

PAHO'S RESPONSE TO MAINTAINING AN EFFECTIVE TECHNICAL COOPERATION AGENDA IN VENEZUELA AND NEIGHBORING MEMBER STATES

November 2016 to July 2020

PAHO



Pan American
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Organization



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Background

The Bolivarian Republic of Venezuela, a federal republic with more than 32 million inhabitants,¹ has been facing a sociopolitical and economic situation that has negatively impacted social and health indicators.

Since 2016, outbreaks of diphtheria, measles, and malaria have spread rapidly, affecting many of the country's 23 states and the Capital District simultaneously. Other public health concerns include the ongoing COVID-19 pandemic, increases in tuberculosis cases and in maternal and infant mortality, as well as issues around mental health and violence prevention.² A further concern is the limited access to medicines, adequate nutrition, and adequate diagnosis and care for people with life-threatening acute and chronic conditions, including HIV, diabetes, hypertension, among others.

The Region of the Americas has the highest cumulative COVID-19 cases and deaths globally and South America is the subregion in the Americas with the second highest number of confirmed cases and deaths reported to date. As of 22 August, the subregion's 10 countries have reported a combined total of more than 5.6 million cases, including close to 186,000 deaths. The global lockdowns to stem the spread of COVID-19 dramatically reduced the demand for oil, resulting in the oil price turning negative in April 2020, for the first time ever. Venezuela, whose economy relies heavily on the oil production industry, is facing new risks and challenges due to the excess oil supplies, the

decreased financial and commercial activity, and the impact of a potential economic crisis.

There have been intensified population movements both within the country and to other countries, particularly Argentina, Brazil, Chile, Colombia, Costa Rica, Curaçao, Dominican Republic, Ecuador, Guyana, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, and Uruguay. Since 2017, an estimated 5.2 million Venezuelans have migrated to other countries, including an estimated 4.3 million who have gone to other Latin America and Caribbean countries: 1.8 million to Colombia, 829,700 to Peru, 455,500 to Chile, 362,900 to Ecuador, 264,600 to Brazil, 179,100 to Argentina, 121,100 to Panama, 104,000 to Dominican Republic, 73,100 to Mexico, 29,800 to Costa Rica, 24,000 to Trinidad and Tobago, and 22,000 to Guyana, among others (figures as of July 2020) [2]. The majority of migrants report not having a short- or medium-term prospect of a possible return to Venezuela. However, in recent months, and as a result of the COVID-19 pandemic, the number of migrants returning to Venezuela has also increased. Records from the entry points at the Colombia and Brazil borders indicate that an estimated 74,000 or more persons have returned to the country as of July 2020, mostly entering Venezuela by land. Migrants who have returned to Venezuela are reacting to the lack of job opportunities and economic income, aggravated by the COVID-19 pandemic, in Peru, Ecuador, Colombia, and Brazil. Out of the total returnees reported as of 31 July 2020, about 7% have tested positive for COVID-19 [3].

¹ Instituto Nacional de Estadística (INE), proyecciones con base a Censo 2011.

² Also based on Venezuelan Ministry of Popular Power for Health (MPPS), Indicadores básicos 2017 [Basic indicators 2017], unpublished document.

Health system fragmentation, combined with the system's diminished capacity to respond to priority needs, including core functions of epidemiological surveillance and the generation of health information, has affected the delivery of priority public health services. This particularly affects those services needed to prevent and reduce the impact of communicable diseases, including COVID-19; serve the medical needs of people living with chronic conditions, mental conditions, or end-stage diseases; and reduce maternal and infant mortality.

The health system in Venezuela, while retaining some capacity, is currently under stress due to a combination of factors. These include the unprecedented response necessary to the COVID-19 pandemic; frequent interruptions in the supply of core public services, such as water and electricity in health facilities; health workforce migration; and shortages of medicines and health supplies, particularly at the secondary

and tertiary levels. Frequent nationwide disruption of public services (electricity, water, communications, and transportation), including in the Capital District, continues to hinder access to essential health services, posing new risks and challenges to the national health system. These factors have affected the overall operation of the health network and its capacity to respond to emergencies and disease outbreaks.

In Argentina, migrants have unrestricted access to health services under the same conditions as Argentine citizens. The majority of Venezuelan migrants reside in the city of Buenos Aires and its greater metropolitan area, where there is a relatively well-established health infrastructure.

In Brazil, migrants have unrestricted access to health care and medicines. Already, thousands of Venezuelan migrants have been relocated from the State of Roraima to cities in different Brazilian states, ensuring their



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access to the labor market and to the National Social Security System, and regular access to healthcare services in the National Health System.

In Chile, since 2016, the Ministry of Health has been giving all migrants, especially those in conditions of economic vulnerability and in migratory registry processes, equitable access to services within the national health system in line with the national Government's policies, including the Policy on International Migrants' Health in Chile 2017 [4].

The Government of Colombia has enacted a resolution to provide emergency care to migrants, including childbirth services. Migrants from neighboring countries have the right to receive initial emergency care within the public health network. However, this does not include medicines or diagnostic exams [5]. In addition, Venezuelans enrolled in the Administrative Registry for Venezuelan Migrants (RAMV, for its acronym in Spanish) are entitled to certain public health services such as vaccination under the Expanded Immunization Program and prenatal care, among others [6]. Local health authorities report that, due to the progressive increase in health care provided to the uninsured migrant population, public hospitals quickly use up their supplies, leaving them unable to provide certain treatments and reducing access to services.

The Government of Guyana has recently launched a digitalized system, called Primes, for the registration and documentation of Venezuelans entering Guyana. However, due to large influxes of migrants to the capital, the Government has announced a restriction on the internal movement of migrants from border areas to the capital [7].

In Ecuador, in response to the increasing influx of Venezuelan migrants, and in accordance with the National Constitution and the Organic Law on Human Mobility, the Ministry of Health has taken action to protect the right of all persons to access comprehensive health care while in Ecuador, regardless of their migratory status.

Peru provides health care, regardless of migratory status, to children under 5 years of age and to pregnant women. Immunizations and emergency care, as well as detection, diagnosis, and treatment for tuberculosis, HIV, vector-borne diseases, mental health conditions, and anemia, are also provided to all, with an emphasis on vulnerable populations [8-11]. During the COVID-19 pandemic, the Government is also allowing all refugees and migrants, including those who have not completed the migration procedures, access to the National Health Insurance System (SIS, for its acronym in Spanish) for COVID-19-related care.

Trinidad and Tobago has received an influx of migrants from Venezuela in recent years. Between 31 May and 14 June 2019, the Government of Trinidad and Tobago conducted a registration process to allow Venezuelans to regularize their status in the country in order to live and work in Trinidad and Tobago for up to one year [12].

The purpose of this information document is to provide an update on the Pan American Sanitary Bureau's response to maintaining an effective technical cooperation agenda in Venezuela and neighboring Member States, from November 2016 to July 2020.

Situation Analysis

Venezuela

The rapid spread of COVID-19 globally posed an additional challenge to the already overstressed national health systems in Venezuela. The first two cases were officially reported on 13 March 2020 in Miranda State. As of 31 July 2020, the country reported 17,859 confirmed cases and 158 deaths. Venezuela is currently experiencing community transmission of COVID-19, with the highest incidence reported in the Capital District, and the states of Apure, Bolívar, Miranda, Táchira, and Zulia. Thirty-four percent of the reported cases nationwide are in the metropolitan area covering the Capital District and Miranda State, while 40% of the cases are reported in border states used by migrants returning to the country from other South American countries. As of 31 July 2020, 1,521,688 tests have been administered in the country,³ of which 96% (1,460,820) are rapid diagnostic tests (RDT), for screening mostly patients with respiratory symptoms similar to COVID-19, who responded to the COVID-19 Epidemiological Survey.⁴ Venezuelan migrants returning to the country through the borders with Colombia and Brazil were also screened at the Comprehensive Social Care Posts (PASI, for the acronym in Spanish). The remaining 64,129 tests (4%) were PCR tests for patients whose symptoms matched the clinical guidelines for COVID-19, as well as patients with positive RDT results. The country implemented nationwide social

distancing measures, while providing inpatient care to positive cases and mandatory quarantine to contact cases. Although the measures in place may have contributed to the relatively slow increase of cases, the data should be analyzed with care, given the ongoing vulnerabilities of the health system and the current capacity of laboratory surveillance and testing nationwide. In May 2020, the Government started implementing alternated flexibilization (7x7) of the quarantine restrictions to initiate the reopening of some economic sectors. The 7x7 alternated flexibilization consists of 7 days when certain economic sectors are authorized to operate as long as they comply with the recommended infection prevention and control measures, followed by 7 days when they must remain closed. As a result of the reopening of the economy, a sharp increase in the number of positive cases of COVID-19 nationwide can be noted in the official epidemiological data, accentuated by the increased transmission risk posed by the high number of returnees to the country, and a recent COVID-19 outbreak reported in Zulia State.

Malaria transmission remains high in 2020, with 108,934 cases reported as of 18 June (EW 29) [13], a 57% decrease compared with the same period in 2019 (253,860). The states of Bolívar (60.7%; 66,115), Sucre (16.6%; 18,113), Amazonas (5.6%; 6,135),

³ Bolivarian Republic of Venezuela, Presidential Commission for the Prevention and Control of the novel coronavirus in Venezuela (31 July 2020), unpublished report.

