, onchocerciasis, and mother-to-child transmission of HIV and syphilis have been eliminated in some countries. However, many diseases – cervical cancer, tuberculosis, viral hepatitis, HIV/AIDS, and neglected and zoonotic diseases – still require substantial efforts to reach elimination targets. Factors hindering progress include poverty, lack of access to health care and sanitation, and environmental challenges. Governmental and intersectoral action will ensure access to prevention, screening, and treatment for populations affected by all diseases and conditions in the initiative.

Status of the elimination targets in the Americas

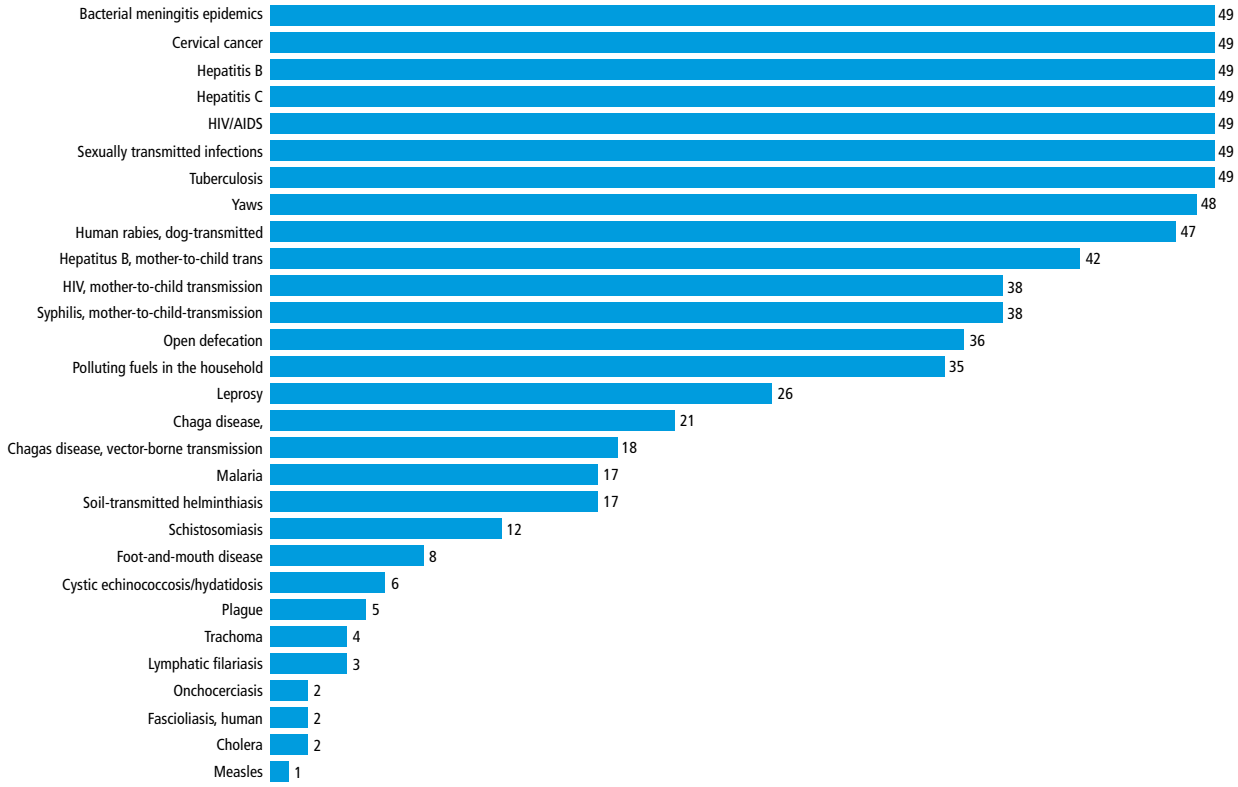
PAHO is monitoring progress toward specific indicators and targets for each of the diseases and conditions – more than 30 – included in the Elimination Initiative. The regional data portal includes elimination definitions, indicators, and targets for each disease and condition in the initiative. By the end of 2024, PAHO will enhance the monitoring process to include indicators to track progress toward the four lines of action. This will provide a comprehensive overview of progress and impact at both country and regional levels, beyond metrics aggregated by diseases.

Box 6. Do each of the 30+ diseases and conditions need addressing in each country and territory in the Americas?

Not every disease target will be relevant for all countries and territories. The Region is diverse, with a range of climates, communities, inequalities, and risk factors that make certain diseases more prevalent in some areas. While some, like sexually transmitted infections and viral hepatitis, are relevant to all countries and territories, others are not. For example, vector-borne, zoonotic, and neglected infectious diseases affect only certain countries and specific areas and populations within countries. Therefore, each country should tailor integrated actions and road maps toward elimination based on the presence of each disease in the different contexts of the populations within the national territory.

The Elimination Initiative encompasses a diverse group of diseases and conditions targeted for elimination – or for those already eliminated, to maintain elimination status. Figure 4 lists the diseases and conditions and, of the 49 total countries and territories in the Elimination Initiative, it lists the number of countries and territories where each of these diseases and conditions are present.

Figure 4. Number of target countries and territories for each disease and condition in the Elimination Initiative



By the numbers

Disease burden of selected diseases in the Americas in 2022

Over **45** million children
under 15 years of age were at risk of **intestinal parasitic infections**

Over **21 000** new cases
of **leprosy** were reported

Over **3.9** million people
were living with **HIV** with approximately 170,000 new infections that year

Over **78 000** women
were diagnosed with **cervical cancer**

1.6 million people
were at risk for schistosomiasis

480 000 cases
of **malaria** were reported

In the following section, data for the diseases and conditions in the Elimination Initiative are presented based on the following categories: (1) targets have been achieved; (2) targets nearing achievement; and (3) targets are yet to be met.

www.paho.org/en/data-portal-elimination

Visit the regional data portal where you can access up-to-date insights and a comprehensive view of the progress toward eliminating over 30 communicable diseases and related conditions in the Americas by 2030.
Click on the "Indicators and Targets" tab for detailed information on end-point elimination indicators andspecific targets for each disease and condition.

Diseases and conditions for which the elimination targets have been achieved

Diseases eliminated throughout the Region

Seven diseases have been eliminated regionally, which include guinea-worm and six vaccine-preventable diseases: smallpox, poliomyelitis, rubella, congenital rubella, measles, and neonatal tetanus. Successful regional elimination of these diseases has been achieved through mass immunization, strengthened surveillance, public health education, and international collaboration supporting different countries' efforts.

The Region recorded its last case of **poliomyelitis** in 1991, and, in 1994, it became the first region in the world to be certified free of the disease. In July 2022, an unvaccinated patient with no recent travel history was diagnosed with vaccine-derived poliomyelitis in the United States, triggering immediate response. While the risk of polio reintroduction is declining in the Region, low vaccination coverage increases the likelihood of poliovirus mutation, potentially leading to a strain capable of causing infection and paralysis. The regional coverage of the third dose of the polio vaccine was 87% in 2023, compared to 80–83% in the previous three years. However, despite this progress, some countries have not yet reached the recommended vaccine coverage goal of 95% nationally *(1)*.

After a decade of vaccination campaigns reaching an estimated 250 million individuals across 32 countries, the last cases of endemic **rubella** in the Americas were reported in 2009. The Region was certified free of endemic rubella in 2015. The proportion of children receiving a first dose of measles, mumps, and rubella vaccine was 87% in 2023, higher than the 2022 level of 84%. However, this still has not reached PAHO's recommended ideal of at least 95% coverage *(2)*.

The Region was certified **measles**-free in September 2016 – the only region in the world to have achieved this goal. Since then, it has reappeared in 14 countries, including the Bolivarian Republic of Venezuela and Brazil, where endemic transmission was reestablished in 2018 and 2019, respectively. The Bolivarian Republic of Venezuela was recertified as a country free of endemic measles in November 2023; Brazil interrupted the circulation of the virus in July 2022 and is pending recertification by the Regional Commission.

The Region eliminated **maternal and neonatal tetanus** in 2017. In 2022, seven

cases of neonatal tetanus were reported in the Region. In 2023, regional coverage of the third dose of diphtheria, tetanus, and pertussis vaccine was 88%, higher than the 84% coverage reported in 2022.

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Significant progress has also been achieved in eliminating vector-borne diseases in the Region. There have been no cases of urban yellow fever transmitted by the *Aedes aegypti* mosquito since 2008, although a range of factors threaten this maintenance of elimination status. Urbanization, deforestation, and climate change expand mosquito habitats and breeding seasons. Population movement and inadequate vaccination coverage increase virus spread. Eliminating **yellow fever epidemics** requires expanded vaccination, improved surveillance, mosquito control, surveillance of epizootics, improved laboratory platforms, real time exchange of information between countries, and stronger public health systems.

Diseases eliminated in some countries

Malaria has been eliminated in 19 countries. Between 2000 and 2022, the Region made good progress in reducing malaria burden: cases declined by approximately 64% (from 1.5 million to 550 000), and total malaria deaths were reduced by 60%, from 850 to 343. The most recent countries certified as malaria free are Paraguay (2018), Argentina (2019), El Salvador (2021), and Belize (2023) *(3)*.

The Region has also seen progress with mother-to-child transmission (MTCT), particularly in Caribbean countries and territories. Elimination of **MTCT of syphilis and HIV** has been achieved in 11 countries and territories (Anguilla, Antigua and Barbuda, Belize, Bermuda, Cayman Islands, Cuba, Dominica, Jamaica, Monserrat, Saint Kitts and Nevis, and Saint Vincent and the Grenadines).

Progress has also been made in the elimination of neglected infectious and zoonotic diseases. Transmission of **foot-and-mouth disease** has been interrupted in 12 out of the 18 countries where this disease occurs. **Onchocerciasis** (river blindness) has been eliminated in four (Colombia, Ecuador, Guatemala, and Mexico) of the six endemic countries in the Region – the only ones in the world to have achieved elimination targets. Three countries were removed from WHO's list of **lymphatic filariasis** endemic countries in 2011 (Costa Rica, Suriname, and Trinidad and Tobago), and Brazil received the validation of the elimination in 2024. Meanwhile, the Dominican Republic interrupted mass drug administration (MDA) in 100% of the endemic area, and two countries are still endemic (Guyana and Haiti). Three countries (Chile, Paraguay, and Uruguay) have interrupted **Chagas disease** due to vector-borne transmission, and all endemic countries in the Region have universal screening of blood donors and blood products to prevent the transmission of Chagas disease. **Trachoma** was eliminated in Mexico (one of four endemic countries in the Americas) in 2017. Furthermore,

in 2019, Mexico became the only country in the world to achieve the milestone of eliminating **human rabies transmitted by dogs**.

Significant progress has been also made in eliminating **cholera** over the past 15 years. However, while 47 countries and territories met their elimination targets, the resurgence of *Vibrio cholerae* O1 in Haiti late 2022 is challenging the regional goals. It has demonstrated the risk of cholera reemergence from environmental reservoirs. During 2023, the Dominican Republic and Haiti reported 149 and 56 355 cases, respectively. In Haiti, the ongoing humanitarian and security crisis made it harder to track cholera cases, as people had limited access to healthcare and testing facilities. Effective cholera elimination and maintenance require robust surveillance and timely case reporting, alongside improved water and sanitation infrastructure and public education campaigns.

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From 1900 to August 2024, 499 "elimination events" have occurred in the Americas. An elimination event happens when a country or territory successfully eliminates a disease or condition. To protect the Region's achievements, each Member State needs to strengthen monitoring systems, continue vaccination programs (especially among communities with low vaccination coverage), counter misinformation, and collaborate across different sectors to reduce the impact of climate change, which could bring back some diseases. Addressing communities' social, economic and cultural aspects is crucial. In this process, this necessitates involving communities not only by raising awareness about the disease risk and emphasizing the ongoing need for prevention measures but also improving their participation in the development of health programs and activities.

Diseases and conditions for which elimination targets have nearly been achieved

For some diseases and conditions, evidence shows that elimination targets have been achieved in certain countries, but the process of certification, verification, or validation is not yet complete.

Several countries are close to eliminating some neglected infectious and zoonotic diseases. While current evidence suggests transmission of **yaws** has halted across the entire Region, no country in the Region – except for Ecuador – has yet confirmed this status. While reports of yaws significantly declined after 1970, many countries ceased surveillance necessary to detect resurgence and certify elimination. Despite Colombia last reporting confirmed yaws cases in 1992 and Haiti in 2015, both countries reported suspected cases to PAHO between 2014 and 2017. Confirming the disease's absence in these two countries requires reviewing past records, gathering new information, and conducting clinical and serological surveys in previously endemic areas.

Human rabies transmitted by dogs is close to being eliminated in 37 countries and territories. Actions for the elimination of this disease in the Americas began in 1983 with the launch of a regional rabies program. Since then, the incidence in the Region has been reduced by about 98%, from 300 cases reported in 1983 to five cases in 2023. This progress is the result of massive canine vaccination campaigns at the regional level, awareness-raising efforts, increased availability of pre-and post-exposure prophylaxis, improved quality of immunobiological treatments and strengthened surveillance and diagnosis capacities in the countries.

Foot-and-mouth disease is close to being eliminated in 12 countries. Notably, South America has been free of foot-and-mouth disease for over a decade and is moving toward eradication. The last reported outbreaks in South America occurred in 2017 and 2018 in Colombia and were allegedly associated with illegal animal introductions on the border with the Bolivarian Republic of Venezuela. Colombia was again declared free of foot-and-mouth disease with vaccination in 2020. Progress toward the interruption of transmission (contributing to the eradication goal) of foot-and-mouth disease in South America is the result of prevention, surveillance, and control measures, including livestock vaccination, early detection, and rapid control of outbreaks.

Although the countries have not provided confirmation, health officials suspect that nine countries and territories in the Caribbean (Antigua and Barbuda, Dominican Republic, Guadeloupe, Martinique, Montserrat, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, and Sint Maarten) have eliminated **schistosomiasis**, with the last human case reported in 2010. Chile is gathering data and aligning with WHO procedures to document its status in meeting the milestones of transmission interruption and **leprosy** elimination. In Brazil, **plague** is close to being eliminated, with no reported cases for several years. As of 2023, Suriname was close to completing three years without indigenous transmission of malaria, a condition established to request WHO certification.

Elimination of **MTCT of hepatitis B** is close to being achieved in 17 countries. The prevalence of hepatitis B in the Region has decreased in recent decades, mainly due to the introduction of the hepatitis B vaccine in the early 1990s. The prevalence of chronic hepatitis B infection among children younger than 5 years in the Americas is estimated to be <0.5%, the lowest among WHO regions, making it feasible to eliminate vertical transmission and early childhood transmission of hepatitis B virus.

The Region has also made progress toward the elimination of the two environmental risk factors included in the Elimination Initiative: 20 countries are close to eliminating **open defecation**, and 13 countries are close to eliminating the **use of polluting fuels within households**.

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Over the next several years, up to 152 elimination events could be realized. The Region holds significant potential to accelerate efforts and achieve elimination targets for diseases and conditions that are on the brink of being eliminated. For some of the diseases and conditions mentioned above, confirming the current epidemiological status is the key step, as PAHO and Member States suspect that elimination has already been achieved. For others, closing gaps in interventions, enhancing surveillance, and compiling evidence are the critical components needed to reach the final milestone.

