UNIVERSAL HEALTH SERIES

MONITORING FRAMEWORK FOR UNIVERSAL HEALTH IN THE AMERICAS

PAHO
Pan American Health Organization
World Health Organization
REGIONAL OFFICE FOR THE Americas

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Monitoring Framework for Universal Health in the Americas

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The document was prepared under the supervision of Amalia Del Riego, Chief of the PAHO Health Services and Access Unit.

The document was prepared taking into consideration the Strategy for Universal Access to Health and Universal Health Coverage approved in October 2014 by the 53rd Directing Council of PAHO. Its content incorporates the contributions from an expert workshop held in Santiago, Chile, in April 2015, and numerous national consultations conducted during the period from June 2015 to February 2018.

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ABOUT THIS DOCUMENT

This document was prepared at the request of Member States. Its purpose is to support monitoring activities and the generation of evidence for reporting on progress and performance under policies and action plans implemented by Member States to advance toward universal health and ensure accountability and the introduction of improvements.

The document will be continually updated to reflect both changing monitoring needs and the dynamic and progressive nature of the change processes occurring as countries work toward universal health. In total, 314 experts from 20 countries, including representatives of national health authorities, academic institutions, and trade and professional associations, participated in the development, review, and updating of this framework.

INTRODUCTION

The Member States of the Pan American Health Organization (PAHO) adopted Resolution CD53.R14, Strategy for Universal Access to Health and Universal Health Coverage, in 2014 (*1*). The objective was to identify a set of strategic interventions to guide the design and implementation of policies for strengthening or transforming health systems and achieving equitable access to health (*1*).

This set of interventions revolves around four simultaneous, interdependent strategic lines: (1) expanding equitable access to comprehensive, quality, people- and community-centered health services; (2) strengthening stewardship and governance; (3) increasing and improving financing, with equity and efficiency, and advancing toward the elimination of direct payment that constitutes a barrier to access at the point of service; and (4) strengthening intersectoral coordination to address the social determinants of health (*1*).

In line with the principles of the Alma-Ata Declaration and primary health care, the resolution recognizes the right to health, equity, and solidarity as core values. It highlights the need for a people- and community-centered model of care as the fundamental basis for the transformation of health systems and also emphasizes the need for an intersectoral approach that will make it possible to ensure equitable conditions of access to these systems (*1*). PAHO Member States also considered it essential for the Strategy to differentiate between universal access to health and universal health coverage as distinct but complementary features of an equitable health system.

In order to ensure accountability in working toward the objectives of the Strategy, Member States committed to establishing formal mechanisms for participation and dialogue to promote the development and implementation of inclusive policies and action plans. At the same time, they asked PAHO to prioritize technical cooperation activities that would help them to progress and to measure their progress toward the objectives of the Strategy.

This renewed focus on the need to transform health systems in the Region of the Americas calls for a regional framework that can be used to measure progress under policies aimed at strengthening health systems and achieving universal health. In response to this mandate, in October 2014 the PAHO Department of Health Systems and Services began developing this framework for monitoring policies aimed at achieving universal health.

This document is the result of a consensus among technical experts from the national health authorities (NHAs), academic institutions, and trade and professional associations of PAHO Member States. The monitoring framework has been developed to support the analysis of progress and performance with regard to public policies, the generation of evidence, and decision-making for the transformation or strengthening of health systems.

It is intended to be an integral part of national processes of planning, monitoring, evaluation, and reporting on Member States' progress in implementing the interventions identified in Resolution CD53.R14. The application of this framework is expected to help enhance policies and foster collaborative work and learning in the Region of the Americas.

The document provides generic guidelines that can be adapted by NHA technical units in accordance with their own context and needs. The proposed activities could be implemented in combination with technical cooperation work and the tools developed by PAHO to strengthen capacities for monitoring, evaluating, and analyzing processes for transforming health systems in order to advance toward universal health in the Region of the Americas.

The document is divided into three sections: (1) description of the monitoring framework and the set of tracer indicators, including the indicator definitions and the methods for data collection and analysis; (2) a proposed methodology for using the monitoring framework to inform and guide the implementation of policies and other actions undertaken to advance toward universal health; and (3) final recommendations on the use of the framework.

CHAPTER 1

UNIVERSAL HEALTH MONITORING FRAMEWORK

1.1. Definition of universal health

It has been essential to have an agreed definition of universal health for the Region of the Americas in order to delimit the dimensions of analysis and the metrics for a universal health monitoring framework. Universal health, with its distinct elements of universal access to health and universal health coverage, was defined by the Member States of PAHO as follows:

"Access to health" is defined as "the capacity to use comprehensive, appropriate, timely, quality health services when they are needed," while "universal access to health" is "the absence of geographical, economic, sociocultural, organizational, or gender barriers [...] that prevent all people from having equitable use of comprehensive health services" (*1*).

"Health coverage," meanwhile, is understood to mean "the capacity of the health system to serve the needs of the population, including the availability of infrastructure, human resources, health technologies (including medicines), and financing," whereas "universal health coverage" means that "organizational mechanisms and financing are sufficient to cover the entire population" (*1*).

The Strategy explicitly indicates that universal access to health and universal health coverage "are necessary conditions for achieving health and well-being" that "require determining and implementing policies and actions with a multisectoral approach to address the social determinants of health" (*1*). The term "universal health" was approved later by PAHO as an acceptable short form for referring to both access and universal health coverage (*2*).

Based on these definitions, universal health monitoring means the use of metrics that will enable simultaneous and complementary measurement of access and universal health coverage. Monitoring of universal health coverage is based on the use of metrics that gauge the equitable availability of critical system resources (including human resources, financing, and technologies), the appropriate organization of services, and the use of intersectoral approaches to address the social determinants of health. Monitoring of universal access to health is based on metrics that reflect equity in the use of comprehensive, appropriate, timely, quality health services, as well as access to intersectoral interventions that have an impact on health and on various barriers to access to health services.

Expanding coverage and access is necessary to improve health status and well-being. The use of tracer indicators of health status is therefore of crucial importance for monitoring universal health.

It is important here to highlight the distinction between universal health monitoring adopted within this framework and the global measurement of universal health coverage (UHC) adopted within the global indicator framework for the Sustainable Development Goals (*3*). The UHC indicator measures the extent to which all people can access health services without facing financial hardship (*4*) and focuses on measuring population coverage of quality essential health services and financial protection (*4-6*).

Although the metrics used to monitor UHC provide a comprehensive understanding of the quality, relevance, and financial availability of health services, they do not, in and of themselves, offer a complete picture of the various barriers to access to health services, nor do they provide any information on the type of interventions needed to improve access conditions (*7, 8*). The incorporation of metrics that reflect access barriers is essential in order to guide the design and implementation of policies needed to improve access to health (*7, 8*). At the same time, it is necessary for monitoring activities to include analysis of the processes (policies and action plans) through which changes in the organizational and financial mechanisms of the health system are brought about. National health authorities can thus explicitly assess the progress and the depth of the transformations needed to advance toward universal health and can interpret trends in that context.

In order to harmonize the various global efforts, this proposal incorporates the global framework for monitoring UHC (*3, 4*). It also puts forward a regional approach for the Americas that takes into account the institutional, political, and intersectoral mechanisms inherent in health system transformation processes and makes it possible to interpret the impact of those efforts on universal health. These are the building blocks from which this universal health monitoring framework is constructed.

1.2. Special considerations

- This proposal provides a common framework for analysis that should ideally be used as one of the stewardship functions performed by the NHA in the course of national monitoring and evaluation processes, planning cycles, initial formulation or review of national health policies or plans, the inception of a government administration, and other processes that entail changes in priorities.
- The results obtained should help to consolidate baseline data that will serve as input for the analysis and measurement of national targets for health universal, as well as for the identification of those areas where greater attention is required or future assessments are needed to identify the causes of problems and possible corrective measures.
- The creation of this consensus-based framework for the Region of the Americas is important in order to understand the implications of the transformations introduced in health systems and thereby facilitate regional learning and collaboration. However, comparison between countries is not the primary aim of the framework. What is most important is a historical comparison within each country of the progress made and the results obtained from the implementation of actions for universal health.
- Since Member States have used different approaches and organizational arrangements in their health systems, it is expected that they will adapt this instrument and its contents and indicators to their own social, economic, political, legal, historical, and cultural contexts and to the current and future challenges they face with regard to health.
- This framework can be used in conjunction with PAHO technical cooperation activities to advance toward universal health. Specifically, the results obtained will serve as input for the preparation of road maps for universal health and will support essential public health function evaluation processes and other technical cooperation processes aimed at strengthening stewardship within the framework of the universal health agenda.

1.3. Process for developing the monitoring framework

This monitoring framework was developed between April 2015 and February 2018, and the indicators were updated in July 2019. The process began with a review of methodological proposals and conceptual models related to health, health systems, universal health coverage, universal access to health, equity in health, and the social determinants of health. A total of 25 articles in indexed journals (*5, 9-32*), 14 reports of United Nations agencies (*33-46*), and three reports of bilateral cooperation agencies (*47-49*) were identified. An initial list of 500 indicators was also identified through a mapping of databases and other universal health-related monitoring frameworks (*50-58*).

Based on this documentation, the first draft of the framework was developed. The proposal underwent several rounds of expert review during consultations held between November 2014 and April 2015. A total of 92 stakeholders involved in technical cooperation processes and regular decision-making about health systems took part in the consultations (see Appendix A). Nine countries were invited to participate in order to ensure regional representation and a diversity of experiences: Brazil, Chile, Colombia, Costa Rica, Cuba,

El Salvador, Panama, Peru, and Uruguay. The process required, in addition to the rounds of consultation, a midterm processing of opinions and the preparation of a report to the group of experts.

At every phase of the consultations, the experts received a draft of the proposal. Its content, including the dimensions of analysis, the indicators, and the methodology, was submitted for assessment by the group of experts. These consultations were complemented by virtual or in-person follow-up consultations with members of the expert group. The comments from earlier sessions were shared during the later sessions. After each working session, the instrument continued to be revised in response to the comments received.

Subsequently, the validity of the monitoring framework was tested by means of six pilot studies conducted in Chile, Cuba, Jamaica, Panama, Peru, and Trinidad and Tobago. Government officials, civil society representatives, and other stakeholders in the health system were brought together in these countries. The objective of this exercise was to assess the validity and the feasibility of the indicators and methodology of the monitoring framework. The working groups were led by five experts from the areas of health service delivery, health stewardship and governance, health financing, intersectoral action, and monitoring and evaluation of health policies.

Participants' comments and suggestions were used to improve the instrument. A total of 222 national stakeholders participated in these sessions, including 133 officials from the technical divisions of the NHAs, 35 researchers and academics working in the area of health systems and services, 13 representatives of statistics offices, and 41 representatives of health-sector trade and professional associations.

The development of the monitoring framework concluded with a round of consultations carried out by e-mail in February 2018. In total, 314 experts from 20 countries participated in one or more phases of the process of developing the monitoring framework (see Appendix A).

The indicator list was updated subsequently, in 2019, in order to reflect the prioritized indicators included in the PAHO Strategic Plan 2020-2025 (*44*).

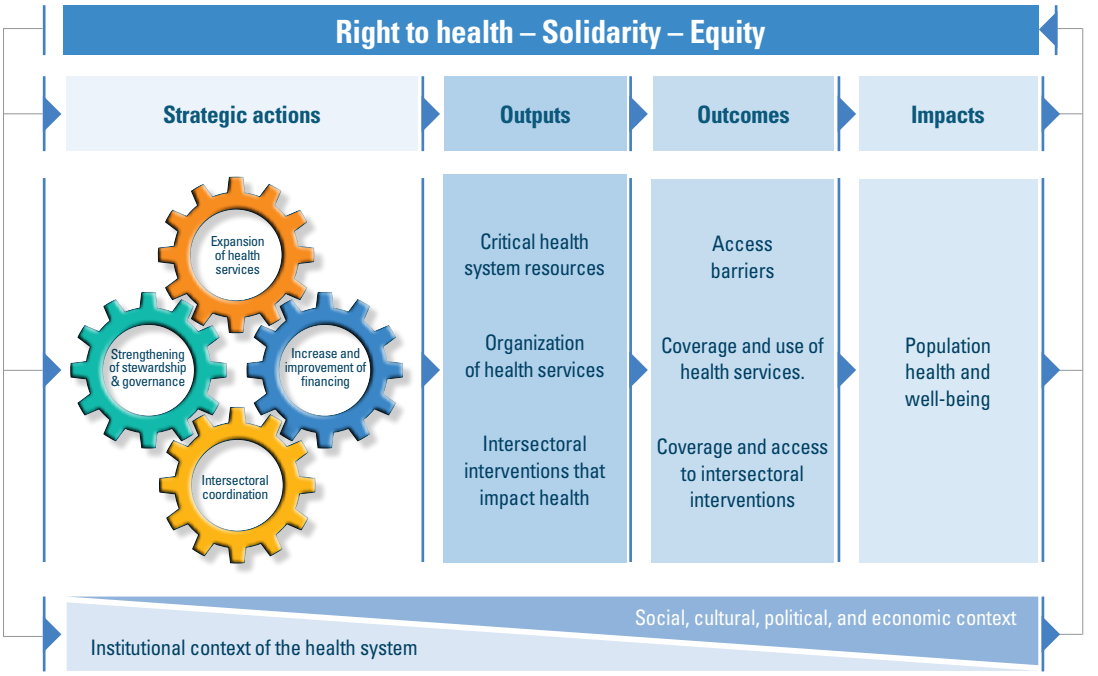
1.4. Description of the monitoring framework

Figure 1 shows the four dimensions of analysis included in the universal health monitoring framework: (1) impacts (health status and well-being); (2) outcomes (universal access to health); (3) outputs (universal health coverage); and (4) strategic actions (policies, plans, programs). The values of the right to health, solidarity, and equity constitute cross-cutting elements in the monitoring framework, as they are essential for ongoing progress toward universal health. The classification of these four dimensions was agreed upon in accordance with the mandate approved by PAHO Member States in Resolution CD53.R14 (*1*). The classification is aligned with the results chains of the PAHO Strategic Plans approved by Member States for the periods 2014-2019 and 2020-2025 (*47*). In these documents, the achievement of equitable and universal access to comprehensive, quality health services is seen as the means for significantly influencing the health status and well-

being of the entire population, and access to health and health coverage are considered essential requirements for achieving the highest attainable standard of population health and well-being (*1*).

Based on the foregoing, Figure 1 illustrates how health impacts provide feedback for the development of strategic actions. At the same time, the combined integrated effects of these strategic actions influence outputs, outcomes, and impacts. The relationship among these dimensions reflects the theory and the assumptions that underpin the need for the integrated formulation and implementation of policies related to each of the various elements of health systems in order to have an effect on conditions of coverage and access and, ultimately, an impact on population health status and well-being (*61, 62, 63*).

Figure 1. Universal health monitoring framework



Source: Prepared by the authors.

The monitoring framework includes impact indicators that track population health status and well-being. The outcome indicators focus on measuring advances in universal access to health through a set of tracer indicators of magnitude and equity relating to barriers to access to health services, use of health services, and access to intersectoral interventions that impact health. These results are analyzed from a perspective of equity, with measures that go beyond averages and make it possible to identify and analyze the health needs of populations in situations of vulnerability. The outcome indicators show advances in universal health coverage and include tracer indicators of availability of critical health system resources, health system organization, and intersectoral approaches addressing the social determinants of health.

Strategic actions are interventions (plans, policies, and programs) through which NHAs endeavor to strengthen or transform health systems in order to achieve universal health. These actions are grouped into four strategic lines found in the Strategy (*1*), namely: (1) expanding equitable access to comprehensive, quality, people- and community-centered health services; (2) strengthening stewardship and governance; (3) increasing and improving financing, with equity and efficiency, and advancing toward the elimination of direct payment that constitutes a barrier to access at the point of service; and (4) strengthening intersectoral coordination to address the social determinants of health.

These actions are simultaneous and interdependent, which means that the achievement of universal health results requires an integrated and comprehensive approach. It is essential for these processes to be integrated in order to bolster the expansion of coverage of critical system resources, ensure access to health services, and have an impact on health outcomes (*62, 63*).

The monitoring framework also highlights the extent to which the health sector influences progress toward universal health. Strategic actions and outcomes are the areas in which the health sector has a greater degree of influence, whereas its influence lessens as the results chain moves from strategic actions to impacts (see Figure 1). In the context of universal health, strategic actions and their effect on outputs are the elements for which the health sector is largely responsible, although even these results are influenced by external factors and the health system context. Outcomes and impacts are more strongly influenced by factors outside the health sector, which is why health systems also require the formulation and implementation of policies and actions with an intersectoral approach to address the social determinants of health and equity.

1.5. Components of the monitoring framework

As Figure 1 shows, the monitoring framework includes four components or dimensions: (1) impacts, (2) outcomes, (3) outputs, and (4) strategic actions. These components are described below.

Impacts

This framework proposes a total of 23 tracer indicators of impact drawn from the PAHO Strategic Plan 2020-2025 and the list of indicators for the Sustainable Health Agenda for the Americas 2018-2030, bearing in mind their importance, quality, and relevance for Member States (see Table 1). The aim of these tracer indicators is to provide an objective overview of the level of achievement of health objectives. However, the list is not exhaustive, and it is recognized that there are numerous indicators of health status, health needs, and health priorities that may vary from country to country. Accordingly, it is anticipated that Member State will adapt this list to their needs in relation to health.

Outcomes

Outcomes represent advances in universal access to health, in accordance with the definition given on page 5. In total, 29 quantitative indicators, grouped into three categories, were selected to provide information on the influence of outputs on access conditions: barriers to access, coverage and use of health services, and coverage of and access to intersectoral interventions (see Table 2).

Outputs

Outputs represent advances in coverage and universal health coverage, in accordance with the definitions given on page 5 of this document. It was agreed to include a total of 15 output indicators related to planning, regulation, and organization of critical health system resources (human resources for health, financing, and health technologies); health service organization and model of care; and intersectoral action to address social determinants (see Table 3). These quantitative indicators reflect the combined integrated effect of strategic actions.