⁴ The COVID-19 Epidemiological Survey is a clinical and epidemiological tool launched through the Patria Platform in Venezuela, aimed at identifying suspected cases of COVID-19 through the virtual assessment of signs, symptoms, travel history, and exposure risk. The survey can be accessed by over 20 million Venezuelan citizens who use the Patria Platform to receive government benefits and pension. The citizens that met the criteria of suspected case based on their answers to the survey, receive a home visit for medical evaluation and test. The survey is designed and analyzed by the Presidential Commission for the Prevention and Control of the novel coronavirus in Venezuela.

and Anzoátegui (2.8%; 3,020) have reported the highest number of cases since the start of 2020. In the eight years from 2010 to 2018, malaria cases increased by 797% (from 45,155), and autochthonous transmission expanded from 12 to 19 states. In 2019, Venezuela reported 398,285 new confirmed malaria cases and 92,196 recurrent cases (relapse and recrudescence). The states of Bolívar (240,934), Sucre (64,203), and Amazonas (33,726) reported the highest number of new cases, but a reduction of 4.2%, 5.6%, and 28.6%, respectively, compared with 2018. Delta Amacuro, Anzoátegui, and Monagas, on the other hand, recorded increases in cases compared with 2018, ranging from 39% to 62%. In 2019, *Plasmodium vivax* caused the highest incidence, accounting for 77.3% of cases nationally; *Plasmodium falciparum* caused 16.1%; and mixed infection, 6.6%.⁵ The figures reported in 2019 represent a continuation of the decrease noted in 2018, following the continuous increased epidemic trend recorded since 2015, when cases rose from 136,402 in 2015 to 240,613 in 2016 to 411,586 [14]⁶ in 2017, and decreased slightly to 404,924 in 2018. The increase in cases since 2015 is linked mainly to the migration of infected people from the mining areas of Bolívar State to other areas of the country with malaria-prone ecosystems, shortages or unaffordability of antimalarial drugs, and weakened vector control programs. The progression of the transmission due to *P. falciparum* and *P. vivax* between 2010 and 2018 is noteworthy, having reached municipalities in which malaria had not been reported in decades [15]. The significant decrease in cases in 2020 is related to the massive reduction in mobility

due to transportation restrictions to endemic areas in the country, linked to the fuel crisis and, more recently, the COVID-19 pandemic. However, there is concern that these same factors may affect drug distribution, access to diagnosis, and case reporting in the short term. This is especially important considering that in the last weeks of July 2020, the transmission of COVID-19 increased in the high malaria burden municipalities of Bolívar State. An increase in malaria transmission is anticipated for the latter part of 2020 into 2021 with the reactivation of economic activity in the mining zone as well as the negative impacts of the response to COVID-19 on the malaria program.

Reported malaria deaths increased markedly in 2017, with a reduction in 2018 and 2019 (105 deaths in 2016, 333 deaths in 2017, 259 deaths in 2018, and 118 deaths in 2019)[16]. In 2020, as of 18 July (EW 29), 25 suspected malaria deaths (currently under investigation) have been reported, representing a 70% decrease from the same period in 2019.⁷ The reduction in the last two years is attributed



⁵ Venezuela Dirección General de Salud Ambiental.

⁶ Number updated by Venezuelan MPPS in 2018 Annual Country Report on Malaria Situation, submitted to PAHO/WHO in May 2019. The last report to the 56th Directing Council indicated that 406,289 cases were reported in 2017.

⁷ Information provided by the Venezuelan MPPS, shared via internal communication from PAHO/WHO Representative Office in Venezuela, received 31 July 2020

to measures related to improvements in the offer of early treatment and the introduction of the use of artesunate. Mortality from malaria continues to be a permanent challenge due to the persisting extremely high transmission in the most affected areas, and the permanent migration of susceptible population to malarious territories and their return to contexts where the health system is not prepared or sensitive to identify and manage severe malaria [16-18]. Due to the high contribution of Venezuela to the total number of cases in the Region (52% in 2018), since 2015 the number of cases in the Region has increased (from 452,847 cases in 2015 to 763,671 cases in 2018) by 40.7%. The export of sporadic cases to countries without malaria poses a challenge for the early detection and prevention of complications associated with the disease. Other important risks include the increase in malaria cases in border areas of neighboring countries, potential emergence of drug-resistant strains, reintroduction of local transmission in previously malaria-free areas, and inadequate treatment with continued increase in malaria-related mortality [13, 15, 16].

The measles outbreak that started in July 2017, with cases reported in all 23 states and the Capital District in Venezuela, has been successfully controlled. In 2020, up to 1 August (EW 31), Venezuela achieved 50 weeks with no new confirmed case, having notified and investigated 258 suspected cases up to 2 May (EW 18) [19]. Between 1 July 2017, when the first case of measles was confirmed, and 11 August 2019 (date of onset of rash of the last confirmed case from

Zulia State), there were 7,054 confirmed cases (727 in 2017, 5,779 in 2018,⁸ and 548 in 2019). The average national incidence rate during 2017-2019 was 22 cases per 100,000 population, with the highest cumulative incidence of cases reported in Delta Amacuro, the Capital District, and Amazonas [20]. Although 23 of the 24 federal entities in the country were affected during the outbreak, more than 70% of the confirmed cases were concentrated in the Capital District (2,646 cases), and in the states of Miranda (1,288 cases) and Bolívar (1,024 cases); while 75% of the deaths occurred in the states of Delta Amacuro (33) and Amazonas (27), all of these deaths related to outbreaks in the indigenous population.

Of the total 80 deaths reported, 2 were in 2017 in Bolívar, 75 were in 2018 (37 in Delta Amacuro, 27 in Amazonas, 9 in Miranda, 4 in the Capital District, 1 in Bolívar, and 1 in Vargas), and 3 were in 2019 in Zulia [20]. Between 2018 and 2019, Argentina, Brazil, Canada, Chile, Colombia, Ecuador, Peru, and the United States of America have also reported cases in which the D8 genotype⁹ associated with the outbreak in Venezuela was identified. The spread of the virus is explained by many factors, including: a) insufficient vaccination coverage, leaving pockets of susceptible population; b) inadequate surveillance systems; c) delayed implementation of control measures; d) low capacity for isolation and adequate case management; and e) high population movement across borders during the incubation or communicable period of the virus.

⁸ According to data previously provided by the Venezuelan MPPS and published by PAHO/WHO in the Epidemiological Update of 18 June 2019, 7,790 suspected cases had rash onset in 2018, and 5,670 cases were confirmed for that year; in addition, 79 deaths were reported (2 in 2017 and 77 in 2018). The current figures for 2018 (8,005 suspected cases, 5,779 confirmed cases, and 79 deaths) were updated by MPPS according to information recently received with new records found in the federal units.

⁹ Lineage MVi/HuluLangat.MYS/26.11.

In 2020, up to 22 August, 54 suspected diphtheria cases were reported, of which five were confirmed, among 2 to 9-year-olds and 10 to 14-year-olds. The most recent confirmed case had symptom onset on 25 January 2020, from Bruzual Municipality, Yaracuy State [21]. Since the beginning of the diphtheria outbreak in Venezuela in June/July 2016 (EW 26), a sustained increase in cases was observed until 2018, followed by a decrease in 2019. It is expected that in 2020, the number of cases will continue to decrease. From the beginning of the outbreak to 22 August 2020, 3,114 suspected diphtheria cases were reported, including 294 deaths (324 cases and 17 deaths in 2016, 1,040 cases and 103 deaths in 2017, 1,208 cases and 151 deaths in 2018, 488 cases and 21 deaths in 2019 [21], and 54 cases and 2 deaths in 2020; 1,790 of the cases were confirmed). Fifty-eight cases, including 17 deaths were confirmed in 2016, 786 cases including 103 deaths in 2017, 775 cases including 151 deaths in 2018, 166 cases

including 21 deaths in 2019, and 5 cases including 2 deaths in 2020. In 2019, the highest case-fatality rate was observed among 5 to 9-year-olds (33%), followed by 1-year-olds (25%) and 40 to 49-year-olds (20%) [21]. In 2020, three states have reported cases up to 22 August. In 2016, confirmed cases were reported in five states (Anzoátegui, Bolívar, Delta Amacuro, Monagas, and Sucre), in 2017 and 2018, 22 states and the Capital District reported confirmed cases and in 2019, 17 reported cases [22].

Venezuela, with the support of the Pan American Sanitary Bureau (PASB) and other partners, launched a combined measles and diphtheria immunization campaign, focusing specifically on nine states and progressively expanding to the entire country. Between April 2018 and August 2019, 8.9 million children aged 6 months to 15 years and more than 500,000 persons over age 15 were vaccinated against measles in all states. The



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campaign achieved 100% coverage nationwide. As of August 2019, 5.1 million children between 7 and 15 years of age had been vaccinated against diphtheria, and most states had achieved vaccination coverage above 95%. Exceptions are three states, Anzoátegui, Bolívar, and Táchira, where vaccination activities continue in an effort to exceed 95% coverage. In addition, states that have reached $\geq 95\%$ coverage are conducting field monitoring to ensure there are no remaining pockets of unvaccinated children [22, 23].

The persistence of diphtheria transmission as well as the low diphtheria vaccination coverage in the regular national program in 2019 and first semester of 2020 could worsen the outbreak, especially in children under 5 years of age. In 2019, national coverage with the third dose of pentavalent (Penta3) was 64%. Also, 77% (259) of the municipalities, which are home to 78% (468,981) of children under 1 year of age, reported coverage with Penta3 below 95%. This could compromise the possibility of eliminating diphtheria as a public health problem. The low measles, rubella, and poliomyelitis vaccination coverage in the regular national program in 2019 and the first semester of 2020 also puts at risk the sustainability of advances achieved. According to information released by the Ministry of Popular Power for Health (Ministerio del Poder Popular para la Salud, MPPS)¹⁰, the 2019 national coverage of the first dose of the measles, mumps and rubella, and (MMR1) vaccine was 65%, and only 13% for the second dose (MMR2), with an 80% dropout between the first and second dose. In addition, 74% (247) of the country's

municipalities, which are home to 74% (468,829) of the under 1-year-old population, reported coverage below 95% for MMR1¹¹. The national coverage indicators should be a call for early actions and response in order to continue with the reverification process of measles interruption in Venezuela. More importantly, an acceptable level of coverage should be pursued to sustain the transmission interruption, within a context of active outbreaks in neighboring countries that may pose a risk for reintroduction of measles through import [24]. Likewise, the coverage for the third dose of the oral polio vaccine (OPV3) was only 62%,¹² increasing the risk of outbreaks due to vaccine-derived polio or imported wild polioviruses.