Diseases and conditions for which the elimination targets still need to be achieved

For some diseases – such as cervical cancer, tuberculosis, hepatitis C, hepatitis B, HIV/AIDS, bacterial meningitis, and sexually transmitted infections – none of the countries in the Region have yet achieved elimination targets. Eliminating MTCT of HIV, syphilis, hepatitis B, and Chagas disease is still a challenge in several countries, along with the elimination of malaria, cholera, open defecation, and use of polluting fuels in the household. Neglected infectious and zoonotic diseases still affect millions across the Region, particularly those lacking access to basic services – including health, education, water, and sanitation.

Over 78 706 women in the Americas were diagnosed with **cervical cancer** in 2022, resulting in nearly 40 135 deaths. Coverage of the human papillomavirus (HPV) vaccine, crucial for preventing cervical cancer, varies dramatically, from 2% in some countries, to 87% in Canada. Barriers to higher vaccination include policy and access issues, as well as vaccine misconceptions. HPV testing with "screen and treat" is effective but adoption is slow due to costs and logistics. Improving access through advocacy, pooled procurement (including PAHO's Strategic Fund), and sustained support is key to progress. In addition to the HPV vaccine, the elimination of cervical cancer as a public health problem necessitates screening and treatment of precancer, early detection and prompt treatment of invasive cancers, and palliative care.

In 2022, **tuberculosis** was the world's second leading cause of death from a single infectious agent (only COVID-19 being higher). In the Americas, more than 325 000 people continue to fall ill with tuberculosis every year, of which 83 000 remain undiagnosed and untreated *(4, 5)*. More than 240 000 people with tuberculosis in the Region had access to diagnosis and treatment in 2022, the highest number in the past 20 years, reflecting the significant efforts being made by countries. However, the estimated incidence of tuberculosis and the estimated number of deaths continue to rise. While the Region has recovered from disruptions in tuberculosis services caused by the COVID-19 pandemic, the tuberculosis

mortality rate reached values not seen in over a decade, taking more than 35 000 lives in 2022 *(6)*. To eliminate tuberculosis, countries need to accelerate new technologies such as artificial intelligence-assisted radiography for tuberculosis screening, and scale up existing interventions like rapid molecular tuberculosis tests, preventive treatment and shorter totally oral treatments. However, to ensure these technologies reach the most underserved and distant communities, it is vital to address underlying social determinants of health. This will allow countries to concentrate efforts on bringing tuberculosis detection and treatment closer to those living in situations of vulnerability.

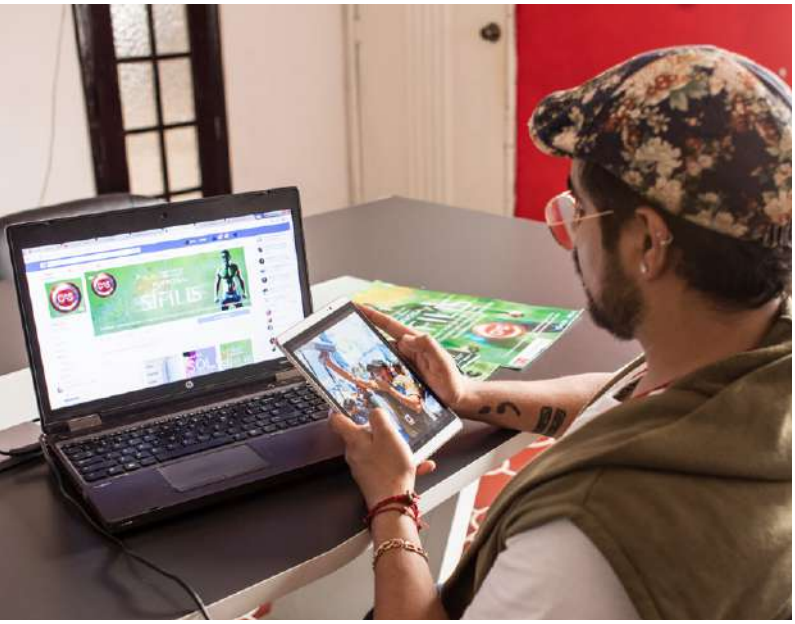
In the Americas, an estimated 5 million people had chronic **hepatitis B** infection, and approximately 20 000 died from hepatitis B-related causes.

Data from the same year show wide variances of hepatitis B rates within the Region, with Haiti having the highest rate followed by a group of Caribbean countries with similar rates (Antigua and Barbuda, Bahamas, Barbados, Dominica, Jamaica, and Saint Lucia). For **hepatitis C**, an estimated 5.3 million had the disease, and 38 000 died from hepatitis C-related causes. The highest rate for hepatitis C was reported in the Bolivarian Republic of Venezuela, followed by Cuba and Saint Kitts and Nevis. Accelerating measures to improve prevention, diagnosis, and treatment of hepatitis B and C is key to achieving elimination.

Under the Elimination Initiative, the **HIV** monitoring indicators include AIDS-related deaths and incidence rate. As of 2023, an estimated 4 million people were living with HIV in the Americas, with 2.9 million receiving antiretroviral therapy (ART) *(7)*. Despite this, an estimated 11% of people with HIV in the Region are unaware of their infection, and about one-third are diagnosed late with advanced disease *(7, 8)*. The number of new infections in Latin America is estimated to have increased by 9% from 2010 to 2023, with approximately 120 000 new infections in 2023. Meanwhile, the Caribbean had a reduction of 22% from 2010 to 2023, down from an estimated 19 000 new cases to 15 000 per year *(7, 9)*. According to 2021 estimates, three key populations – men who have sex with men, transgender women, and female sex workers – represent 60% of new infections in Latin America and 44% of new infections in the Caribbean *(7)*. To accelerate HIV elimination, urgent actions needed include: strengthening ART access, increasing testing, ensuring availability of pre-exposure prophylaxis, providing sexual education, implementing behavior change interventions, and addressing stigma, discrimination, and other structural barriers.

Elimination of MTCT of Chagas, syphilis, HIV, and hepatitis B remains a significant challenge in the Americas. Although 11 countries and territories have eliminated the MTCT of syphilis and HIV, there were still an estimated 183 000 pregnant women with syphilis and 68 000 cases of congenital syphilis regionally in 2022 *(10)*. The estimated HIV vertical transmission rate for Latin America and the Caribbean is 15%. Despite regional progress on eliminating MTCT of hepatitis B, an estimated 34 000 children under 5 in the Americas had chronic hepatitis B infection in 2022. Maternal and child health care systems throughout the Region need to address MTCT

– including increasing awareness of these diseases, increasing the coverage of maternal testing and treatment (when applicable), improving vaccination when applicable, and ensuring safe childbirth practices.



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While 19 countries have achieved elimination targets and some countries and territories such as Costa Rica, Dominican Republic, Ecuador, French Guiana, Mexico, and Suriname are on track on the elimination after significant progress in reducing the transmission, **malaria** remains a public health problem in the Americas, particularly among rural and impoverished communities. In 2022, about 482 000 confirmed cases and 89 deaths were reported in the Region of the Americas. By 2022, three countries – Brazil, Colombia, and the Bolivarian Republic of Venezuela – accounted for an estimated 73% of all cases region-wide *(3)*. Regional malaria elimination faces several challenges, including the increase in gold mining activity, movement of people for social and economic reasons, and limited healthcare access for migrants, hard-to-reach populations, and marginalized groups. Effective elimination requires effective intersectoral action to address the barriers that exist to providing access to malaria diagnosis and treatment to affected communities.

Thirteen **neglected infectious and zoonotic diseases** are included in the Elimination Initiative. Three (plague, foot-and-mouth disease, and yaws) are nearly or suspected fully eliminated. Progress on the remaining diseases is detailed below.

Each year, over 20 000 cases of **leprosy** are reported in the Americas, 90% of which are in Brazil. There are 17 countries with fewer than 10 annual reported cases on average, which are on track to potentially interrupt transmission in the coming years (Antigua and Barbuda, Bahamas, Barbados, Belize, Chile, Dominica, El Salvador, Grenada, Guatemala, Honduras, Jamaica, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Uruguay). In addition, eight countries (Plurinational State of Bolivia, Costa Rica, Ecuador, Guyana, Haiti, Peru, Suriname, and Trinidad and Tobago) are well-positioned to make significant strides toward leprosy elimination by enhancing their efforts, as they report between 11 and 100 leprosy cases annually on average.

Brazil and the Bolivarian Republic of Venezuela have widespread **schistosomiasis** transmission where approximately 25 million people are at risk of infection, and Suriname has focal transmission. In the Americas, **soil-transmitted helminthiasis** presents a public health problem in 17 countries, affecting nearly 46 million children under 15 years of age. Six countries (Belize, Dominican Republic, El Salvador, Honduras, Nicaragua, and Paraguay), where around 10 million children under 15 years old need preventive chemotherapy, are

implementing successful control programs, including annual deworming and treatment.

In Guyana and Haiti, in spite of significant progress, an estimated 5.1 million people are at risk of **lymphatic filariasis**. Progress is measured by the number of districts that stopped MDA. Haiti went from 140 communes needing MDA to 18 (a reduction of 87.2%) and Guyana went from eight regions with MDA to two (a reduction of 75%). Brazil, Colombia, Guatemala, and Peru continue efforts to eliminate **trachoma** with an estimated 5.6 million people requiring preventive chemotherapy. Guatemala is poised to achieve the elimination target by 2025, and PAHO is supporting other countries in the Americas to find out whether more populations are at risk, a necessary step to eventually declare the Region free of trachoma. The last remaining active transmission focus of **onchocerciasis** is in the Yanomami Indigenous area bordering Brazil and the Bolivarian Republic of Venezuela, where approximately 36 000 people still require preventive chemotherapy.

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Chagas disease is endemic in 21 countries where an estimated 6–8 million people are infected. About 30 000 new cases occur annually due to vector-borne transmission, and approximately 9000 more are due to MTCT. Sixty-five million people are estimated to be at risk of contracting the infection and about 12 000 deaths are caused by this disease each year, mostly in Argentina, the Plurinational State of Bolivia, and Brazil. Eighteen countries in the Region have interrupted transmission by the main domestic vector of Chagas disease at the national level, but more remains to be done. Although only one country achieved the status of free of human rabies mediated by dog (Mexico), countries of the Caribbean have never reported the disease, and others have not reported the occurrence for decades. Only four countries reported human deaths due to dog-mediated rabies in the Region in 2023 (Plurinational State of Bolivia, Haiti, Peru, and Bolivarian Republic of Venezuela).

There has been some progress in addressing **cystic echinococcosis/hydatidosis** with improvements in elimination capacities, such as the case of Argentina, Brazil, Chile, Peru, and Uruguay, all of which have included interventions in their national plans. It is still necessary, however, to increase the sensitivity of surveillance and improve the quality of available information. Mainly due to its chronic course and late diagnosis, echinococcosis is often expensive and complicated to treat and may require extensive surgery and/or prolonged drug therapy. Animal fasciolosis is widespread in the Region, but **human fascioliasis** is a public health problem only in Peru and the Plurinational State of Bolivia, where approximately 250 000 people (primarily Indigenous communities) are at risk of infection due to socioeconomic and cultural determinants. Since 2007, the Plurinational

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State of Bolivia's annual deworming efforts have significantly reduced fascioliasis, and elimination is likely within the next four years. Peru faces widespread human fascioliasis in several regions, particularly in high Andean and rural areas.

To achieve disease elimination of neglected infectious and zoonotic diseases and conditions, countries must enhance case management, monitoring, and documentation while addressing complications, preventing disabilities, and combating stigma. Implementing population-based interventions is crucial, including preventive chemotherapy, improved water and sanitation, hygiene education, control of vectors, and addressing communities' social, economic, and cultural aspects. Disease-specific activities like deworming, animal vaccination, and food inspection are also important. Adopting an integrated One Health approach that addresses humans, animals, and the environment is also key to sustaining progress and achieving elimination goals.

As reported by the Joint Monitoring Program in 2021, a total of 9.1 million people practiced **open defecation** in the Region *(11)*. The practice is especially prevalent in rural and low-income urban areas. In 2022, six countries reported having between 1% and less than 4% of the population practicing open defecation (Colombia, Dominican Republic, Guatemala, Panama, Peru, and Suriname,) while the Plurinational State of Bolivia, Honduras, and Saint Lucia reported proportions between 4% and 9%, and Haiti reported 17.7%. More

support is needed to strengthen water, sanitation, and hygiene (WASH) interventions and improve access to safely managed sanitation services, especially for those living in situations of vulnerability, including rural and Indigenous communities.

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Fourteen countries have eliminated the **polluting fuels in the household**, and regional use has decreased by 10 million individuals over the last decade. However, 74 million people in the Region still relied on polluting fuels for cooking or heating sources in 2021. This issue primarily affects rural and low-income urban areas. In five countries (Guatemala, Haiti, Honduras, Nicaragua, and Paraguay), more than 30% of the population still uses polluting fuels. Eight countries are close to the elimination goal (<10% of the population using polluting fuels: Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Saint Lucia, Saint Vincent and the Grenadines, and Suriname) and in eight countries, the percentage is between 10% and 30% (Belize, Plurinational State of Bolivia, Dominica, Grenada, Guyana, Jamaica, Mexico, and Peru). Rural areas (24.9%) are more affected than urban areas (3.5%). Solutions include improving access to clean energy, enhancing infrastructure, and raising awareness about health and environmental risks.

As the current data show, a number of strategic areas require more effort to achieve elimination targets for a range of diseases and conditions. Factors such as poverty, lack of education, and stigma play significant roles in the ongoing transmission of these diseases. Progress toward elimination hinges on expanding interventions to reach underserved communities, intensifying intersectoral efforts to reduce inequalities, strengthening first level of care to deliver integrated services, and fostering meaningful community engagement.

Gaps in data/information

While the Elimination Initiative has already begun advancing the implementation and measurement of disease elimination in the Region, it is important to highlight gaps in data and information that prevent countries from fully recognizing the initiative's full potential. Data gaps in disease elimination efforts are multifaceted, stemming from barriers to health technologies and systematic data access, as well as disparities in global attention, geographical coverage, and population focus. High-profile diseases like HIV, tuberculosis, and malaria often have more comprehensive data, while neglected diseases suffer from information scarcity. Urban areas generally have better data availability compared to remote regions, and structural inequities lead to inadequate surveillance among certain populations, particularly Indigenous communities. While PAHO Member States have made progress in generating national-level data, there is a pressing need for higher-quality, disaggregated data at subnational levels to understand trends, inequalities, and specific demographic impacts.

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Improving data quality is crucial for effective monitoring and evaluation of the Elimination Initiative. This involves enhancing accuracy, completeness, consistency, timeliness, and validity of data. Accurate cause-of-death information and increased specificity in data collection are essential for allocating health resources effectively and addressing the impact of various conditions, including noncommunicable diseases, on disease elimination efforts. Additionally, key information about the disability burden for diseases is often lacking, challenging the Region's ability to reach all disease elimination targets. Better quality data leads to increased accountability and can help ensure that the initiative reaches the hardest-to-reach populations with tailored and effective strategies.