Table 1. Universal Health Impact Indicators

Indicator	Definition	Numerator	Denominator	Disaggregation	Data source
Healthy life expectancy	Expected years of life in good health for persons at a given age, taking into account age-specific morbidity and mortality and functional health status	Not applicable	Not applicable	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Mortality data at PAHO/WHO regional level and databases of the Institute for Health Metrics and Evaluation (IHME)
Neonatal mortality rate	Probability that a child born in a specific year or period will die in the first 28 days of life (0-27 days), age-adjusted and expressed per 1,000 live births	Number of neonatal deaths (deaths among live births during the first 28 days of life)	Number of live births	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Civil registries and vital statistics, in addition to population household surveys
Under-5 mortality rate	Calculates the approximate risk of dying of a child aged 0-4 years	Number of deaths among children aged 0-4 years per 1,000 live births	Number of live births in the same year and place	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	United Nations, Department of Economic and Social Affairs, Population Division

Table 1. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data source
Maternal mortality ratio	Calculates the approximate risk of a woman dying while pregnant or within 42 days of termination of pregnancy	Number of maternal deaths per 100,000 live births	Number of live births in a given year and place	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Maternal Mortality Estimation Inter-agency Group, including WHO, UNICEF, UNFPA, and the World Bank
Mortality attributable to poor-quality health care	Measures the rate of premature deaths that could have been prevented if health care had been timely and effective	Number of specific causes of death (certain infectious and parasitic, neoplastic, endocrine, nutritional and metabolic, nervous system, circulatory, respiratory, digestive, and genitourinary diseases, as well as maternal and perinatal deaths and deaths from external causes)	Total population in a specific year, age-adjusted, using the WHO standard population	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by region
Probability of dying from age 30 to 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	Probability of dying from age 30 to 70 years for the causes included in ICD-11 codes 100-199, C00-C97, E10-E14, and J30-J98	Sum of deaths for the aforementioned causes in persons aged 30-70 years in a determined year per 100,000 population	Total population in a specific year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Databases of the Institute for Health Metrics and Evaluation (IHME)
Mortality due to chronic viral hepatitis	Mortality from hepatocellular carcinoma, cirrhosis, or chronic liver disease attributable to hepatitis B virus (HBV) or hepatitis C virus (HCV) infection	Estimated deaths from HBV and HCV infection in a determined year per 100,000 population	Total population in a given year		Databases of the Institute for Health Metrics and Evaluation (IHME) and of Global Burden of Disease (GBD) mortality estimates

Table 1. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data source
AIDS-related mortality	Total number of people who have died from AIDS-related causes per 100,000 population	Total deaths with some identified cause that coincides with ICD-10 codes B20 B24 among all population groups (independent of sex and age)	Total population in a specific year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by region
Mortality rate from tuberculosis	Number of deaths due to tuberculosis per 100,000 population per year	Total deaths with an underlying cause of death corresponding to any of ICD-10 codes A15 to A19	Total population in a specific year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by regions
Rate of congenital syphilis	Annual rate of reported congenital syphilis cases per 1,000 live births	Number of congenital syphilis cases reported according to the national case definition in a given year	Calculated number of live births in the same period	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National registry system for congenital syphilis cases, national vital statistics, from calculations by the United Nations Population Division
Rate of mother-to-child transmission of HIV infection	Percentage of children aged < 1 year born to HIV-positive mothers whose HIV test results were positive	Number of children aged < 1 born to HIV-positive mothers in a calendar year, given that they were diagnosed as HIV-positive	Reported number of children aged < 1 year born to HIV-positive mothers in a given calendar year, with a definitive diagnosis (HIV-positive or HIV-negative)	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	HIV and prenatal care records or other health facility records, national vital statistics, from calculations by the United Nations Population Division

Table 1. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Rate of homicides among youths aged 15-24 years	Number of deaths caused by homicide per 100,000 population aged 15-24 years, per year	Number of deaths with an underlying cause of death corresponding to any of ICD-10 codes X85-Y09 (assaults) and Y35 (legal intervention), in the population aged 15-24 years	Population aged 15-24 years in a year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by region
Rate of death due to suicide per 100,000 population	Number of deaths due to suicide per 100,000 population, per year	All deaths with an underlying cause of death corresponding to any of ICD-10 codes X60-X84, among the population	Population in the corresponding year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by region
Mortality due to road traffic injuries	Number of deaths due to road traffic injuries per 100,000 population	Deaths with an underlying cause corresponding to any of ICD-10 codes V01-V89, among the population aged 15-24 years	Population aged 15-24 years in one year by region	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	PAHO Mortality Information System by region
Prevalence of overweight and obesity	Percentage of the population with overweight and obesity	Total number of adolescents and adults with a body mass index (BMI) for age ≥25.0 kg/m^2	Total number of adolescents and adults	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National nutrition and health survey

Table 1. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Proportion of older adults having difficulty with activities of daily living	Percentage of people aged >60 or >80 years having difficulty with activities of daily living	Number total of people aged >60 or >80 years that might describe difficulty in the following activities of daily living: 1. Walking across a room 2. Dressing (including put on shoes and socks) 3. Bathing (including getting in and out of the bathtub) 4. Eating (including cutting food, filling glasses) 5. Getting in and out of bed 6. Toileting (including getting on and off toilet)	Total number of people aged >60 or >80 years surveyed	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Health, Well-being, and Aging Survey (known as the SABE survey)
Proportion of low birthweight (<2,500 g) among newborns	Number of newborns with weight less than 2,500 grams, measured at birth or in the first hours of life, before significant loss of birth weight has occurred, expressed per 100 live births	Number of newborns with weight less than 2,500 grams, measured at birth or in the first hours of life	Corresponding total number of newborns, for a given year, in a given country, territory, or geographical area	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National health information systems, national vital statistics
Prevalence of chronic malnutrition in children under 5	Percentage of cases of chronic nutritional deficiency in children under 5 detected during a given year	Number of children under 5 detected during a given year with height-for-age ratio 2 standard deviations (-2SD) from the reference median	Corresponding given midyear population, for a given country, territory, or geographical area	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National health information systems

Table 1. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Age-specific fertility rate for women aged 15-19 years	Annual number of births to adolescent mothers aged 15-19 years per 1,000 adolescents aged 15-19 years	Number of live births to adolescent mothers aged 15-19 years during a given period	Number of adolescents aged 15-19 years during the same period	*Location*: rural/urban *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Annual country, United Nations, and census reports
Prevalence of intimate partner violence	Percentage of girls and women aged 15-49 years who have been subjected to physical, sexual, or psychological violence by their current or former intimate partner, in the last 12 months	Total number of women aged 15-49 years interviewed who report having been subjected to physical, sexual, or psychological violence inflicted by their current or former intimate partner, in the last 12 months	Total number of women aged 15-49 years interviewed that have or have had an intimate partner in the last 12 months	*Age* *Location*: rural and urban *Type of violence*: physical, sexual, psychological *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Population surveys on violence against women or population surveys with a special module on violence against women
Mortality attributable to household and ambient air pollution	Mortality rate for the following conditions: acute respiratory infections in children under 5. For adults aged >25 years: cerebrovascular diseases, ischemic disease, chronic obstructive pulmonary disease, and lung cancer	Number of deaths from the listed conditions per 100,000 population	Total population	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	Burden of disease attributable to ambient air pollution. Available at: http://apps.who.int/gho/data/node.wrapper.imr?x-id=2259 Metrics: Population Attributable Fraction. Available at: http://www.who.int/healthinfo/global_burden_disease/metrics_paf/en/
Mortality attributable to unsafe water, unsafe sanitation, and lack of hygiene	Mortality from the following conditions: fractions of diarrhea, nematode infections, and malnutrition	Number of deaths from the listed conditions per 100,000 population	Total population	*Location*: rural/urban *Sex*: men, women *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National statistics offices, administrative data
Rate of mortality from disasters	Number of people who died as a direct result of disaster per 100,000 population	Number deaths attributable to disasters per 100,000 population	Total population	*Location*: rural/urban *Sex*: men, women *Socioeconomic status*: income quintile, education level, ethnic group, and migratory status	National statistics offices, administrative data

Note: Complete technical specifications for these indicators are in Appendix C.

Table 2. Universal Health Outcome Indicators

ACCESS BARRIERS					
Indicator	**Definition**	**Numerator**	**Denominator**	**Disaggregation**	**Data Source**
Percentage of the population reporting access barriers to health (cultural, institutional [acceptability, convenience, availability, waiting time], economic, geographical)	Percentage of people who needed medical care and did not receive it and leading reasons why they did not receive it	Number of people who needed medical care and did not receive it	Total number of people who needed medical care	*Type of disease* *Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Household surveys with special health module
Proportion of out-of-pocket health expenditure in relation to total health expenditure	Expenditures at the time the individual or household benefits from health services	Direct expenditures for use of health services: expenditures for medical, dental, and ophthalmological care or on other health professionals; on prescribed drugs; and on other health goods and services	Total health expenditure, which is the sum of general government (or public) spending and private health expenditure	Not applicable	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption
Percentage of households with out-of-pocket catastrophic health spending	Percentage of households whose out-of-pocket health expenditures represent a substantial proportion of their income or ability to pay	Total number of homes that incur out-of-pocket health expenditures that exceed a threshold with regard to income or ability to pay	Total number of homes that incur out-of-pocket health expenditures	*Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption
Percentage of households with out-of-pocket expenditure that causes impoverishment	Percentage of households whose out-of-pocket health expenditure pushes them below the poverty line	Total number of households that incur out-of-pocket health expenditure that pushes them below the poverty line	Total number of households that incur out-of-pocket health expenditure	*Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption

Table 2. Continued

COVERAGE AND USE OF HEALTH SERVICES					
Indicator	**Definition**	**Numerator**	**Denominator**	**Disaggregation**	**Data Source**
Coverage of three doses of diphtheria, tetanus, and pertussis (DTP) vaccine during the first year of life	Percentage of children who, upon completing their first year of life, have received three doses of DTP vaccine	Number of children aged <1 year who have received three doses of DTP vaccine	Total children aged <1 year in a country, territory, or geographical area at a given time	*Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	PAHO/WHO and UNICEF joint reporting form
Proportion of women aged 30-49 years who report having been screened for cervical cancer	Proportion of women aged 30-49 years who report they were screened for cervical cancer at least once in their life with any of the following methods: visual inspection with acetic acid, pap smear, and human papillomavirus (HPV) screening test	Total number of women in the age group specified in the national screening policy who are screened for cervical cancer	Total number of women in this age group in the country's population	*Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National cervical cancer screening survey
Percentage of women of reproductive age who have their need for family planning satisfied with modern methods	Percentage of sexually active women of reproductive age (aged 15-49 years) who report not desiring more children or who wish to delay the next pregnancy, and that use some modern contraceptive method	Total number of women of reproductive age (married or in a consensual union) who are not pregnant nor have postpartum amenorrhea and that do not desire more children (limit), or that wish to postpone the birth of a child at least two years, or do not know when they wish to have another child (space) and use some modern contraceptive method	Total number of women of reproductive age (aged 15-49 years) who are married or in a consensual union	*Location*: rural/ urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Household surveys, demographic and health survey (DHS), multiple indicator cluster surveys (MICS), reproductive health surveys (RHS), and national surveys based on similar methods

Table 2. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Proportion of pregnant population attended by skilled personnel during pregnancy (%)	Number of pregnant women who have gone to at least four prenatal care visits with a skilled health professional	Number of pregnant women who go to at least one health care visit during pregnancy in services for control and monitoring of pregnancy or outpatient care for associated morbidity	Population of live births, for a given year, in a given country, territory, or geographical area	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	The ministry of health of each country, based on data compiled systematically by the national information system or collected through surveys
Percentage of births attended by skilled health personnel	Percentage of births attended by skilled health personnel in a specific year and in a given country, territory, or geographical area	Births attended by skilled personnel in a specific year	Total number of births in that same year	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	The ministry of health of each country, based on data compiled systematically by the national information system or collected through surveys
Percentage of the population that receives at least one preventive-care visit per year	Number of people who have at least one preventive-care visit in a year, expressed as percentage of the total population surveyed	Number of people who report having gone to at least one preventive-care visit in a specific year	Total number of people surveyed	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Household surveys with a special health module and health facility records
Access to community health programs for older adults	Number of evidence-based self-care interventions so that older adults can live an independent life	Number of self-care and community support services programs of this type available to older adults	Not applicable	Not applicable	National, subnational, and local records of the number of evidence-based self-care interventions for chronic diseases
Coverage for care of persons with disabilities	Percentage of disabled people with access to habilitation and rehabilitation services and to social services	Number of persons with any type of disability treated in the habilitation and rehabilitation services of the country's health sector	Total number of disabled people in the country	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Reports from ministry of health health-services, supplemented with multiuse surveys from each country's ministry of health or social development program

Table 2. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Percentage of controlled diabetes at the population level in people aged >18 years	Percentage of controlled diabetes at the population level (100-125 mg/dl) in people aged >18 years	Total number of people aged >18 years with controlled diabetes (normal blood glucose: 100-125 mg/dl)	Total number of people with hypertension (systolic ≥140 mmHg or diastolic ≥90 mmHg), or who report that a health professional has diagnosed them with hypertension or who report taking drugs to treat hypertension	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National health surveys, reports on health services from ministries of health and clinical records from health facilities
Percentage of controlled diabetes at the population level in people aged >18 years	Percentage of controlled diabetes at the population level (100-125 mg/dl) in people aged >18 years	Total number of people aged >18 years with controlled diabetes (normal blood glucose: 100-125 mg/dl)	Total number of people aged >18 years with diabetes (defined as persons with fasting blood glucose of >125 mg or 7.0 mg/dl or a two-hour blood glucose of ≥11.1 mmol/l or 200 mg/dl or A1c ≥6.5%), or hyperglycemia (fasting blood glucose of 100-125 mg/dl), or treated with drugs for hyperglycemia/diabetes	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National health surveys, health services reports from ministries of health, and health facility clinical records
Treatment in mental health facilities	Rate of visits in outpatient mental health facilities	Number of mental health visits in outpatient facilities in a year	Total population (general population)	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Country reports

Table 2. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Percentage of coverage with antiretroviral therapy (ART)	Measures coverage of access to ART	Number of people who receive ART	Estimate of the number of people who need ART	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Reports provided by ministries of health and UNAIDS
Percentage of coverage with prophylactic HIV treatment to prevent mother-to-child transmission	Measures progress in administration of antiretroviral therapy to HIV-infected women to prevent vertical transmission	Number of HIV-infected pregnant women who received antiretrovirals to reduce mother-to-child transmission during the 12 previous months	Estimated number of HIV-infected pregnant women corresponding to the 12 previous months	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National program records, which consolidate health facility records
Percentage of coverage of pregnant women with treatment for syphilis	Percentage of pregnant women who were positive for syphilis and who received appropriate treatment (at least one dose of penicillin G [intramuscular])	Number of pregnant women who were positive for syphilis during pregnancy and who received appropriate treatment	Number of pregnant women with positive syphilis serology during pregnancy	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National program records, which consolidate health facility records
Number of successfully treated tuberculosis patients	Number of patients with bacteriologically confirmed tuberculosis successfully treated in the program	Number of patients with bacteriologically confirmed tuberculosis successfully treated in countries each year	Not applicable	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* quintile of admission, level of education, ethnic group, and migratory status	National program records, which consolidate health facility records

Table 2. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Timeliness of malaria detection and treatment	Proportion of detected malaria cases that began treatment in the first 72 hours following symptom onset, by type of surveillance (active case-finding and passive case-finding). In countries with very few cases: median number of days elapsed between symptom onset and beginning of treatment.	Number of malaria cases that began treatment in the first 72 hours following symptom onset.	Total cases detected	*Location*: rural/urban *Sex*: men, women *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status *Type of surveillance:* active and passive *Risk groups* *Time:* month, year *Type of provider*	National program records that combine health facility records or that are based on individual electronic records in online systems. Malaria programs record dates of symptom onset and of beginning of treatment on a nominal basis
Percentage of diagnosed and treated cases of leishmaniasis	Number of people diagnosed according to laboratory criteria and properly treated as a result of an increase in medical care quality and coverage	Number of cases diagnosed and treated according to laboratory criteria, by type of leishmaniasis: 1) for cutaneous and mucocutaneous leishmaniasis (together) and 2) for visceral leishmaniasis	Number of cases diagnosed according to laboratory criteria, by type of leishmaniasis: 1) for cutaneous and mucocutaneous leishmaniasis (together) and 2) for visceral leishmaniasis	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National systems or the annual national reports registered annually in the Regional Leishmaniasis System
Percentage of coverage with treatment of viral hepatitis	Proportion of people diagnosed with chronic hepatitis C virus (HCV) infection that began treatment during a specific time period (e.g., 12 months)	Number of people diagnosed with chronic HCV infection (defined as HCV RNA positive or HCV Ag [antigen]) that initiated treatment during a specified time period (e.g., 12 months)	Number of people diagnosed with chronic HCV infection (defined as HCV RNA positive or HCV Ag)	*Age* *Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	National program records and health facility clinical records

Table 2. Continued

COVERAGE AND ACCESS TO INTERSECTORAL INTERVENTIONS					
Indicator	**Definition**	**Numerator**	**Denominator**	**Disaggregation**	**Data Source**
Percentage of population relying on solid fuels	Proportion of population relying on solid fuels that are used for cooking or heating	Population relying on solid fuels (e.g., wood, dung, crop waste, and coal used for cooking or heating)	Corresponding population	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Household surveys and reports on policy implementation
Alcohol per capita consumption in people aged >15 years	Consumption of pure alcohol (ethanol) in people aged >15 years in a calendar year	Sum of beverage-specific alcohol consumption of pure alcohol (beer, wine, spirits, and others) during a calendar year	Corresponding population during a calendar year	*Location*: rural/urban *Sex*: men, women	Government statistics on alcoholic beverage sales or data on alcohol production, export, and import in different beverage categories
Tobacco use in adolescents	Prevalence of current tobacco use among adolescents aged 13-17 years	Total number of current tobacco users aged 13-17 years	Total population surveyed in the country (tobacco users and non-users)	*Location*: rural/urban *Sex*: men, women	Global Youth Tobacco Survey Global School-based Student Health Survey Drug abuse surveys National population-based household surveys
Tobacco use in adults	Age-standardized prevalence of current tobacco use (aged ≥18 years)	Number of current tobacco users aged ≥18 years	Total population surveyed in the country (tobacco users and non-users)	*Location*: rural/urban *Sex*: men, women	Global Youth Tobacco Survey Global School-based Student Health Survey Drug abuse surveys National population-based household surveys

Table 2. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Insufficient physical activity in adolescents	Prevalence of adolescents aged 13-17 years who engage in <60 minutes of moderate to vigorous physical activity daily	Number of adolescents aged 13-17 years that do not engage in the recommended amount of physical activity	Number of adolescents aged 13-17 years surveyed	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Global Physical Activity Questionnaire or the International Physical Activity Questionnaire
Insufficient physical activity in adults aged >18 years	Prevalence of adults aged >18 years that do not engage at least 150 minutes of moderate physical activity per week	Number of people aged >18 years who do not do the recommended amount of physical activity	Total number of people aged >18 years surveyed	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	Global Physical Activity Questionnaire (GPAQ)
Breastfeeding in infants aged <6 months	Percentage of infants aged <6 months who are fed exclusively with breast milk	Number of infants aged <6 months who are exclusively breastfed	Total number of surveyed minors	*Location*: rural/urban *Sex*: men, women *Provider*: public, social security, private, total *Socioeconomic status:* income quintile, education level, ethnic group, and migratory status	WHO Global Data Bank on Infant and Young Child Feeding (GDBIYCF), national health or nutrition surveys, demographic and health surveys (DHS), Multiple Indicator Cluster Surveys (MICS)

Notes: DTP, diphtheria, tetanus, and pertussis vaccine; HIV, human immunodeficiency virus.
The complete technical specifications for these indicators can be consulted in the Appendix C.

Table 3. Universal Health Output Indicators

CRITICAL HEALTH SYSTEM RESOURCES					
Indicator	**Definition**	**Numerator**	**Denominator**	Disaggregation	**Data Source**
Availability of a health workforce	Number of health workers (physicians, nurses, and midwives) that, in a given year, work full-time in public or private health facilities, expressed in a rate per 10,000 population	Number of physicians, nurses, and midwives in a given year	Total population in a given year	Subnational jurisdiction (province, state, department, territory, district, etc.) Provider: public, social security, private, total Geographical: by region of the country and rural/urban	Each country's ministries of health or national health authorities and population census
Percentage of teams of health professionals or medical specialists who receive remuneration with payment for performance	Percentage of health professionals with payment by performance with incentives specifically designed to increase the access and the quality of health services	Number of health professionals or medical specialists that receive pay for performance remuneration	Total number of health professionals or medical specialists with wage-based remuneration	Provider: public, social security, private, total	Ministry of health or national health authority administrative data
Per capita public and private pharmaceutical expenditure (in United States dollars)	Total public and private health expenditure, as a proportion of the total population. Encompasses provision of pharmaceutical services designated for health	Total public or private health expenditure allocated for provision of pharmaceutical services, multiplied by 100. Data in United States dollars at current prices	Total population	Not applicable	WHO national accounts database
Number of high-energy teletherapy units (cobalt-60 and linear accelerators) per 1 million population	Availability of high-energy teletherapy units per 1 million inhabitants	Total high-energy teletherapy units (cobalt-60 and linear accelerators)	Total population	Provider: public, social security, private, total	Directory of Radiotherapy Centres 2016, published by the International Atomic Energy Agency (IAEA) and WHO
Blood donation rate by 1,000 people	An indicator of the general availability of blood in a country	Number of donations in a specific year	Total inhabitants in a specific year	Not applicable	Data on blood supply for transfusions

Table 3. Continued

Indicator	Definition	Numerator	Denominator	Disaggregation	Data Source
Population coverage by health financing schemes	Proportion of the population covered by health financing schemes in the country	Number of people covered by type of health financing scheme	Corresponding total population	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status	Household surveys with special health module
Proportion of public spending allocated to health in relation to gross domestic product (GDP)	Proportion of public spending allocated to health in relation to GDP	Public health expenditure	GDP	Not applicable	WHO national accounts database
Percentage of public spending on the first level of care in relation to GDP	Measures public spending on the first level of care expressed in relation to GDP	Public spending in the first level of care (facilities and services)	GDP	Not applicable	National budget data provided by ministries of health, and budgetary and financial statement data provided by social security institutions
Percentage of hospitals that have prospective financing based on health outputs	Measures the number of hospitals that have financing from the prospective budget based on caseload, expressed as a percentage of the total number of hospitals	Number of hospitals with prospective budget financing based on caseload by 100	Total number of hospitals	Provider: public, social security, private, total	National budget data provided by ministries of health, and budgetary and financial statement data provided by social security institutions

Table 3. Continued

ORGANIZATION OF HEALTH SERVICES					
Indicator	**Definition**	**Numerator**	**Denominator**	**Disaggregation**	**Data Source**
Percentage of preventable hospitalizations for ambulatory care sensitive conditions (ACSCs)	Hospitalizations for conditions that the first level of care has potential capacity to prevent if it has adequate response capacity	Preventable hospitalizations for 20 ACSC conditions	Hospitalizations for all causes	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status	Hospital discharges, ministry of health statistics departments, and health services efficiency studies
Incidence of patients with healthcare-associated infections (HAIs)	Incidence of infections associated with invasive devices in intensive care units (ICUs)	Number of patient-days with an invasive device in ICUs (patients on mechanical ventilation, indwelling urinary catheter, and central venous catheter) with a device-associated infection, confirmed via case definition criteria	Number of patient-days with an invasive device in ICUs (patients on mechanical ventilation, indwelling urinary catheter, and central venous catheter)	Location: rural/urban Sex: men, women Age Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status	Records of temperature, antibiotic use, cultures, and patient progress; medical and nursing orders; and records of suspected infections by clinical staff in charge of patient care
Percentage of first level of care facilities with a territory-based population under their responsibility	Percentage of first level of care facilities with a clear territory-based assignment of the population and territory under their responsibility	Number of first level of care facilities with a territory-based population under their responsibility	Total number of first level of care facilities	Provider: public, social security, private, total	Ministry of health statistics departments
Percentage of the national population covered by an integrated health service delivery network (IHSDN)	Percentage of the national population covered by comprehensive health services from an IHSDN in a single territory	Number of inhabitants covered by health services networks	National population	Provider: public, social security, private, total	Ministry of health statistics departments

Table 3. Continued

INTERSECTORAL INTERVENTIONS WITH IMPACT ON HEALTH					
Indicator	**Definition**	**Numerator**	**Denominator**	**Disaggregation**	**Data Source**
Proportion of the population with access to safe drinking water services	Percentage of the population with access to safe drinking water services in a given year	Percentage of the population with access to safe drinking water services in a given year	Corresponding midyear population, in a given country, territory, or geographical area	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status	Household surveys
Proportion of the population using an improved sanitation facility	Percentage of the population with access to excreta disposal services in a given year	Population with direct access through a household connection to public sewerage systems or through a septic tank or latrine	Corresponding midyear population, in a given country, territory, or geographical area	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status	Household surveys

Note: Complete technical specifications for these indicators are in Appendix C.