During 2019, a reduced availability of some biologicals and persistence of vaccine-preventable disease outbreaks, mainly measles, led to the expansion of complementary vaccination containment activities. This affected implementation of the strategies designed to follow up on vaccination schedules, including the operation of fixed vaccination posts. This general situation has continued into 2020, with the following coverages as of June: OPV3 and Penta3 stands at 26% and 28%, respectively, while coverage with MMR reached 32% with the first dose and 10% with the second dose. The projected coverage up to December 2020 is below the minimum of 80% required to maintain control of vaccine-preventable diseases, with projections for hepatitis B (HB), Penta, and OPV being less than 60%. Although vaccination services have remained operational in Venezuela during the COVID-19 pandemic, the containment strategies

¹⁰ Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations, Routine Vaccination Program. Aug 2020. Unpublished

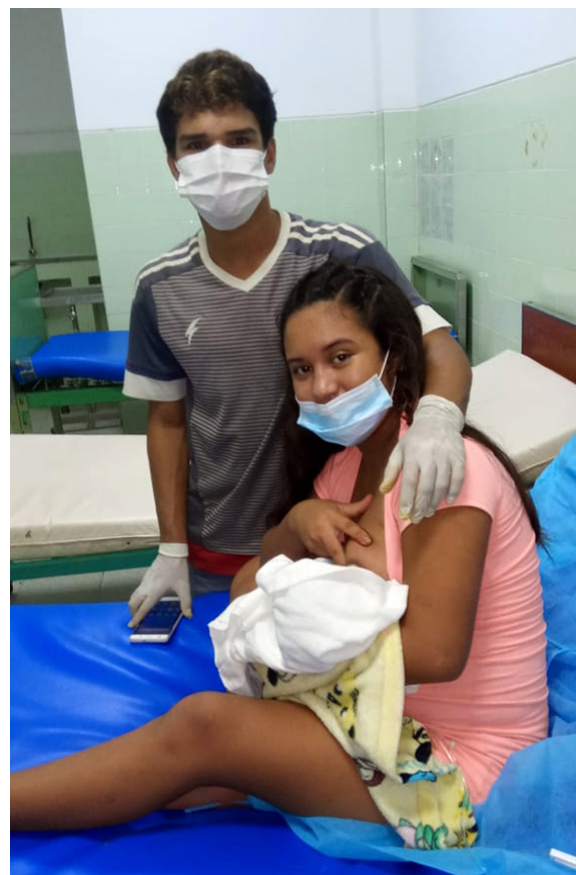
¹¹ Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations. Analysis of the Expanded Program on Immunization, 2019 and 2020. March 2020. Unpublished

¹² Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations, Routine Vaccination Program. Aug 2020. Unpublished

applied, and the deficit of biologicals have negatively impacted the productivity of the regular vaccination program during the first semester of 2020.

On 13 November 2019 (EW 46), in the context of an epizootic wave from Guyana, Venezuela reported the first case of yellow fever in a 46-year-old male patient, a farmer from the Pemón indigenous community, with no yellow fever vaccination history, and resident of the Kuana community located in the Kamarata sector (Gran Sabana Municipality of Bolívar State). This is the first confirmed case of yellow fever in humans registered in Venezuela since 2005. MPPS, with technical support from PASB, rapidly implemented epidemiological investigation to establish exposure and transmissibility, and conduct active institutional and community search of cases and deaths from febrile jaundice syndrome, febrile jaundice hemorrhagic syndrome, and possible unreported epizootics. The investigation team took samples of symptomatic and asymptomatic suspected cases and captured mosquitoes for entomological study. At the conclusion of the investigation, no epidemiological or virologic evidence of other cases, including epizootics in nonhuman primates, was found in the at-risk communities. It was also determined that the density of the *Haemagogus* genus vector found in the area was low. Prevention and control activities included vaccination of the population aged 1 to 59 years without proof of vaccination and the application of vector control measures through space spraying.

In 2020, up to 31 July, 284 maternal deaths, including late maternal deaths, were reported



(77.28 deaths per 100,000 live births); this is 19% fewer than reported for the same period in 2019 (351).¹³ Of the total, 182 deaths were due to direct causes (including hypertensive disorders, 18.7%; obstetric hemorrhage, 15.1%; infections/sepsis, 11.6%; abortion complications, 4.9%) and the remaining 102 were due to indirect causes (including respiratory infections, COVID-19). An average of eight deaths per week were reported during this period; 94.4% were in-hospital deaths¹⁴. In 2019, up to 28 December, 598 maternal deaths, including late maternal deaths,¹⁵ were reported (100.1

¹³ Preliminary figures from the national epidemiological surveillance system that require subsequent adjustment, through the intentional search and reclassification of maternal deaths (BIRMM) methodology for the year 2020.

¹⁴ Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations, Routine Vaccination Program. Aug 2020. Unpublished

¹⁵ Preliminary figures from the national epidemiological surveillance system that require subsequent adjustment, through the intentional search and reclassification of maternal deaths (BIRMM) methodology for the year 2020

deaths per 100,000 live births); this is 16.7% fewer than reported for the same period in 2018 (718). Of the total, 469 deaths were due to direct causes and the remaining 129 were due to indirect causes. An average of 11 deaths per week were reported during this period; 95.5% were intrahospital deaths.¹⁶ Maternal mortality is a very good proxy for measuring the capacity of the health system.

In 2019, 8,593 child deaths were reported, a 21.3% decrease compared with 2018 (10,916 deaths). The infant mortality rate in children under 1 year of age was 14.39 deaths per 1,000 live births, and the neonatal mortality rate was 10.91 deaths per 1,000 live births. In 2020, until 31 July, 3,659 infant deaths were reported, a 35% decrease compared with the same period in 2019 (5,632 deaths). The infant mortality rate in children under 1 year of age in the country stands at 9.96 deaths per 1,000 live births and the neonatal mortality rate at 7.37 deaths per 1,000 live births. Neonatal mortality (0-27 days) accounts for 74%, while post-neonatal mortality (28 days-11 months) accounts for the remaining 26%. In this period, an average of 114 infant deaths were reported per week. The most frequent causes recorded were: unspecified bacterial sepsis of the newborn, newborn respiratory distress syndrome, congenital pneumonia (organism not identified), other preterm newborns, asphyxia at birth (unspecified), respiratory failure of the newborn, pneumonia (unspecified), and other unspecified gastroenteritis and colitis of infectious origin.¹⁷

Hepatitis A has remained in an epidemic state since 2017, when an 86.69% increase in

cases was observed compared with the previous year, a trend that was maintained for 2018 (81.91%) and 2019, (11.63%). In 2019, there was an incidence rate of 50.65 per 100,000 inhabitants. In 2020, up to 31 July, the national incidence rate for hepatitis A was 9.35 per 100,000 population, which is exceeded in nine federal entities: Delta Amacuro (29.76), Falcón (25.99), Bolívar (25.09), Lara (24.04), Táchira (15.59), Mérida (11.90), Carabobo (10.04), Guárico (9.31), and Amazonas (8.30), per 100,000 inhabitants. Between 30 December 2018 and 29 June 2019, 714,536 cases of diarrhea were reported in the country, with 171 deaths.¹⁸ The highest incidence rates were reported among children under 1 year of age (746 cases per 100,000 population) and in Anzoátegui State. In the week of 23 June 2019 (EW 26), four states (Carabobo, Guárico, Portuguesa, and Sucre) were at the epidemic threshold for cases among children <1 year; two states (Guárico and Portuguesa) were at the epidemic threshold for cases among children aged 1-4 years; and four states (Cojedes, Guárico, Monagas, and Portuguesa) were at the epidemic threshold for cases among persons ≥5 years.

According to data from the National Survey of Living Conditions (Encuesta Nacional de Condiciones de Vida—ENCOVI) 2019-2020, published in July 2020, although 77% of households have access to water supply network, not all of them receive continuous drinking water: most have the service only certain days a week and others a few times a month [25]. In 2018, only 29% of the population had water supply in their homes every day, compared with 45% in 2017. The percentage of people receiving water every 15 days increased from 10% in 2017 to 14%

¹⁶ Venezuelan MPPS, National Epidemiology Directorate.

¹⁷ Venezuelan MPPS, National Epidemiology Directorate. Preliminary figures from the national epidemiological surveillance system that require subsequent adjustment for 2020.

¹⁸ Information provided by the Venezuelan MPPS, shared via internal communication from PAHO/WHO Representative Office in Venezuela, received 7 August 2019.

in 2018 [26]. In terms of sanitation coverage, according to the WHO/UNICEF Joint Monitoring Program for Water Supply, Sanitation and Hygiene (JMP), only 24% of sanitation systems are adequately managed, and open defecation is practiced in rural areas [27]. While 95.7% of the population has access to basic level water service, 23.8% has access to safely managed sanitation service and 70.2% to basic level sanitation service. Water, sanitation, and hygiene (WASH) systems have been affected by a reduction in operational personnel and limitations in the supply chain of essential products for the treatment of water for human consumption and wastewater. The recurrent interruption in electrical service also affects the infrastructure and operation of WASH services, causing limitations in access, which lead to an increase in health risks, particularly for healthcare facilities, detention centers, and others [27]. Health promotion strategies and interventions are not actively implemented in vulnerable areas, further complicating the health situation.