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CHAPTER

3

Perspectives on Disease-specific Interventions

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Summary

The Elimination Initiative in the Americas faces complex challenges, including healthcare disparities, political and economic barriers, and inadequate surveillance. Progress toward disease elimination targets can be measured by looking at incidence and prevalence, as well as examining the impact of disease control efforts and making projections about future disease progression. These analyses will help Member States adjust programs based on existing data. While the Region is seeing varying success tackling diseases in the Elimination Initiative, great disparities exist both among and within countries, driven by underlying health inequities and social determinants. Addressing access barriers and ensuring the success of the Elimination Initiative urgently requires developing a better understanding of the mechanisms behind inequity.

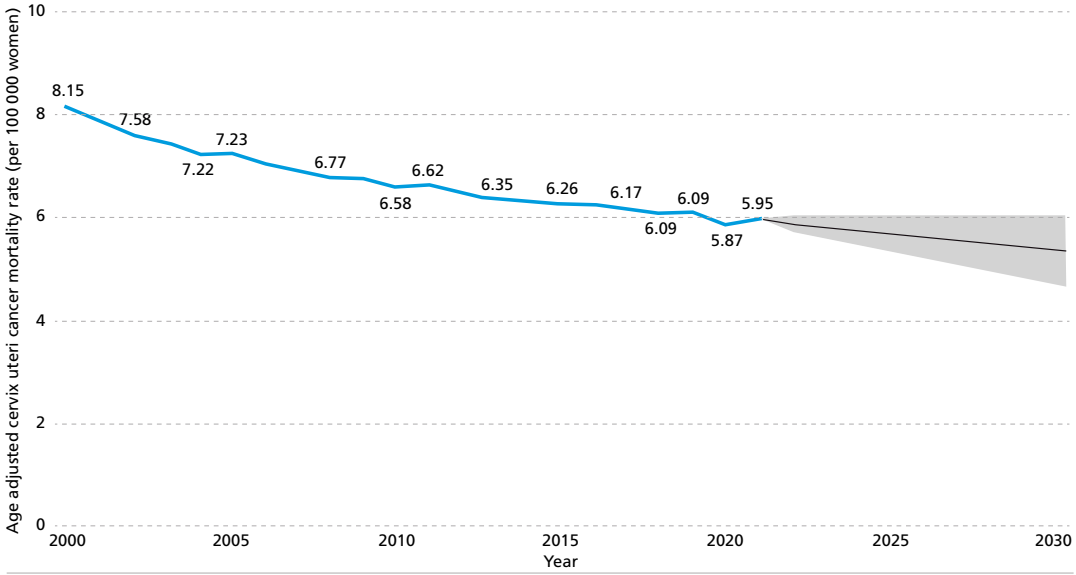
Challenges achieving elimination

The Elimination Initiative faces complex challenges in reaching its disease-specific targets, including healthcare disparities, political and economic barriers, inadequate surveillance, and cultural and linguistic diversity. While the previous chapter examined progress on elimination targets, this chapter digs deeper into some of the diseases that have not yet achieved their targets, to see what strategies have worked, what challenges exist, and what remains to be done. This chapter also explores equity indicators that can help PAHO and Member States ensure disease elimination efforts reach the most underserved and marginalized communities. Due to limited data availability and the need for sufficient data points to ensure accurate forecasting, only a limited number of diseases are included in this chapter's analysis.

Cervical cancer

In 2022, the age-standardized incidence and mortality rates for cervical cancer were 11.5 and 5.85 per 100,000 women, respectively, which represents 78 706 new cervical cancer cases and nearly 40 000 estimated deaths *(1)*. The burden of cervical cancer in the Americas was significant, with mortality rates three times higher in Latin America and the Caribbean compared to North America, highlighting substantial disparities in wealth and access to healthcare services. If current trends persist, cervical cancer deaths in the Americas are projected to be as high as 5.37 per 100 000 women by the end of the initiative in 2030 (see Figure 5). Ensuring healthcare access and quality at the first level of care can improve precancer screening, and treatment of precancerous lesions can prevent progression of the disease. Additionally, providing universal access to the human papillomavirus (HPV) vaccine could significantly reduce the risk of cervical cancer on a population level *(2)*. Eliminating cervical cancer also requires prompt screening and treatment as well as palliative care.

Figure 5. Age-adjusted cervical cancer mortality rate projections in the Region of the Americas



Source: World Health Organization. Global health estimates 2021: deaths by cause, age, sex, by country and by region, 2000–2021. Geneva: WHO; 2021 [cited 16 September 2024]. Available from: https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-leading-causes-of-death.

PAHO collaborates with countries to implement the Regional Strategy and Plan of Action for Cervical Cancer Prevention and Control *(2)*. This involves providing technical assistance and strengthening cervical cancer programs, using existing PAHO/WHO tools and resources. Additionally, PAHO's Regional Revolving Fund (RRF) can provide access to bulk purchasing of HPV vaccines at a standardized price across the Region. PAHO's ProVac Initiative has also developed a cost-effectiveness model to aid decision-making regarding the introduction of HPV vaccines and the enhancement of cervical cancer screening strategies. Ensuring that these actions are scaled up throughout the Region – particularly in areas with high prevalence of cervical cancer and low rates of vaccination – can improve progress toward the elimination target.

Cholera

The regional elimination target for cholera is the absence of community transmission for at least three consecutive years. Although the Region registered no cases in 2020 and 2021, a resurgence began in 2022. A total of 56 355 and 149 cases were reported by Haiti and the Dominican Republic, respectively, in 2023 *(3)*.

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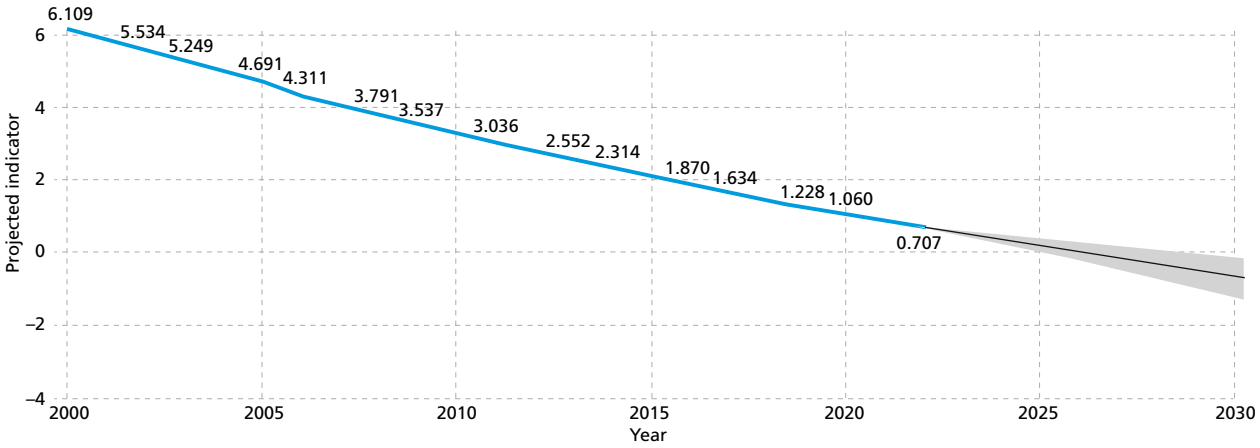
Since predicting future cases is difficult, cholera elimination efforts must focus on prevention, preparedness, and response alongside a strong surveillance system for early case detection. For prevention, improving water supply and sanitation services is the most sustainable way to protect against cholera and other waterborne diarrheal diseases, although this may be unrealistic for populations living in extreme poverty in the Region *(3)*. In this context, controlling mortality by cholera should be at the center of health services interventions. Use of available treatment is highly effective for those who become infected: up to 80% of cases can be treated through early administration of oral rehydration salts *(4)*. Cholera surveillance should be part of an integrated national system with timely feedback at local, regional, and global levels, using the WHO standardized case definition to accurately estimate the global cholera burden and develop sustainable support strategies. In countries without reported cholera cases, health officials recommend monitoring acute diarrhea trends in adults, immediately reporting suspected cases, investigating all suspected clusters and confirming cases through laboratory testing. The deployment of cholera vaccine is an efficient tool for managing cholera outbreaks during complex emergencies, including humanitarian crises.

Environmental risk factors

Environmental risk factors in the Americas can lead to increased rates of respiratory illnesses, vector-borne and tropical diseases, cardiovascular diseases, and other chronic conditions. The Region struggles to mitigate the impact of these hazards, as inadequate waste management, deforestation, and exposure to toxic substances continue to compromise public health and well-being.
Open defecation contributes to the spread of infectious diseases, contaminates water sources, and undermines sanitation efforts in many impoverished communities. In 2000, 52.3 million people practiced open defecation, and by 2020 this had decreased to 11.1 million. The Elimination Initiative is aiming for a 95% reduction in this behavior between 2020 and 2030. By 2021, this number decreased further to 9.1 million people. Continued reduction in this practice is likely; by 2026, the initiative forecasts that 0.01% of the Region's population will still be engaging in this practice, and in subsequent years, this value will reach close to 0.

Figure 6. Percentage of population practicing open defection in the Region of the Americas

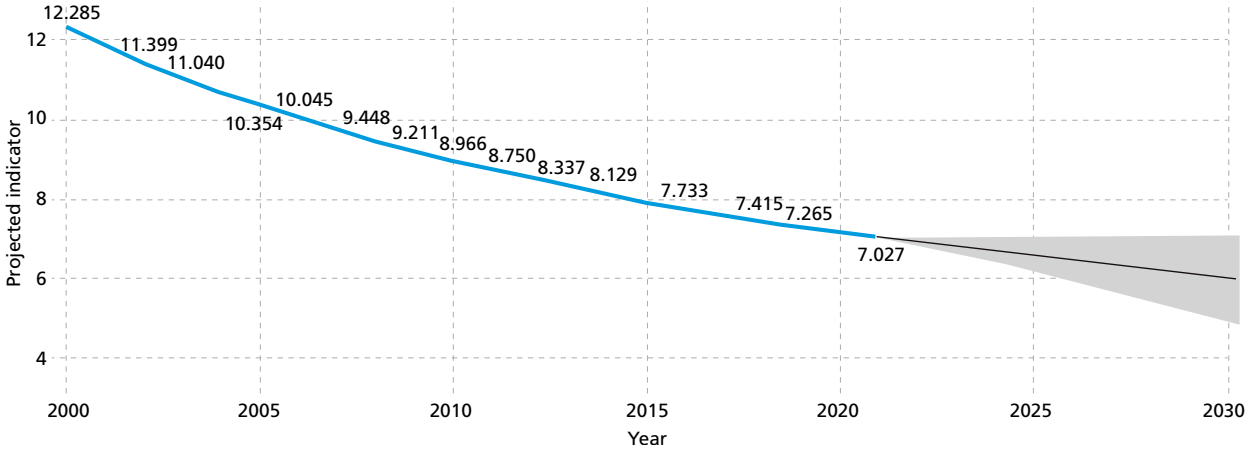


Source: World Health Organization. The global health observatory. Geneva: WHO; [date unkown] [cited 16 September 2024]. https://www.who.int/data/gho.

Reducing the number of people in the Region dependent on household polluting fuels will improve health outcomes and protect the environment. Assessing how many people primarily rely on polluting fuels for cooking can serve as a proxy for estimating the progress associated with polluting fuel use across the Region. The forecasting analysis indicates that by 2030, the estimated proportion of people relying on polluting fuels will be 5.96%, close to the Elimination Initiative target of 5%.

PAHO provides technical support to Member States to generate evidence for better management of water and sanitation services and review the financial accounts of the sector, using tools such as Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) and Tracking Financing to WASH (TrackFin) *(5)*. Additionally, efforts are underway to disseminate technical guidelines and strengthen surveillance systems *(5)*. PAHO also supports performance improvement of environmental health programs, combined with actions to build an environmentally sustainable and resilient health sector by estimating the sector's air pollution footprint and promoting use of clean energy *(6)*.

Figure 7. Percentage of population with primary reliance on polluting fuels and technologies for cooking in the Region of the Americas

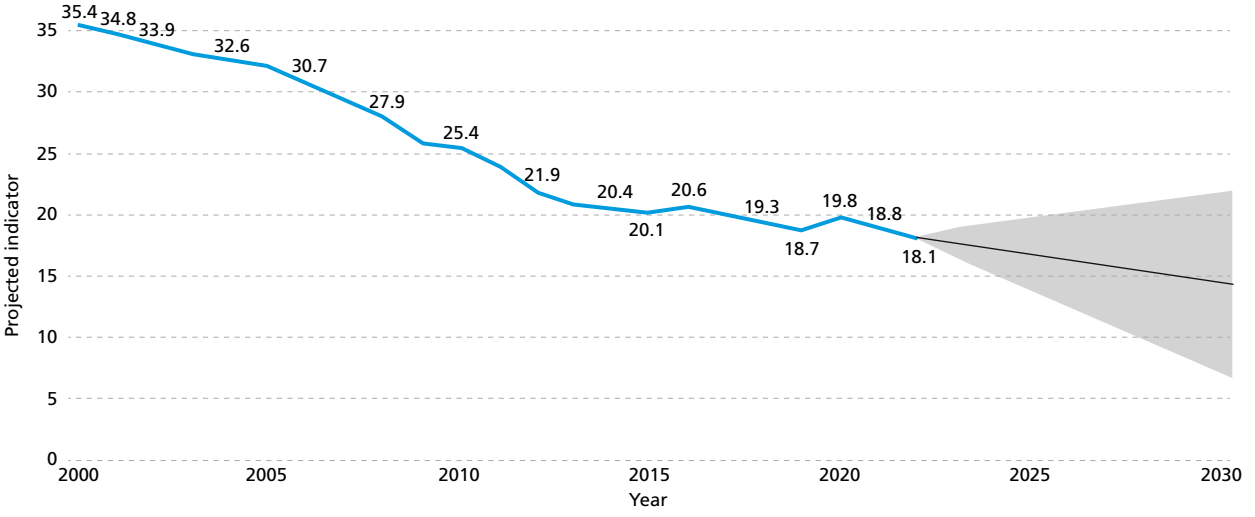


Source: World Health Organization. The global health observatory. Geneva: WHO; [date unkown] [cited 16 September 2024]. https://www.who.int/data/gho.