Strategic actions

Table 4 lists strategic actions formulated based on the interventions (plans, policies, and programs) identified by Member States in Strategy CD53/5, Rev2 (*1*). This list has been continually enhanced in response to the comments received during the consultation exercises and the working meetings conducted with various experts from the Region of the Americas.

Under the first strategic line, the analysis looks at progress in the delivery of comprehensive, integrated people- and community-centered services, with special emphasis on the response capacity of the first level of care and on the organization of services in integrated networks. Under the second strategic line, the analysis focuses on the political and technical capacity of the NHA to lead health system change processes and to formulate, regulate, and oversee compliance with legal and regulatory frameworks in line with the values of universal health.

Table 4. Strategic actions for universal health

Strategic line 1. Expanding equitable access to comprehensive, quality, people- and community-centered health services
SA 1.1. Define the features of and implement a people-, family-, and community-centered health care model
SA 1.2. Increase the response capacity of the first level of care, prioritizing areas with populations living in conditions of vulnerability
SA 1.3. Strengthen the organization and management of health services through integrated health services networks (IHSNs)
SA 1.4. Establish mechanisms to enable the participation of individuals and their families and communities in decision-making aimed at improving the quality of care
Strategic line 2: Strengthening stewardship and governance
SA 2.1. Develop norms and standards to improve quality in health services delivery
SA 2.2. Ensure the availability, equitable distribution, and quality of human resources for health
SA 2.3. Establish processes for improving the availability and regulation of medicines and other health technologies
SA 2.4. Facilitate the empowerment of individuals and communities and ensure that all population groups are represented in policy-making and implementation
SA 2.5. Strengthen monitoring and information systems to identify health needs, health inequities, and access barriers
SA 2.6. Prioritize research on universal health in the domestic research agenda
Strategic line 3: Increasing and improving financing, with equity and efficiency, and advancing toward the elimination of direct payment that constitutes a barrier to access at the point of service
SA 3.1. Use fiscal regulation as a tool for promoting the mobilization and allocation of financial resources for health
SA 3.2. Advance toward the pooling of resources for health from various sources
SA 3.3. Advance toward elimination of the burden of cost-recovery schemes and direct out-of-pocket payments
Strategic line 4: Strengthening intersectoral coordination to address the social determinants of health
SA 4.1. Establish or strengthen the capacity of the national health authority to successfully implement intersectoral public policies

Note: SA, strategic action.

Under the third strategic line, the analysis examines increasing and optimizing public funding for health, strengthening financial protection, minimizing direct payment for services, and pooling funds to strengthen the model of care and ensure universal access. Finally, under the fourth strategic line, the analysis focuses on linking and integrating health services with various social sectors and on mechanisms for regulating the production, marketing, and consumption of goods and services that have an impact on population health.

CHAPTER 2

USING THE UNIVERSAL HEALTH MONITORING FRAMEWORK

The universal health monitoring framework is designed to be an integral part of Member States' national processes of planning, monitoring, evaluation, and accountability for progress in the implementation of actions to advance toward universal health. This progress is analyzed on the basis of measurements of inequity in access and coverage, together with evidence on the implementation of the basic activities necessary to enable continuous progress toward universal health.

Monitoring that focuses exclusively on trends, without considering contextual information related to health system transformation processes, will not generally yield sufficient information on the effectiveness of government policies (*64, 65*). It is therefore necessary for trend monitoring to be complemented by qualitative data collected through systematic processes that will make it possible to analyze the characteristics and the depth of changes introduced in the health system (*65*). In order to meet this need, the experts agreed on a methodology for using the monitoring framework that links equity analysis with policy analysis.

It is recommended that indicators be disaggregated by various socioeconomic variables and that qualitative information reflecting the implementation of key policies for health system transformation be collected. For quantitative analysis of the data, it is expected that NHAs will select from the list of 66 indicators those that are most relevant to their national context, bearing in mind the availability of information and the priorities of the health system, including the epidemiological profile and health system transformation policy needs. The aim of the qualitative approach is to complement the analysis of quantitative data with contextual information that reflects the characteristics and the

depth of changes introduced through health system policies and to identify policy options for addressing the gaps and challenges identified (*66-68*). It is proposed that the process be carried out in four stages, which may overlap.

Stage 1: Analysis of health system context

The aim in this step is to analyze relevant contextual information that will make it possible to interpret data on universal health outcomes in the light of other important health system factors. Such information includes a description and analysis of the institutional and organizational structure of the health system and of the stakeholders in the system. This information can be collected and analyzed using a standardized format developed by PAHO for the preparation of health system profiles (*69*).

Stage 2: Analysis of strategic actions

The strategic actions will be analyzed through a review of official documents from the country and interviews with key informants, using an unstructured questionnaire that allows the collection of qualitative information (see Appendix B). This information is intended to provide context and help explain the effect of policies and plans designed to advance efforts toward the achievement of universal health. Each strategic action will be analyzed in relation to four areas:

1. Interventions (policies, plans, and strategies) used to enhance the capacity of health systems to respond to the health needs of the population.
2. Institutional aspects related to regulatory frameworks and mechanisms for the allocation of resources (financial, technological, and human) that have helped to strengthen the response capacity of the health system.
3. Policy aspects related to actions taken by the NHA and other actors that have made it possible to introduce changes in regulatory frameworks and resource allocation mechanisms in order to strengthen the response capacity of the health system.
4. Intersectoral interventions that have facilitated change processes within regulatory frameworks and resource allocation mechanisms (see Appendix B).

These areas reflect the dynamics and the inherent characteristics of health system transformation processes. Changes in health systems involve institutional, policy, and intersectoral mechanisms for the regulation of critical resources and the organization of services. The inclusion of all these components should be led by the NHA in partnership with other institutional and social actors (*59, 60*). The promotion of a legal framework for universal health includes the development of interventions (policies, plans, and strategies) related to each of the four strategic lines, including the organization of services, the health workforce, financing, medicines and technologies, and intersectoral action. These elements are considered critical aspects of the health system transformations needed to ensure health access and coverage (*59, 60*).

It is important to note that the questionnaire is not meant to be self-completed. Accordingly, it is recommended that the NHA appoint a group of national facilitators to be responsible for collecting the information. This group should be made up of the national officials responsible for each of the strategic lines for universal health: health services, governance, financing, and intersectoral action. The group of facilitators will be responsible for planning and conducting a workshop and ensuring the participation of health professionals and officials, representatives of patients, and other health system experts and stakeholders. Data collection should be carried out through a highly participatory collective exercise that brings together health workers, experts, and other health system stakeholders. During the exercise, working groups will be formed, with professionals distributed across groups based on their profiles. Each group will have a local facilitator to compile a group response and will also have the support of a rapporteur who will be responsible for keeping track of the responses and noting the level of consensus in the group. The rapporteur will also note any differences of opinion. An external instructor from PAHO will help to compile the participants' comments and suggestions to support the analysis process.

Stage 3: Analysis of outputs, outcomes, and impacts

The NHA will set up a working group to measure and analyze the output, outcome, and impact indicators (see Appendix C). This step includes the measurement and analysis of equity. Monitoring of inequities in health is essential in order to advance toward the achievement of universal health, as such monitoring makes it possible to draw comparisons between different populations over time, which in turn facilitates target-setting and ensures that policies do not overlook groups in situations of vulnerability. Inequity is multicausal and it is therefore recommended that universal health monitoring be designed in a way that incorporates the various dimensions of inequity in order to identify the types of interventions that will best address the types of inequity found (*71-72*). PAHO offers a technical guide for measuring and monitoring health inequities, with special emphasis on the characteristics of various metrics and methods of measurement and analysis. PAHO technical advisors can provide technical support on methodologies for measuring and interpreting data on equity.

Stage 4: Sharing of findings and formulation of recommendations

The information collected in stages 2 and 3 should be shared with government officials, civil society representatives, and other health system stakeholders through a highly participatory collective exercise that brings together all relevant actors. It is expected that the findings and comments and the recommendations arising from the analysis of the findings will be translated into inputs for government, the public, and other stakeholders that will serve to guide the formulation or updating of policies.

CHAPTER 3

FINAL RECOMMENDATIONS

This proposal presents a framework for monitoring universal health. Its basic aim is to strengthen analysis and decision-making capacity in order to catalyze change processes that will lead to improvements in equitable access conditions. Below, recommendations for its effective use:

- Ensuring the acceptability of monitoring tools is a key requirement for facilitating change processes in the quest for universal health (*5*). The consensus-based process of developing this proposal made it possible to create an instrument that reflects the agreements reached among the various participants with regard to the dimensions of analysis and the relevance, validity, and feasibility of the metrics and methodology selected.
- The inclusion of several dimensions of analysis (strategic actions, outputs, outcomes, impacts) will allow a blended approach that combines qualitative and quantitative methods in order to better explain the impact of interventions (plans, policies, and programs) on access and coverage.
- This methodological approach should also serve to guide the design and development of processes for deeper evaluation of the effect of health system transformation policies, including processes, contextual factors, and causality.
- Although the existence of an agreed framework for the Region of the Americas will facilitate regional learning about the implications and effects of health system transformations, the framework was not developed with the aim of drawing comparisons between countries. Its main purpose is to support monitoring of national targets in each country and facilitate the identification of areas that require greater attention and the introduction of corrective measures.

- The application of the monitoring framework will not be without challenges. One of them relates to the difficulty of analyzing the full list of indicators and strategic actions and the limited availability of data disaggregated by socioeconomic variables, which hinders the monitoring of equity. At the same time, the list of indicators may not be sufficiently exhaustive in the specific context of some countries. It is considered more practical to select a set of tracer indicators that countries can adapt based on their needs in relation to health. To that end, the experts recommended that each country prioritize the indicators and strategic actions that are most relevant and feasible for its specific context.
- The analysis of the elements included in the monitoring framework can be relatively complex for large countries where responsibility for policy implementation is shared among federal, state, and local authorities. This poses a challenge when it comes to interpreting the policy analysis at subnational levels. A robust instrument was therefore developed to make it possible for health authorities to select the most relevant dimensions and indicators for their national context.
- The development of this monitoring framework is just a first step. National monitoring systems need to be strengthened in order to produce, analyze, and use information on universal health. In order to strengthen the governance of monitoring systems, in addition to a greater investment, it is essential to address needs in relation to analysis and monitoring of policies for universal health and needs in relation to other health system programs and activities. It is also necessary to strengthen national information systems to integrate data from surveys of households and health institutions and ensure an adequate flow of data. These and other elements related to the design of national monitoring systems call for additional efforts.

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GLOSSARY

Access: capacity to use comprehensive, adequate, timely, quality health services when there are needed. (*Pan American Health Organization. Document CD53/5, Rev2. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Appropriate care: the provision of care that meets the health needs of the entire population; care that is effective and based on the best available scientific evidence; interventions that are safe and that do not cause any harm or suffering; and priorities for the allocation and organization of resources that are based on equity and economic efficiency (e.g., cost-effectiveness). (*Pan American Health Organization. Renewing Primary Health Care in the Americas: PAHO/WHO position paper. Washington, D.C., 2007. In: Pan American Health Organization. Adapted from Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. Series: Renewing Primary Health Care in the Americas No.4. Available at: http://new.paho.org/hq/dmdocuments/2011/PHC_IHSD-2011Serie4.pdf*).

Community health workers: offer education, referral, follow-up, case management, and home visiting services to vulnerable groups, most often women at highest risk for poor birth outcomes, particularly low birth weight and infant mortality. Services are generally provided by paraprofessionals who live in or are familiar with the community. They are trained to provide basic health education and referrals to families and communities for a wide range of services and to provide support and assistance in navigating health and community service systems. (*Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013*).

Comprehensive health services: management and delivery of health services so that people receive a continuum of promotion, prevention, diagnosis, treatment, disease management, rehabilitation, and care palliative services at different levels and locations in the health system, according to their needs throughout the life course. (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

Direct out-of-pocket payments (or direct payments): fees or charges often collected for medical consultations, procedures, or investigation in order to pay drugs and other supplies, and for clinical analyses. Depending on the country, these are collected by government agencies, religious health centers, or private facilities. Some are official charges and others are not (e.g., "under the table" payments). Even users covered by insurance are required to share these costs (normally in the form of co-insurance, copayments, or deductibles) and to pay out-of-pocket at the point of service for the part not covered by the insurance plan. (*World Health Organization. Adapted from: World Health Report. Health systems financing: the path to universal coverage. Geneva, WHO, 2010*).

Efficiency: optimal utilization of resources to achieve specific social objectives. (*Pan American Health Organization. Document CD53/5. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Family and community health approach: care that addresses problems in the context of an individual's family circumstances and social and cultural networks, and the circumstances in which people live and work. It also means that families and communities both receive and sometimes provide health services (e.g., care in the home), respecting all types of diversity (i.e., gender, cultural, ethnic, and any other diversity in the community). (*Pan American Health Organization. Adapted from: Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. Series: Renewing Primary Health Care in the Americas No.4].*

First level of care: delivery of integrated and accessible services by health workers, aimed at resolving most of people's health needs, developing an ongoing relationship with people in the context of the family and the community. (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

First-level care facilities: care facilities that have beds but not specialists, or facilities that have specialists but not beds (Concept adopted in this document at the suggestion of the experts).

First-level care physician: in most countries, known as a primary care physician. Certified medical profession who provides primary health care services in the public or private sphere, at the first level of care, in non-hospital facilities that do not offer acute care or extended stays. This definition does not refer exclusively to graduates or specialists in primary health care or community health. (*Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013*).

First-level health care services: often including, but not limited to, disease prevention and treatment, first-line emergency services that include stabilization of the patient and referral to another center, continuity of treatment and coordination with other types and levels of care (such as hospitals and specialists), mental health care, palliative and late-stage care, health promotion, growth and development of healthy children, maternal care, rehabilitation services, and other services that correspond to the model of care in each country or the level of health system development. (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

Fragmentation (of health services): coexistence of several unintegrated units or facilities within the healthcare network. Other definitions include: (1) services that do not cover the entire range of promotion, prevention, diagnosis, treatment, rehabilitation, and palliative care; (2) services at different levels of care that are not mutually coordinated; (3) services

that do not continue over time; and (4) services that are not adjusted to people's needs. (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]. In: Pan American Health Organization. Health in the Americas 2007. Vol. I, p. 319. Washington, D.C.: PAHO; 2007*).

Governance: institutional arrangements that regulate the actors and critical resources that influence the conditions of coverage and access to health services. (*Pan American Health Organization. Health in the Americas 2017. Washington, D.C.: PAHO; 2017*).

Groups in conditions of vulnerability: sectors of the population with special needs and limited capacities, or that are at greater risk of poverty or social exclusion than the general population. These include women, children, ethnic minorities, indigenous populations, Afro-descendants, migrants, patients with chronic diseases or incapacitating conditions, and older adults, among others. In this context, these are groups at greater risk of suffering from poor health and limited access to services due to ethnic, religious, cultural, or socioeconomic factors. (*European Commission. The European Social Fund and Social Inclusion, Belgium; 2010. Available at: http://ec.europa.eu/employment_social/esf/docs/sf_social_inclusion_en.pdf*).

Healthcare-associated infections: infections that the patient acquires while receiving treatment for a medical condition or surgical procedure, when the patient had not presented with an infection nor was incubating one at the time of admission to the facility. This is associated with several causes, including but not limited to the use of medical devices, postsurgical complications, transmission between patients and health workers, and frequent consumption of antibiotics. These infections can be caused by different agents, including bacteria, fungi, and viruses. An adverse event resulting from health care that unintentionally causes harm to the patient can be classified as preventable or non-preventable. PAHO/WHO recommends that this definition should replace others previously used in other subsystems, such as hospital-associated infections or hospital or nosocomial infections. (*Instituto Nacional de Salud de Colombia. Qué son las infecciones asociadas a la asistencia sanitaria. Available at: https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/PP/PAI/programa-iaas-ram.pdf*).

Health coverage: capacity of the health system to serve the population's needs. This includes the availability of infrastructure, human resources, health technologies (including medicines), and financing. (*Pan American Health Organization. Document CD53/5. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Health equity: the absence of unfair differences in health status, in access to health care and healthy environments, and in the treatment received in the health system and other social services. (*Pan American Health Organization. Renewing Primary Health Care in the Americas: PAHO/WHO position paper. Washington, D.C.: PAHO; 2007*).

Health in all policies: an approach aimed at improving health and well-being. It involves an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to

improve population health and health equity. (*Adapted from: World Health Organization. Health in All Policies Framework for Country Action https://www.who.int/healthpromotion/frameworkforcountryaction/en/*).

Health needs assessment: a systematic method for reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health and reduce inequalities. (*Cavanagh S, Chadwick K. Health needs assessment: A practical guide. UK National Institute for Health and Clinical Excellence, 2005. Available at: https://www.webarchive.org.uk/wayback/archive/20140616160834mp_/http:/nice.org.uk/nicemedia/documents/Health_Needs_Assessment_A_Practical_Guide.pdf*).

Health system: group of organizations, individuals, and actions focused fundamentally on promoting, recovering, and/or improving health. (*World Health Organization. The World Health Report 2000. Health systems: improving performance. Geneva: PAHO; 2000*).

Human resources for health: to facilitate international comparisons, given the disparity of available data for many professions, the WHO definition is used, which includes physicians, nurses, and midwives. However, countries are encouraged to collect information on all of the health professions that are relevant to the health team. (*Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013*).

Integrated health services delivery network: a network of organizations that provides, or makes arrangements to provide, equitable, comprehensive, integrated, and continuous health services to a defined population and is willing to be held accountable for its clinical and economic outcomes and the health status of the population served. (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

Intersectoral action: coordinated intervention of more than one social sector in actions aimed at improving the health and well-being of the population, involving policies, programs, and projects carried out by two or more ministries or agencies of the government. This includes both purely horizontal action between ministries and agencies, and actions across different levels of government. Traditionally, the health sector has taken a lead in actions across sectors for health and health equity; for example, through the "health in all policies" approach and the "whole-of-government" approach. (*World Health Organization. First draft of the Framework for Country Action Across Sectors for Health and Health Equity, Second WHO Discussion Paper, 2015. Available at: http://www.who.int/nmh/events/WHO-discussion-paper2.pdf?ua=1&ua=1*).

Life course: approach based on a model that suggests that health outcomes for people and communities depend on the interaction of multiple protective and risk factors throughout people's lives. Accordingly, each life stage influences the following one. These factors involve environmental, biological, behavioral, and psychological features, as well as access to health services. This approach provides a more comprehensive vision of health and its determinants, urging the development of health services more centered on the needs of

users at each stage of life. (*Pan American Health Organization. Adapted from: Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]. In: Lu M, Halfon N. Racial and Ethnic Disparities in Birth Outcomes: A Life-Course Perspective. Mat and Chil Health J 2003; Vol 7, No. 1:13-30*).