Since 2017, official HIV surveillance data have been unavailable as shortages in diagnostics have significantly affected the capacity to detect new cases of HIV infection. Notwithstanding, in 2019, 4,052 new HIV infections [28] were registered. However, likely with significant underreporting, since many donated rapid tests for HIV diagnosis were distributed as a priority for HIV detection in pregnant women, limiting their broader availability to public health laboratories. By the end of 2019, 62% of the estimated 110,000 persons living with HIV in Venezuela knew their status, but only 41% (44,912) were registered in the treatment program [29]. During 2018, the national HIV/AIDS program reported episodes of stock-outs of antiretroviral medicines,



affecting up to 84% of registered persons with HIV receiving care in the public sector [30]. Nevertheless, thanks to the combined efforts of PAHO, the Global Fund, UNAIDS, UNICEF, civil society, and other partners, in 2019 Venezuela started receiving antiretroviral medicines, mainly dolutegravir-based regimens for adolescents and adults with HIV and pediatric formulations. The country initiated a process of transitioning eligible persons to dolutegravir-based treatment regimens, and by end of June 2020, 41,125 people with HIV (representing 91% of persons currently being treated) were receiving the fixed dose combination of tenofovir, lamivudine and dolutegravir (TLD).¹⁹ However, there is still limited availability of antiretroviral medicines for alternative regimens, drugs for prevention and treatment of opportunistic infections, and reagents for in vitro HIV diagnosis and monitoring. Similarly, shortages in diagnostics and treatment for syphilis have severely impacted efforts to reduce vertical transmission of syphilis in newborns.

Up to 31 July 2020, 3,695 newly detected and relapsed tuberculosis (TB) cases were registered, 20.1% fewer than the same period in 2019²⁰. However, the 2020

¹⁹ Data reported by the Ministry of Health to PAHO and UNAIDS in August 2020

²⁰ MPPS, National Tuberculosis Control Program 2020

information excludes information for Zulia State for May and June, which was not available. The difference in numbers is also due to the mobility restrictions imposed in the country because of the COVID-19 epidemic, since 13 March of this year, and to the partial closure of some services, including laboratories. The 10,293 newly detected and relapsed cases reported (31.9 per 100,000 population) in 2019 represents a 6.6% decrease from the 11,017 recorded in 2018 (38.1 per 100,000 population). Half of the cases are in the Capital District and four other states, and nine states have a TB incidence above the national average (of 31.9 per 100,000 population). Prisoners (16.1%) and indigenous people (6.3%) are most affected.²¹ Comorbidities account for almost 8% of cases (3.6% TB/HIV and 4.3% TB/diabetes), with a rising trend for TB/diabetes. Additionally, between 2017 and 2019, the number of drug-resistant TB cases decreased from 81 to 34.²² The shortage of laboratory supplies and functional laboratories performing smear microscopy, Xpert MTB/RIF, and drug susceptibility testing, as well as difficulties in transporting the samples that meet the criteria for conducting sensitivity tests, have affected TB diagnosis, which may explain the decrease from 2018 to 2019. TB cases increased significantly from 2014 (6,063) and 2017 (10,185) to 2018 (11,017). Considering the challenges outlined, the country may find it difficult to reach the targets established in the End TB Strategy.

In 2016, noncommunicable diseases (NCDs)—principally cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases—were responsible for approximately 125,800 deaths, representing 70% of all deaths in Venezuela, with deaths from cardiovascular diseases (29.9%) and cancer (15.8%)

accounting for almost 50% [31]. This is lower than the regional average of 81% [32]. Also, in 2016, an estimated 17% of adults had elevated blood pressure and an estimated 9% had elevated blood glucose/diabetes, requiring essential medicines and care to treat their conditions, ensure adequate control, and prevent premature death due to NCDs [31]. Treatment for these diseases at the first level of care is limited due to insufficient basic medical resources, such as equipment to measure blood pressure or scales, as well as difficulty in accessing laboratory tests and essential treatments. This situation results in overcrowding at the second level care centers, which also experience similar challenges related to availability of medicines and laboratories, as well as specialists to provide care. Homicide is also a major concern, with an estimated 49.2 deaths per 100,000 population from this cause in Venezuela in 2016. This rate is almost three times higher than the regional average of 17.9 per 100,000, and more than seven times the global average of 6.4 per 100,000 [33]. Beyond these deaths, many more women, men, boys, and girls in Venezuela, including health workers, suffer injuries and experience physical and mental conditions as a result of violence. Challenges related to the economic situation, further aggravated by the pandemic, have had a negative impact on the mental health of the population. It is necessary to increase the capacity for emergency health response and to train healthcare workers in strategies to prevent violence and respond to the needs of victims of violence. It is also necessary to promote healthy lifestyles and reduce exposure to risk factors that are harmful to health.

The Venezuelan health system continues to operate, but with significant challenges. The system has a network of 292 hospitals (levels

²¹ MPPS, National Tuberculosis Control Program 2018.

²² MPPS, National Tuberculosis Control Program 2019.

I through IV); a network of 323 health facilities for ambulatory specialized care; a community-based network (Red de Atención Comunal) with 17,029 points of care, including popular health posts, dental offices, comprehensive diagnostic centers, popular optical clinics, and comprehensive rehabilitation centers; as well as a transversal emergency network [34]. Misión Barrio Adentro, established in 2003, has significantly expanded primary care services to the population. In 2005, Barrio Adentro II and III began simultaneously and helped strengthen the specialized outpatient centers and the hospital network, respectively. In 2006, Barrio Adentro IV was promoted to develop new highly specialized centers, such as the Latin American Children's Cardiology Hospital [35]. In 2017, the Government launched Barrio Adentro 100%, aiming for 100% coverage of the program. This initiative led to important investments in health infrastructure and technology at both the hospital and primary care levels and in human resources development (202 projects for rehabilitation, maintenance, and equipment for 80 centers).²³ As part of the National Training Program for Comprehensive Community Medicine created in 2008, 23,990 "comprehensive community doctors"

(médicos integrales comunitarios) graduated in seven cohorts from 2011 to August 2018. Additionally, 12,269 doctors received credentials in comprehensive general medicine. This model of medical training has been reinforced by the creation of the University of Health Sciences in 2014. On 23-24 August 2018, the Government convened the first National Revolutionary Congress for Health to discuss the development of the National Health Plan 2019-2025, aiming to transform the health system to address current challenges. The new plan replaced the National Health Plan 2014-2019.

In 2020, 47 health facilities designated for the care of patients with COVID-19 have been strengthened across all the Venezuelan states. Connections with the private sector have also been enhanced. The health system network was reorganized to care for suspected and confirmed COVID-19 patients, by making available about 11,000 beds in public hospitals, 4,003 isolation beds in the comprehensive diagnostic centers, 4,759 hospital beds in private health facilities, and 4,000 beds in hotels. Additionally, in July 2020, the sports multiplex in Caracas was adapted as an alternative place for the admission of asymptomatic and mild cases, thus adding 900 new beds to reach a national total of 24,662 beds for COVID-19 patients. Venezuela has also made available 1,213 intensive care beds for critically ill patients, out of which 450 are in public hospitals, 573 in the Barrio Adentro Network, and 190 in the private sector. Between March and July 2020, the national and regional authorities have implemented 62 Comprehensive Social Care Posts (PASI) to provide health care for migrants who return to the country by land. However, difficulties persist in mobilizing essential health personnel throughout the



²³ MPPS, unpublished presentation, 13 June 2018.

country, with a greater impact on the public hospital network.

Nevertheless, there has been a progressive loss of operational capacity in the national health system over the past seven years, and this has become more acute since 2017, affecting the delivery of health care and access to medicines without charge at the point of service. According to Médicos por la Salud (an agency that conducts weekly monitoring of hospitals in Venezuela), in 2019, the average of shortages in medicines and basic supplies for emergency services and hospitalization was 48.2% for emergency wards and 35.4% in other wards [36]. However, further studies on the availability of medicines at health facilities found an improvement in the general supply because some critical medicines went from nonexistent to being intermittently available. Likewise, they found differences in the percentage of shortages between local government-run hospitals (71%), health facilities from MPPS (62%), military hospitals (42%), and the Venezuelan Institute of Social Security hospitals (27.1%). The peripheral and border states had the greatest scarcity of medicines: Amazonas, Bolívar, Táchira, and Zulia systematically present values worse than the national average—a pattern that is repeated in other key indicators, such as operating capacity of medical wards and availability of hospital beds. The study also concludes that, given the multidimensional crisis that affects the country, the reduction in shortages is not constant and presents peaks according to events such as protests and fuel shortages that limit the transport of medicines and supplies to the hospitals. Similarly, the reported improvement in some months of 2019 can be attributed to the humanitarian aid provided during the year, including the delivery of emergency kits (IEHK) by PAHO,

UNICEF, and the Red Cross. Despite all of the international cooperation efforts, many hospitals continue operating in challenging conditions and are unable to ensure a supply of basic support services. The main challenges for guaranteeing quality health care coverage to the population include failures in the provision of public services, significant deficiencies in the maintenance of medical equipment and the work environment, and the shortage of health personnel. In that regard, according to the Venezuelan Medical Federation, by the end of 2019 an estimated 30,000 physicians had migrated out of the country; 53% of them previously staffed public hospitals in Venezuela. This figure represents 45% of the country's 66,138 physicians in 2014. The migration of physicians has predominately affected certain specialty areas (neonatology, anesthesiology, oncology, nephrology, and intensive and emergency care). Similarly, an estimated 6,000 bioanalysts and laboratory technicians have reportedly left the country, and the Venezuelan Federation of Nursing Schools estimates that between 3,000 and 5,000 nurses have also migrated.