Mother-to-child-transmission

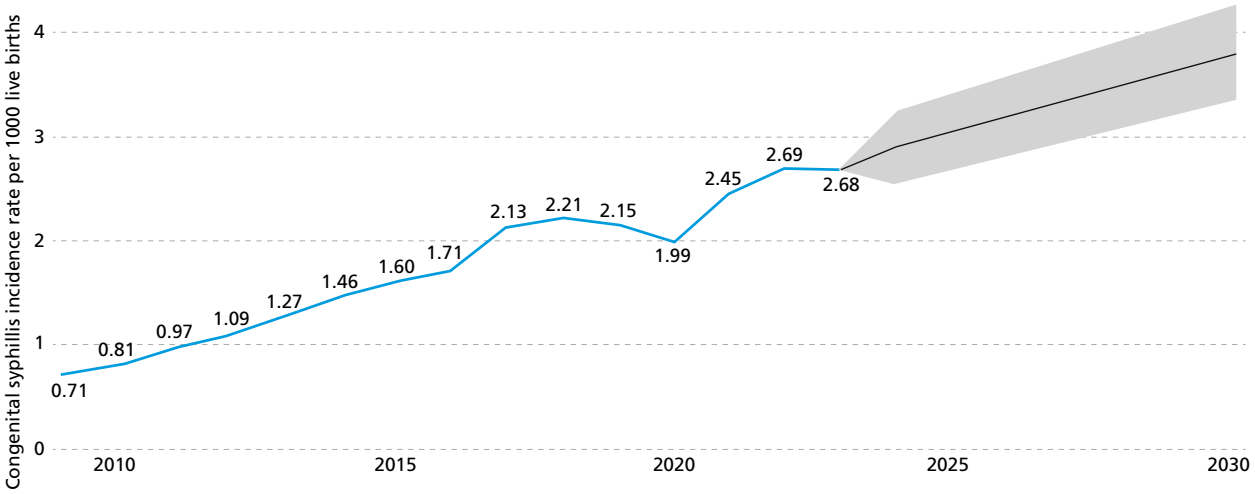
The mother-to-child transmission (MTCT) rate of HIV in the Region has been consistently decreasing, and, in 2022, 4900 new infections among children were avoided thanks to the MTCT strategy. However, reaching the 2030 target (MTCT of HIV of 2% or less) requires implementing efforts like increasing access to HIV testing and treatment among pregnant women.

Figure 8. HIV mother-to-child transmission rate in the Region of the Americas



Source: The Joint United Nations Programme on HIV/AIDS. AIDSinfo. Geneva: UNAIDS; [date unkown] [cited 16 September 2024]. https://aidsinfo.unaids.org.

Figure 9. Congenital syphilis incidence rate in the Region of the Americas



Source: Pan American Health Organization. Communicable disease prevention, control, and elimination. Washington, D.C.: PAHO; [date unkown] [cited 16 September 2024]. https://www.paho.org/en/communicable-disease-prevention-control-and-elimination.
Countries excluded from the analysis: Barbados, Bonaire, Curacao, Dominican Republic, French Guiana, Grenada, Guadeloupe, Haiti, Martinique, Saba, Sint Eustatius, Sint Maarten, Suriname.

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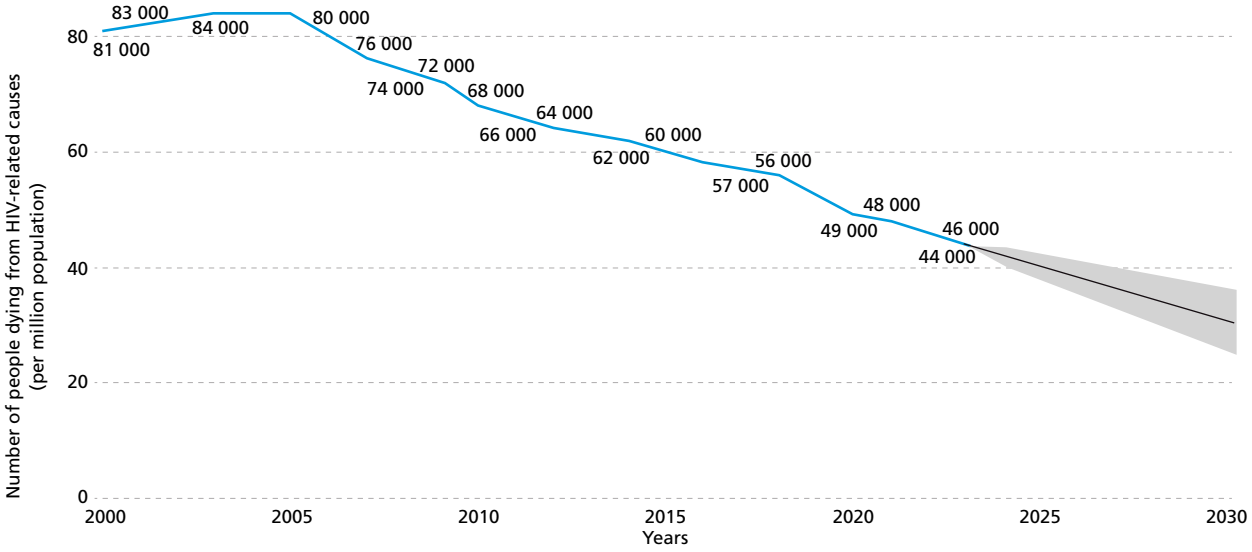
Syphilis is on the rise in the Americas, and this translates to higher prevalence among pregnant women and higher congenital syphilis rates. Managing MTCT of syphilis presents significant challenges, including limited access to comprehensive prenatal care, diagnostic, and treatment services, particularly in underserved and rural areas. Low awareness about syphilis further complicates prevention efforts. Barriers to timely and effective treatment include penicillin shortages, restrictions on who can prescribe the medication, and lack of follow-up after treatment. The forecasting analysis suggests that by 2030, the rate of congenital syphilis will increase to close to 3.7 per 1000 live births – therefore trending in the opposite direction of the desired elimination target of 0.5 per 1000 live births.

HIV

If current trends persist, the estimated number of HIV-related deaths by 2030 will be well above the established target of 65% reduction in comparison with the values presented in 2010.

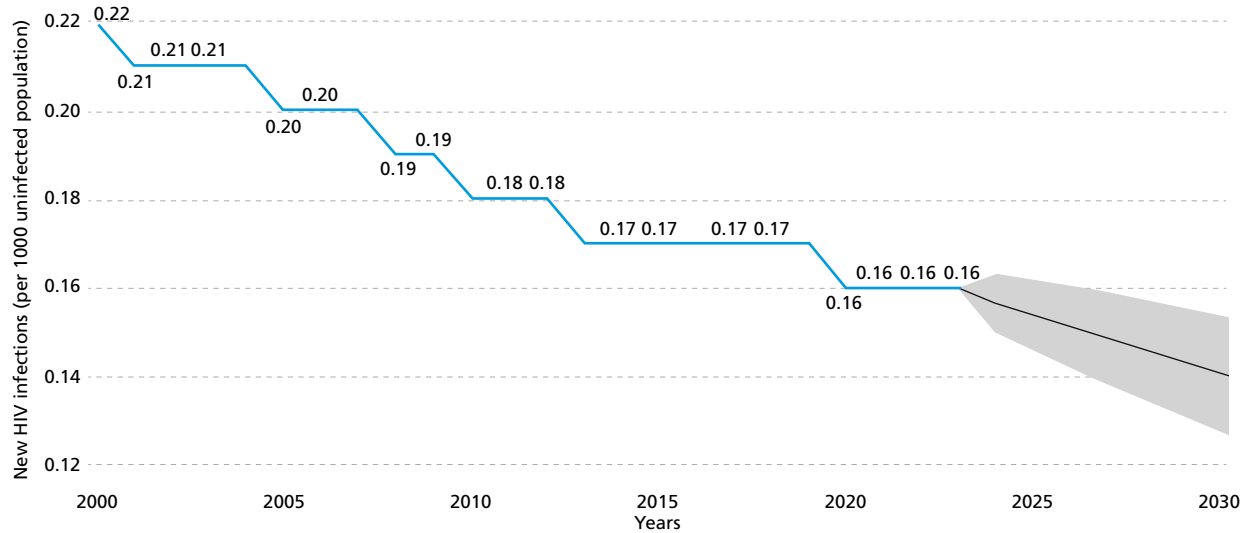
Figure 10. Number of people dying from HIV-related causes in the Region of the Americas



Source: The Joint United Nations Programme on HIV/AIDS. AIDSinfo. Geneva: UNAIDS; [date unknown] [cited 16 September 2024]. Avaulable from: https://aidsinfo.unaids.org.

New HIV infections have decreased in the Region, and the trend projects an expected rate of 0.14 cases per 1000 noninfected population by 2030. To accelerate progress and reach the 2030 target (0.02 new cases per 1000 population), it is essential to expand access to combination prevention with a focus on key populations *(7)*. The 75th World Health Assembly endorsed the Global Health Sector Strategies (GHSS) on HIV, viral hepatitis, and sexually transmitted infections (STIs) for the period of 2022–2030. The GHSS aim to guide countries in implementing effective prevention and treatment programs, with the goal of ending the epidemics of HIV, STIs, and viral hepatitis as public health problems by 2030 *(8)*.

Figure 11: New HIV infections in the Region of the Americas

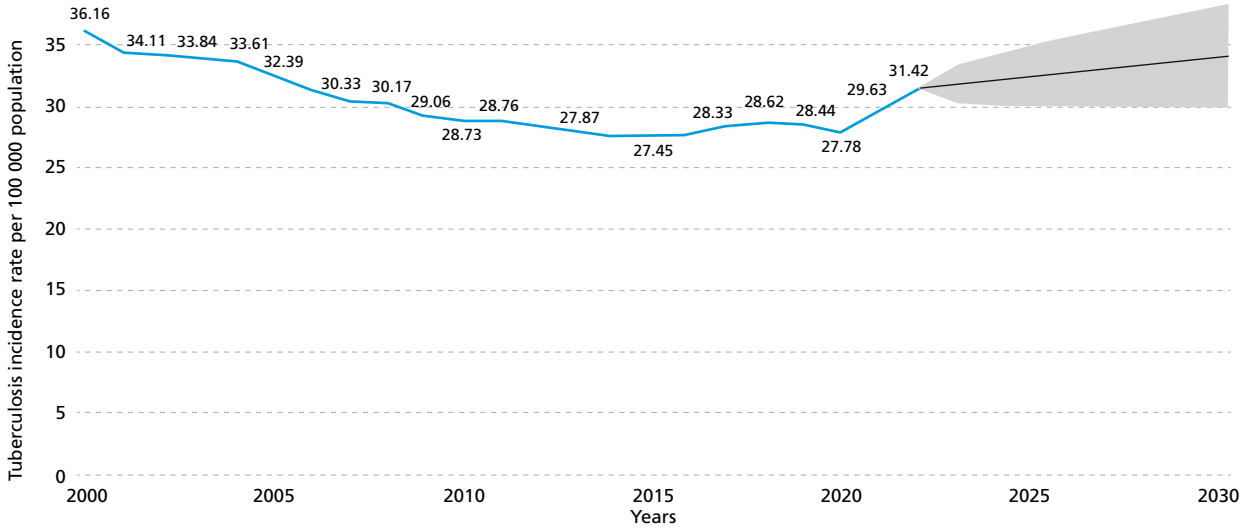


Source: The Joint United Nations Programme on HIV/AIDS. AIDSinfo. Geneva: UNAIDS; [date unkown] [cited 16 September 2024]. Available from: https://aidsinfo.unaids.org.

Tuberculosis

In 2022, tuberculosis remained one of the leading infectious disease killers globally, and was the leading cause of death among people living with HIV. Figure 13 illustrates that the incidence rate has varied, with a marked decline observed during the years 2019 and 2020, likely due to disruptions in the notification process caused by the COVID-19 pandemic. Projections indicate a possible increase of the incidence rate by 2030, underscoring the continued need for sustained efforts to combat tuberculosis in the Region.

Figure 12. Tuberculosis incidence rate in the Region of the Americas



Source: World Health Organization Global Tuberculosis Programme. Global tuberculosis report 2021. Geneva: WHO; 2021. https://iris.who.int/bitstream/handle/10665/346387/9789240037021-eng.pdf.

PAHO and WHO are actively supporting countries in the Americas through various initiatives to reduce tuberculosis incidence and mortality. The End TB Strategy aims to end the global tuberculosis epidemic. The strategy focuses on reducing tuberculosis deaths by 95% compared to 2015, reducing new cases by 90% between 2015 and 2035, and ensuring that no family faces catastrophic costs due to tuberculosis. PAHO's response to tuberculosis focuses on six key areas: providing regional leadership and fostering partnerships, advancing research and innovation, setting and promoting evidence-based norms and standards, developing ethical policy options, offering specialized technical support to countries, and monitoring and reporting *(9)*.

In September 2023, global Heads of State reaffirmed their commitment at the second United Nations High-Level Meeting on Tuberculosis with a new political declaration that includes ambitious targets to be met by 2027 *(10)*. They agreed that countries should accelerate implementation of evidence-based tools and innovations, including: more sensitive screening tools such as digital X ray with artificial intelligence to increase tuberculosis detection, rapid molecular tests for early diagnosis, shorter treatment regimens that can increase the treatment success rate, and tuberculosis preventive treatment to break the community transmission and prevent new infections. A multisectoral response is required, including the meaningful participation of members of parliaments, civil society, and affected communities.

Vector-borne diseases

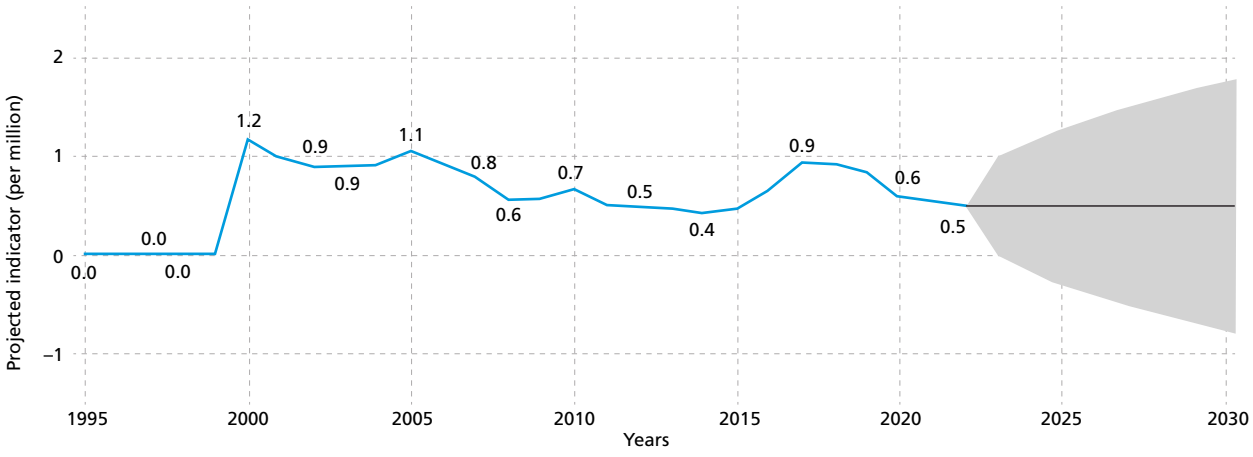
The dynamics of yellow fever cases in the Americas has varied significantly over the years. Arboviral disease with a sylvatic reservoir is present in 13 countries of the inter-tropical area of the Region; while the complex nature of this disease makes accurate forecasting for the expected number of yellow fever cases difficult, planning concrete actions for prevention and control is nonetheless essential.

PAHO is implementing the Elimination of Yellow Fever Epidemics initiative: a focus on expanding yellow fever vaccination coverage, strengthening the laboratory networks, and expanding the surveillance and characterization of epizootics. This includes preparing guidelines for district, state, and national levels. PAHO has also developed a detailed map of yellow fever risk areas based on environmental and geographical conditions, which guide the establishment of vaccination policies *(11)*.