Multidisciplinary team (first level of care): may include any of the following professionals and community agents (the first three categories usually constitute the minimum core team): general practitioners, nurses, professional midwives or obstetricians, physical therapists, occupational therapists, social workers, psychologists, nutritionists, pharmacists, dentists, first-line managers and administrators, community health agents, nurse auxiliaries, medical assistants, and medical technologists. (*Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013*).

National health authority: the custodian of the public good for health and its fundamental objective is the protection and promotion of the population's health. It represents the power of the State to perform its specific, non-delegable substantive functions, responsibilities and competencies in order to effectively monitor health as a public good. (*Pan American Health Organization. Steering role of the national health authority, performance and strengthening. Washington, D.C.: PAHO; 2007. Available at: https://www.paho.org/hq/dmdocuments/2010/Steering_Role_NHA.pdf*).

National health policy: a formal statement or procedure within an institution (notably government) which defines goals, priorities and the parameters for action in response to health needs, within the context of available resources. (*World Health Organization. A Glossary of Terms for Community Health Care and Services for Older Persons, Japan: WHO; 2004. Available at: https://apps.who.int/iris/bitstream/handle/10665/68896/WHO_WKC_Tech.Ser._04.2.pdf?sequence=1*).

National plan of action: a broad intersectoral master plan for attaining national health goals through implementation of a strategy. It indicates what has to be done, who has to do it, during what time-frame, and with what resources. It is a framework leading to more detailed programming, budgeting, implementation and evaluation. It specifies, in operational terms, the steps to be taken in accordance with the strategy, keeping in mind the various objectives and targets to be attained and the programs for attaining them. (*World Health Organization. A Glossary of Terms for Community Health Care and Services for Older Persons, Japan: WHO; 2004. Available at: https://apps.who.int/iris/bitstream/handle/10665/68896/WHO_WKC_Tech.Ser._04.2.pdf?sequence=1*).

National strategy: based on a national policy, a set of decisions that includes the broad lines of action required in all sectors involved to give effect to the national health policy and indicates the problems and ways of dealing with them. (*World Health Organization. A Glossary of Terms for Community Health Care and Services for Older Persons, Japan: WHO; 2004. Available at: https://apps.who.int/iris/bitstream/handle/10665/68896/WHO_WKC_Tech.Ser._04.2.pdf?sequence=1*).

Neglected areas: areas with a low density of health workers per 10,000 population compared to the national density of health workers per 10,000 population. This concept can be used to compare the size of the population living in each subnational jurisdiction (province, state, department, territory, district, etc.) in order to determine the number of human resources for health in that geographical jurisdiction. (*Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013*).

People- and community-centered health services: The focus is on "the person as a whole"; i.e., care that considers a person's physical, mental, emotional, and social dimensions throughout the life course. This also means that health services incorporate intercultural and gender approaches and focus on vulnerable populations. It implies that health workers have a degree of knowledge about each person; that care is adapted to the person's specific needs; that there is empathy, respect, and trust; and that clinical decision-making is shared by the provider and the person. It means empowering people to manage their health better, through strategies such as health education, self-care and self-management of their illness. People-centered care is also linked to approach focused on the rights (and sometimes the responsibilities) of people or patients with respect to health care. In some countries, this has been expressed in "patient charters". (*Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

Pooled funding: unification of all types of financing in a single fund (social security, government budget, individual contributions, and other funds); each person contributes according to their capacity and receives services according to their needs. In this scheme, the public budget covers the contributions of individuals who lack the ability to contribute (poor and indigent persons). (*Pan American Health Organization. Document CD53/5. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Primary health care (PHC): a broad approach to the organization and operation of health systems aimed principally at ensuring the right to enjoy the highest attainable standard of health, while maximizing equity and solidarity. A system of this nature follows the key principles of PHC, such as responding to the health needs of the population, while focusing on quality, responsibility, government accountability, social justice, sustainability, participation, and intersectoralism. (*Pan American Health Organization. Renewing Primary Health Care in the Americas: PAHO/WHO position paper. Washington, D.C.; 2007*).

Public, private, or other health providers: the terms "public" and "private", although not precise, are frequently used to describe health systems. In general, "public" means government-owned (national, regional, state, or local level), while "private" refers to the involvement of businesses, charitable organizations, or individuals. Although the public and private sectors are separate entities, they are often closely related. For example, even when health services are provided by charitable organizations (sector private),

the responsibility to do so tends to correspond to government providers (public sector). Moreover, governments generally regulate the private sector and can provide additional financing. In the context of this document, public providers are nonprofit, public sector entities that offer health services in publicly-owned facilities, using public sector funds. Private providers are commercial or nonprofit providers that offer health services in privately-owned facilities. Funding for these services can come from the public or private sector. "Other" providers are those that cannot be considered exclusively public or private, since they are both owned and administered jointly by the public and private sector. Some countries have health centers or social security facilities that are examples of this modality. (*Kawiorska D. Guidelines for the Delineation into Public and Private Units. Organisation for Economic Co-operation and Development; 2018. Available at: http://www.oecd.org/health/health-systems/40191715.pdf*).

Quality of health services: the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. To this definition should be added the subjective component of quality, which is users' perception of quality. (*Pan American Health Organization. Pan American Health Organization. Regional Policy and Strategy for Ensuring Quality of Health Care, Including Patient Safety. CSP 27/16, 2007*).

Response capacity: the capacity of health services to provide comprehensive care capable of meeting most of the population's health needs and demands over time and throughout the life course. (*Pan American Health Organization. Adapted from Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]*).

Response capacity at the first level of care: capacity of a first-level facility to correctly diagnose and effectively treat users' health problems, having an appropriate level of human resources and materials available for primary care. This capacity is measured by evaluating selected health problems as indicators, and based on the performance of clinicians, according to the definitions established in clinical practice guidelines. (*Adapted from: Peñaloza B, Leisewitz T, Bastías G, Zárate V, Depaux R, Villarroel L, et al. Metodología para la evaluación de la relación costo-efectividad en centros de atención primaria de Chile. Rev Panam Salud Pública. 2010;28(5):376-387*).

Segmentation (of health systems): health systems characterized by the coexistence of subsystems with different modalities of financing, affiliation, and service delivery, each of them "specialized" in different strata of the population, according labor status, income level, ability to pay, and social position. This type of institutional organization consolidates and deepens inequities in access to health services between different population groups. In organizational terms, this means the coexistence of one or more public entities (depending on the degree of decentralization or deconcentration) and social security systems (represented by one or more entities), as well as various financing/insurance schemes and private service providers (depending on the degree to which market mechanisms and business management practices have been introduced during sectoral reforms). (*Pan*

American Health Organization. Health in the Americas 2007. Vol. I, p. 319, Washington, D.C.: PAHO; 2007. In: PAHO. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. Washington, D.C.: PAHO, 2010. [Series: Renewing Primary Health Care in the Americas No.4]).

Self-care (or personal care): what people do for themselves to establish and maintain health, prevent and deal with illness. This is a broad concept encompassing hygiene (personal and general), nutrition (type and quality of food eaten), lifestyle (sporting activities, leisure, etc.), environmental factors (living conditions, social habits, etc.), socioeconomic factors (income level, cultural beliefs, etc.) and self-medication. (*World Health Organization. Report of the 4th WHO Consultative Group on the Role of the Pharmacist. The Hague, Netherlands: WHO; 1998*).

Stewardship: capacity of the health authorities to design and support joint action to create, strengthen, or change the governance structures of the health system, as well as exercising regulation and control functions. (*Pan American Health Organization. Health in the Americas 2017. Washington, D.C.: PAHO; 2017*).

Universal access to health: the absence of geographical, economic, sociocultural, organizational, or gender barriers that prevent all people from having equitable use of comprehensive health services, and from having a healthy life that enables their human development and well-being. (*Pan American Health Organization. Document CD53/5. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Universal health coverage: the existence of organizational mechanisms and health system financing sufficient to cover the entire population. (*Pan American Health Organization. Document CD53/5. 53rd Directing Council of PAHO, 2014. Strategy for Universal Access to Health and Universal Health Coverage. Washington, D.C., PAHO; 2014*).

Unmet health needs: "the difference between the services judged necessary to deal appropriately with health problems and the services actually received." These are the result of access barriers related to accessibility, availability, and acceptability. (*Pappa E, Kontodimopoulos N, Papadopoulos A, Tountas Y, Niakas D. Investigating Unmet Health Needs in Primary Health Care Services in a Representative Sample of the Greek Population. Int. J. Environ. Res. Public Health. 2013;10(5):2017-2027. http://doi.org/10.3390/ijerph10052017*).

APPENDIX A

ORGANIZATIONS PARTICIPATING IN THE PREPARATION OF THE UNIVERSAL HEALTH MONITORING FRAMEWORK

Country	Agency	Department, location	Specialty
Bahamas	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Brazil	Ministry of Health of Brazil	International Advisory Services	International advisory services
Brazil	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Chile	Economic Commission for Latin America and the Caribbean (ECLAC)	Population Division	Definition of indicators for the PAHO Strategic Plan
Chile	University for Development, Chile	Center for Epidemiology and Health Policies (CEPS)	Health system policy analysis
Chile	University for Development, Chile	Center for Epidemiology and Health Policies (CEPS)	Health policy research and education
Chile	Ministry of Health of Chile	Health Care Networks Management Division	Organization and management of health care networks
Chile	Ministry of Health of Chile	Strategic Development Department	Strategic planning
Chile	Ministry of Health of Chile	National Strategy Department	Health priority-setting
Chile	Ministry of Health of Chile	Benefit Plan Sub-department	Institutional planning of health benefits
Chile	Ministry of Health of Chile	Primary Care Division	Strengthening of the first level of care
Chile	Ministry of Health of Chile	Health Planning Division	Health planning, monitoring, and evaluation
Chile	Pan American Health Organization	Health Systems and Services	Drug and health technology regulatory matters
Chile	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Colombia	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Costa Rica	Ministry of Health of Costa Rica	Health Services Unit	Organization and delivery of health services
Costa Rica	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Cuba	Center for Research on Aging, Longevity, and Health (CITED)	Office of the Director	Aging issues
Cuba	National School of Public Health (ENSAP)	Doctoral Department	Public health, health systems
Cuba	National School of Public Health (ENSAP)	Biostatistics Department	Statistics and education

Country	Agency	Department, location	Specialty
Cuba	National School of Public Health (ENSAP)	Doctoral Department	Health economics
Cuba	Ministry of Public Health	National Rehabilitation Department	Health rehabilitation
Cuba	Ministry of Public Health	National Primary Health Care Department	Strengthening of the first level of care
Cuba	Ministry of Public Health	National Department of Statistics	Collection and analysis of health information and indicators
Cuba	Ministry of Public Health	National Pediatrics Group	Child health
Cuba	Ministry of Public Health	International Relations Department	International relations
Cuba	Ministry of Public Health	National Program on Noncommunicable Diseases	Noncommunicable diseases
Cuba	Ministry of Public Health	Legal Department	Health legislation
Cuba	Ministry of Public Health	National Oral Health Department	Communicable diseases and health emergencies
Cuba	Ministry of Public Health	Innovation Department of the National Science and Technology Directorate	Health research
Cuba	Ministry of Public Health	National Nursing Department	Human resources for the health
Cuba	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Cuba	Pan American Health Organization	Epidemiology Consultant	Public health and epidemiology
El Salvador	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Mexico	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Panama	Ministry of Health of the Republic of Panama	Planning Department	Strategic planning, formulation and implementation of health policies
Panama	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Paraguay	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Peru	Ministry of Health of Peru	Office of the Minister	Monitoring and evaluation
Peru	Ministry of Health of Peru	Office of the Deputy Minister of Public Health	Management of public health and health systems
Peru	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
Peru	Pan American Health Organization	Health Systems and Services	Human resources for the health

Country	Agency	Department, location	Specialty
Suriname	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health
United States of America	Pan American Health Organization	Department of Communicable Diseases and Environmental Determinants of Health (CDE)	Health analysis and information; PAHO regional core health data platform; policies for surveillance, prevention, control, elimination or reduction of communicable diseases, zoonoses, and environmental threats to health
United States of America	Pan American Health Organization	Department of Noncommunicable Diseases and Mental Health (NMH)	Policies for prevention and control of noncommunicable diseases, risk factors, and mental, neurological, and substance abuse disabilities and disorders
United States of America	Pan American Health Organization	Department of Family, Health Promotion, and Life Course (FPL)	Comprehensive family immunization, healthy life course, perinatology, women's and reproductive health, health promotion, and social determinants
United States of America	Pan American Health Organization	Medicines and Health Technologies Unit (HSS-MT)	Regulation, platforms for collaboration, and observatories on medicines and health technologies
United States of America	Pan American Health Organization	Human Resources for Health Unit (HSS-HR)	Regulation and planning of human resources for health
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Health systems analysis
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Health economics and financing
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Health governance, stewardship, policy, and planning
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Monitoring and evaluation of health policies
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Delivery of comprehensive health services, model of care, and organization of services
United States of America	Pan American Health Organization	Health Services and Access Unit (HSS/HAS)	Quality of health services
United States of America	Pan American Health Organization	Special Program of Sustainable Development and Equity in Health (SDE)	Monitoring, evaluation, and analysis of equity in health
Uruguay	Pan American Health Organization	Health Systems and Services	Policies for strengthening and transforming health systems for universal health

APPENDIX B

ANALYSIS OF STRATEGIC ACTIONS: QUALITATIVE QUESTIONNAIRE

Strategic Line 1. Expanding equitable access to comprehensive, quality, people- and community-centered health services.

Strategic action 1.1. *Define the features of and implement a people-, family-, and community-centered health care model.*

Question 1: What existing strategies and standards meet the requirements[1] of a people-, family-, and community-centered model of care? Are these standards and strategies linked to specific health priorities? What improvements have been promoted by these strategies and standards in the organization of the health system and the expansion of access to health services?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have facilitated the development of this model of care? Consider the following:

- Mechanisms for defining guaranteed health services and benefits and moving toward their progressive expansion.
- Mechanisms for organizing and managing health services and outcomes in a network.
- Mechanisms for determining how resources are to be allocated to finance these services.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the development of the care model?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have contributed to the development of the care model?

1 Requirements of a people-centered care model: (1) focus on the health needs of the designated population and geographic area through individual, family, and community health care visits; (2) an approach focusing on individual and family biopsychosocial well-being, promotion and prevention with a family risk approach, social determinants of health, and health in all policies; (3) care at each health care visit and family and individual follow-up throughout the life course, continuity of care in IHSNs, and public policies on social determinants of health; (4) health teams with responsibility for designated families, designated geographic areas, and equity; (5) comprehensive, integrated plans to enable users to become healthy individuals and families, empowered with their health.

Question 5: What intersectoral interventions have facilitated changes in the development of a people-, family-, and community-centered model of care?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 1.2. *Increase the response capacity of the first level of care, prioritizing areas with populations living in conditions of vulnerability.*

Question 1: What existing strategies and standards have helped to strengthen the first level of care?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have facilitated the development of the first level of care (FLC)? Consider the following:

- Mechanisms to prioritize investment in the FLC, considering the sustainability and incremental nature of future increases.
- Mechanisms to improve infrastructure and equipment at the FLC.
- Mechanisms to enable the FLC to take territorial responsibility for the health of a population, with personalized care.
- Mechanisms to improve the availability and distribution of multidisciplinary teams at the FLC.
- Mechanisms to incorporate all health priorities into the work of the FLC, avoiding fragmented action.
- Mechanisms to define the portfolio of services at the FLC and move forward in their progressive expansion.
- Mechanisms to identify which public health problems are the responsibility of the FLC and which are the responsibility of other levels of the health system.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the strengthening of the first level of care?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to strengthen the first level of care?

Question 5: What intersectoral interventions have facilitated the strengthening of the first level of care? Consider the following:

- Coordination of the FLC with other public and private stakeholders, development sectors, local governments, etc.
- Identification by the FLC of priorities for intersectoral action where the health team can act by lobbying for or backing the demands of the community.
- Training for the FLC health team in health promotion and integration of the health promotion approach into their work.
- Express inclusion of health promotion in the portfolio of services and specification of the time to be devoted by the health team to contact with people.

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 1.3. *Strengthen the organization and management of health services through integrated health services networks (IHSNs).*

Question 1: What existing strategies and standards have helped to strengthen the organization and management of health services through IHSNs?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have facilitated the organization and management of health services through IHSNs? Consider the following:

- Mechanisms for including various types of facilities in the network (first level, second level, third level).
- Mechanisms for creating treatment protocols that explicitly ensure that system users are registered and remain registered in the network.
- Mechanisms for making payments to the network, with a capitated budget ceiling and various modalities adapted to the characteristics of the assigned population.
- Mechanisms for controlling referrals from the first level of care for specialist consultations within IHSNs.
- Mechanisms for coordinating and managing networks, including managers with defined functions and roles for each IHSN.
- Single health record system within the IHSN.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the organization and management of health services through IHSNs?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to strengthen the organization and management of health services through IHSNs?

Question 5: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to strengthen the organization and management of health services through IHSNs?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 1.4. *Establish mechanisms to enable the participation of individuals and their families and communities in decision-making aimed at improving the quality of care.*

Question 1: What social participation mechanisms have helped to improve the planning and delivery of quality, people- and community-centered health services?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have facilitated the establishment of mechanisms to enable the participation of service users and their families and communities in decision-making aimed at improving the quality of care?

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the establishment of mechanisms to enable the participation of service users and their families and communities in decision-making aimed at improving the quality of care?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to establish mechanisms to enable the participation of service users and their families and communities in decision-making aimed at improving the quality of care?

Question 5: What intersectoral interventions have facilitated the establishment of mechanisms to enable the participation of service users and their families and communities in decision-making aimed at improving the quality of care?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic line 2. Strengthening stewardship and governance.

Strategic action 2.1. *Develop norms and standards to improve quality in health services delivery.*

Question 1: What existing strategies and standards have helped to improve health care quality indicators?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have improved health care quality? Consider the following:

- Mechanisms for ensuring the updating of and adherence to standardized clinical practice guidelines for health conditions.
- Mechanisms for ensuring monitoring and reporting of health care-related infections and adverse events.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve health care quality?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve health care quality?

Question 5: What intersectoral interventions have helped to improve health care quality?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 2.2. *Ensure the availability, equitable distribution, and quality of human resources for health.*

Question 1: What existing strategies and standards have helped to improve the availability, equitable distribution, and quality of human resources for health?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have improved the availability, equitable distribution, and quality of human resources for the health? Consider the following:

- Mechanisms for human resources planning.
- Creation of incentives and attractive working conditions to expand employment options at the first level of care and in underserved areas.
- Mechanisms for incorporating interdisciplinary and cross-cutting work into health care.
- Mechanisms for organizational coordination and coordination of care through integrated health services networks.
- Creation of information systems for human resources planning.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve the availability, equitable distribution, and quality of human resources for health?

Question 4: What intersectoral interventions have helped to improve the availability, equitable distribution, and quality of human resources for health? Consider the following:

- Development of new specialties (general medicine and family health) to facilitate changes in models of care.
- Regulatory changes in the labor market to improve working conditions for professionals (time and workload, wage scale, decent working conditions, responsibilities).
- Changes in the training and performance of human resources, prompted by the insurance market, private health services, and health technologies.
- Innovations introduced by service purchasing agencies to influence standards and dimensions of professional performance, whether through economic incentives or standards of care established by contract.

Question 5: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve the availability, equitable distribution, and quality of human resources for health?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 2.3. *Establish processes for improving the availability and regulation of medicines and other health technologies.*

Question 1: What existing strategies and standards have helped to improve the availability and regulation of medicines and other health technologies?

Question 2: What regulatory mechanisms and what mechanisms for the allocation of resources (financial, technological, and human) have improved availability, regulation, and access to medicines and other health technologies? Consider the following:

- Mechanisms for ensuring access to medicines and other health technologies included in national lists and for high-cost diseases.
- Mechanisms for the rational use and assessment of medicines and other health technologies.
- Introduction of supply systems that ensure adequate supplies for health needs.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve the availability and regulation of medicines and other health technologies?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve the availability and regulation of medicines and other health technologies?

Question 5: What intersectoral interventions have helped to improve the availability and regulation of medicines and other health technologies? Consider the following:

- Regulatory mechanisms that ensure a balanced market for medicines and health technologies.
- Incentives that promote innovation (intellectual property) and competition (generic drugs) in line with health needs and social policy objectives, with equity, solidarity, and protection of the right to health.
- Mechanisms for the negotiation of affordable drug prices.

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 2.4. *Facilitate the empowerment of individuals and communities and ensure that all population groups are represented in policy-making and implementation.*

Question 1: What existing strategies and standards have helped to ensure that all population groups are represented in policy-making and implementation?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have improved the participation of all population groups in policy-making and implementation? Consider the following:

- Mechanisms for the participation of communities and civil society groups (for example, dialogue systems).