Immediate action is required to address short-term priorities in order to ensure operational capacity within health services and access to medicines and health technologies, and to rationalize existing resources while mobilizing additional resources. This is necessary in order to address disease outbreaks and increase the system's capacity to provide comprehensive care for priority conditions, physical and mental health, and emergencies. In the medium term, opportunities exist to transform the health system to reduce fragmentation and segmentation, stem the migration of health workers, ensure sustainability, and improve resilience.

Neighboring Countries



In 2020, as of 1 August (EW31), **Argentina** reported 69 confirmed measles cases, of which 12 were imported and 56 were of unknown origin [37]. Since the country recorded elimination of endemic measles circulation in 2000, it experienced the most extensive outbreaks of measles between 11 August 2019 and 16 May 2020, with 174 confirmed cases, including one death. Fifteen of the cases were imported (9 from Brazil, 3 from the United States of America, and 3 with travel history to Spain and Southeast Asia) and 159 were of unknown origin. Thirty-two of the cases were in Buenos Aires City, one in Córdoba City, and 141 in municipalities of Buenos Aires Province. The highest incidence rate was recorded in children under 1 year of age, followed by those in the 1 year age group. Date of onset of rash for the last

measles case recorded in the country was 19 March 2020. These outbreaks were not related with the one in Venezuela, given the presence of other sources of infections or different genotypes and lineages (D8, MVs/Gir Somnath.IND/42.16; B3, MVs/Kabul.AFG/20.2014/3)[38]. The Argentine Government is facilitating integration of Venezuelan health professionals into the health workforce. Since February 2018, the Government has issued resolutions which allow Venezuelan students and professionals to validate their studies in the country. Additionally, 1,200 Venezuelan professionals are currently working in the health system.

Between January and 31 August 2020, **Brazil** reported 16,064 malaria cases in Roraima, including 801 (5%) imported cases, of which

67% (537) were from Venezuela (12.7% due to *P. falciparum*). This represents a 52% reduction in imported cases from Venezuela compared with the same period in 2019 (1,681). The remaining 33% of imported cases were from other Brazilian states and three other countries and territories (French Guiana, Guyana, and Suriname). In 2019, Brazil reported 156,916 malaria cases, of which 2,632 (1.7%) were imported from Venezuela, representing 66.4% of all imported malaria cases in the country (3,965). This compares with 193,837 cases reported in 2018, of which 4,863 (30.6% due to *P. falciparum*) were imported from Venezuela, representing 73.6% of all imported malaria cases in Brazil (6,606). The majority of imported cases from Venezuela were reported in Roraima. In 2019, Roraima reported 22,794 malaria cases, including 2,845 imported cases, of which 80.3% (2,284) were from Venezuela (18.1% due to *P. falciparum*). The remaining 19.7% of imported cases in Roraima were from other Brazilian states and four other countries (French Guiana, Guyana, Saint Helena, and Suriname)²⁴.

In 2020, as of 26 September (EW 39), 8,187 measles cases including seven deaths were confirmed in 21 states: Alagoas (3), Amapá (96), Amazonas (4), Bahia (7), Ceará (7), Distrito Federal (5), Goiás (8), Maranhão (17), Mato Grosso (1), Mato Grosso do Sul (7), Minas Gerais (21), Pará (5,287), Paraná (376), Pernambuco (34), Rio de Janeiro (1,332), Rio Grande do Sul (37), Rondônia (6), Santa Catarina (110), São Paulo (820), Sergipe (8), and Tocantins (1). The State of Pará, with 64.6% of confirmed cases, had an incidence rate of 93.47 per 100,000

population, which is higher than the cumulative national incidence rate of 10.61 per 100,000 population. Seven deaths were reported in three states: Pará (5), Rio de Janeiro (1), and São Paulo (1), four of them in children under 1 year, two in children 1-4 years old, and one in a 34 year-old adult²⁵. The predominant genotype in 2020 continues to be D8—Frankfurt, Hulu, Delhi, and Gir Somnath lineages²⁶—which was also circulating in 2019 and unrelated to the Venezuelan outbreak.

The measles outbreak that started in February 2018, linked to the D8 genotype and lineage circulating in Venezuela and other countries in the region, was interrupted in May 2019, as per report from Brazilian health authorities during a meeting with the Regional Verification Commission for Measles and Rubella, in September 2020. In March 2019, the Ministry of Health of Brazil had announced that the country had reestablished endemic transmission of measles on 19 February 2019, due to ongoing transmission of the same genotype D8 for more than 12 months, mainly in the states of Amazonas, Roraima, and Pará. The measles outbreak started in the week of 4 February 2018 (EW 6) in Roraima State, then spread to Amazonas State and subsequently to 11 additional states, resulting in a total of 10,346 confirmed cases, including 12 deaths up to 15 May 2019. The most affected states were Amazonas (95.7% of the cases), followed by Roraima (3.5%) and Pará (0.8%). The highest proportion of cases was reported among children under 5 years of age (28%), followed by young adults aged 20-29 years (25%).²⁷

²⁴ Brazilian Ministry of Health, Malaria Epidemiological Information System (Sivep-Malaria), accessed 13 October 2020. Preliminary data subject to change.

²⁵ Brazilian Ministry of Health, State Health Secretariats, official update on October 09, 2020

²⁶ Brazilian Ministry of Health, Immunization Program, official update on 9 October 2020

²⁷ Brazilian Ministry of Health, State Health Secretariats, Immunization Program. 2018-2019. Official update on 9 October 2020.

Between 2019 and 2020, multiple importations were reported in several Brazilian states, where other genotypes and lineages (e.g., D8, lineage Gir Somnath in the State of São Paulo) as well as source of infections were identified. In 2019, 20,901 measles cases were confirmed in 23 states. The State of São Paulo, with 85.2% of cases, had an incidence rate of 46.7 per 100,000 population, which was higher than the cumulative national incidence rate of 20.3 per 100,000 population. Sixteen deaths were reported in three states (Pará (1), Pernambuco (1), and São Paulo (14)), six of which were in children under 1 year, three were children between 1 and 4 years old, and seven were adults over 20 years.²⁸

In 2020, up to 19 September (EW 38), there were two confirmed cases of diphtheria in the states of Minas Gerais and Rio Grande do Sul (data subject to review).²⁹ Two cases were confirmed in 2019 and one in 2018 [39]. In 2017, five cases of diphtheria were confirmed in four Brazilian states, including a fatal case imported from Venezuela[40]. Between 2017 and 2019, one only of the confirmed cases had an epidemiological link to Venezuela. In 2018, responding to the growing demand for health services in Roraima, the Ministry of Health programmed specific additional funds for upgrading of health units, strengthening and expansion of hospital care, strengthening of primary health care, and acquisition of vaccines. The municipalities of Pacaraima and Boa Vista will receive support for primary health care and to expand hospital care [41].

On 23 February 2020, Brazil reported its first COVID-19 case in São Paulo City. Up to 31 July, the country reported 2,662,485

confirmed cases and 92,475 deaths. The State of Roraima, which is the main gateway for Venezuelan immigrants to Brazil, reported a COVID-19 incidence rate of 5,282 per 100,000 population and a mortality rate of 83 per 100,000 population. During the same period, 95 confirmed cases and 29 fatal cases of COVID-19 were reported among immigrants in Roraima.

In 2020, up to 16 January, **Chile** reported two confirmed measles cases associated with importations from Brazil and the United States of America. While identification of lineage is pending for both cases, genotype D8 was identified for one case and the other is pending identification. The date of onset of rash of the second case was 16 January.³⁰ In 2019, 11 confirmed cases were reported (5 imported and 6 import related). Four were vaccinated, three were unvaccinated, and four had no proof of vaccination history. Genotype D8 was identified (the lineage was not reported)[20]. Between 3 June 2018 and 26 January 2019, Chile reported 25 measles cases (23 in 2018 and 2 in 2019). Seven were imported and 18 were import-related; 12 required hospitalization, with no deaths reported; 44% of confirmed cases were male and 56% were children under 1 year old (below the minimum age required for the first dose of measles vaccine). Nineteen cases were confirmed as infected by the D8 genotype that is also circulating in Venezuela, while one case was confirmed with a D8 genotype of a different lineage. Six of the nine imported cases were from Venezuela and the other three from Argentina, Colombia, and Germany.³¹

In **Colombia**, 244 confirmed measles cases were reported in 2019 in the departments of

²⁸ Brazilian Ministry of Health, State Health Secretariats, Immunization Program, 2019-2020. Official update on 9 October 2020.

²⁹ Brazilian Ministry of Health, Immunization Program, official update on 9 October 2020.

³⁰ Chile International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.

³¹ Chilean Ministry of Health, Office of Cooperation and International Affairs, email communication 28 August 2020.



Atlántico, Cesar, Córdoba, Cundinamarca, La Guajira, and Norte de Santander, and in the districts of Barranquilla, Cartagena, and Bogotá[42]. The highest incidence rate in the Colombian population is among children aged under 1 year, which was 5.9 cases per 100,000 population in 2018 and 3.1 cases per 100,000 population in 2019, followed by 1 to 4-year-olds, with an incidence rate of 0.6 cases per 100,000 population in both 2018 and 2019. Of the 244 confirmed cases, 69 (28.2%) were imported (65 from Venezuela, 3 from Europe, 1 from Brazil) and 159 (65.1%) were import-related. The source of infection for the other 16 cases (6.5%) remains under investigation [43]. There was one death in a 3-month-old Colombian male of the Wayúu indigenous ethnic group, from Uribia in La Guajira. A total of 452 measles cases were confirmed in the country between 4 March 2018 and 31 December 2019, in 15

departments and three districts: 208 [44]³² with dates of rash onset in 2018, and 244 in 2019. Of the 452 confirmed cases, 126 (27.8%) were imported, (122 from Venezuela, 3 from Europe, 1 from Brazil) and 300 (66.3%) were import-related. The source of infection for the other 26 cases (5.75%) remains under investigation. During this period, 10,305 suspected measles cases were reported. Genotyping performed on samples for all cases indicated genotype D8 lineage, similar to the one circulating in Venezuela and other countries in the Region [42].