The number of malaria cases has also varied considerably over the years. The projection for 2030 is 487 698 cases. Changes in malaria incidence in recent years confirm the strong connection between malaria transmission and social and economic factors that generate population movement and changes in land use. From 2016 to 2019, the increase in gold mining in South America generated a significant increase in transmission. By 2023, mining areas and Indigenous communities became the areas with the highest transmission in the Region.

To combat malaria, PAHO developed the Plan of Action for Malaria Elimination 2021–2025 in consultation with countries and regional partners. This document guides national plans and promotes an inter-programmatic and intersectoral approach, along with joint efforts between countries and partners. The document emphasizes the need to address key malaria foci in each country with specific, information-based operational solutions. Continuation of these initiatives is crucial to control and eventually eliminate malaria in the Americas *(12)*.

Figure 13. Projected malaria cases in the Region of the Americas



Source: World Health Organization Global Malaria Programme. World malaria report 2023. Geneva: WHO; 2023. Available from: https://www.who.int/publications/i/item/9789240086173.

Leaving no one behind: measuring and addressing inequity

The Region faces deep-rooted structural inequalities that significantly impact health outcomes and opportunities *(13)*. The more than 30 diseases and conditions in the Elimination Initiative disproportionately affect those living in situations of vulnerability, who face stigma, environmental challenges, and limited access to health care. For example, Indigenous communities in El Chaco (spanning several countries in South America) and La Mosquitia (in Honduras) still struggle with diseases eliminated elsewhere, highlighting the persistent impact of inequality on health.

For the Elimination Initiative to succeed, Member States must address underlying health inequities and recognize social and environmental determinants of health. The first step in this process is rigorous health inequality assessments, which help Member States address inequities while working toward elimination targets, ensuring no one is left behind. Such assessments typically involve examining how health outcomes are distributed across different social groups. For example, health programs might look at the incidence of a disease, comparing individuals based on their income levels, or how health outcomes vary across different geographical areas (like countries or districts) ranked by social factors. Sex, gender, ethnicity, disability, and age, for example, are important dimensions that can affect health outcomes.

Health programs can measure these health inequalities using summary statistics such as the slope index of inequality (SII) and the concentration index (CIx). The SII is used to quantify inequality in health outcomes, most often based on education or income. It represents the absolute difference in health outcomes between the hypothetical individuals at the bottom and top of the education or income distribution. The CIx measures relative health inequality by quantifying how a health variable is distributed across socioeconomic groups. It provides a summary statistic that indicates whether the health outcome is disproportionately distributed among the poor or the wealthy. For both of these values, a value of 0 indicates perfect equality, while negative values show concentration among the disadvantaged (poorest groups) and positive values among the advantaged (richest groups). Both measures are useful for comparing health inequalities across different populations or time periods and are widely used in health economics and epidemiology. SII measures absolute inequality (the actual difference in outcomes), while CIx measures relative inequality based on a concentration curve, indicating how health outcomes are distributed across socioeconomic groups *(14, 15)*.

Tables 2 and 3 present SII and CIx measures, created using data from the Global Burden of Disease 2021 Study *(16)* and PAHO's sustainable development index. Table 2 shows the summary measures of inequality (SII and CIx) in the incidence of selected diseases over time, along with the corresponding regional incidence average rates. Table 3 shows those values in mortality for the same diseases. Results indicate high and persistent cross-country inequalities (note the mostly negative values in the SII and CIx columns). For some diseases, the excess incidence in the most affected countries was more than double the regional average in 2021. The mortality burden is also disproportionately concentrated in the most disadvantaged countries.

Table 2. Inequality of incidence of selected diseases in the Elimination Initiative Region of the Americas: 2015, 2019, and 2021 data

Disease	Year	Regional average (x)	Absolute inequality (SII)	Regional average (CIx)
HIV/AIDS	2015	18.9	–4.81	–5.1
	2019	19.0	–5.4	–5.0
	2021	18.2	–4.7	–4.4
Cervical cancer	2015	10.9	–7.7	–13.0
	2019	11.0	–9.5	–16.3
	2021	10.9	–10.2	–18.2
Tuberculosis	2015	19.1	–80.3	–47.5
	2019	18.6	–72.4	–45.6
	2021	18.2	–70.1	–45.1
Hepatitis B	2015	218.8	–333.1	–25.6
	2019	196.1	–301.9	–25.1
	2021	186.0	–305.9	–26.1
Hepatitis C	2015	69.6	–59.3	–18.4
	2019	67.4	–54.1	–16.4
	2021	67.6	–52.6	–16.2

Age standardized rates per 100 000 population. Data for 36 countries of the Americas. Source: Institute for Health Metrics and Evaluation. Global Burden of Disease 2021: findings from the GBD 2021 study. Seattle: IHME; 2024. Available from: https://www.healthdata.org/researchanalysis/library/global-burden-disease-2021-findings-gbd-2021-study.

Table 3. Inequality in mortality of selected diseases in the Elimination Initiative Region of the Americas: 2015, 2019, and 2021 data

Disease	Year	Regional average (x)	Absolute inequality (SII)	Regional average (CIx)
HIV/AIDS	2015	5.2	–8.6	–34.7
	2019	4.4	–7.9	–36.0
	2021	4.1	–7.1	–34.2
Cervical cancer	2015	4.1	–7.0	–27.0
	2019	4.0	–7.2	–29.2
	2021	3.9	–7.2	–30.5
Tuberculosis	2015	2.3	–10.7	–53.9
	2019	2.1	–8.7	–51.2
	2021	2.0	–8.1	–52.2
Hepatitis B*	2015	2.8	–0.06	–34.5
	2019	2.4	–0.05	–33.0
	2021	2.3	–0.04	–31.8
Hepatitis C*	2015	0.63	–0.01	–33.4
	2019	0.59	–0.01	–29.2
	2021	0.55	–0.01	–28.5

Age standardized rates per 100 000 population. Data for 36 countries of the Americas.
*Age standardized rates per 10 000 000 population. Source: Institute for Health Metrics and Evaluation. Global Burden of Disease 2021: findings from the GBD 2021 study. Seattle: IHME; 2024. Available from: https://www.healthdata.org/researchanalysis/library/global-burden-disease-2021-findings-gbd-2021-study.

Case study: patterns of inequality in four countries

Health disparities observed among countries for these diseases (in Tables 2 and 3) also exist within countries. The uneven distribution of risk for incidence and mortality from these diseases is replicated at smaller geographic levels within nations. This pattern, influenced by social and environmental factors, is demonstrated in Figure 14. Each panel in Figure 14 demonstrates how health outcomes for selected diseases vary within a selected country, based on socioeconomic factors.

Panel A presents cervical cancer incidence across 33 departments in Colombia, grouped by poverty levels. The poorest areas have 8 more cases per 100 000 women (a 64% higher incidence) than the richest areas *(17)*.

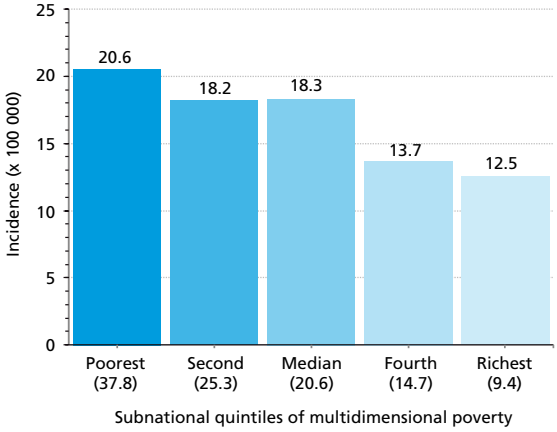
Panel B presents HIV incidence in the United States across 51 states and territories, ranked by the sociodemographic index (SDIx), a composite indicator that measures sustainable development across three key dimensions: economic, social, and environmental. The figure shows a difference of 7 cases per 100 000 people between the highest and lowest groups *(16)*.

Panel C presents tuberculosis mortality data from Mexico across 32 federal entities ranked by SDIx. The SII is –0.90, meaning there is 1 additional death per 100 000 people across the social gradient. While this seems small, it represents about 50% of the national tuberculosis mortality rate *(16)*.

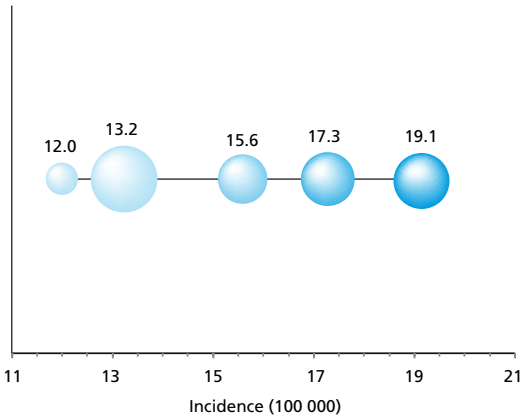
Panel D shows how new cases of hepatitis B are distributed across Brazil's 27 federative units, which are ranked according to SDIx. The graph suggests a moderate level of inequality: 60% of Brazil's new hepatitis B cases were found in the half of federative units that are most socially disadvantaged *(16)*.

Figure 14. Inequalities within countries for selected diseases in the Elimination Initiative

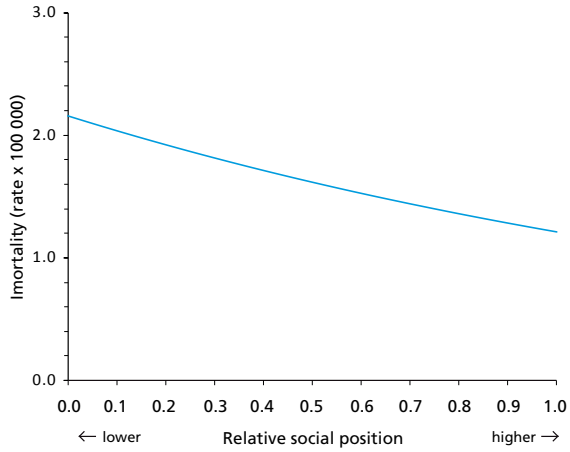
(A) Colombia: Cervical cancer incidence (age-adjusted rate per 100 000 women) by subnatiomnal quintiles of multidimensional poverty; 2017–2021



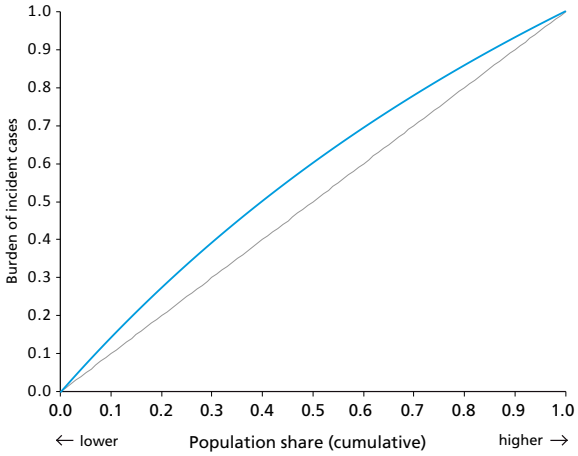
(B) United States: HIV/AIDS incidence (age-adjusted rate per 100 000) by subnational quintiles of the Institute for Health Metrics and Evaluation's (IHME's) SDix; 2021



(C) Mexico: Mortality due to terberculosis (age-adjusted rate per 100 000 by subnational social position relative to IMHE's SDIx; 2021



(D) Brazil: Hepatitis B incidence (age-adjusted rate per 100 000) by subnational social position relative to IHME's SDIx; 2021



As the above data illustrate, health inequalities deeply rooted in social factors are widespread across the Americas. As the Region works toward eliminating communicable diseases, it is crucial to understand the mechanisms behind inequalities and to closely monitor changes over time. In other words, PAHO and Member States should not just focus on reaching difficult-to-access groups but also on addressing the underlying social factors that make these groups more susceptible to inequality. This means developing strategies and implementing effective, culturally appropriate interventions that can create lasting positive changes in the social conditions affecting these groups. By doing this, prioritizing the most marginalized and socially excluded groups will be possible.

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CHAPTER

4

How to Accelerate the Elimination Efforts in the Region

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Summary

The cumulative experience of PAHO and Member States in disease elimination has yielded valuable insights into integrated strategies for disease elimination. While implementation and context vary, all strategies discussed have potential for further acceleration. Key approaches cover all four of the Elimination Initiative's lines of action and include strategies such as strengthening first level of care, supporting innovation and access to health technologies and data systems, developing equity-focused interventions, and engaging civil society. Member States are encouraged to adopt and scale up these effective strategies to meet their disease elimination targets and provide more equitable, community- and person-centered care.

Strengthening the integration of health systems and service delivery (LINE OF ACTION 1)

Approach: Multi-disease integration with first level of care

Why is this important?

The first level of care (also called primary care) is essential for disease elimination, providing vaccines, screening, diagnosis, and treatment. It also creates an opportunity to focus on equity and address disease elimination using a life course approach. The first level of care is the cornerstone of the primary health care (PHC) strategy, which strengthens health systems and leverages multisectoral policy and action. The implementation of the PHC strategy can support communities' engagement and involvement in their own care, respecting their needs and demands.

What is currently being done?

The Elimination of Mother-to-Child Transmission Plus initiative (EMTCT+), was established in 2016 to eliminate mother-to-child transmission (MTCT) of HIV, syphilis, Chagas disease, and hepatitis B, prioritizing the first level of care. EMTCT+ has led to measurable results. For example, rates of MTCT of HIV fell from 22% in 2010 to 16% in 2019 in Latin America and from 21% in 2010 to 13% in 2019 in the Caribbean (before increasing slightly in both sub-regions during the COVID-19 pandemic) There has also been a 40% decline in new HIV infections in children *(1)*. Eleven countries and territories, all in the Caribbean (Anguilla, Antigua and Barbuda, Belize, Bermuda, Cayman Islands, Cuba, Dominica, Jamaica, Montserrat, Saint Kitts and Nevis, and Saint Vincent and the Grenadines) eliminated MTCT of HIV and syphilis, the result of a successful implementation of EMTCT+. Belize, Jamaica, and Saint Vincent and the Grenadines are the latest countries in the Region to receive WHO elimination certification for MTCT of HIV and syphilis. To meet elimination targets, these countries focused on strengthening prevention, screening, and treatment services within the first level of care *(2)*.

An additional strategy for implementing integrated approaches like EMTCT+ at the first level of care is training community health workers (CHWs). Helping to address health worker shortages, CHWs provide basic services like vaccinations, disease testing, health education, antenatal care, and surveillance. For example, Suriname's National Malaria Program includes CHWs who diagnose and treat uncomplicated malaria, primarily in hard-to-reach areas and among mobile migrant communities *(3)*. CHWs also played a critical role in responding to the 2022–2023 cholera outbreak in Haiti, providing prevention education, initial treatment, referrals, and surveillance support *(4)*. Similarly, community animal health workers support initiatives aligning with PAHO's One Health strategy to control zoonotic diseases.

How can countries accelerate progress?