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve the participation of all population groups in policy-making and implementation?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve the participation of all population groups in policy-making and implementation?

Question 5: What intersectoral interventions have facilitated the participation of all population groups in policy-making and implementation?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 2.5. *Strengthen monitoring and information systems to identify health needs, health inequities, and access barriers.*

Question 1: What existing strategies and standards have helped to strengthen monitoring and information systems to identify health needs, health inequities, and access barriers?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have strengthened monitoring and information systems to identify health needs, health inequities, and access barriers? Consider the following:

- Strengthening and integration of information systems to support monitoring activities.
- Availability of quality data disaggregated by socioeconomic variables that make it possible to assess the impact of government policies on health conditions, access barriers, and health inequities.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve monitoring and information systems to identify health needs, health inequities, and access barriers?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve monitoring and information systems to identify health needs, health inequities, and access barriers?

Question 5: What intersectoral interventions have facilitated the strengthening of monitoring and information systems to identify health needs, health inequities, and access barriers?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 2.6. *Prioritize research on universal health in the domestic research agenda.*

Question 1: What existing strategies and standards have helped to prioritize research on universal health in the domestic research agenda?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have helped to prioritize research on universal health in the domestic research agenda? Consider the following:

- Inclusion of topics relating to health equity, health service delivery, financing, impact of policies on health systems and social determinants.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to prioritize research on universal health in the domestic research agenda?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to prioritize research on universal health in the domestic research agenda?

Question 5: What intersectoral interventions have helped to prioritize research on universal health in the domestic research agenda?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic Line 3. Increasing and improving financing, with equity and efficiency, and advancing toward the elimination of direct payment that constitutes a barrier to access at the point of service.

Strategic action 3.1. *Use fiscal regulation as a tool for promoting the mobilization and allocation of financial resources for health.*

Question 1: What existing strategies and standards have helped to increase the collection of public funds for health?

Question 2: What regulatory mechanisms have facilitated the mobilization and allocation of financial resources for health?

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the mobilization and allocation of financial resources for health?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to mobilize and allocate financial resources for health?

Question 5: What intersectoral interventions have facilitated the mobilization and allocation of financial resources for health?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 3.2. *Advance toward pooling resources for health from various sources.*

Question 1: What strategies and existing standards have helped to improve the pooling of resources for health from various sources?

Question 2: What regulatory mechanisms have helped to improve the pooling of resources for health from various sources? Consider the following:

- Regulatory mechanisms for redistributing sectoral financing.
- Regulatory mechanisms for increasing the integration of the health financing system.

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to improve the pooling of resources for health from various sources?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to improve the pooling of resources for health from various sources?

Question 5: What intersectoral interventions have improved the pooling of resources for health from various sources

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Strategic action 3.3. *Advance toward elimination of the burden of cost-recovery schemes and direct out-of-pocket payments.*

Question 1: What strategies and existing standards have helped to eliminate the burden of cost-recovery schemes and direct out-of-pocket payments?

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have helped to eliminate the burden of cost-recovery schemes and direct out-of-pocket payments?

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have helped to eliminate the burden of cost-recovery schemes and direct out-of-pocket payments?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated the changes in regulatory and resource allocation mechanisms that have helped to eliminate the burden of cost-recovery schemes and direct out-of-pocket payments?

Question 5: What intersectoral interventions have facilitated progress toward eliminating the burden of cost-recovery schemes and direct out-of-pocket payments?

Question 6: With regard to questions 1-5, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

Line Strategic 4. Strengthening intersectoral coordination to address the social determinants of health.

Strategic action 4.1. *Establish or strengthen the capacity of the national health authority to successfully implement intersectoral public policies.*

Question 1: What intersectoral public policies or programs have helped to address social determinants and reduce health inequities? Some examples are policies to prevent and address violence, environmental health policies, conditional transfer programs, and schemes to regulate the production and use of mass goods (for example, the food industry, use of pesticides, regulation of alcohol, drug, and tobacco use, the environment, etc.).

Question 2: What regulatory mechanisms and mechanisms for the allocation of resources (financial, technological, and human) have facilitated the implementation of intersectoral public policies or programs?

Question 3: Which of the structures and agencies within the national health authority that are responsible for establishing, strengthening, and overseeing regulatory and resource allocation mechanisms have facilitated the implementation of intersectoral public policies or programs?

Question 4: Which stakeholders (in addition to the national health authority) have facilitated changes in regulatory mechanisms and the allocation of resources for the implementation of intersectoral public policies or programs?

Question 5: With regard to questions 1-4, what policy challenges and conflicts and what organizational barriers have been encountered in carrying out the activities mentioned above?

APPENDIX C
TECHNICAL SPECIFICATIONS FOR QUANTITATIVE INDICATORS
Universal Health Impact Indicators

Indicator	Healthy life expectancy
Definition	Expected years of life in good health for persons at a given age, taking into account age-specific morbidity and mortality and functional health status
Domain	Health impacts
Numerator	Not applicable
Denominator	Not applicable
Calculation	To measure healthy life expectancy of a specific population (defined by sex, country, and year), the first step is to calculate the average health of individuals in that population within each age interval. Information on prevalence of all sequelae and associated disability considerations are then combined, which represents comorbidity. These average health values equal at least the indicator of years lived with disability by persons in a population. These values are entered into a life table using the Sullivan method
Comments	This indicator has several steps and its calculation requires intensive computation, requiring collaboration from the Institute for Health Metrics and Evaluation (IHME)
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Mortality data at PAHO/WHO regional level and databases of the Institute for Health Metrics and Evaluation (IHME)
Reference	Sullivan DF. A single index of mortality and morbidity. HSMHA Health Rep 1971; 86: 347-354. Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Neonatal mortality rate
Definition	Probability that a child born in a specific year or period will die in the first 28 days of life (0-27 days), age-adjusted and expressed per 1,000 live births
Domain	Health impacts
Numerator	Number of neonatal deaths (deaths among live births during the first 28 days of life)
Denominator	Number of live births in the same year and place
Calculation	The neonatal mortality rate is calculated by dividing the number of newborn deaths (0-27 days) by the number of live births in the same year and place, and is expressed as the number of neonatal deaths per 1,000 live births
Comments	The quality of reported data depends on the quality of national information systems. Some countries provide exact values using registry data when cross-checked with estimates
Disaggregation	Location: rural/urban Sex: men, women Age: in days and weeks Birthweight
Data source	Civil registries and vital statistics, in addition to population household surveys
Reference	Pan American Health Organization. PAHO Strategic Plan 2020-2025. Washington, D.C.: PAHO; 2019.

Indicator	Under-5 mortality rate
Definition	Calculates the approximate risk of dying of a child aged 0-4 years
Domain	Health impacts
Numerator	Number of deaths among children aged 0-4 years per 1,000 live births
Denominator	Number of live births in the same year and place
Calculation	The infant mortality rate is calculated by dividing the number of deaths of children aged 0-4 years by the number of live births in the same year and place, and is expressed as the number of deaths of children aged 0-4 years per 1,000 live births
Comments	Despite its name, this indicator should not be interpreted as a rate (i.e., number of deaths divided by the number of population at risk of dying during a certain period of time), but as a probability of dying expressed as a rate per 1,000 live births
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	United Nations, Department of Economic and Social Affairs, Population Division
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Maternal mortality ratio
Definition	Calculates the approximate risk of a woman dying while pregnant or within 42 days of termination of pregnancy
Domain	Health impacts
Numerator	Number of maternal deaths per 100,000 live births
Denominator	Number of live births in a given year and place
Calculation	The maternal mortality ratio is calculated by dividing the number of maternal deaths by the number of live births in a given year and place, and is expressed as the number of maternal deaths per 100,000 live births
Comments	Under the leadership of the World Health Organization, the Maternal Mortality Estimation Inter-agency Group uses maternal deaths mainly from the WHO mortality database for 1985 onwards, using the causes of death in Chapter 1 of ICD-9, Complications of pregnancy, childbirth, and the puerperium, and Chapter 15 of ICD-10, Pregnancy, childbirth, and the puerperium
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Maternal Mortality Estimation Inter-agency Group, including WHO, UNICEF, UNFPA, and the World Bank
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Mortality attributable to poor-quality health care
Definition	Measures the rate of premature deaths that could have been prevented if health care had been timely and effective
Domain	Health impacts
Numerator	Number of specific causes of death (certain infectious and parasitic, neoplastic, endocrine, nutritional and metabolic, nervous system, circulatory, respiratory, digestive, and genitourinary diseases, as well as maternal and perinatal deaths and deaths from external causes)
Denominator	Total population in a specific year, age-adjusted, using the WHO standard population
Calculation	Mortality from health-care sensitive causes is calculated by dividing the number of specific causes of death (see Table below) by the total population in a specific year, expressed as number of deaths per 100,000 population at a regional level. To account for the different demographic structures in the Americas, the regional rate is age-adjusted, using the WHO standard population
Comments	This indicator is also known as preventable mortality and refers to premature deaths that would not have occurred if timely and effective health care had existed, including preventive measures. It is used to focus attention on the portion of population health achievements that can be influenced by the health system

Certain infectious and parasitic diseases

Group or name of cause	Age	ICD-10 Codes
Intestinal infectious diseases	0-14	A00-A09
Tuberculosis	0-74	A15-A19, B90
Certain zoonotic bacterial diseases (tularemia, anthrax, brucellosis, glanders and melioidosis, rat-bite fevers, other zoonotic bacterial diseases)	0-74	A21-A26, A28
Leprosy, infection due to other mycobacteria, listeriosis, tetanus neonatorum, obstetrical tetanus, streptococcal sepsis, other sepsis, other bacterial diseases	0-74	A30-A33, A34, A40, A41, A48
Other infectious diseases (other tetanus, diphtheria, acute poliomyelitis)	0-74	A35, A36, A80
Whooping cough	0-14	A37
Scarlet fever, erysipelas, other bacterial diseases	0-74	A38, A46, A49.1
Chlamydial lymphogranuloma (venereum), chancroid, granuloma inguinale, unspecified sexually transmitted disease	0-74	A55, A57, A58,A64
Relapsing fevers	0-74	A68
Measles, rubella (German measles), unspecified viral infections characterized by skin and mucous membrane lesions	1-14	B05, B06, B09
Acute hepatitis A, acute hepatitis B, other acute viral hepatitis (C), chronic viral hepatitis, unspecified viral hepatitis, HIV/AIDS infection	0-74	B15-B19, B20-B24
Plasmodium falciparum malaria, *plasmodium vivax* malaria, *plasmodium malariae* malaria, other parasitologically confirmed malaria, unspecified malaria	0-74	B50-B54

Comments	Schistosomiasis, other fluke infections, echinococcosis, taeniasis, cysticercosis, other cestode infections, onchocerciasis, filariasis, trichinosis, hookworm diseases, ascariasis, strongyloidiasis, trichuriasis, enterobiasis, other intestinal helminthiases, unspecified intestinal parasitism, other helminthiases, cellulitis	0-74	B65-B69, B71, B73-B83, L03
	Tumors (neoplasms)		
	Group or name of cause	**Age**	**ICD-10 Codes**
	Malignant neoplasm of lip	0-74	C00
	Malignant neoplasm of stomach, malignant neoplasm of colon, malignant neoplasm of rectosigmoid junction, malignant neoplasm of rectum, malignant neoplasm of anus and anal channel, malignant neoplasm of liver and intrahepatic bile ducts	0-74	C16, C18-C21, C22
	Malignant melanoma of skin, other malignant neoplasms of skin	0-74	C43, C44
	Malignant neoplasm of breast (women only)	0-74	C50
	Malignant neoplasm of cervix uteri	0-74	C53
	Malignant neoplasm of corpus uteri and of uterus	0-74	C54, C55
	Malignant neoplasm of testis	0-74	C62
	Malignant neoplasm of bladder	0-74	C67
	Malignant neoplasm of thyroid gland	0-74	C73
	Hodgkin lymphoma	0-74	C81
	Leukemia	0-44	C91-C95
	In situ neoplasms	0-74	D00-D09
	Benign neoplasms	0-74	D10-D36
	Endocrine, nutritional, and metabolic diseases		
	Group or name of cause	**Age**	**ICD-10 Codes**
	Disorders of thyroid gland	0-74	E00-E07
	Diabetes mellitus, Cushing syndrome, adrenogenital disorders, other disorders of adrenal gland, glycogen storage disease, disorders of galactose metabolism	0-49	E10-E14, E24, E25, E27, E74.0, E74.2
	Diseases of the nervous system		
	Group or name of cause	**Age**	**ICD-10 Codes**
	Bacterial meningitis, not elsewhere classified; meningitis due to other and unspecified causes; encephalitis, myelitis, and encephalomyelitis; intracranial and intraspinal abscess and granuloma (except for nonpyogenic meningitis)	0-74	G00, G03, (except for G03.0) G04, G06
	Epilepsy	0-74	G40-G41
	Rheumatic fever without mention of heart involvement, rheumatic fever with heart involvement, rheumatic chorea	0-74	I00–I02
	Chronic rheumatic heart diseases	0-74	I05-I09
	Hypertensive diseases	0-74	I10-I13, I15
	Ischemic heart diseases	0-74	I20-I25
	Cerebrovascular diseases; atherosclerosis; peripheral vascular disease, unspecified	0-74	I60-I69, I70; I73.9

<table>
<tr><td rowspan="20">Comments</td><td colspan="3">Diseases of the respiratory system</td></tr>
<tr><td>Group or name of cause</td><td>Age</td><td>ICD-10 Codes</td></tr>
<tr><td>All respiratory diseases (except pneumonia and influenza)</td><td>1-14</td><td>J00-J09, J20-J99</td></tr>
<tr><td>Influenza</td><td>0-74</td><td>J10-J11</td></tr>
<tr><td>Pneumonia</td><td>0-74</td><td>J12-J18,</td></tr>
<tr><td>Asthma</td><td>0-74</td><td>J45-J46</td></tr>
<tr><td colspan="3">Diseases of the digestive system</td></tr>
<tr><td>Group or name of cause</td><td>Age</td><td>ICD-10 Codes</td></tr>
<tr><td>Gastric ulcer; duodenal ulcer; peptic ulcer, site unspecified; gastrojejunal ulcer; gastritis and duodenitis</td><td>0-74</td><td>K25-K27, K28, K29</td></tr>
<tr><td>Diseases of appendix</td><td>0-74</td><td>K35-K38</td></tr>
<tr><td>Hernia</td><td>0-74</td><td>K40-K46</td></tr>
<tr><td>Paralytic ileus and intestinal obstruction without hernia</td><td>0-74</td><td>K56</td></tr>
<tr><td>Cholelithiasis, cholecystitis, other diseases of gallbladder, other diseases of biliary tract, acute pancreatitis, other diseases of pancreas</td><td>0-74</td><td>K80-K86</td></tr>
<tr><td>Consecutive disorders of the system “digestive” to procedures, not classified elsewhere</td><td>0-74</td><td>K91</td></tr>
<tr><td colspan="3">Diseases of the genitourinary system</td></tr>
<tr><td>Group or name of cause</td><td>Age</td><td>ICD-10 Codes</td></tr>
<tr><td>Glomerular diseases, obstructive and reflux uropathy, renal failure, calculus of kidney and ureter, calculus of lower urinary tract, unspecified renal colic, disorders resulting from impaired renal tubular function, unspecified contracted kidney, small kidney of unknown cause, nonspecific urethritis, urethral stricture</td><td>0-74</td><td>N00-N08, N13, N17-N19, N20, N21, N23, N25-N27, N34.1, N35</td></tr>
<tr><td>Hyperplasia of prostate</td><td>0-74</td><td>N40</td></tr>
<tr><td>Salpingitis and oophoritis; inflammatory disease of uterus, except cervix; inflammatory disease of cervix uteri; other female pelvic inflammatory diseases; diseases of Bartholin gland; other inflammation of vagina and vulva</td><td>0-74</td><td>N70–N73, N75, N76</td></tr>
<tr><td>Dysplasia of cervix uteri, other noninflammatory disorders of cervix uteri, other noninflammatory disorders of vulva and perineum</td><td>0-74</td><td>N87, N88, N90</td></tr>
<tr><td>Postprocedural urethral stricture</td><td>0-74</td><td>N99.1</td></tr>
<tr><td colspan="3">Maternal and perinatal death</td></tr>
<tr><td>Group or name of cause</td><td>Age</td><td>ICD-10 Codes</td></tr>
<tr><td>Pregnancy, childbirth, and the puerperium</td><td>All</td><td>O00-O99</td></tr>
<tr><td>Certain conditions originating in the perinatal period</td><td>0-74</td><td>P00-P96</td></tr>
<tr><td>Congenital malformations, deformations, and chromosomal abnormalities</td><td>Todas</td><td>Q00-Q99</td></tr>
<tr><td>Misadventures to patients during surgical and medical care</td><td>All</td><td>Y60-Y69, Y83-Y84</td></tr>
<tr><td>Disaggregation</td><td colspan="3">Location: rural/urban
Sex: men, women
Provider: public, social security, private, total
Socioeconomic status: income quintile, education level, ethnic group, and migratory status</td></tr>
<tr><td>Data source</td><td colspan="3">PAHO Mortality Information System by region</td></tr>
<tr><td>Reference</td><td colspan="3">Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.</td></tr>
</table>

Indicator	Probability of dying from age 30 to 70 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases
Definition	Probability of dying from age 30 to 70 years for the causes included in ICD-11 codes 100-199, C00-C97, E10-E14, and J30-J98
Domain	Health impacts
Numerator	Sum of deaths for the aforementioned causes in persons aged 30 to 70 years in a determined year per 100,000 population
Denominator	Total population in a specific year
Calculation	Premature mortality from noncommunicable diseases is calculated by adding deaths from the aforementioned causes in persons aged 30 to 70 years in a given year, divided by the total population in a specific year, expressed as number of deaths per 100,000 population
Comments	To account for the Region's different demographic structures, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data Source	Databases of the Institute for Health Metrics and Evaluation (IHME)
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Mortality due to chronic viral hepatitis
Definition	Mortality from hepatocellular carcinoma, cirrhosis, or chronic liver disease attributable to hepatitis B virus (HBV) or hepatitis C virus (HCV) infection
Domain	Health impacts
Numerator	Estimated deaths from HBV and HCV infection in a determined year per 100,000 population
Denominator	Total population in a given year
Calculation	Mortality from chronic viral hepatitis is calculated by dividing the estimate of deaths from HBV and HCV infection in a determined year by the total population in that period
Comments	Given the limitations on HBC and HCV diagnosis, including underreporting and difficulties in identifying deaths due to viral hepatitis, the indicator is measured using Global Burden of Disease (GBD) estimates
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Databases of the Institute for Health Metrics and Evaluation (IHME) and of Global Burden of Disease (GBD) mortality estimates
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	AIDS-related mortality
Definition	Total number of people who have died from AIDS-related causes per 100,000 population
Domain	Health impacts
Numerator	Total deaths with some identified cause that coincides with ICD-10 codes B20 B24 among all population groups (independent of sex and age)
Denominator	Total population in a specific year
Calculation	The rate is calculated by adding all deaths in which any of ICD-10 codes B20 B24 has been identified as the cause among all population groups (independent of sex and age), divided by the total population in a given year and country, multiplied by 100,000
Comments	To account for different population structures in the countries of the Americas, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO Mortality Information System by region
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013. UNAIDS. Global AIDS Monitoring 2018: Indicators for monitoring the 2016 United Nations Political Declaration on Ending AIDS.

Indicator	Mortality rate from tuberculosis
Definition	Number of deaths due to tuberculosis per 100,000 population per year
Domain	Health impacts
Numerator	Total deaths with an underlying cause of death corresponding to any of ICD-10 codes A15 to A19
Denominator	Total population in a specific year
Calculation	The rate is calculated via the sum of all deaths with an underlying cause of death identified by any of ICD-10 codes A15-A19, among all population groups (independent of sex and age), divided by the total population given in a year and country, multiplied by 100,000
Comments	To account for the different population structures of the countries in the Americas, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO Mortality Information System by region
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013. UNAIDS. Global AIDS Monitoring 2018: Indicators for monitoring the 2016 United Nations Political Declaration on Ending AIDS.