In the first 24 epidemiological weeks of 2019, there were 48 suspected and one confirmed diphtheria cases [45]. Between 31 December 2017 and 29 December 2018, Colombia confirmed eight cases of diphtheria (four in La Guajira, two in Norte de Santander, and two from Venezuela), including three deaths. Confirmed cases were males ranging in age

³² The PAHO/WHO Epidemiological Update of 17 May 2019 reported 209 cases with rash onset in 2018; however, one case has been reclassified.

from 3 to 37 years, six of them Venezuelan citizens [46]. In 2020, up to 18 July (EW 29), Colombia reported 44,284 malaria cases, a 9% decrease compared with the same period in 2019. However, five departments are above the expected number of cases according to the endemic curve. As of 11 July 2020 (EW 28), 298 imported malaria cases were reported, of which 284 (95%) were from Venezuela [47]. During 2019, up to 28 December, Colombia reported 78,513 malaria cases, including 77,172 cases of uncomplicated malaria and 1,341 complicated cases [48]. This represents a more than twofold increase since 2014 (38,544 confirmed cases, including 38,233 cases of uncomplicated malaria and 311 complicated cases) [49]. Of the total in 2019, 2,288 (2.91%) were imported, with 2,189 from Venezuela; the latter included 262 *P. falciparum*, 1,981 *P. vivax*, 1 *P. malariae*, and 44 mixed infections. This represents a 22.1% increase in imported malaria cases from Venezuela compared with 2018. In 2018, up to 29 December 1,774 imported malaria cases were reported in Colombia, of which 94.9% (1,684) were from Venezuela. The departments of Arauca, Caquetá, and Norte de Santander reported an increase in malaria cases higher than the 2012-2017 average [50].

Colombia reported its first case of COVID-19 on 6 March 2020 [51], and up to 31 July 2020 had recorded 286,020 confirmed cases [52]. The Ministry of Health has issued guidelines for care of the migrant population during the pandemic. Due to the impact of implementation of the nonpharmaceutical measures and associated socioeconomic implications, between March and August, thousands of Venezuelan migrants in

Colombia voluntarily returned to Venezuela through official land crossings.

In **Ecuador**, no confirmed measles cases were reported in 2019 or in 2020, up to April. Between 25 March and 29 December 2018, 19 confirmed measles cases were reported, of which 11 were imported (all Venezuelans) and 8 were import-related.³³ The cases were reported in Quito (12 cases), Cuenca (1), Riobamba (1), and Tulcán (5).³⁴ Since the start of 2019 until April of 2020, 31 cases of malaria were notified in Venezuelan migrants, representing 13% of the total imported cases (232). This represents 1.3% of the total malaria cases reported in the country (2,304) during this period. The Ministry of Health estimated that in 2017 and 2018, 36,544 persons were living with HIV in the country and 19,545 (53%) received antiretroviral treatment.³⁵ Between January and December 2019, the Ministry of Health reported that 176 migrant persons living with HIV received care in comprehensive care units in 19 of the country's 24 provinces, mainly in Pichincha (78 persons, 44.6%), Guayas (39 persons, 22%), and El Oro (10 persons, 6%). These provinces are officially part of the



³³ Numbers differ from previous report due to result of epidemiological investigations conducted.

³⁴ Ecuadoran Ministry of Public Health, Report by the National Directorate of Immunizations Strategy.

³⁵ Ecuadoran Ministry of Public Health website, page on HIV. Available from: <https://www.salud.gob.ec/vih/>

migration corridor,³⁶ or they adjoin it. However, since the national government does not have an HIV patient registry that disaggregates data by nationality, and has not yet conducted epidemiological tracing for HIV, no direct link has been established between the national HIV incidence and human migration. As a result of the peaks in HIV incidence, the Ministry of Health has started an HIV patient data registry to ensure access to essential health services. Ecuador reported its first confirmed case of COVID-19 on 29 February 2020 [53] and has registered 78,085 confirmed cases as of 3 August 2020 [54]. The Ministry of Health has reported 275 confirmed COVID-19 cases in Venezuelan migrants, as of 10 August 2020 (275 out of 89,387).³⁷

In 2020, up to 11 April (EW 15), **Guyana** has reported a reduction in malaria cases compared with the same period in 2019. The decrease may be linked to reporting challenges, possibly exacerbated by communication restrictions related to the COVID-19 pandemic. In 2019, 20,502 cases were reported (13,094 *P. vivax*), a 7% increase over the 19,214 reported in 2018. In 2018, there was an approximately 13% increase in malaria cases at the national level compared with 2017, due mainly to cases in Region 1 (Barima-Waini), a region bordering Venezuela, where malaria cases have been increasing since 2017. Localities in Regions 1 and 7, situated along the border with Venezuela—White Water, Arau, Mabaruma, and Kaikan—where the highest number of imported Venezuelan cases were recorded in 2018 (2,056), experienced a sharp reduction in cases in 2019 (354). This is 17% of the total cases reported in Venezuelan migrants in

2019 (2,034). Puruni River (Region 7), the most affected area in 2019, reported 20% of these cases (415). Kaikan in Region 7, near the border with Venezuela, which had a massive outbreak in 2019 (168 cases compared with 17 in 2017), recorded only 5 cases in the first quarter of 2020, thanks to an aggressive response from the National Malaria Program. Guyana continues to be free from measles, diphtheria, and rubella.

In 2020, up to 25 July (EW 30), **Peru** has reported no confirmed measles case. Sixteen suspected cases of measles and 34 suspected cases of rubella were reported. Seven of these are pending classification and 43 were discarded. Three confirmed cases of imported measles were reported in 2019 (2 from Spain and 1 from Brazil).³⁸ Between 18 February and 29 December 2018, 42 confirmed cases of measles were reported, with ages ranging from 4 months to 51 years (median 18 months). No deaths were reported. Cases were from Amazonas, Callao, Cusco, Ica, La Libertad, Lima, Piura, and Puno [44]. Of the confirmed cases, 24 were associated with the genotype D8 circulating in other countries in the Region, by molecular epidemiology or epidemiological link to a laboratory-confirmed case where genotype D8 was identified. As of EW 18 of 2018, one diphtheria case was identified and contained at the northwest border with Ecuador in Amazonas department. No additional cases of diphtheria have been reported in the country since then [55].

In 2020, as of 18 July (EW 29), Peru reported 7,775 malaria cases 41% fewer than the same period in 2019 (13,231). Loreto, the department with the highest number of cases,

³⁶ The humanitarian/migration corridor was established by the national government for the safe, free, and orderly transit of Venezuelan migrants on the northern border of Ecuador toward Huaquillas on the border with Peru. <https://www.ministeriointerior.gob.ec/ecuador-activa-corredor-humanitario-para-garantizar-el-transito-seguro-de-migrantes-venezolanos/>

³⁷ Ecuador Ministry of Health

³⁸ National Center for Epidemiology, Prevention and Control of Diseases / MINSA.



recorded a 52% reduction, but there was a 97% increase in cases in Amazonas department, which has the second highest malaria burden in the country (1,256 cases compared with 636 during the same period in 2019). No deaths from the disease have been reported during this period, while five were reported during the same period in 2019. A decrease in malaria cases has been observed in the country since the start of the COVID-19 outbreak in March 2020, probably because the epidemiological surveillance systems were very busy attending the health emergency due to the SARS-CoV-2 pandemic in Peru, which was quite explosive in the city of Iquitos/Loreto.³⁹ In 2019, 23,869 malaria cases were confirmed, 47% fewer than in 2018 (45,442) [56]. Peruvian health authorities reported 18 imported malaria cases (*P. vivax*) from Venezuela in Tumbes during 2019. In 2018, 31 malaria cases were reported in the Tumbes region, where no

malaria cases had been reported since 2012. Seventeen of these cases were imported from Venezuela [57]. Currently, there is an increase in malaria transmission in the Peru and Ecuador border department of Tumbes and province El Oro, where both countries had previously interrupted malaria transmission. In 2020, as of 11 July (EW 28), 70 malaria cases were reported (*P. vivax*) in the Tumbes region compared with 84 for the entire year 2019 (70 were local, 14 imported from Venezuela) [58].

According to the Ministry of Health's National Health Strategy for Prevention and Control of HIV and Hepatitis, 3,161 Venezuelan migrants received HIV antiretroviral treatment between March 2018 to June 2020, 79% in Lima. Up to the end of 2018, the HIV Prevention and Control Office had a registry of 1,338 Venezuelan citizens receiving HIV treatment, 90% in the

³⁹ According to the SARS-Cov-2 antibody Seroprevalence study carried out in June 2020 in the city of Iquitos, a SARS-Cov-2 Prevalence of 71.1% was found, according to the Loreto Health Directorate.

Lima/Callao area. In relation to TB, during 2019, 1,232 Venezuelan migrants were treated for TB. In 2020, up to June, 739 Venezuelans registered in the health information system of the Ministry of Health received treatment for TB.⁴⁰ A nutritional needs assessment conducted in March 2019 by health partners within the framework of the Regional Inter-Agency Coordination Platform for Refugees and Migrants from Venezuela (R4V) reported that among the children under 5 years old who entered Peru through the binational centers for border health care services (Centros Binacionales de Atención en Frontera, CEBAF), 3% were acutely malnourished, 18% had chronic malnutrition, and 25% had anemia [59]. In Peru, the free application of 17 vaccines that protect against 26 diseases is carried out according to the National Immunization Calendar of the Ministry of Health of Peru, and during 2019, a total of 34,039 Venezuelan migrants were vaccinated. In 2020, as of 4 July (EW 27), 7,538 migrants from Venezuela have been vaccinated, according to official data from the Peruvian Ministry of Health. Due to the national restrictions linked to the state of emergency for COVID-19, the coping mechanisms of over 200,000 vulnerable refugee and migrant families have been stretched. Many have lost their livelihoods and many families report eating once a day. The Government has authorized 100 Venezuelan doctors, to reinforce health personnel during the emergency [60].