Countries' PHC strategies should reach communities where disease transmission persists. This includes tackling issues like distrust, insufficient intercultural approaches, and linguistic barriers *(5)*. Also, effective practices from existing programs like EMTCT+ can be scaled up to strengthen first level of care – making sure that services like antenatal care and immunization are widely available. Improving digital health programs can also expand access. For example, many countries used telemedicine to meet demand for health services during the COVID-19 pandemic. In Colombia, 100

million people used telemedicine during the first year of COVID-19 *(6)*, and in Peru, a multi-sectoral effort provided telemedicine services to serve eight isolated Indigenous communities in the Amazon *(7)*. To scale up this type of intervention, countries must first address access to technology and implement legal regulations for confidentiality *(8)*.

A key challenge for the first level of care is adequate health personnel. Not only is staffing availability inadequate for effective provision of integrated services, but the current system does not support a multi-professional team approach where various health professionals (for example, doctors, nurses, pharmacists, social workers) collaborate to provide a full range of services. Member States can address this by committing more resources to securing and training more staff – and supporting a comprehensive, team-based approach at the first level of care.

Approach: Improved innovation and access to health technologies

Why is this important?

Health technologies, including vaccines, diagnostics, and treatments, are essential for reducing the burden of communicable diseases. However, an array of challenges prevent access to these supplies, including lack of research and development, distribution channels in remote areas, stockouts, pricing, regulatory requirements, funding constraints, inadequate supply infrastructure, and lack of regional production. These factors can lead to shortages, delayed access, and reduced effectiveness of critical health resources. Decentralization of country-level purchasing can compound this problem, as smaller areas often lack purchasing power, causing inconsistencies in availability of certain supplies even within the same country.

What is currently being done?

PAHO and Member States work on various initiatives that help respond to current and future health needs, reduce inequities in the Region, and foster economic development. PAHO's Regional Revolving Funds (RRF) provide affordable, timely access to supplies. They also improve supply management, assist with demand planning, and prevent stockouts. An estimated 180 million people benefited from health supplies acquired through the [RRFs] in the last two years. The PAHO Innovation and Access to Medicines and Health Technologies department, and its Special Program, Innovation and Regional Production Platform strengthens capacities for innovation, development, and production of health technologies.

PAHO also helps improve the availability and affordability of medicines and health technologies. This includes supporting Member States' assessment, incorporation, regulation, management, and safe use of health technologies. PAHO also works with countries on strengthening generic and biosimilar competition and other policies and strategies to improve access to medicines.

How can countries accelerate progress?

Access to health technologies necessitates a comprehensive system addressing the life cycle from innovation through distribution and rational use of technologies. Further, some diseases lack necessary technologies, such as Chagas disease, which faces diagnostic challenges. Current tests are limited in effectiveness across strains and infection stages. Improved detection technology could boost diagnosis and treatment rates *(9)*. Advancing research and development requires political will, funding, supportive policies and regulations, and an exploration of innovative

"As we move forward in the pandemic recovery, it is time to give the Elimination Initiative a renewed, stronger and more mature push to reach a goal on communicable diseases that started right at the establishment of the Organization, 120 years ago,"

- Dr. Jarbas Barbosa, Director of PAHO

solutions. For example, expanding the use of point-of-care dual HIV/syphilis testing in maternal and child health services and promoting rapid malaria testing can accelerate the elimination of MTCT and malaria, respectively. Self-testing – available for HIV, human papillomavirus (HPV), sexually transmitted infections (STIs), and hepatitis C in some countries – can increase accessibility and early detection of these diseases. However, effective implementation requires cultural shifts and education campaigns, as seen with HPV self-testing.

Many existing technologies are not produced at affordable prices or adequate volume to meet demand. For example, the high cost of the HPV vaccine is a burden for many countries *(10)*. More use of the RRFs can improve access to cost-effective products. The participation of 42 countries in the Revolving Fund for Vaccines saves approximately 50% on the 13 most used routine vaccines. Strengthening innovation and production ecosystems can create a more resilient and self-sufficient system. Promotion of competition, including through local and regional production, is key to overcoming challenges like the high cost of HPV vaccines *(11)*. Also, broader use of existing tools like the Performance Monitoring Tool for National Expanded Program on Immunization can improve distribution to underserved areas *(12)*.

In 2022, Member States reaffirmed their commitment to strengthening national regulatory systems that can meet growing market demands and respond to health emergencies *(13)*. These systems, along with crosscutting initiatives like integrated supply chain management and pooled procurement (for example, through the RRFs), can enhance the availability of essential health technologies and accelerate disease elimination efforts across the Region.

Approach: Water, sanitation and hygiene

Why is this important?

Water, sanitation, and hygiene (WASH) programs are critical in prevention and management of communicable diseases. Access to safe water and sanitation services plays a key role in eliminating neglected infectious diseases such as soil-transmitted helminthiasis, schistosomiasis, human fascioliasis, and trachoma. Beyond neglected infectious diseases, though, WASH is essential for eliminating all diseases *(14)*. For example, safe WASH practices during childbirth can support elimination of vertical disease transmission. Also, people living with HIV are more likely to experience diarrhea, which can be life-threatening and make antiretroviral drugs less effective. Improving WASH can reduce these diarrheal episodes *(15)*.

What is currently being done?

Many countries are updating WASH-related policies and regulations with PAHO's technical assistance. WASH strategies to address communicable diseases currently focus on improving water quality; enhancing sanitation infrastructure; promoting hygiene practices; and implementing vector control measures. While progress has been made, challenges persist, particularly in rural and low-income urban areas. For example, climate change impacts (including changing weather patterns and increased frequency of natural disasters) complicate efforts to improve WASH access, particularly among remote communities with limited infrastructure. Also, historical underinvestment and persistent social inequalities continue to hinder widespread access to these essential services across the Region.

How can countries accelerate progress?
Saint Lucia once had high levels of schistosomiasis prevalence and morbidity; after ensuring widespread access to sanitation and safe water, schistosomiasis in the country has practically disappeared *(16)*. Other countries can follow its lead by expanding existing WASH programs to integrate prevention and management of neglected infectious diseases, as well as other vector-borne and water-related infectious diseases *(17)*. This can be challenging as countries often have limited funding earmarked for neglected diseases. Accelerating WASH for disease elimination therefore requires multifaceted, creative approaches; partnerships between governments, private sector, and international organizations; increased funding and resource mobilization; and integrated activities involving national staff from water, sanitation, and health sectors as endorsed by the Global Strategy on Water, Sanitation, and Hygiene to Combat Neglected Infectious Diseases, 2021–2030 *(18)*. A recent virtual WASH course with participants from five countries demonstrates the potential for such integrated efforts *(19)*.

Strengthening health surveillance and information systems for health (LINE OF ACTION 2)

Approach: Enhancing surveillance and information systems for health

Why is this important?
Surveillance systems that allow disease monitoring – including interoperability among systems and platforms, data sharing capabilities, emerging technologies such as artificial intelligence, early detection of public health threats, and capacity-building for healthcare workers – can ensure effective data governance and accurate and timely data collection and management, especially in underserved and cross-border areas. Interconnected information systems also help evaluate the effectiveness of interventions.

What is currently being done?
PAHO, in partnership with the U.S. Centers for Disease Control and Prevention and some countries, supports the use of a single laboratory platform called the multiplex bead assay (MBA) to analyze antibodies against 50–500 different pathogens in a single blood sample. By monitoring multiple diseases that overlap in populations and geographical areas, MBA enhances understanding of transmission, monitors intervention impacts (such as vaccination), identifies susceptible populations, and helps address multiple conditions simultaneously.

In addition, the Elimination Initiative provides more incentive to include communicable diseases in existing surveillance activities. For example, surveillance of acute flaccid paralysis has been a key component of identifying hotspots for poliovirus transmission. Other innovative surveillance efforts can also be implemented, like genomic surveillance efforts, which were expanded during the COVID-19 pandemic *(20)* and could also impact the Elimination Initiative. Although use varies widely among countries in the Region, the infrastructure and expertise developed for COVID-19 genomic surveillance provide valuable tools to detect pathogens and new variants, update vaccine formulations, and guide diagnostics even beyond the COVID-19 virus. Additionally, community-based surveillance efforts are being done throughout the Region. For example, the Brazilian Wildlife

Health Information System engages local communities in collaborative monitoring of yellow fever potentially caused by nonhuman primates *(21)*.

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PAHO conducted a maturity assessment of information systems for health (IS4H), the first of its kind in the Region, between 2016 and 2023. Using over 240 standardized indicators, it assessed national health information systems on a scale of 1–5. It found that 42.8% of the countries are at level 1, "building awareness." They are beginning to adopt IS4H but have limited capacity to generate high-quality data. A third of the countries, 34.7%, have reached level 2, "implementing best practices." They are developing systems and managing health information effectively, but they face challenges like incomplete development of indicators and insufficient data exchange. Another 18.4% have reached level 3, "standardization and continuous improvement," reflecting advances in policies and the use of high-quality data for decision-making. Only 4.1% of countries are at level 4, "integration and alignment," with highly integrated information systems aligned with national and international standards. No country in the Region has reached level 5. A comprehensive report on the regional IS4H maturity assessment will be published in late 2024.

How can countries accelerate progress?

PAHO's renewed focus on IS4H is vital to the elimination of communicable diseases. Countries need to modernize their public health surveillance systems within interoperable information systems and open data platforms to allow real-time detection and timely outbreak response. This means the transition from paper-based to electronic platforms for data management, monitoring tools, and electronic health records, based on international standards. Countries also need to focus on national and cross-border interoperability of information systems and platforms for disease control, prevention, and critical data and information-sharing. Integrated surveillance will help to accelerate progress towards elimination. In many countries, disease-specific surveillance continues to be the norm, which causes inefficiencies and duplication of efforts, particularly at the first level of care. Accelerating the introduction and expansion of innovative multi-disease surveillance platforms is urgently needed to enhance efficiency and ensure health services are responsive to the specific context and needs of populations.

Improving the availability and accuracy of data is necessary to quantify disease magnitude and health supply needs, ensuring that resources are appropriately allocated and that supply chains are aligned with the needs of the Elimination Initiative. In addition, open data platforms and information systems should include a standardized set of equity stratifiers, and data collection forms can advance to include information about an underlying condition causing a patient's death or illness. Adding such information, particularly to digital records, can ensure that countries are better able to understand the full impact and scope of communicable diseases.

Approach: Data for decision-making at all levels

Why is this important?

Strong open data platforms and systems are critical for communicable disease elimination. They enable real-tine actions, targeted interventions, efficient resource allocation, and evidence-based policy formulation. Data facilitate progress tracking, decision-making, and cross-border and intersectoral collaboration, leading to more effective and sustainable elimination strategies.

What is currently being done?

PAHO and Member States use epidemiological data to identify trends, assess intervention effectiveness, and guide strategic decision-making. This data-driven approach enables more targeted and efficient efforts in disease control, from vaccination campaigns to vector control, while also facilitating cross-border collaboration and addressing health equity concerns. Countries have improved their health data management through online reporting systems, enhanced data analysis capacity, improved auditing tools, and dashboards and national repositories. One example is the establishment of electronic immunization registries in 19 countries in the Region. These systems have greatly improved the ability to track immunization rates, identify coverage gaps, and pinpoint zero-dose children. In addition, PAHO has worked to strengthen vaccine-preventable disease surveillance by promoting the use of open online platforms. These advancements have fostered data-driven decision-making, leading to more effective public health strategies and improved health outcomes across the Region.

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The RRFs also launched the Member State Portal in 2023 for countries to submit their estimation of needs yearly and plan their

demand together, as well as provide real-time information for decision-makers. It also offers financial reports and other public health data; this tool is key to performing the core activity of the RRFs, which is to analyze and consolidate the demand to obtain better conditions for countries and territories in health technologies used to treat, prevent, or diagnose elimination targets. This technology facilitates collaboration between PAHO, disease specialists, regulators, and suppliers to support disease elimination efforts. Additionally, PAHO developed a digital dashboard to help decision-makers navigate fund portfolios in relation to critical initiatives like the Elimination Initiative.

Data governance efforts across the Americas, based on the IS4H Maturity Assessment, revealed key challenges in the health sector. A lack of interoperability among health systems is common, hindering efficient data exchange and coordination. Many countries also face the absence of policies for adopting international standards, leading to fragmented data management. Furthermore, there are varying levels of digital transformation, with some nations advancing while others lag behind. Lastly, the Region shows low capacity in artificial intelligence and data science techniques for health data management, limiting innovation and efficiency. These gaps highlight the need for stronger policies, investments, and capacity-building in digital health.

How can countries accelerate progress?
While national aggregates are important, there is a need for more sub-national, disaggregated data for use in decision-making about communicable disease efforts. Member States and partners can also develop tools that present data more effectively for decision makers, program implementers, and healthcare providers. The overall approach should focus on strengthening real-time data collection and open data platforms that monitor diseases targeted for elimination. This requires integrating data from local, regional, and national sources to provide a comprehensive view of health threats. Additionally, aligning surveillance systems with international standards and promoting the use of interoperable platforms is essential for efficient data-sharing and timely responses. Capacity building in data science is also critical, as it equips health workers to use data for early detection, risk analysis, and strategic decision-making. Finally, fostering regional partnerships and cross-border interoperability and collaboration will harmonize surveillance efforts, allowing countries to share data in real time, but also to exchange best practices and mobilize resources. This integration facilitates informed decision-making, efficient resource allocation, and improved patient care.

Member States also need to address the challenges of implementing real-time data systems – including lack of digital infrastructure and disparities in access to technology. Digital health systems can provide useful tools for collecting timely data, particularly at the subnational level and related to the most marginalized and underserved communities.

Approach: Addressing antimicrobial resistance

Why is this important?
Antimicrobial resistance (AMR) threatens effective prevention and treatment of a range of infectious diseases caused by bacteria, parasites, viruses, and fungi. For example, rates of multidrug-resistant tuberculosis (MDR-TB) and rifampicin-resistant tuberculosis (RR-TB) are growing in the Region: in 2022, there were 11 600 MDR/RR-TB estimated cases and 5428

diagnosed, an increase of 12% from 2021 *(22)*. PAHO's Plan of Action on Antimicrobial Resistance supports Member States to take necessary actions to prevent and treat communicable diseases by using safe, effective, affordable, and quality-assured medicines and technologies *(23)*.

What is currently being done?

Countries are making steady progress in building capacity to monitor and contain AMR. Presently, 20 countries are participating in the Latin American Network for Antimicrobial Resistance Surveillance (ReLAVRA). ReLAVRA holds meetings with its members on a regular basis for the exchange of information on resistance surveillance in the countries. This helps Member States obtain routine data to monitor the magnitude and trend of AMR. ReLAVRA also works on the introduction and scale-up of new technologies for tracking AMR *(24)*. These efforts are in direct alignment with the Elimination Initiative – particularly its efforts to strengthen health surveillance and information systems.

How can countries accelerate progress?

To accelerate progress in AMR surveillance for communicable disease prevention, elimination programs should focus on improving data collection and sharing through standardized digital platforms, implementing advanced laboratory techniques like rapid testing, and using a One Health approach to integrate surveillance across human, animal, and environmental sectors. Programs can also leverage artificial intelligence for data analysis and predictive modeling while building capacity of data and surveillance teams to detect and respond to AMR threats.