Indicator	Rate of congenital syphilis
Definition	Annual rate of reported congenital syphilis cases per 1,000 live births
Domain	Health impacts
Numerator	Number of congenital syphilis cases reported according to the national case definition in a given year
Denominator	Calculated number of live births in the same period
Calculation	Magnitude is calculated via the total of all reported congenital syphilis cases, divided by the calculated number of live births in the same period, multiplied by 1,000
Comments	The national case definition should include the number of stillbirths due to syphilis
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National registry system for congenital syphilis cases, national vital statistics, from calculations by the United Nations Population Division
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Rate of mother-to-child transmission of HIV infection
Definition	Percentage of children aged <1 year born to HIV-positive mothers whose HIV test results were positive
Domain	Health impacts
Numerator	Number of children aged <1 born to HIV-positive mothers in a calendar year, given that they were diagnosed as HIV-positive
Denominator	Reported number of children aged <1 year born to HIV-positive mothers in a given calendar year, with a definitive diagnosis (HIV-positive or HIV-negative)
Calculation	The total number of children aged <1 born to HIV-positive mothers in a calendar year, given that they were diagnosed as HIV-positive, divided by the reported number of children aged <1 born to HIV-positive mothers in a given calendar year, with a definitive diagnosis (HIV-positive or HIV-negative), multiplied by 100
Comments	This indicator reflects the commitment of Member States to the dual elimination of congenital syphilis and mother-to-child transmission of HIV
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	HIV and prenatal care records or other health facility records, national vital statistics, from calculations by the United Nations Population Division
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013. Pan American Health Organization. 50th Directing Council. Resolution CD50.R12. Strategy and Plan of Action for the Elimination of Mother-to-Child Transmission of HIV and Congenital Syphilis. Washington, D.C.: PAHO, 2010.

Indicator	Rate of homicides among youths aged 15-24 years
Definition	Number of deaths caused by homicide per 100,000 population aged 15-24 years, per year
Domain	Health impacts
Numerator	Number of deaths with an underlying cause of death corresponding to any of ICD-10 codes X85-Y09 (assaults) and Y35 (legal intervention), in the population aged 15-24 years
Denominator	Population aged 15-24 years in a year
Calculation	The rate is calculated via the sum of all deaths with an underlying cause of death corresponding to any of ICD-10 codes X85-Y09 (assaults) and Y35 (legal intervention) among the population aged 15-24 years (independent of sex), divided by the population aged 15-24 years in one year at the regional level
Comments	To account for the different demographic structures of adolescents and young adults in the countries of the Americas, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO Mortality Information System by region
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Rate of death due to suicide per 100,000 population
Definition	Number of deaths due to suicide per 100,000 population, per year
Domain	Health impacts
Numerator	All deaths with an underlying cause of death corresponding to any of ICD-10 codes X60-X84, among the population
Denominator	Population in the corresponding year
Calculation	The rate is calculated by adding all deaths that have an underlying cause corresponding to any of ICD-10 codes X60-X84, among the population (independent of sex) and dividing them by the total population in one year
Comments	To account for the different demographic structures of adolescents and young adults in the countries of the Americas, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO Mortality Information System by region
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Mortality due to road traffic injuries in youth aged 15-24 years
Definition	Number of deaths due to road traffic injuries per 100,000 population
Domain	Health impacts
Numerator	Deaths with an underlying cause corresponding to any of ICD-10 codes V01-V89, among the population aged 15-24 years
Denominator	Population aged 15-24 years in one year by region
Calculation	The rate is calculated by adding all deaths with an underlying cause corresponding to any of ICD-10 codes V01-V89, among the population aged 15-24 years (independent of sex), and dividing them by the population aged 15-24 years in one year and by region
Comments	To account for the different demographic structures among adolescents and young adults in the countries of the Americas, the rate is age-adjusted, using the WHO standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO Mortality Information System by region
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Prevalence of overweight and obesity
Definition	Percentage of the population with overweight and obesity
Domain	Health impacts
Numerator	Total number of adolescents and adults with a body mass index (BMI) for age ≥25.0 kg/m^2
Denominator	Total number of adolescents and adults
Calculation	To calculate BMI: weight (kg)/height (m^2), according to WHO standards Overweight: BMI ≥25.0 kg/m^2 Obesity: BMI ≥30.0 kg/m^2
Comments	Overweight: adolescents and adults with a BMI for age of >+1 standard deviations (SD) from the WHO 2007 reference median (equivalent to a BMI of 25 kg/m^2 at 19 years of age) Obesity: adolescents and adults with a BMI for age of >+2 SD of the WHO 2007 reference median (equivalent to a BMI of 30 kg/m^2 at 19 years)
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National nutrition and health survey
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Proportion of older adults having difficulty with activities of daily living
Definition	Percentage of people aged >60 or >80 years having difficulty with activities of daily living
Domain	Health impacts
Numerator	Number total of people aged >60 or >80 years that might describe difficulty in the following activities of daily living: 1. Walking across a room 2. Dressing (including put on shoes and socks) 3. Bathing (including getting in and out of the bathtub) 4. Eating (including cutting food, filling glasses) 5. Getting in and out of bed 6. Toileting (including getting on and off toilet)
Denominator	Total number of people aged >60 or >80 years surveyed
Calculation	Divide the total number of people aged >60 or >80 years that describe difficulty with the aforementioned activities of daily living, by the total number of people aged 60 or >80 years surveyed, multiplied by 100
Comments	Type of activities of daily living may vary with the country survey
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Health, Well-being, and Aging Survey (known as the SABE survey)
Reference	Albala C, Lebano ML, Leon Diaz, Han-Chande R, Hennis AJ, Palloni A, et al. Encuesta Salud, Bienestar y Envejecimiento (SABE): metodología de la encuesta y perfil de la población estudiada. Rev Panam Salud Pública. 2005: 17(5/6):307-322. Aranibar P. Acercamiento conceptual a la situación del adulto mayor en América Latina. Serie Población y Desarrollo, CELADE, Santiago de Chile 2001; 21:28-29. Melzer D. Socioeconomic status and the expectation of disability in old age: estimates for England. J Epidemiol Community Health. 2000; 54:286.

Indicator	Proportion of low birthweight (<2,500 g) among newborns
Definition	Number of newborns with weight less than 2,500 grams, measured at birth or in the first hours of life, before significant loss of birth weight has occurred, expressed per 100 live births
Domain	Health impacts
Numerator	Number of newborns with weight less than 2,500 grams, measured at birth or in the first hours of life
Denominator	Corresponding total number of newborns, for a given year, in a given country, territory, or geographical area
Calculation	Divide the number of newborns with weight less than 2,500 grams, measured at birth or in the first hours of life, before significant loss of birth weight has occurred, by the number of live births, for a given year, in a given country, territory, or geographical area, multiplied by 100
Comments	Data are provided by PAHO/WHO country offices and regional technical programs based on information reported by national health information systems
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National health information systems, national vital statistics
Reference	Pan American Health Organization. Regional Core Health Data Initiative. Available at: https://www.paho.org/hq/index.php?option=com_tabs&view=article&id=2151&lang=en.

Indicator	Prevalence of chronic malnutrition in children under 5
Definition	Percentage of cases of chronic nutritional deficiency in children under 5 detected during a given year
Domain	Health impacts
Numerator	Number of children under 5 detected during a given year with height-for-age ratio <–2 standard deviations (–2SD) from the reference median
Denominator	Corresponding given midyear population, for a given country, territory, or geographical area
Calculation	Divide the number of children under 5 with height-for-age ratio <–2 standard deviations (–2SD) from the reference median by the corresponding population at a given half year, multiplied by 100
Comments	Moderate nutritional deficiency in children under 5 is defined as any height-for-age ratio <–2 standard deviations (–2SD) from the reference median and results from inadequate growth in length/height for age
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National health information systems
Reference	Pan American Health Organization. Regional Core Health Data Initiative. Available at: https://www.paho.org/hq/index.php?option=com_tabs&view=article&id=2151&lang=en.

Indicator	Age-specific fertility rate for women aged 15-19 years
Definition	Annual number of births to adolescent mothers aged 15-19 years per 1,000 adolescents aged 15-19 years
Domain	Health impacts
Numerator	Number of live births to adolescent mothers aged 15-19 years during a given period
Denominator	Number of adolescents aged 15-19 years during the same period
Calculation	The age-specific fertility rate for female adolescents is calculated as a ratio: number of live births to mothers aged 15-19 years during a given period, divide by the number of women aged 15-19 years during the same period, multiplied by 1,000
Comments	When survey and census data are used, both the numerator and denominator come from the same population
Disaggregation	Location: rural/urban Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Annual country, United Nations, and census reports
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Prevalence of intimate partner violence
Definition	Percentage of girls and women aged >15 years who have been subjected to physical, sexual, or psychological violence by their current or former intimate partner, in the last 12 months
Domain	Health impacts
Numerator	Total number of women aged >15 years (or aged 15-49 years) who report having been subjected to physical, sexual, or psychological violence inflicted by their current or former intimate partner, in the last 12 months
Denominator	Total number of women aged >15 years (or aged 15-49 years) interviewed that have or have had an intimate partner in the last 12 months
Calculation	Population surveys include a series of questions asked to women currently or previously in a partnership inquiring about experience of physical acts, sexual violence, and psychological abuse by their partner. These questions are ideally asked by interviewers trained in household surveys dedicated to measurement of violence against women
Comments	Measurement and methodological efforts are underway to ensure a more expansive definition of the indicator. Given the data available currently, estimates mainly measure the "proportion of women aged 15-49 years subjected to physical or sexual violence by their current intimate partner in the last 12 months"
Disaggregation	Age Geographical location: rural and urban Type of violence: physical, sexual, psychological Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Population surveys on violence against women or population surveys with a special module on violence against women
Reference	Pan American Health Organization. 2018 Global reference list of 100 core health indicators (plus health-related SDGs). Washington, D.C.: PAHO, 2018. Available at: http://www.who.int/iris/handle/10665/259951.

Indicator	Mortality attributable to household and ambient air pollution
Definition	Mortality rate for the following conditions: acute respiratory infections in children under 5. For adults aged >25 years: cerebrovascular diseases, ischemic disease, chronic obstructive pulmonary disease, and lung cancer
Domain	Health impacts
Numerator	Number of deaths from the listed conditions per 100,000 population
Denominator	Total population
Calculation	This indicator follows WHO methodology to estimate the burden of disease attributable to pollution. This methodology is well established and is used to measure Sustainable Development Goal 3.9.1
Comments	The indicator does not include all diseases associated with air pollution, which might have an impact on specific populations. Mortality data might not be replicable due to underreporting
Disaggregation	Location: rural/urban Sex: men, women Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Burden of disease attributable to ambient air pollution. Available at: http://apps.who.int/gho/data/node.wrapper.imr?x-id=2259 Metrics: Population Attributable Fraction. Available at: http://www.who.int/healthinfo/global_burden_disease/metrics_paf/en/
Reference	Pan American Health Organization. PAHO Strategic Plan 2020-2025. Washington, D.C.: PAHO; 2018.

Indicator	Mortality attributable to unsafe water, unsafe sanitation, and lack of hygiene
Definition	Mortality from the following conditions: fractions of diarrhea, nematode infections, and malnutrition
Domain	Health impacts
Numerator	Number of deaths from the listed conditions per 100,000 population
Denominator	Total population
Calculation	This indicator is calculated by dividing deaths caused by water, sanitation, and hygiene (WASH) by the total population in the same territory and period. The agreed method for measurement
Comments	In some countries, national data are incomplete and statistics are provided by international agencies.
Disaggregation	Location: rural/urban Sex: men, women Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National statistics offices, administrative data
Reference	Pan American Health Organization. PAHO Strategic Plan 2020-2025. Washington, D.C.: PAHO; 2018.

Indicator	Rate of mortality from disasters
Definition	Number of people who died as a direct result of disaster per 100,000 population
Domain	Health impacts
Numerator	Number of deaths attributable to disasters per 100,000 population
Denominator	Total population
Calculation	This indicator is measured by adding the total number of people who died during the disaster, or directly after, as a direct result of the event, divided by the total population and expressed per 100,000 population.
Comments	Limitations on the calculation of this indicator include inaccurate reporting of deaths caused by disasters, lack of replicable information on mortality, delays in mortality report.
Disaggregation	Location: rural/urban Sex: men, women Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National statistics offices, administrative data
Reference	Pan American Health Organization. PAHO Strategic Plan 2020-2025. Washington, D.C.: PAHO; 2018.

Universal Health Outcome Indicators

Indicator	Percentage of the population reporting access barriers to health (cultural, institutional [acceptability, convenience, availability, waiting time], economic, geographical)
Definition	Percentage of people who needed medical care and did not receive it and leading reasons why they did not receive it
Domain	Access barriers
Numerator	Number of people who needed medical care and did not receive it
Denominator	Total number of people who needed medical care
Calculation	Calculate the percentage of people who have needed care during the 30 to 90 days prior to the survey and did not receive it, in relation to the total number of people surveyed
Comments	The indicator should also be calculated by type of access barrier. To do so, calculate the percentage of people who did not receive medical care for each type of barrier in relation to the total number of people who did not receive medical care The following categories of barriers are included: acceptability (negative perception of quality of care and treatment by staff); waiting time (delays at the health center or waiting time to obtain an appointment); convenience (lack of time); availability (lack of drugs or health workers); geographical distance (lack of nearby care); economic (inability to pay for services); cultural (lack of trust in physicians; language; preference for indigenous, homeopathic, or alternative medicine; or prevented by a household member); the service is not considered important; and self-medication
Disaggregation	Type of disease Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys with special health module
Reference	Penchansky R, Thomas JW. The Concept of Access: Definition and Relationship to Consumer Satisfaction. Medical Care. 1981;19:127-140. Thorpe JM., Thorpe CT, Kennelty KA, Pandhi N. Patterns of perceived barriers to medical care in older adults: a latent class analysis. BMC Health Services Research. 2011;11;1-12. doi:10.1186/1472-6963-11-181.

Indicator	Proportion of out-of-pocket health expenditure in relation to total health expenditure
Definition	Expenditures at the time the individual or household benefits from health services
Domain	Access barriers
Numerator	Direct expenditures for use of health services: expenditures for medical, dental, and ophthalmological care or on other health professionals; on prescribed drugs; and on other health goods and services
Denominator	Total health expenditure, which is the sum of general government (or public) spending and private health expenditure
Calculation	Calculate health expenditure and total private household consumption in relation to total health expenditure, which is the sum of general government (or public) spending and private health expenditure
Comments	The estimate of out-of-pocket health expenditure is obtained from each country's health accounts. For the purposes of calculating out-of-pocket health expenditure, use the section on direct expenditures for use of health services that includes spending on medical, dental, and ophthalmological care, and on other health professionals; prescribed drugs; and on other health goods and services. General government health expenditure includes: expenditure by all levels of government (central, regional, municipal, etc.) and compulsory social security health expenditure. Finally, private health expenditure includes spending by private insurers, private providers (clinics, physician's offices, etc.), and out-of-pocket household expenditure
Disaggregation	Not applicable
Data source	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption
Reference	World Bank / World Health Organization. Monitoring progress towards universal health coverage at country and global levels: framework, measures and targets, WHO/WB; 2014. Pan American Health Organization. Health in the Americas 2017: Health Financing in the Americas. Washington, D.C.: PAHO; 2017.

Indicator	Percentage of households with out-of-pocket catastrophic health spending
Definition	Percentage of households whose out-of-pocket health expenditures represent a substantial proportion of their income or ability to pay
Domain	Access barriers
Numerator	Total number of homes that incur out-of-pocket health expenditures that exceed a threshold with regard to income or ability to pay
Denominator	Total number of homes that incur out-of-pocket health expenditures
Calculation	Calculate the fraction of households surveyed that incur out-of-pocket health expenditures that exceed 10-25% of their income or 30% or 40% of their ability to pay
Comments	Household income is measured as total household expenditure Ability to pay is defined as total household income (measured as total household expenditure) minus the expenditure necessary for meeting basic needs Incidence of catastrophic expenditure can vary with the method used, since different income-level or ability-to-pay thresholds are used
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption
Reference	World Bank / World Health Organization. Monitoring progress towards universal health coverage at country and global levels: framework, measures and targets, WHO/WB; 2014. Pan American Health Organization. Health in the Americas 2017: Health Financing in the Americas. Washington, D.C.: PAHO; 2017.

Indicator	Percentage of households with out-of-pocket expenditure that causes impoverishment
Definition	Percentage of households whose out-of-pocket health expenditure pushes them below the poverty line
Domain	Access barriers
Numerator	Total number of households that incur out-of-pocket health expenditure that pushes them below the poverty line
Denominator	Total number of households that incur out-of-pocket health expenditure
Calculation	Calculate the fraction of households surveyed that incur out-of-pocket health expenditure that pushes them below the poverty line
Comments	Incidence of impoverishment expenditure can vary with the method used, since each country and region use different poverty lines
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Health accounts from each country, consulting health expenditure information. Household surveys with special module on total private household consumption
Reference	World Bank / World Health Organization. Monitoring progress towards universal health coverage at country and global levels: framework, measures and targets, WHO/WB; 2014. Pan American Health Organization. Health in the Americas 2017: Health Financing in the Americas. Washington, D.C.: PAHO; 2017.

Indicator	Coverage of three doses of diphtheria, tetanus, and pertussis (DTP) vaccine during the first year of life
Definition	Percentage of children who, upon completing their first year of life, have received three doses of DTP vaccine
Domain	Coverage and use of health services
Numerator	Number of children aged <1 year who have received three doses of DTP vaccine
Denominator	Total children aged <1 year in a country, territory, or geographical area at a given time
Calculation	Calculate number of children aged <1 year who have received three doses of DTP vaccine, divided by the total of children aged <1 year in a country, territory, or geographical area at given time
Comments	The denominator corresponds to population estimates obtained from the United Nations Population Division
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	PAHO/WHO and UNICEF joint reporting form
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Proportion of women aged 30-49 years who report having been screened for cervical cancer
Definition	Proportion of women aged 30-49 years who report they were screened for cervical cancer at least once in their life with any of the following methods: visual inspection with acetic acid, pap smear, and human papillomavirus (HPV) screening test
Domain	Coverage and use of health services
Numerator	Total number of women in the age group specified in the national screening policy who are screened for cervical cancer
Denominator	Total number of women in this age group in the country's population
Calculation	Calculate the total number of women in the age group specified in the national screening policy (which can vary from one country to another) who are screened for cancer cervical, in the period specified in the national policy, divided by the total number of women in this age group in the country's population, multiplied by 100
Comments	This indicator identifies the proportion of women aged 30-49 years who report having been screened for cervical cancer at least once in their life with any of the following methods: visual inspection with acetic acid, pap smear, and HPV screening test
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National cervical cancer screening survey
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of women of reproductive age who have their need for family planning satisfied with modern methods
Definition	Percentage of sexually active women of reproductive age (aged 15-49 years) who report not desiring more children or who wish to delay the next pregnancy, and that use some modern contraceptive method
Domain	Coverage and use of health services
Numerator	Total number of women of reproductive age (married or in a consensual union) who are not pregnant nor have postpartum amenorrhea and that do not desire more children (limit), or that wish to postpone the birth of a child at least two years, or do not know when they wish to have another child (space) and use some modern contraceptive method
Denominator	Total number of women of reproductive age (aged 15-49 years) who are married or in a consensual union
Calculation	Unmet need is expressed as a percentage based on women of reproductive age (aged 15-49 years) who are married or in a consensual union
Comments	The standard definition of unmet need for family planning includes: 1. Numerator: • All pregnant women (married or in a consensual union) whose pregnancies were unwanted or mistimed at the time of conception • All postpartum amenorrheic women (married or in consensual union) who are not using any family planning method and whose last birth was unwanted or mistimed • All women of reproductive age (married or in consensual union) who are neither pregnant nor postpartum amenorrheic and who either do not want any more children (limit), or who wish to postpone the birth of a child for at least two years, or do not know when or if they want another child (space) and do not use any contraceptive method 2. Denominator: • Number of women of reproductive age (15-49 years old) who are married or in a consensual union The results are multiplied by 100 The numerator excludes: • Pregnant women with amenorrhea whose pregnancy occurred inadvertently because of deficiency of the contraceptive method (it is presumed that these women need a better contraceptive method). Sterile women are also excluded from the definition It is presumed that women are sterile if they: • Have been married for 5 or more years • Have not had a birth in the last 5 years • Are not currently pregnant • Have not used contraceptive methods in the last 5 years (or if the date of the last time they used contraceptives is unknown or if they have never used any type of contraceptive) • They report that they are sterile due to menopause, or because they have had a hysterectomy, or (in the case of women who are not pregnant or postpartum amenorrheic) if the last menstruation period occurred more than six months before the survey It is presumed that women who are married or in a consensual union are sexually active. If unmarried women will be included in the calculation of unmet need (in the national supplementary monitoring reports on the Millennium Development Goals) it is necessary to determine the date of most recent sexual activity. Unmarried women are now considered at risk of pregnancy (and potentially in the numerator) if they have had sex in the month prior to the survey interview. According to the standard definition, women who use a traditional contraceptive method are not considered to have an unmet need for family planning.* Because traditional methods can be much less effective than modern ones, additional analyses are often used to distinguish between traditional and modern methods
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys, demographic and health survey (DHS), multiple indicator cluster surveys (MICS), reproductive health surveys (RHS), and national surveys based on similar methods
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

* *For a definition of unmet family planning need (see http://dhsprogram.com/Topics/Unmet-Need.cfm).*

Indicator	Proportion of pregnant population attended by skilled personnel during pregnancy (%)
Definition	Number of pregnant women who have gone to at least four prenatal care visits with a skilled health professional
Domain	Coverage and use of health services
Numerator	Number of pregnant women who go to at least one health care visit during pregnancy in services for control and monitoring of pregnancy or outpatient care for associated morbidity
Denominator	Population of live births, for a given year, in a given country, territory, or geographical area
Calculation	Calculated by the number of pregnant women who have gone to at least one health care visit during pregnancy provided by a trained health professional, expressed as a percentage of the population of live births, for a given year, in a given country, territory, or geographical area
Comments	Health care during pregnancy is defined as services for control and monitoring of pregnancy or outpatient care for associated morbidity; it does not include direct vaccination activities or care immediately prior to delivery. Skilled personal include obstetricians, physicians with training in the care of pregnant women, university-trained midwives, and nurses with training in the care of pregnant women and qualified midwives. Trained or untrained traditional midwives are not included
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	The ministry of health of each country, based on data compiled systematically by the national information system or collected through surveys
Reference	Pan American Health Organization / World Health Organization. Communicable Diseases and Health Analysis / Health Information and Analysis. PLISA database. Health Situation in the Americas: Core Indicators 2017. Washington, D.C.: PAHO/WHO; 2017.