Trinidad and Tobago has reported no confirmed measles or diphtheria cases. However, the Ministry of Health reported an increase in imported malaria cases from Venezuela. As of 24 April 2020, there have

been 7 new malaria cases, with 5 imported from Venezuela (*P. vivax*) and 2 being local. Both local cases were directly epidemiologically linked to one of the imported cases. In 2019, there were 36 new malaria cases (1 from Equatorial Guinea, *P. falciparum*; 1 from Ghana, *P. falciparum*; 2 from Guyana, 1 mixed infection with *P. vivax* and *P. falciparum* and 1 *P. vivax*; 2 from Nigeria, 1 *P. malariae* and 1 *P. falciparum*; 1 from Uganda, *P. falciparum*; 27 from Venezuela, 24 *P. vivax* and 3 *P. falciparum*; and 2 local cases, 1 introduced *P. vivax* and 1 indigenous *P. malariae*). Between 2006 and 2017, an average of 15 cases were reported each year. Twelve cases were confirmed in 2017 (8 from Venezuela, 1 from Guyana, 1 from India, and 2 from Nigeria) and 40 in 2018 (38 imported cases: 33 from Venezuela, 4 from Guyana, and 1 from Ghana).⁴¹ In 2018, the Ministry of Health reported that there was no malaria outbreak in Trinidad and Tobago, indicating that the majority of confirmed cases in Trinidad and Tobago were imported from neighboring countries.⁴²

The **indigenous populations** living in border areas of Venezuela are highly vulnerable to epidemic-prone diseases. Of special concern are the Warao people living in border areas between Venezuela and Guyana, who are now migrating to northern Brazil; the Wayúu people, living in the border areas between Venezuela and Colombia; and the Yanomami people, living in remote locations along the border between Venezuela and Brazil [60, 61]. One of the highest HIV prevalence rates in indigenous populations in the Region of the Americas is among the Warao in Venezuela (9.5%) [63]. This population also has among the highest levels of TB. Between 31

⁴⁰ Ministry of Health of Peru.

⁴¹ Trinidad and Tobago Ministry of Health, unpublished data.

⁴² Trinidad and Tobago Ministry of Health, press note, "No malaria outbreak in Trinidad and Tobago," 28 August 2018. Available from: <http://www.health.gov.tt/news/newsitem.aspx?id=866>

December 2017 and 29 December 2018, a total of 541 measles cases were confirmed in indigenous communities in Venezuela, 61% of them in Delta Amacuro State, among the Warao ethnic group.⁴³ Additionally, 62 deaths were reported, of which 35 were in Delta Amacuro (all in the Warao ethnic group) and 27 were in Amazonas (26 in the Sanema and 1 in the Yanomami ethnic groups). In 2019, up to 28 December, 139 cases of measles were reported among indigenous communities, all in Zulia State, in the following ethnic groups: Añu (50 cases), Putumayo (2 cases), Wayu (85 cases), and Yupka (2 cases). In 2018, 183 suspected measles cases were reported among indigenous populations in Brazil, of which 145 were confirmed in Roraima State and 2 (both fatal) in Pará State. The majority of confirmed cases in Roraima are in the Auaris indigenous health district, which borders Venezuela. In 2019, there were no confirmed cases of

measles reported among indigenous communities in Brazil [20]. Up to June 2020, among the Warao indigenous population in Brazil, there were 9 fatal cases of COVID-19 (6 in the State of Pará, 1 in Roraima, 1 in Amazonas and 1 in Pernambuco) [64].

Regarding water services, among Venezuela and its seven neighboring countries, four have a percentage of the population covered by a safely managed service of greater than 50%: Chile (98.6%), Ecuador (75.1%), Colombia (73.2%), and Peru (50.4%). The four others have a lower quality service, called basic service: Brazil (98.2%), Guyana (95.5%), Trinidad and Tobago (98.2%), and Venezuela (95.7%). In regard to sanitation, the percentage of the population with access to safely managed services is lower for all countries; Chile has the highest percentage (77.5%), while the five countries with the lowest percentage are Brazil (49.3%), Peru



The indigenous populations living in border areas of Venezuela are highly vulnerable to epidemic-prone diseases.

⁴³ The difference with respect to that reported in previous Epidemiological Updates is due to the retrospective adjustments made by the national authorities based on the review, consolidation, and investigation of cases in indigenous populations.

(42.8%), Ecuador (42%), Venezuela (23.8%), and Colombia (17%). However, Trinidad and Tobago and Guyana hardly reach basic service, and have population coverage of 93.4% and 85.8% respectively. Open

defecation is also an issue and in some countries it exceeds 2%, which is already considered high, as is the case of Peru (6.5%), Venezuela (3%), and Colombia (3.1%) [27].

Response of the Pan American Sanitary Bureau

In response to the evolving situation in Venezuela, PASB has been involved in intensified technical cooperation with the Ministry of Health, international partners, and local nongovernmental organizations (NGOs) to enhance health systems management; improve the prevention and control of communicable and noncommunicable diseases; reduce maternal and neonatal mortality; improve emergency management; implement preparedness and response actions to the COVID-19 pandemic; and

purchase medicines, vaccines, laboratory reagents, and other supplies for health programs, both directly and through the PAHO Regional Revolving Fund for Strategic Public Health Supplies (the Strategic Fund)⁴⁴ and PAHO Revolving Fund for Access to Vaccines (the Revolving Fund).⁴⁵ To maximize this technical cooperation, the following support has been provided since December 2017: an active incident management system at Headquarters level and in the PAHO/WHO Representative Offices in



PASB has intensified its technical cooperation with the Ministry of Health, international partners, and local nongovernmental organizations to support health systems delivery capacity.

⁴⁴ The PAHO Strategic Fund was created in 2000 by the Organization as a mechanism to improve equitable access to safe, efficacious, and quality medicines and supplies in the Americas.

⁴⁵ The PAHO Revolving Fund provides countries and territories with guarantees of quality, safe, and adequate supplies of vaccines and related products, and lower prices.

Brazil, Colombia, Ecuador, Peru, and Venezuela; release of funds from the PAHO Emergency Disaster Fund and the PAHO Epidemic Emergency Fund; the activation of special internal administrative procedures to facilitate fast and agile technical cooperation with the targeted countries; and enhanced partnerships and resource mobilization.

PASB received financial contributions from the following partners to support its technical cooperation agenda in Venezuela and neighboring Member States: Canada, European Union, Japan, New Zealand, Switzerland, United States of America, Spain, Global Fund to Fight AIDS, Tuberculosis and Malaria, Measles and Rubella Initiative, Task Force for Global Health, United Nations (UN) Central Emergency Response Fund, UN Foundation, Vaccine Ambassadors, Project HOPE/Proyecto Esperanza, and the WHO Contingency Fund for Emergencies.

PASB quickly scaled up its technical cooperation with Venezuela and neighboring countries. Targeting various public health issues, since November 2016 PASB has deployed multidisciplinary technical field missions, involving the mobilization of over 120 personnel. The in-country mission teams and the field offices include personnel with expertise spanning several technical areas: emergency management, entomology and vector control, surveillance, epidemiology, health and laboratory services, health services management, immunization, cold chain, infection prevention and control, antenatal care, maternal and neonatal health and post-abortion care, sexual and reproductive health, clinical management, public health, coordination and logistics, administration, and risk communication. In addition to its established presence on the ground through the PAHO/WHO Representative Offices, PASB has completed

more than 122 technical cooperation missions at national and subnational levels to Venezuela, Colombia, Brazil, Guyana, Ecuador, and Peru.

PASB is supporting the Venezuelan Ministry of Popular Power for Health (Ministerio del Poder Popular para la Salud, MPPS) in the implementation of its National Rapid Response Plan to halt the measles and diphtheria outbreaks. The plan is aimed at interrupting transmission of these diseases and includes universal mass vaccination for children aged 6 months to 15 years against measles and 7 to 15 years against diphtheria, together with extensive contact tracing and associated laboratory work. It is underpinned by the mobilization of national, regional, and municipal rapid response teams. In addition to the rapid response plan, Venezuela, with support from PASB, is also implementing a national plan to increase vaccination coverage in indigenous communities, municipalities with low coverage, and difficult-to-reach areas. The vaccination campaign from April 2018 to August 2019 achieved 100% coverage for measles nationwide, with coverage above 95% for diphtheria in most states. According to MPPS data, as of August 2019, 8.9 million children aged 6 months to 15 years and more than 500,000 persons over 15 were vaccinated against measles in all states, and 5.1 million children between 7 and 15 years of age against diphtheria.⁴⁶ MPPS reported that during Vaccination Week in the Americas 2019, more than 381,000 children were immunized in Venezuela. Six types of vaccines to protect the population against 11 diseases were made available, 7,124 vaccination posts were in operation, and 231 indigenous communities received vaccinations. In November 2019, Venezuela reached 12 weeks with no new reported cases of measles. Since then, PASB has been supporting MPPS

⁴⁶ Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations. Analysis of the Expanded Program on Immunization, 2019 and 2020. March 2020. Unpublished.