Addressing the environmental and social determinants of health (LINE OF ACTION 3)

Approach: Use available tools to measure and address equity

Why is this important?

Social determinants of health encompass the non-medical conditions that affect health outcomes. They are the ways in which people are born, grow, work, live, and age, as well as the broader forces shaping daily life, including economic policies, social norms, and political systems. Research indicates that social determinants of health can account for 30–55% of health outcomes *(25)*. By addressing the complex web of factors that influence health outcomes, communicable disease programs can implement more effective, equitable, and sustainable approaches.

What is currently being done?

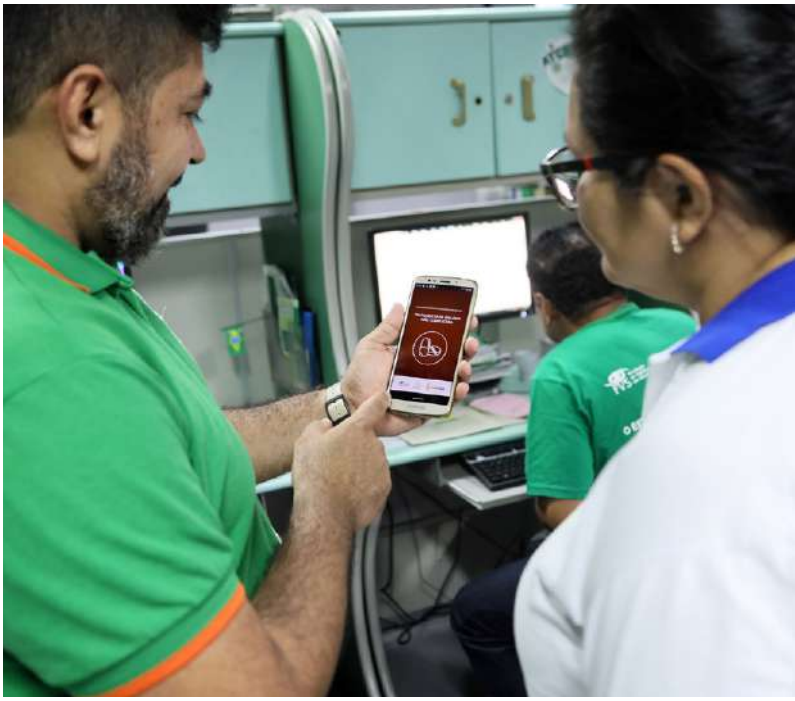
Existing tools are currently being used by program implementers, designers, and researchers in PAHO Member States to measure inequity within communicable disease programs. These include the WHO Health Equity Assessment Tool *(26)*, the Innov8 tool, and PAHO's website tracking progress towards the Sustainable Development Goals (particularly the section analyzing progress and inequities related to the third goal, both regionally and nationally) *(27)*. Some equity-based analyses have already prompted tailored interventions. For instance, recognizing the high tuberculosis risk in prisons has led to enhanced screening, diagnosis, and treatment efforts in these settings *(28)*.

How can countries accelerate progress?
Introducing simpler, more efficient checklists could increase the application of equity tools across countries and health areas. Consistent and more widespread use of these resources would help programs identify mechanisms leading to vulnerability, moving away from one-size-fits-all approaches. Also, accessing and using more community-level data would help PAHO and Member States enable focused, tailored disease elimination strategies that address systemic barriers. For example, those living in remote areas of the Amazon may have multiple health issues they need to address in one visit, so may need fully integrated services that address screening, diagnostics, treatment, and other services in a single visit. Another example is single parents, who may not have access to weekday vaccination clinics. Programs could adapt and reach these groups more effectively by offering clinics in shopping centers or adjusting clinic hours. Tailored strategies like this can improve access to various health services for marginalized groups by adapting to their specific needs and circumstances.

Approach: Use an intercultural perspective

Why is this important?
Using an intercultural perspective helps ensure that health interventions are culturally appropriate, address disparities, and build trust among marginalized communities. By considering various cultural beliefs, traditional practices, and communication styles, disease elimination efforts can be more effective, equitable, and sustainable across the diverse Region.

What is currently being done?
PAHO Member States unanimously approved the 2017 Policy on Ethnicity and Health and the 2019 Strategy and Plan of Action. These build on earlier initiatives like the 2006 resolution on Health of the Indigenous Peoples in the Americas *(29)*. In 2023, PAHO supported a World Health Assembly resolution on Indigenous Peoples' Health *(30)*. These policies promote an intercultural, participatory approach to health, aiming to incorporate Indigenous perspectives and eliminate health disparities affecting these communities in the Americas.



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Many countries throughout the Region have also established intercultural health policies and programs. For example, the Plurinational State of Bolivia has integrated traditional medicine into its national health system. Its National Intercultural Community Family Health (SAFCI) policy integrates traditional medicine into the public health agenda, recognizing Indigenous healing practices alongside modern medicine. It has also incorporated traditional midwives into the healthcare system to promote intercultural dialogue and lead to better health outcomes *(31)*.

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How can countries accelerate progress?

To include populations in situations of vulnerability in the Elimination Initiative, national strategies should integrate and scale up intercultural approaches. Studies in Colombia on participatory healthcare models among Indigenous communities highlight the importance and effectiveness of community consultation regarding vaccines, treatments, and disease control efforts *(32, 33)*. PAHO's Vaccine Action campaign in the Plurinational State of Bolivia, targeting low COVID-19 vaccination rates, also exemplifies this approach. The initiative addressed vaccine hesitancy and access issues in remote Indigenous communities, using diverse and culturally relevant strategies like community dialogue, workshop, radio announcements, and performances. The result was increased childhood vaccine acceptance rates, demonstrating the importance of cultural sensitivity and diverse communication in improving public health outcomes *(34)*.

Community engagement can be enhanced by creating welcoming environments with inclusive signage and interpretation services. They can also integrate traditional healing practices and develop culturally adapted health education materials. Regular meetings between healthcare providers and traditional healers at the municipal level can promote dialogue and adapt services to local needs, ultimately improving the initiative's reach and effectiveness.

Approach: One Health

Why is this important?

One Health is an integrated approach that optimizes the health of people, animals, and ecosystems, and can facilitate disease elimination at the local level. During the COVID-19 pandemic, animal disease labs were repurposed for human testing, demonstrating this potential. Similarly, human health services can manage animal health supplies, like rabies vaccines for dogs. This integration enhances local capacity for environmental, human, and animal health services, supporting the goals of the Elimination Initiative.

What is currently being done?

In 2021, PAHO Member States adopted a One Health policy to address current and future health challenges in the Region *(35)*. In addition, the Elimination Initiative is aligned with the global One Health Joint Plan of Action (2022–2026) recommendations related to zoonotic, neglected tropical, and vector-borne diseases *(36)*. Practically, One Health involves human and animal health sectors collaborating at country and community levels for surveillance, cross-reporting, and prevention activities that directly affect human health, such as deworming animals to prevent human diseases like cystic echinococcosis/hydatidosis and fascioliasis.

Several countries have national One Health strategies – including the Plurinational State

of Bolivia and Guyana. Other countries use the One Health approach in responding to specific diseases. For example, coordinated efforts by veterinary, environmental, and public health services in several countries – including Guatemala, Honduras, and Nicaragua – have led to significant reductions in rabies cases through dog vaccination campaigns and community education. Also, to respond to Chagas disease, collaborative programs in affected countries – including El Salvador and Honduras – focus on improving housing conditions, vector control, and health education.

How can countries accelerate progress?
Key strategies for accelerating the One Health approach include improving surveillance systems, increasing funding, focusing on prevention, addressing antimicrobial resistance, and strengthening policies. Success hinges on cross-sector collaboration, cross-border cooperation, and long-term commitments to these integrated efforts. Also, when implementing a One Health approach in disease elimination initiatives, programs must consider cultural aspects affecting traditional animal health, production, and food safety practices within local communities.

Approach: Address climate change

Why is this important?
Climate change has an enormous impact on communicable diseases. Rising temperatures and changing precipitation patterns expand the range of vectors like mosquitoes, introducing diseases to new areas or intensifying transmission in endemic regions. For example, recent estimates projected that the additional number of people at risk of malaria infection due to climate change in South America will rise from 25 million by year 2020 to 50 million by 2080 *(37)*. Climate-induced events like droughts and floods can force migrations, exposing populations to new pathogens and poor living conditions, as seen in the recent cholera outbreak in Haiti. Other environmental factors influencing disease spread include access to clean water, air quality, deforestation, and food systems. These interact with social and economic determinants, creating complex challenges.

What is currently being done?
PAHO and countries in the Region are actively addressing climate change's impact on health through the Climate and Health Program, which supports countries in assessing health vulnerabilities, developing adaptation plans, and strengthening climate-resilient health systems. Additionally, PAHO is working on improving climate-informed disease surveillance systems and early warning mechanisms to better predict and respond to climate-sensitive disease outbreaks. PAHO and Member States promote the inclusion of health considerations in national climate change policies and climate finance for health-related projects.

How can countries accelerate progress?
Addressing climate change and environmental health determinants is vital for sustainable disease control and aligns with the One Health approach. Key strategies for climate change action related to disease elimination include strengthening political commitment, enhancing cross-sector collaboration, increasing funding for climate health initiatives, and building local capacity. By implementing these strategies collectively, countries in the Americas can create more favorable conditions for elimination, improve health system resilience, and better protect those living in situations of vulnerability.

Strengthening governance, stewardship, and finance (LINE OF ACTION 4)

Approach: Intergovernmental coordination

Why is this important?

The Elimination Initiative demands effective coordination among various government institutions and ministries, including health, finance, education, environment, agriculture, foreign affairs, science and technology, and trade. Within the health sector itself, multiple groups must collaborate, ranging from maternal and child health to health systems strengthening and surveillance. This coordinated effort facilitates resource-sharing, standardized monitoring, policy alignment, and a unified strategy to maximize the initiative's impact. Expanding beyond the health sector and integrating with other interventions fosters joint ownership of the initiative and enhances its long-term financial sustainability.

What is currently being done?

The Elimination Initiative uses the Health in All Policies approach, a collaborative policymaking approach that systematically considers health implications across all sectors. Also, several countries – Brazil, El Salvador, and Honduras – have established national intergovernmental plans for disease elimination.

In 2023, Brazil established the Interministerial Committee for the Elimination of Tuberculosis and Other Socially Determined Diseases (CIEDDS). Coordinated by the Ministry of Health and involving 14 ministries, this committee aims to promote inter-sectoral actions to eliminate diseases strongly influenced by social determinants, particularly those affecting those living in situations of vulnerability. CIEDDS is developing a National Program for the Elimination of Socially Determined Diseases, focusing on many of the diseases in the Elimination Initiative, such as MTCT of HIV, syphilis, Chagas, and hepatitis B; tuberculosis; leprosy; and malaria. This initiative represents a coordinated governmental effort to address both medical and social factors contributing to these health issues in Brazil *(38)*.

Also, in February 2024, El Salvador launched a national plan to prevent, control, and eliminate tropical diseases, and established an intersectoral National Commission to implement the plan. Developed using a One Health approach, the plan aims to accelerate efforts in 11 diseases, some of which are in the Elimination Initiative, such as Chagas disease, soil-transmitted helminthiasis, malaria, human rabies transmitted by dogs, and leprosy. The commission includes representatives from government, academia, and PAHO, ensuring comprehensive care encompassing human, animal, and environmental health *(39)*.

Also in July 2024, the Honduras Ministry of Health, with support from PAHO, established a national intersectoral committee to focus on disease elimination. The committee revised Honduras's past success in eliminating diseases and focused on diseases with elimination potential – including malaria, human rabies transmitted by dogs, leprosy, congenital syphilis, congenital Chagas disease, and cervical cancer – and outlined future steps to accelerate national efforts in eliminating these diseases and improving data collection in the country *(40)*.

How can countries accelerate progress?

Establishing or engaging with high-level steering groups or task forces, with

representation from multiple stakeholders, will enhance intergovernmental collaboration for disease elimination. Lessons from countries that have successfully established intergovernmental task forces for multi-disease elimination can guide similar initiatives. Integrating elimination goals into national health plans will strengthen sustainability and secure political and financial commitments.

Reinforcing subnational actions led by governors and mayors will enhance stewardship and leadership, addressing the specific needs of communities affected by communicable diseases through an intersectoral approach. Leveraging ongoing strategies like health municipalities presents an opportunity to accelerate progress toward elimination targets. Additionally, coordinating cross-border health initiatives among countries will further bolster efforts toward achieving these goals.

To ensure sustained financial support, countries should increase domestic funding for disease elimination by reallocating national health budgets and securing additional funds from national development programs. Innovative financing mechanisms can help bridge funding gaps and maintain momentum.

Approach: Public–private partnerships

Why is this important?

Public–private partnerships can help provide essential resources, drive innovation, and enhance local capacity. These partnerships ensure that vulnerable populations have access to affordable health interventions, promote long-term sustainability, and foster multisectoral collaboration. Additionally, the private sector's role in supply chain management, innovative health technology, workplace health programs, and community engagement extends the reach and effectiveness of disease elimination strategies and can help address inequities. By leveraging the strengths of both public and private sectors, public–private partnerships enable countries to implement comprehensive and integrated solutions, securing the political and financial commitments needed to achieve lasting public health impact across the Americas.

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What is currently being done?

PAHO employs a flexible approach to partner engagement to leverage the best expertise, evidence, and information available. One example of an effective public–private partnership is the Onchocerciasis Elimination Program for the Americas, whose partners include national governments, PAHO and other health organizations, academic institutions, public and private foundations, and the pharmaceutical company Merck & Co, Inc. Through health education and mass administration of the drug ivermectin, the program has successfully eliminated transmission in 11 of 13 endemic areas. Due to the program's success, 94% of people originally requiring treatment no longer need it, and four of the six participating countries (Colombia, Ecuador, Guatemala, and Mexico) are now

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free of the disease *(41)*. Another example is the recommendations adopted at the 17th Inter-American Ministerial Meeting on Health and Agriculture in 2016, which emphasized the importance of intersectoral collaboration between health, agriculture, and environment sectors to address zoonotic diseases, food safety, and antimicrobial resistance *(42)*. Also, IMT and the RRFs are working to expand manufacturing capacities for vaccines and other health technologies in the Region.

How can countries accelerate progress?

Evidence has shown that public–private partnerships can help facilitate access to primary health care services, especially in remote areas, which are key to disease elimination efforts. PAHO and Member States can consider additional partnerships and should consider sustainable plans and policies with private stakeholders, while carefully considering local needs and contexts *(43)*.

Approach: Civil society engagement

Why is this important?

Civil society brings local knowledge to health initiatives, enhancing the effectiveness and cultural appropriateness of interventions. This engagement can be more cost-effective than top-down approaches, ultimately leading to better long-term health outcomes. Local communities can help plan and implement programs most effectively in their own contexts. Developing capacity among civil society groups to enhance their role in disease elimination efforts can help strengthen their sense of ownership and their ability to participate effectively, which can eventually lead to more sustainable and impactful interventions.

What is currently being done?