Indicator	Percentage of births attended by skilled health personnel
Definition	Percentage of births attended by skilled health personnel in a specific year and in a given country, territory, or geographical area
Domain	Coverage and use of health services
Numerator	Births attended by skilled personnel in a specific year
Denominator	Total number of births in that same year
Calculation	Calculate the number of births attended by trained personnel in a specific year, independent of the type of delivery or the site where it occurred, expressed as a percentage of the total number of births in that same year, in a given country, territory, or geographical area
Comments	Calculation by country: The numerator includes all births attended by trained personnel in a specific year, independent of the site where they occurred, expressed as a percentage of the total number of births in that same year, in a given country, territory, or geographical area. Trained staff includes obstetricians, physicians trained to attend pregnant women, university-trained midwives and nurses trained to attend pregnant women, and graduate midwives; trained or untrained traditional midwives are not included
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	The ministry of health of each country, based on data compiled systematically by the national information system or collected through surveys
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of the population that receives at least one preventive-care visit per year
Definition	Number of people who have at least one preventive-care visit in a year, expressed as percentage of the total population surveyed
Domain	Coverage and use of health services
Numerator	Number of people who report having gone to at least one preventive-care visit in a specific year
Denominator	Total number of people surveyed
Calculation	This indicator is measured using data from household surveys that collect information on the total number of people that report having had at least one preventive-care visit in the 3 to 12 months prior to the survey. This number is expressed as a percentage of the total number of people surveyed
Comments	The type of preventive visits is not specified for all countries. In some cases, the person is asked whether they went for a check-up in the last 3 to 12 months without being sick. In other cases, the type of visit is specified, which can include visits for disease prevention, child growth monitoring, family planning, and vaccination
Disaggregation	Age Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys with a special health module and health facility records
Reference	Dmytraczenko T, Almeida G. Toward Universal Health Coverage and Equity in Latin America and the Caribbean: Evidence from Selected Countries. Directions in Development-Human Development. Washington, D.C.: World Bank; 2015. Available at: https://openknowledge.worldbank.org/handle/10986/22026

Indicator	Access to community health programs for older adults
Definition	Number of evidence-based self-care interventions so that older adults can live an independent life
Domain	Coverage and use of health services
Numerator	Number of self-care and community support services programs of this type available to older adults
Denominator	Not applicable
Calculation	Use national, subnational, and local records to calculate the number of evidence-based self-care interventions for chronic diseases
Comments	This indicator responds to the recommendations in document CD49/8 and resolution CD49. R15 Plan of Action on the Health of Older Persons, Including Active and Healthy Aging, and WHO resolution EB130.R6, Strengthening noncommunicable disease policies to promote active aging
Disaggregation	Not applicable
Data source	National, subnational, and local records of the number of evidence-based self-care interventions for chronic diseases
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington D.C.: PAHO; 2013.

Indicator	Coverage for care of persons with disabilities
Definition	Percentage of disabled people with access to habilitation and rehabilitation services and to social services
Domain	Coverage and use of health services
Numerator	Number of persons with any type of disability treated in the habilitation and rehabilitation services of the country's health sector
Denominator	Total number of disabled people in the country
Calculation	Calculate the number of persons with any type of disability treated in the habilitation and rehabilitation services of the country's health sector, divided by the total number of disabled people in the country, multiplied by 100
Comments	Few countries have records with this information
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Reports from ministry of health health-services, supplemented with multiuse surveys from each country's ministry of health or social development program
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of controlled hypertension at the population level in persons aged ≥18 years
Definition	Percentage of controlled hypertension at the population level (<140/90 mmHg) in persons aged ≥18 years
Domain	Coverage and use of health services
Numerator	Total number of people with controlled hypertension (blood pressure: systolic <140 mmHg and diastolic <90 mmHg)
Denominator	Total number of people with hypertension (systolic ≥140 mmHg or diastolic ≥90 mmHg), or who report that a health professional has diagnosed them with hypertension or who report taking drugs to treat hypertension
Calculation	Calculate the total number of people with controlled hypertension (systolic blood pressure of <140 mmHg and diastolic blood pressure of <90 mmHg), divided by the total number of people with hypertension (defined as people with systolic blood pressure of ≥140 mmHg or diastolic blood pressure of ≥90 mmHg), or who report that a health professional has diagnosed them with hypertension, or who report taking drugs to treat hypertension, multiplied by 100
Comments	This indicator measures the degree of control over hypertension (the principal risk factor for a cardiovascular episode and dying from that cause) at the population level, as a measure of effectiveness and efficiency in health system performance
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National health surveys, reports on health services from ministries of health and clinical records from health facilities
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of controlled diabetes at the population level in people aged 18 years
Definition	Percentage of controlled diabetes at the population level (100-125 mg/dl) in people aged 18 years
Domain	Coverage and use of health services
Numerator	Total number of people aged >18 years with controlled diabetes (normal blood glucose: 100-125 mg/dl)
Denominator	Total number of people aged >18 years with diabetes (defined as persons with fasting blood glucose of >125 mg/dl or 7.0 mmol/l or a two-hour blood glucose of ≥11.1 mmol/l or 200 mg/dl or A1c ≥6.5%), or hyperglycemia (fasting blood glucose of 100-125 mg/dl), or treated with drugs for hyperglycemia/diabetes
Calculation	Calculate the total number of people aged >18 years with controlled diabetes (blood glucose of 100-125 mg/dl), divided by the total number of people aged >18 years with diabetes, multiplied by 100
Comments	It is anticipated that countries will use the WHO STEPS method for monitoring risk factors for noncommunicable diseases
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National health surveys, health services reports from ministries of health, and health facility clinical records
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013. Aguilera X, Castillo-Laborde C, Ferrari MN-D, Delgado I, Ibañez C. Monitoring and Evaluating Progress towards Universal Health Coverage in Chile. PLoS Med 11(9):e1001676. doi.org/10.1371/journal.pmed.1001676

Indicator	Treatment in mental health facilities
Definition	Rate of visits in outpatient mental health facilities
Domain	Coverage and use of health services
Numerator	Number of mental health visits in outpatient facilities in a year
Denominator	Total population (general population)
Calculation	Calculate the number of mental health visits in outpatient facilities in a year, divided by total population, multiplied by 100
Comments	The calculation should not count hospitalized patients, including those who are in the PAHO Regional Strategy and Plan of Action: general hospitals, community residential facilities, and partial hospitalization services (day hospitalization), in accordance with the operational criteria of WHO's Assessment Instrument for Mental Health Systems (WHO-AIMS). This indicator is essential for monitoring the transformation of mental health care and is based on the WHO Comprehensive Mental Health Action Plan. It is important for monitoring the transition from the home-hospital model of care for people with mental disorders to a model of ambulatory care that is decentralized, community-based, and linked to primary health care services
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Country reports
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of coverage with antiretroviral therapy (ART)
Definition	Measures coverage of access to ART
Domain	Coverage and use of health services
Numerator	Number of people who receive ART
Denominator	Estimate of the number of people who need ART
Calculation	To calculate, the numerator is the number of people who receive ART. The denominator is the estimate of the number of people who need ART
Comments	Country denominators, which are generated using standardized statistical modeling methodologies and instruments, are provided by the Joint United Nations Programme on HIV/AIDS (UNAIDS)
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Reports provided by ministries of health and UNAIDS
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of coverage with prophylactic HIV treatment to prevent mother-to-child transmission
Definition	Measures progress in administration of antiretroviral therapy to HIV-infected women to prevent vertical transmission
Domain	Coverage and use of health services
Numerator	Number of HIV-infected pregnant women who received antiretrovirals to reduce mother-to-child transmission during the 12 previous months
Denominator	Estimated number of HIV-infected pregnant women corresponding to the 12 previous months
Calculation	Calculate the number of HIV-infected pregnant women who received antiretrovirals to reduce mother-to-child transmission during the 12 previous months, divided by the estimated number of HIV-infected pregnant women corresponding to the 12 previous months, multiplied by 100
Comments	The numerator is calculated using national program records, which consolidate health facility records. It should have a national scope and encompass all public, private, and NGO-run health facilities that provide antiretrovirals to HIV-infected pregnant women. The numerator consists of pregnant women who are already receiving treatment for their own health. Administration of a single dose of nevirapine will not be regarded as a valid plan for prevention of mother-to-child HIV transmission. Two methods can be used to estimate the denominator: 1. Multiply the number of women who gave birth in the 12 previous months (these data can be obtained from estimates of births done by the central statistics office or from estimates by the United Nations Population Division) by the most recent national estimate of HIV prevalence in pregnant women (which can be obtained from HIV sentinel surveillance in prenatal care clinics) 2. Use a projection model, such as the one provided by the Spectrum app (i.e., use as the product the number of pregnant women that need treatment for prevention of mother-to-child transmission). This method is indicated in countries with generalized epidemics. Where there are few or concentrated epidemics, this method can present a high degree of uncertainty
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National program records, which consolidate health facility records
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of coverage of pregnant women with treatment for syphilis
Definition	Percentage of pregnant women who were positive for syphilis and who received appropriate treatment (at least one dose of penicillin G [intramuscular])
Domain	Coverage and use of health services
Numerator	Number of pregnant women who were positive for syphilis during pregnancy and who received appropriate treatment
Denominator	Number of pregnant women with positive syphilis serology during pregnancy
Calculation	To calculate: the number of pregnant women who were positive for syphilis during pregnancy and who received appropriate treatment, divided by the number of pregnant women with positive syphilis serology during pregnancy, multiplied by 100
Comments	Treatment for women infected by syphilis can be provided in various places (such as prenatal care or sexual and reproductive health clinics) during pregnancy. Women should not be counted in the numerator if they have not been tested or treated, and a cross-check should be done between data collection and the report to minimize the risk of duplicate counting. Country coverage is based on population and can be calculated by dividing the number of pregnant women with syphilis who received appropriate treatment by the expected number of seropositive pregnant women. The expected number of pregnant women can be estimated by multiplying the estimated number of women who gave birth during the last 12 months by the most recent national estimate of syphilis prevalence in pregnant women
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National program records, which consolidate health facility records
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington. D.C.: PAHO; 2013.

Indicator	Number of successfully treated tuberculosis patients
Definition	Number of patients with bacteriologically confirmed tuberculosis successfully treated in the program
Domain	Coverage and use of health services
Numerator	Number of patients with bacteriologically confirmed tuberculosis successfully treated in countries each year
Denominator	Not applicable
Calculation	The indicator is calculated by totaling the number of patients with bacteriologically confirmed tuberculosis successfully treated in countries each year. The total number of successfully treated new cases is used due to the great variability in number of cases reported and treated by different countries in the Region and in relation to the tuberculosis burden in each country
Comments	A bacteriologically confirmed case of tuberculosis is one in which a biological sample was obtained that was positive in sputum-smear microscopy, culture, or rapid diagnostic medium approved by WHO (WDR). A successfully treated patient is one who has been cured or who has concluded treatment. A cured patient is a patient with bacteriologically confirmed pulmonary tuberculosis at the beginning of treatment and with negative sputum-smear microscopy or culture in the last month of treatment and on at least one previous occasion. A patient who finishes treatment is a patient with tuberculosis who carried out the full treatment without signs of failure, but without a record of negative sputum-smear microscopy or culture in the last month of treatment and, at least, on one previous occasion
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National program records, which consolidate health facility records
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Timeliness of malaria detection and treatment
Definition	Proportion of detected malaria cases that began treatment in the first 72 hours following symptom onset, by type of surveillance (active case-finding and passive case-finding). In countries with very few cases: median number of days elapsed between symptom onset and beginning of treatment.
Domain	Coverage and use of health services
Numerator	Number of malaria cases that began treatment in the first 72 hours following symptom onset
Denominator	Total cases detected
Calculation	Calculate the number of days that elapse from the date of symptom onset to the date treatment begins for each malaria case and calculate the proportion of cases where this interval is less than 72 hours.
Comments	This indicator evaluates compliance with the main action for malaria elimination, which is access to early diagnosis and beginning of treatment in the shortest time possible. In countries with very low numbers of cases it can be useful to use a central tendency measure for this indicator, in particular the use of the median number of days elapsed between symptom onset and the beginning of treatment The indicator integrates indicators on timeliness of detection and on access to treatment, including in the cited WHO technical reference frameworks
Disaggregation	Location: rural/urban Sex: men, women Socioeconomic status: income quintile, education level, ethnic group, and migratory status Type of surveillance: active and passive Risk groups Time: month, year Type of provider
Data source	National program records that combine health facility records or that are based on individual electronic records in online systems. Malaria programs record dates of symptom onset and of beginning of treatment on a nominal basis
Reference	World Health Organization. A Framework for Malaria Elimination. Geneva: WHO; 2017. World Health Organization. Malaria surveillance, monitoring and evaluation. Geneva: WHO; 2018.

Indicator	Percentage of diagnosed and treated cases of leishmaniasis
Definition	Number of people diagnosed according to laboratory criteria and properly treated as a result of an increase in medical care quality and coverage
Domain	Coverage and use of health services
Numerator	Number of cases diagnosed and treated according to laboratory criteria, by type of leishmaniasis: (1) for cutaneous and mucocutaneous leishmaniasis (together); and (2) for visceral leishmaniasis
Denominator	Number of cases diagnosed according to laboratory criteria, by type of leishmaniasis: (1) for cutaneous and mucocutaneous leishmaniasis (together); and (2) for visceral leishmaniasis
Calculation	The correct way to present this indicator is to calculate all cases of cutaneous, mucocutaneous, and visceral leishmaniasis diagnosed according laboratory criteria and express them in the form of individual percentages. This calculation should also be done for the proportion of treated cases by type of leishmaniasis The percentages obtained of diagnosed and treated cases of all types of leishmaniasis are added and the result is an estimate (similar to an approximate indicator) that reflects the percentage of leishmaniasis cases diagnosed according to laboratory criteria and treated in each country
Comments	Take into account the following when calculating the indicator: • Calculations must be done by type of leishmaniasis: (1) for cutaneous and mucocutaneous leishmaniasis (together); and (2) for visceral leishmaniasis. • Some countries have both types of leishmaniasis and others only have a single type
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National systems or the annual national reports registered annually in the Regional Leishmaniasis System
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of coverage with treatment of viral hepatitis
Definition	Proportion of people diagnosed with chronic hepatitis C virus (HCV) infection that began treatment during a specific time period (e.g., 12 months)
Domain	Coverage and use of health services
Numerator	Number of people diagnosed with chronic HCV infection (defined as HCV RNA positive or HCV Ag [antigen]) that initiated treatment during a specified time period (e.g., 12 months)
Denominator	Number of people diagnosed with chronic HCV infection (defined as HCV RNA positive or HCV Ag)
Calculation	Calculated by the total number of people diagnosed with chronic HCV infection who began treatment during a specific period (e.g., 12 months), divided by total people diagnosed, multiplied by 100
Comments	All people who are already diagnosed to date, but treated and cured, should be excluded from the calculation
Disaggregation	Age Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	National program records and health facility clinical records
Reference	World Health Organization. Monitoring and evaluation for viral hepatitis B and C: Recommended indicators and framework. Technical report. Washington, D.C.: WHO; 2016.

Indicator	Percentage of population relying on solid fuels
Definition	Proportion of population relying on solid fuels that are used for cooking or heating
Domain	Coverage and access to intersectoral interventions
Numerator	Population relying on solid fuels (e.g., wood, dung, crop waste, and coal used for cooking or heating)
Denominator	Corresponding population
Calculation	WHO estimates the proportion of the population relying on solid fuels on the basis of country reports and surveys
Comments	The indicator is a proxy for estimating the proportion of the population exposed to air pollution from domestic emissions, caused by incomplete combustion of solid fuels used for cooking or heating. Information on sustained progress will be obtained by monitoring country surveys and from reports on the implementation of policies or programs to shift the energy matrix to cleaner fuels, or replace cookstoves in certain countries with models that emit less air pollution
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys and reports on policy implementation
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Alcohol per capita consumption in people aged older than 15 years
Definition	Consumption of pure alcohol (ethanol) in people aged older than 15 years in a calendar year
Domain	Coverage and access to intersectoral interventions
Numerator	Sum of beverage-specific alcohol consumption of pure alcohol (beer, wine, spirits, and others) during a calendar year
Denominator	Corresponding population during a calendar year
Calculation	Recorded per capita consumption in adults is calculated as the sum of beverage-specific alcohol consumption of pure alcohol (beer, wine, spirits, and others) during a calendar year, using data from different sources. Calculations of recorded per capita alcohol consumption prioritize government statistics on sales of alcoholic beverages during a calendar year or data on alcohol production, export, and import in different beverage categories. For countries where government data on sales or production is not available, calculations are based on private sector data for the country in the public domain, including data from alcohol producers, or in statistical data for the country from the statistical database of the Food and Agriculture Organization of the United Nations (FAOSTAT), which may also include estimates of unrecorded alcohol consumption. Estimates of unrecorded alcohol consumption are based largely on survey data, FAOSTAT, and other sources, such as customs and police, as well as expert opinions. This indicator is calculated as total recorded and unrecorded alcohol consumption in a population during a given calendar year divided by the number of residents aged ≥15 years in the middle of the same calendar year. WHO uses all the information available in the Region and in each country to provide per capita consumption estimates by country and for the Region
Comments	With regard to the main categories of alcoholic beverages, “beer” refers to malt beers, “wine” refers to the alcoholic beverage made from grapes, “spirits” include all distilled beverages, and “others” includes one or several other alcoholic beverages, such as fermented beverages made from sorghum, maize, millet, rice, or cider, fruit wine, fortified wine, etc.
Disaggregation	Location: rural/urban Sex: men, women
Data source	Government statistics on alcoholic beverage sales or data on alcohol production, export, and import in different beverage categories
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Tobacco use in adolescents
Definition	Prevalence of current tobacco use among adolescents aged 13-17 years
Domain	Coverage and access to intersectoral interventions
Numerator	Total number of current tobacco users aged 13-17 years
Denominator	Total population surveyed in the country (tobacco users and non-users)
Calculation	Calculate the total number of adolescents aged 13-17 years that report using any tobacco product (smoked or smokeless) during the 30 days prior to the survey, whether daily use or occasional use, divided by the total population surveyed in the country (tobacco users and non-users), multiplied by 100
Comments	This information comes from a survey that compiles data through a sample that is weighted to represent the entire population of the country
Disaggregation	Location: rural/urban Sex: men, women
Data source	Global Youth Tobacco Survey Global School-based Student Health Survey Drug abuse surveys National population-based household surveys
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Tobacco use in adults
Definition	Age-standardized prevalence of current tobacco use (aged ≥18 years)
Domain	Coverage and access to intersectoral interventions
Numerator	Number of current tobacco users aged ≥18 years
Denominator	Total population surveyed in the country (tobacco users and non-users)
Calculation	Calculate the total number of people aged ≥18 years that report having consumed any tobacco product (smoked or smokeless) during the 30 days prior to the survey, whether daily use or occasional use, divided by the total population surveyed in the country (tobacco users and non-users), multiplied by 100
Comments	This information comes from a survey that compiles data through a sample that is weighted to represent the entire population of the country
Disaggregation	Location: rural/urban Sex: men, women
Data source	Global Youth Tobacco Survey Global School-based Student Health Survey Drug abuse surveys National population-based household surveys
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Insufficient physical activity in adolescents
Definition	Prevalence of adolescents aged 13-17 years who engage in 60 minutes of moderate to vigorous physical activity daily
Domain	Coverage and access to intersectoral interventions
Numerator	Number of adolescents aged 13-17 years that do not engage in the recommended amount of physical activity
Denominator	Number of adolescents aged 13-17 years surveyed
Calculation	Calculation of the prevalence of physical inactivity in countries: number of people who do not engage in the recommended amount of physical activity, divided by number of respondents, multiplied by 100
Comments	Data are collected by self-reporting, through the Global Physical Activity Questionnaire or the International Physical Activity Questionnaire
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Global Physical Activity Questionnaire or the International Physical Activity Questionnaire
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Insufficient physical activity in adults aged >18 years
Definition	Prevalence of adults aged >18 years that do not engage at least 150 minutes of moderate physical activity per week
Domain	Coverage and access to intersectoral interventions
Numerator	Number of people aged >18 years who do not do the recommended amount of physical activity
Denominator	Total number of people aged >18 years surveyed
Calculation	Prevalence of physical inactivity: number of people who do not do the recommended amount of physical activity, divided by total number of people surveyed, multiplied by 100
Comments	Self-reporting method with the Global Physical Activity Questionnaire (GPAQ). Standardization according to the WHO world standard population
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Global Physical Activity Questionnaire (GPAQ)
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Breastfeeding in infants aged <6 months
Definition	Percentage of infants aged <6 months who are fed exclusively with breast milk
Domain	Coverage and access to intersectoral interventions
Numerator	Number of infants aged <6 months who are exclusively breastfed
Denominator	Total number of infants aged <6 months
Calculation	The numerator is obtained from the number of infants aged <6 months who were fed exclusively with breast milk, which includes breast-feeding by a wet-nurse and feeding with extracted breast milk. The denominator represents total infants aged <6 months
Comments	Exclusive breastfeeding is defined as infant feeding in which no other food or drink is given, not even water, except breast milk (including milk expressed or from a wet-nurse) for six months of life, but allows the infant to receive oral rehydration solution, drops, and syrups (vitamins, minerals, and medicines)
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	WHO Global Data Bank on Infant and Young Child Feeding (GDBIYCF), national health or nutrition surveys, demographic and health surveys (DHS), Multiple Indicator Cluster Surveys (MICS)
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Universal Health Output Indicators

Indicator	Availability of a health workforce
Definition	Number of health workers (physicians, nurses, and midwives) that, in a given year, work full-time in public or private health facilities, expressed in a rate per 10,000 population
Domain	Critical health system resources
Numerator	Number of physicians, nurses, and midwives in a given year
Denominator	Total population in a given year
Calculation	Calculated by dividing the number of human resources counted in a given year by the population in that same year, multiplied by 10,000. The year in which the human resources data are collected should coincide with the population for the same year
Comments	To calculate gaps in health-worker availability, countries have to determine and monitor density of health workers at the national level and in each subnational jurisdiction (province, state, department, territory, district, etc.) Midwifery is a profession requiring three to five years of higher education. If a midwife is also a nurse, they should be recorded as one person. If the country does not have a midwife profession, explain this in a footnote. In some countries of the Region, health workers, especially physicians, work in more than one institution, which can lead to errors of overestimation of available personnel. This variable should be monitored to record each worker only once. Alternatively, measure the total hours worked by health workers in each center, and from there, calculate the number of available workers according to the hours that a physician should work during the day
Disaggregation	Subnational jurisdiction (province, state, department, territory, district, etc.) Provider: public, social security, private, total Geographical: by region of the country and rural/urban
Data source	Each country's ministries of health or national health authorities and population census
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of teams of health professionals or medical specialists who receive remuneration with payment for performance
Definition	Percentage of health professionals with payment by performance with incentives specifically designed to increase the access and the quality of health services
Domain	Critical health system resources
Numerator	Number of health professionals or medical specialists that receive pay for performance remuneration
Denominator	Total number of health professionals or medical specialists with wage-based remuneration
Calculation	Divide the number of health professionals or medical specialists with performance-based remuneration by the total number of health professionals or medical specialists with wage-based remuneration, multiplied by 100
Comments	The lack of availability of valid data on health professional payment limits calculation of this indicator
Disaggregation	Provider: public, social security, private, total
Data source	Ministry of health or national health authority administrative data
Reference	World Health Organization. World health report. Health systems financing: the path to universal coverage. Geneva: WHO; 2010.

Indicator	Per capita public and private pharmaceutical expenditure (in United States dollars)
Definition	Total public and private health expenditure, as a proportion of the total population.
Domain	Critical health system resources
Numerator	Total public or private health expenditure allocated for provision of pharmaceutical services, multiplied by 100. Data in United States dollars at current prices
Denominator	Total population
Calculation	This indicator is measured as a part of public or private spending, in United States dollars, at per capita current prices
Comments	Pharmaceutical expenditure covers spending on prescribed drugs and self-medication, often called over-the-counter products. In some countries, other non-durable medical products are also included, such as syringes and bandages. Drugs that are used in hospitals and other medical care settings are excluded (on average, these represent 15% of total pharmaceutical expenditure)
Disaggregation	Not applicable
Data source	WHO national accounts database
Reference	Health in the Americas 2017: The quest for universal health: summary of indicators on health systems performance. Washington, D.C.: PAHO; 2017. Available at: https://www.paho.org/salud-en-las-americas-2017/?p=65&lang=en Organisation for Economic Co-operation and Development. Health at a glance 2015: OECD indicators. Paris: OCDE; 2015. Available at: http://apps.who.int/medicinedocs/documents/s22177en/s22177en.pdf

Indicator	Number of high-energy teletherapy units (cobalt-60 and linear accelerators) per 1 million population
Definition	Availability of high-energy teletherapy units per 1 million inhabitants
Domain	Critical health system resources
Numerator	Total high-energy teletherapy units (cobalt-60 and linear accelerators)
Denominator	Total population
Calculation	Calculated by dividing the total number of high-energy teletherapy units (cobalt-60 and linear accelerators) found in hospital and clinical institution records in the country, in a given year, by the existing population in that same year. The total is multiplied by 1,000,000
Comments	Since 1959, the International Atomic Energy Agency maintains a registry of hospitals and clinical institutions that have radiotherapy machines
Disaggregation	Provider: public, social security, private, total
Data source	Directory of Radiotherapy Centres 2016, published by the International Atomic Energy Agency (IAEA) and WHO
Reference	Health in the Americas 2017: The quest for universal health: summary of indicators on health systems performance. Washington, D.C.: PAHO; 2017. Available at: https://www.paho.org/salud-en-las-americas-2017/?p=65&lang=en. International Atomic Energy Agency / World Health Organization. Directory of Radiotherapy Centres 2016. Available at: https://dirac.iaea.org/Data/Country

Indicator	Blood donation rate per 1,000 people
Definition	An indicator of the general availability of blood in a country
Domain	Critical health system resources
Numerator	Number of donations in a specific year
Denominator	Total inhabitants in a specific year
Calculation	Calculated by dividing the average number of donations in the country, in a given year, by the existing population in that same year. The total is multiplied by 1,000
Comments	The blood donation rate is an indicator of the availability of blood in the country
Disaggregation	Not applicable
Data source	Data on blood supply for transfusions
Reference	Health in the Americas 2017: The quest for universal health: summary of indicators on health systems performance. Washington, D.C.: PAHO; 2017.

Indicator	Population coverage by health financing schemes
Definition	Proportion of the population covered by health financing schemes in the country
Domain	Critical health system resources
Numerator	Number of people covered by type of health financing scheme
Denominator	Corresponding total population
Calculation	Calculated by dividing the number of people who report being covered by some financing scheme, in a given year, by the corresponding surveyed population, multiplied by 100
Comments	Many countries in the Region have established different insurance schemes. Schemes that can be included in calculation of the indicator are: • Public schemes by central, regional, and local administrations • Social security contributory public health-financing schemes • Voluntary healthcare payment schemes: voluntary health insurance, financing schemes from nonprofit institutions, financing schemes from businesses
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys with special health module
Reference	Kawiorska D. Guidelines for the Delineation into Public and Private Units; 2008. Available at: http://www.oecd.org/health/health-systems/40191715.pdf.

Indicator	Proportion of public spending allocated to health in relation to gross domestic product (GDP)
Definition	Proportion of public spending allocated to health in relation to GDP
Domain	Critical health system resources
Numerator	Public health expenditure
Denominator	GDP
Calculation	Public health expenditure includes disbursements by institutional units of all levels of government: central, state, provincial, and local, when its amount is known, plus health-related social security expenditure. It is calculated using budgetary and administrative data. GDP represents a measure of a country's economic activity in a year
Comments	The methodology used to estimate public health expenditure is not standardized and uses different sources according to the country. Measurement would be more exact if this expenditure were measured following the same methodology used to calculate GDP
Disaggregation	Not applicable
Data Source	WHO national accounts database. Data on health expenditure from the national government and from regional, provincial, or state governments, as well as local or municipal governments in Latin America and Caribbean countries come from the online database of the International Monetary Fund (IMF) on public finance statistics; from national budget data provided by ministries of health; and from budgetary and financial statement data provided by social security institutions. Data on GDP and exchange rates come from the IMF online database on international finance statistics. Data lacking from several Caribbean countries come from official presentations by national authorities at international events
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Percentage of public spending on the first level of care in relation to GDP
Definition	Measures public spending on the first level of care expressed in relation to GDP
Domain	Critical health system resources
Numerator	Public spending on the first level of care (facilities and services)
Denominator	GDP
Calculation	Calculated by dividing the expenditure allocated to first-level health facilities and services, by total health expenditure, multiplied by 100
Comments	First-level health services often include (but are not limited to): disease prevention and treatment, first-contact emergency services that include patient stabilization and referral to another center, continuity of treatment and coordination with other types and levels of care (such as hospitals and specialty services), mental health care, palliative treatment and end-of-life care, health promotion, healthy child growth and development, maternal care, rehabilitation services, and others that are part of each country's model of care or level of health system development
Disaggregation	Provider: public, social security, private, total
Data source	National budget data provided by ministries of health, and budgetary and financial statement data provided by social security institutions
Reference	Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. (Series: Renewing Primary Health Care in the Americas No.4). Washington, D.C.: PAHO, 2010.

Indicator	Percentage of hospitals that have prospective financing based on health outputs
Definition	Measures the number of hospitals that have financing from the prospective budget based on caseload, expressed as a percentage of the total number of hospitals
Domain	Organization of health services
Numerator	Number of hospitals with prospective budget financing based on caseload
Denominator	Total number of hospitals
Calculation	Calculated by dividing the total number of hospitals with prospective budget financing by the total number of hospitals, multiplied by 100
Comments	Prospective payment is a financing method in which hospitals receive a predetermined payment for each member of the population registered with them. In turn, hospitals agree to provide specific services to each member of the defined population, as needed, during a stipulated period
Disaggregation	Provider: public, social security, private, total
Data source	National budget data provided by ministries of health, and budgetary and financial statement data provided by social security institutions
Reference	World Health Organization. World health report. Health systems financing: the path to universal coverage. Geneva: WHO; 2010 Telyukov A, ABT Associates. Guía para la capitación prospectiva con ejemplos de América Latina. Massachusetts: ABT Associates; 2001.

Indicator	Percentage of preventable hospitalizations for ambulatory care sensitive conditions (ACSCs)
Definition	Hospitalizations for conditions that the first level of care has potential capacity to prevent if it has adequate response capacity
Domain	Organization of health services
Numerator	Preventable hospitalizations for 20 ACSC conditions
Denominator	Hospitalizations for all causes
Calculation	It measures the percentage of preventable hospitalizations for the following 20 ACSC conditions, according to ICD-10: • Preventable disorders, including rheumatic fever, syphilis, tuberculosis, and pulmonary tuberculosis (A15-A16, A18, A17.1-a17.9, I00-I02, A51-A53, B50-B54, B77) • Anemia (D50), malnutrition (E40-E46, E50-E64) • Asthma (J45-J46) • Diabetes mellitus (E10-E14); epilepsy (G40-G41) • Cerebrovascular disease (I63-I67, I69, G45-G46) • Lower respiratory infections (J20, J21, J40-J44, J47) • Diseases of pregnancy, childbirth, and the puerperium (O23, A50, P35.0) • Inflammatory diseases of female pelvic organs (N70-N73, N75-N76) • Vaccine-preventable diseases (A33-A37, A95, B16, B05-B06, B26, G00.0, A17.0, A19) • Infectious gastroenteritis and complications (E86, A00-A09) • Hypertension (I10-I11) • Infection of the skin and subcutaneous tissue (A46, L01-L04, L08) • Renal and urinary tract infections (N10-N12, N30, N34, N39) • Ear, nose, and throat infections (H66, J00-J03, J06, J31) • Heart failure (I50, J81) • Congestive heart failure (I20) • Bacterial pneumonia (J13-J14, J15.3-j15.4, J15.8-j15.9, J18.1) • Ulcer of digestive system (K25-K28, K92.0, K92.1, K92.2)
Comments	ACSCs assess first level of care response capacity in relation to preventable hospitalizations following the logic that hospital admissions for conditions such as asthma, diabetes, or hypertension will be prevented or reduced through better health promotion programs, specific prevention interventions, and timely care in the first level of care. ACSCs are conditions for which the first level of care has the potential capacity to prevent unnecessary hospitalizations if it has adequate response capacity
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Hospital discharges, ministry of health statistics departments, and health services efficiency studies
Reference	Pan American Health Organization. PAHO Strategic Plan 2014-2019. Official Document 345. Washington, D.C.: PAHO; 2013.

Indicator	Incidence of patients with healthcare-associated infections (HAIs)
Definition	Incidence of infections associated with invasive devices in intensive care units (ICUs)
Domain	Organization of health services
Numerator	Number of patient-days with an invasive device in ICUs (patients on mechanical ventilation, indwelling urinary catheter, and central venous catheter) with a device-associated infection, confirmed via case definition criteria
Denominator	Number of patient-days with an invasive device in ICUs (patients on mechanical ventilation, indwelling urinary catheter, and central venous catheter)
Calculation	HAI rates should be adjusted to hospital stay; i.e., number of infections per patient-day, also called incidence density rates, which provide a more exact calculation of risk. To adjust HAIs during a hospital stay it is recommended using the number of patient-days as the denominator instead of number of admissions or beds. The appropriately trained infection prevention and control professional will identify patients suspected of having a device-associated infection and will collect the corresponding data
Comments	HAIs are infections that patients contract while receiving treatment for medical or surgical conditions and in whom the infection was neither present nor incubating upon the patient's admission to the facility. In patients suspected of having a device-associated infection, the infection prevention and control professional will confirm the infection using case-definition criteria (see references below); through review of laboratory, pharmacy, admission, discharge and patient transfer, and radiology (images) records; pathological anatomy databases; and clinical charts that include case history, physical examination notes, and nursing notes. Laboratory monitoring data should not be used alone, unless all potential infection diagnostic criteria are determined exclusively by laboratory data
Disaggregation	Location: rural/urban Sex: men, women Age Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Records of temperature, antibiotic use, cultures, and patient progress; medical and nursing orders; and records of suspected infections by clinical staff in charge of patient care
Reference	Pan American Health Organization / World Health Organization. Vigilancia epidemiológica de las infecciones asociadas a la atención de la salud. Módulos I y III: información para gerentes y personal directivo. Washington, D.C.: PAHO/WHO; 2012. Available at: http://iris.paho.org/xmlui/handle/123456789/3270?locale-attribute=en

Indicator	Percentage of first level of care facilities with a territory-based population under their responsibility
Definition	Percentage of first level of care facilities with a clear territory-based assignment of the population and territory under their responsibility
Domain	Organization of health services
Numerator	Number of first level of care facilities with a territory-based population under their responsibility
Denominator	Total number of first level of care facilities
Calculation	Calculated by the total number of first level of care facilities with an assigned territory-based population, divided by the total number of first-level facilities, multiplied by 100
Comments	For calculation of this indicator, it is proposed that health centers having beds but not specialists, or having specialists but not beds, be counted as first level of care centers
Disaggregation	Provider: public, social security, private, total
Data source	Ministry of health statistics departments
Reference	Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013. Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. (Series: Renewing Primary Health Care in the Americas No. 4). Washington, D.C.: PAHO, 2010.

Indicator	Percentage of the national population covered by an integrated health service delivery network (IHSDN)
Definition	Percentage of the national population covered by comprehensive health services from an IHSDN in a single territory
Domain	Organization of health services
Numerator	Number of inhabitants covered by health services networks
Denominator	National population
Calculation	Calculated by the number of inhabitants covered by health services networks, divided by the national population, multiplied by 100
Comments	An IHSDN corresponds to a network of organizations that provides or makes arrangements for the provision of equitable and comprehensive health services to a defined population, and that is willing to be accountable for its clinical and economic outcomes, as well as for the health status of the population it serves
Disaggregation	Provider: public, social security, private, total
Data source	Ministry of health statistics departments
Reference	Pan American Health Organization. Handbook for Measurement and Monitoring. Indicators of the Regional Goals for Human Resources for Health. A Shared Commitment. Washington, D.C.: PAHO; 2013. Pan American Health Organization. Integrated Health Service Delivery Networks: Concepts, Policy Options and a Road Map for Implementation in the Americas. (Series: Renewing Primary Health Care in the Americas No.4). Washington, D.C.: PAHO, 2010.

Indicator	Proportion of the population with access to safe drinking water services
Definition	Percentage of the population with access to safe drinking water services in a given year
Domain	Intersectoral interventions with a health impact
Numerator	Population with a household connection to a drinking water system or reasonable access to a public water source within 200 meters
Denominator	Corresponding midyear population, in a given country, territory, or geographical area
Calculation	The definition of access to safe drinking water services varies according to whether it is applied to an urban or rural population. In an urban setting, it is defined as direct access through a household connection to a drinking water system or reasonable access through public drinking water sources. "Reasonable access to drinking water services in urban settlements" is defined by a distance from the house to the public water source of no more than 200 meters. Reasonable access to drinking water services in rural settlements is defined by more flexible distances from the home to individual or common water sources, depending on topography and other environmental factors
Comments	Data provided by PAHO/WHO country offices and regional technical programs based on information reported by the national health authority
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys
Reference	Pan American Health Organization. Regional Core Health Data Initiative. Available at: http://www.paho.org/hq/index.php?option=com_tabs&view=article&id=2151

Indicator	Proportion of the population using an improved sanitation facility
Definition	Percentage of the population with access to excreta disposal services in a given year
Domain	Intersectoral interventions with a health impact
Numerator	Population with direct access through a household connection to public sewerage systems or through a septic tank or latrine.
Denominator	Corresponding midyear population, in a given country, territory, or geographical area
Calculation	The definition of access to excreta disposal services varies according to whether it is applied to an urban or rural population. In an urban setting, it is defined as direct access through a household connection to a public sewerage system or having a septic tank or latrine as individual excreta disposal systems. In a rural setting, it is defined as direct access through a latrine, septic tank, or drain as individual excreta disposal systems
Comments	Data provided by PAHO/WHO country offices and regional technical programs based on information reported by the national health authority
Disaggregation	Location: rural/urban Sex: men, women Provider: public, social security, private, total Socioeconomic status: income quintile, education level, ethnic group, and migratory status
Data source	Household surveys
Reference	Pan American Health Organization. Regional Core Health Data Initiative. Available at: http://www.paho.org/hq/index.php?option=com_tabs&view=article&id=2151

Notes: BMI, body mass index; GDP; gross domestic product; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; IHSDN, integrated health service delivery network.

The need to transform health systems in the Region of the Americas also evidences the need for a framework of regional reference to measure the progress of policies aimed at strengthening health systems and achieving universal health.

Monitoring Framework for Universal Health in the Americas has been prepared with the aim of supporting the analysis of progress and performance of public policies, the generation of evidence and the decision-making to transform or strengthen health systems.

Similarly, its purpose is to be integrated into the national processes of planning, monitoring, evaluation, and accountability of progress Member States in the implementation of the measures contained in Resolution CD53.R14. It is expected that the application of this framework will contribute to better policies as well as collaborative work and learning in the Region.

This publication offers general guidelines for technical units of national health authorities, which may adapt them according to their own context and needs. The proposed activities could be implemented in an integrated manner with the technical cooperation work of the Pan American Health Organization and related tools developed to strengthen capacities for monitoring, evaluation, and analysis of transformation processes of health systems to advance toward universal health in the Region of the Americas.

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