The revised Essential Public Health Functions (EPHF) framework helps strengthen multisectoral participation and civil society's role in health decision-making. Since its launch in 2020, several countries in the Region have

implemented the EPHF. For example, several Caribbean countries, including Saint Kitts and Nevis and Saint Vincent and the Grenadines, completed EPHF assessments and incorporated sections on the EPHF into national strategic health policies.

PAHO has also supported and fostered social participation and intersectoral work at all levels of decision-making – for example, PAHO and WHO have organized the Network on Intersectoral Work and Social Participation for Health Equity in the Americas. Another example is the Grupo de Cooperación Técnica Horizontal, created in 1996 by National AIDS Program Directors of Latin America. For the last few decades, it has included regional and subregional networks of civil society representing people living with HIV and key populations most affected by HIV infection. They a collaborate on capacity-building and advocacy virtual sessions, as well as periodic face-to-face meetings for technical exchange and political dialogue.

The Plurinational State of Bolivia's SAFCI policy, established in 2008, also demonstrates effective civil society engagement and has shown success through its community approach integrating biomedical and Indigenous practices. For instance, the program introduced the HPV vaccine in 2017 using a range of community-focused approaches – including peer-to-peer information-sharing, community-based immunization promotion, and unified messaging. This approach led to high vaccine coverage and low dropout during the introduction *(44)*.

How can countries accelerate progress?

Scaling up civil society engagement across the Region is important for disease elimination. Evidence shows the positive impact of community engagement on communicable disease control on health issues like HIV, STIs, malaria, tuberculosis, and maternal and child health *(45)*. While specific community engagement methods need to be tailored for the context, strategies designed with and for individual communities can better enhance education and awareness and build local capacity. Using flexible, community-driven approaches is key for allowing civil society to lead engagement efforts while ensuring these initiatives are responsive to the unique needs and contexts of each community. Encouraging co-creation of strategies with civil society can foster stronger collaboration and more sustainable outcomes.

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CHAPTER

5

Achieving Elimination

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Summary

Since the Elimination Initiative's launch, PAHO and Member States have documented challenges, lessons, and effective strategies. Sustaining progress requires a multifaceted approach. By focusing on community engagement, addressing social and environmental determinants of health, and tailoring interventions to local contexts, disease elimination programs can more effectively reach and benefit all individuals. By combining resources and addressing multiple diseases through a systems lens, this approach seeks to achieve sustainable disease elimination goals while promoting equity in service delivery and paving the way for a fairer, healthier world for all. PAHO and Member States can apply the lessons learned from the Elimination Initiative to continue to build resilient health systems that can maintain capacities and effectively respond to emerging diseases and future challenges.

Impact of the Elimination Initiative

While the Region of the Americas has achieved remarkable milestones in disease elimination over the past several decades, challenges persist, particularly due to setbacks caused by COVID-19. The Region can build on past successes using available tools and strategies, including universal vaccination programs, point-of-care and rapid tests, and integrated service packages like the Elimination of Mother-to-Child Transmission Plus initiative. Reaching elimination targets requires implementing mass drug administration for neglected infectious diseases, integrated actions to reduce morbidity and disability, and innovative solutions for vector-borne diseases. Advanced technologies like portable X rays with artificial intelligence, telemedicine, and multi-disease surveillance and diagnostic platforms can enhance resource efficiency and improve integrated services. The Elimination Initiative helps synergize these resources and strategies across disease programs, fostering collaboration at local and national levels to address communicable diseases with the greatest impact.

Investing in disease elimination boosts the well-being of individuals, communities, nations, and economies. Interventions to fight neglected infectious diseases are highly cost-effective, yielding a net benefit of around USD 25 for every USD 1 invested, resulting in a 30% annualized rate of return *(1)*. The worldwide socioeconomic benefit of eliminating diseases such as leprosy, leishmaniasis, and Chagas disease has been estimated as high as USD 16.6 billion for 2021–2030, with an additional USD 10.4 billion reduction in out-of-pocket expenses *(2)*. Estimated returns for each USD 1 invested in tuberculosis diagnosis and treatment range from USD 30 to USD 115, and fighting the HIV epidemic could avoid USD 24 billion in HIV treatment costs by 2030 and yield a 15-fold return on countries' HIV investments *(3, 4)*. Every dollar invested in vaccination delivers a return on investment of USD 26.35 *(5)*.

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The Elimination Initiative serves as a critical call to action for countries to tackle communicable diseases which most impact their populations. Harnessing regional expertise, driving advocacy and communication at the highest levels, and forging robust partnerships – including public–private collaborations and community engagement – can make a significant impact. Collaboration across borders is a vital path toward addressing shared challenges, building strategic alliances with donors, integrating elimination efforts into primary health care, and enhancing synergy among various programs. Leveraging proven tools and strategies will be crucial to achieving and sustaining the elimination targets. Now is the time to join efforts to fight against communicable diseases.

Key challenges

PAHO and Member States have identified challenges that must be addressed to maximize the potential of the initiative. These challenges follow.

Funding and resource constraints

Funding for health care is already stretched thin, and in the context of noncommunicable diseases, climate change, and other emerging health needs, communicable disease budgets are often insufficient. Another challenge has been implementing the Elimination Initiative within health systems that are organized around individual diseases, with separate program budgets for each disease. Fragmented, siloed funding reduces efficiency by causing duplication of efforts, poor coordination, administrative burdens, fragmented patient care, and reduced flexibility in responding to changing health needs. This approach hinders the system's ability to provide comprehensive, cost-effective care and respond to public health challenges.

Health inequities

Unequal distribution of healthcare resources allows diseases to persist in underserved communities, creating reservoirs that hinder progress. Limited access to healthcare services reduces the effectiveness of prevention and treatment interventions among marginalized groups, while also delaying detection and response to outbreaks. Stigma and discrimination can also deter individuals from seeking testing and treatment. These disparities result in incomplete coverage of elimination strategies and exacerbate socioeconomic factors that perpetuate disease transmission. Collectively, these issues diminish the impact of elimination efforts.

Maintaining elimination

The Elimination Initiative is not just about achieving elimination but maintaining past gains. However, advocating for sustained efforts (for example, vaccines) can be challenging when public perception of disease risk is low. Constant monitoring is needed to minimize the threat of reintroduction. For example, while the Region has maintained elimination of rubella and congenital rubella, it temporarily lost measles elimination certification during 2013–2015 due to outbreaks in Brazil and the Bolivarian Republic of Venezuela. Integrating elimination efforts into broader health systems, rather than relying on disease-specific programs, could secure long-term commitments. Embedding elimination goals into general health initiatives can create a resilient framework to support ongoing vigilance and response capabilities.

Multisectoral engagement for all 30+ diseases and conditions

While country leaders have committed to the Elimination Initiative, engaging local stakeholders for a multi-disease approach is complex. For example, there is a long history of civil society advocacy within the HIV space, along with other well-known diseases like malaria and tuberculosis. However, this advocacy has been traditionally focused on individual diseases, including social determinants of those most at risk. Encouraging advocates to expand to other diseases – for example, neglected and zoonotic diseases – in this context can be challenging.

Technology and innovation challenges

Disease elimination in the Americas faces significant technological challenges, including inadequate needs-driven research and development and access to health technologies, such as those needed for disease surveillance, diagnostics, and treatment. In addition, although advances in digital health are promising, data integration difficulties and interoperability issues in health information systems remain. Service delivery is hampered by limited diagnostic and surveillance capabilities (especially in remote areas), unintegrated

public health laboratory systems, antimicrobial resistance, and gaps in telemedicine infrastructure. The Region also struggles with implementing artificial intelligence and machine learning in health care. Logistical and supply chain management issues persist, including forecasting problems and challenges in storage and distribution. Additionally, many essential health technologies are either not widely available or are unaffordable for broad use.

Migration

Migration within the Americas is driven by economic disparities, political instability, violence, and environmental issues, creating diverse movement patterns within and between countries. This poses challenges for managing communicable diseases by enabling cross-border transmission and disrupting ongoing treatments. Migrants often face limited access to health care, leading to vaccination gaps and increased transmission risks due to living conditions in transit or temporary settlements. Effective surveillance among migrant communities remains difficult. Climate change impacts, cultural and language barriers, strained health systems, and legal status issues further complicate infectious disease control efforts. These interconnected factors collectively impact public health management in both origin and destination areas.

Accelerating the agenda

PAHO and Member States have identified the following ways to ensure progress continues towards the goals outlined for 2030.

Advocate for continued political and financial support

The Elimination Initiative itself offers a shared vision to the Region. Member States have successfully used this platform to advocate for broad support among government institutions and multisectoral partners, but more remains to be done. Since its 2023 relaunch, momentum has been restored. Continued promotion of the initiative's ambitious goals is crucial for securing additional support. Advocates can apply lessons from the COVID-19 pandemic to underscore the importance of disease elimination and health system strengthening. Additionally, the Regional Revolving Funds help ensure access to high-quality, affordable health technologies.

Strengthen community engagement

To address Elimination Initiative implementation challenges, PAHO and Member States must integrate communities and civil society into all aspects of communicable disease programs. This engagement ensures strategies are locally relevant and supported. Communities can provide insights on cultural stigmas, reasons for underutilization of certain programs (for example, vaccines), and ideas to boost participation. Capacity building for local teams is essential to effectively gather and incorporate community-level information into broader health strategies.

Improve intercultural services

Social and environmental factors greatly influence disease transmission, requiring strategies that address root causes of health disparities. Prioritizing marginalized communities is key, requiring a nuanced understanding of health equity. Developing culturally relevant services, addressing issues like vaccine hesitancy, addressing cross-border and migrant populations, and incorporating traditional medicine where appropriate ensures that health services are more accessible and acceptable to diverse communities. Strategies must be tailored for location, requiring adaptations to address vulnerabilities in various settings, such as slums or favelas.

Strengthen primary health care strategy implementation

Adopting a primary health care (PHC) approach can accelerate progress toward disease elimination through integrated health services, emphasizing the first level of care and public health functions, multisectoral policy and action, and empowering people and communities. The first level of care is the most effective way to provide access to disease prevention, early detection, and treatment. It may help improve community-level access to health interventions, extend services to underserved areas, and eliminate various diseases simultaneously. The PHC strategy strengthens the entire health system – improving testing and tracing of diseases, medication supply management, data systems, and referral systems, among others.

Work with partners across departments and sectors

The Elimination Initiative is not an isolated effort by specialized teams but a comprehensive approach requiring expertise from diverse fields and partners. In addition to nongovernmental sectors, eliminating diseases also requires multiple government institutions to work together at the national and subnational levels. This can present challenges, as health issues are typically seen as the sole responsibility of the Ministry of Health or local health authorities. However, elevating the elimination agenda to the highest governmental level can ensure broader commitment from additional government institutions like ministries of finance, trade, and industry. Engaging governors and mayors is critical to empowering intergovernmental response to address the needs of the affected populations in their context. Innovative approaches, such as enhancing regional production of supplies, necessitate collaboration with the private sector, additional government ministries, and trade partners. Leveraging existing strategies such as engaging health communities and health municipalities is critical to reinforce governance, leadership, and stewardship at the local level. When the initiative is truly owned by all of these institutions – incorporated into their strategies and agendas and building from the bottom up – then disease elimination priorities truly become the priorities of the entire Region.

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Digital transformation of the health sector

Embracing digital transformation is crucial for increasing the initiative's impact. PAHO and Member States must leverage digital tools to enhance disease programs' efficiency and reach. This includes implementing interoperable health information systems, telehealth platforms, and mobile applications to improve data collection, patient tracking, and service delivery, especially in hard-to-reach areas. Investing in digital health infrastructure and building healthcare workers' capacity to use these tools effectively will strengthen decision-making and improve health outcomes through better data collection, analysis, and action. Digital tools can also enhance community networks, making public health messages, services, and prevention efforts more accessible, even in remote or underserved populations.

Ensure access to new technology

PAHO and Member States can advance elimination efforts by promoting the use of innovations at the first level of care and addressing inequities that affect access to technologies. Key technological advancements include enhanced real-time digital surveillance systems, improved diagnostics with rapid tests and multi-disease platforms, advanced vector control (for example, gene drives; messenger RNA [mRNA]), expanded telemedicine, self-care techniques for early screening and treatment, and virtual reality for healthcare worker training. These technologies can improve tracking, diagnosis, treatment, and healthcare delivery across the Americas.

Box 7. South–South cooperation in the Americas: the power of Pan-Americanism

A spirit of Pan-Americanism has fostered robust cooperation in public health across the Americas. This approach recognizes that progress for one nation often benefits all, particularly in combating neglected infectious diseases that pose regional risks. Countries have leveraged mutual support, resource sharing, and knowledge exchange to address health challenges and strengthen solidarity.

South–South partnerships often involve knowledge transfer, capacity building, and direct assistance, often focusing on cross-border cooperation. They contribute to overall health system strengthening, with countries applying their experiences to new challenges. South–South cooperation in disease control has gained momentum, with examples including:

- For several years, malaria-endemic countries have collaborated to establish a system to improve performance and competence in malaria microscopy in the Region, based on the strengths of reference laboratories and on networking principles.
- Mexico supports the HIV drug resistance national surveys providing technical assistance and covering the costs of sample transportation and processing for HIV genotyping.
- Brazil provides training and technical support and donations of antiretroviral drugs to several South American countries.
- Cuba has trained many medical professionals from the Region and has sent medical professionals to support health initiatives in various countries.

PAHO and the Elimination Initiative serve as platforms for countries still working towards disease elimination, facilitating learning and access to support. This approach ensures progress towards more robust health systems across the Americas.

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Creating more resilient health systems and mitigating future disease threats

Despite setbacks caused by the COVID-19 pandemic, the Elimination Initiative continues to drive the development of more integrated, effective, efficient, and equitable health services across the Americas, aimed at accelerating multi-disease elimination. To ensure the continuation of high-level political and financial commitments, Member States can adopt a multisectoral approach that convenes partners beyond the health sector. Using the Elimination Framework as a guide, countries can tailor interventions to specific contexts and communities. The framework can be flexible and adaptable as new challenges and diseases arise.

To strengthen disease preparedness efforts, PAHO and Member States can collaboratively:

- **Enhance disease surveillance** through data sharing and improved technology;
- **Strengthen health systems**, focusing on the first level of care;
- **Bolster laboratory and diagnostic capacities** to promote new and efficient methods;
- **Invest in research and development** for vaccines, treatments, and diagnostics;
- **Develop robust networks** for contact tracing, protocols, and communication;
- **Invest in environmental health** to mitigate climate change impacts on disease spread;
- **Scale up One Health activities** to address links between animal and human health;
- **Prepare communities** through drills and education on precautionary measures;
- **Invest in education** to combat misinformation and improve public health literacy;
- **Cooperate cross-regionally** to ensure equitable access to resources.

In strengthening health systems to prepare for future needs and outbreaks, PAHO and Member States can apply lessons learned and scale up effective practices. This includes addressing inequities through a community- and person-centered approach that considers social and environmental determinants and promotes strong community engagement. As 2030 approaches, these efforts will also better support the Elimination Initiative overall, while supporting regional collaboration to mitigate future communicable disease threats. If Member States integrate these preparedness strategies into existing health systems, this will ensure sustainable and consistent prioritization of enhanced surveillance, infrastructure, and community preparedness, even beyond crisis situations.

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