to document evidence of the end of the outbreak, which is the first step in the process of re-verification of measles elimination in the country. As of July 2020, PASB has provided technical advice for the preparation of reports for all 23 states and the Central District, as input for the national report that must be submitted for the elimination re-verification process. Additionally, as part of the polio risk mitigation plan, a national polio campaign was implemented between July and September 2019 in the country. By the end of the campaign, 3,290,426 children 2 months to 5 years of age had been vaccinated, and 79% of the federal entities (19 out of 24) and 77% of the municipalities nationwide (257 out of 335) achieved coverage above 95%. Following the national polio campaign, PASB provided technical assistance to MPPS to evaluate the results of the campaign and introduce the National Response Plan to Poliovirus Outbreaks, complemented by a poliovirus outbreak simulation exercise.⁴⁷

To date, with PASB's support, more than 19,916 health workers, including 4,811 vaccinators, have been trained in measles and diphtheria outbreak response in 23 states and the Capital District. Additionally, in collaboration with national and local immunization programs in the country, PASB

has been facilitating the purchase of vaccine supplies through the PAHO Revolving Fund, paid for primarily by Venezuela. The following supplies and vaccines have been purchased since 2017: pentavalent vaccine; BCG; inactivated polio vaccine (IPV) and oral polio vaccine (bOPV); diphtheria-tetanus (DT) vaccine for the immunization campaign; diphtheria antitoxin (DAT); human tetanus immunoglobulin; MMR, MR, and yellow fever vaccines. In 2017, the combined total of these vaccines and associated syringes procured was 33 million doses/units, which increased to 43 million doses/units in 2018. Due to outstanding arrears, purchases in 2019 with country funds were affected. During that year, 4 million syringes were procured against the country's line of credit. In addition, PASB was able to mobilize resources from different sources to procure around 450,000 doses/units of BCG, bOPV, DAT, and rabies immunoglobulin (IG). In 2020, PASB, in collaboration with UN Foundation and Vaccine Ambassadors, procured 2.5 million doses of bOPV to meet the country annual need and 50,000 doses of MR for outbreak response. PASB also coordinated a donation of 4.7 million doses of yellow fever vaccine from the Government of Brazil and partnered with Direct Relief for the procurement of the necessary syringes (4.7 million syringes for application, plus 1 million syringes for dilution).

To facilitate national immunization efforts and reach more communities nationwide, PASB also supported the strengthening of: a) the vaccine cold chain by acquiring additional supplies, including safety boxes, water packs, vaccine carriers, thermometers, refrigerators, and cold boxes; 100 Comprehensive Community Health Services (ASIC) from 11 federal entities were prioritized to receive cold chain equipment based on their geographical location to serve as vaccine

⁴⁷ Bolivarian Republic of Venezuela, Ministry of Popular Power for Health. Directorate of Immunizations. Annual Report: documentation of the polio eradication status 2019. 2020 Aug. Unpublished.



From May 2018 to December 2019, PASB supported the monthly mobilization of tens of thousands of vaccinators to implement nationwide immunization activities.

warehouses for the MPPS Health Posts within the Community Healthcare Network (5 in Amazonas, 10 in Anzoátegui, 10 in Apure, 10 in Aragua, 10 in Bolívar, 10 in Carabobo, 4 in Delta Amacuro, 11 in the Capital District, 10 in Miranda, 10 in Táchira, and 10 in Zulia). PASB also trained more than 2,600 health professionals in the 23 states and the Central District on cold chain network diagnosis; b) laboratory capacity for diphtheria and measles diagnosis, including flocked swabs, cotton swabs, dry tubes, Amies transport medium, Remel M4RT transport medium, blood extraction syringes, kits for measles IgM/IgG, kits for rubella IgM/IgG, kits of primers/probes for RNA detection of measles and rubella, and five sets of primers for diphtheria diagnosis; and c) laboratory diagnosis for poliovirus through provision of reagents and supplies for viral isolation and intratypic characterization. Together with WHO, UNICEF, and the Measles and Rubella

Initiative (MRI), PASB has also implemented alternative support mechanisms to ensure continued access to the MMR vaccine and to supplies for a nationwide mass campaign to interrupt measles transmission.

In support of MPPS, PASB has deployed 74 international and national consultants to all states to strengthen the coordination capacity of the regional health directorates and support measles and diphtheria immunization-related activities. From May 2018 to December 2019, PASB supported the monthly mobilization of between 19,000 and 31,000⁴⁸ vaccinators to implement nationwide immunization activities. PASB has also facilitated the availability of vehicles for the vaccination brigades (regular fleet of approximately 60 vehicles and up to 100 at peak levels). To ensure the availability of epidemiological formats needed for the notification, investigation, and control of

⁴⁸ 800 to 1,400 people a day, six days a week.

vaccine-preventable diseases, at the end of 2019, PASB provided MPPS with the 2020 formats required for case investigation and contact tracing in the 23 states and Central District. In addition to the immunization efforts, PASB has implemented actions for outbreak prevention and control at the community level through the provision of essential health kits for the management of measles and diphtheria to healthcare workers and community leaders. These supplies, complemented by training, have empowered communities as first responders for the early detection and control of suspected cases.

Since the first COVID-19 case was reported in Venezuela in March 2020, PASB has been working closely with MPPS to adapt vaccination strategies to maintain nationwide coverage of the regular vaccination program, while ensuring the protection of health workers. PASB has supported local vaccination teams to maintain service at the vaccination post through support to implement recommended safety practices that observe national guidance on social distancing, are adapted based on the current situation of the national health system, recognize the necessity to alleviate the burden of vaccine-preventable diseases, are revised based on the context of local transmission of SARS-CoV-2, and consider other demographic factors as well as the availability of vaccines and supplies [65]. In March 2020, PASB supported MPPS during a national vaccination campaign. In addition, PASB has provided support for the investigation of adverse events associated with vaccines. PASB is currently implementing a 2020-2021 workplan designed, in coordination with MPPS, around three strategic lines of action: a) interruption of active outbreaks; b) prevention of new outbreaks; and, c) strengthening of the routine immunizations program. By the end of July 2020, actions implemented under the workplan have contributed to increasing availability of

supplies for vaccination; providing direct technical support to the 23 states and the Capital District to build technical capacities of the immunizations personnel at the regional and local levels; delivering logistics support for the transportation of health personnel, vaccines, and supplies, through terrestrial and fluvial routes, to 335 municipalities, while prioritizing indigenous populations and communities with restricted access.

In response to one confirmed case of yellow fever reported during the week of 11 November 2019, PASB provided technical assistance in case investigation, development of the response plan for the prevention and control of the outbreak, revision of the clinical case, active search for suspected cases and epizootics, training of the reference laboratory technical teams, and development of a manual for the clinical management of yellow fever cases. PASB also supported MPPS to prepare a National Plan for the Control and Prevention of Yellow Fever 2020-2024 within the framework of the WHO global strategy for the elimination of yellow fever epidemics (EYE). The National Plan aims at guiding the implementation of vaccination campaigns and routine program strategies, as well as epidemiological surveillance actions. PASB advised on the planning and implementation of yellow fever vaccination activities in Bolívar State in December 2019. An additional 6-month vaccination campaign was scheduled to start in April 2020 as part of the Vaccination Week of the Americas to mitigate the outbreak risks in nine other states with enzootic corridors. However, the 6-month campaign, which targeted 4.5 million at-risk persons between 2 and 59 years, has been postponed due to the nationwide response to the COVID-19 pandemic. An additional challenge hindering progress in the implementation of the National Plan and vaccination campaigns is the low available stock of yellow fever vaccines. As of April



PASB provided trainings, supplies and technical guidance to health professionals from the public and private sectors to support COVID-19 response efforts.

2020, the country only had 523,800 doses of yellow fever vaccine in the national warehouse for the routine immunization program.

Since the first semester of 2020, PASB has been supporting Venezuela in the development and implementation of its COVID-19 Preparedness and Control Plan, including technical support to scale up epidemiological surveillance, strengthen laboratory capacity and points of entry, implement risk communications strategies, and improve clinical management of positive cases. PASB has supported the design and distribution of informational materials for the prevention and control of COVID-19 to airports, health facilities, and the community. The information materials distributed include over 2.6 million text messages (SMS) with information on COVID-19 prevention and how to cope with quarantine restrictions (distributed with the support of the telecommunications company Digitel), 5,000 labels about hand-washing, 25,000 about

safe travel, 28 information banners on COVID-19 for the international airport in Maiquetía, and cards, posters, and brochures developed with MPPS and the United Nations Population Fund (UNFPA) on COVID-19 for pregnant and breastfeeding women.

To increase the surveillance and diagnostic capacities, PASB provided training to seven professionals from the national reference laboratory on molecular diagnosis (RT-PCR) along with the donation of supplies for 5,900 diagnostic tests. In addition, PASB continues to provide technical guidance to MPPS for the development and updating of surveillance, laboratory, patient care, and infection prevention and control guidelines, including training to epidemiologists, medical doctors from both the public and private sectors, members of scientific societies, laboratory personnel, social communicators, and airport personnel. PASB has also coordinated the evaluation of the COVID-19 reference hospitals to assess the level of preparedness and increase the capacity of the essential

services. Subsequently, PASB supported the timely provision of personal protective equipment (PPE) as well as hygiene and disinfection kits to the designated hospitals, including the procurement and delivery of 400 PPE kits (including 200 gloves, surgical masks, N95, gowns, and goggles per kit) and 2 PAHO COVID kits (including 5,000 gloves, 2,500 surgical masks, 100 N95, 2,500 gowns, and 100 goggles per kit). Additionally, as of July 2020, PASB in collaboration with WHO and Direct Relief, has delivered to Venezuela and additional 27,000 gloves, 12,000 surgical masks, 3,960 N95, 1,004 gowns, 200 goggles, 5 oxygen concentrator systems, 1,425 face shields, 2,000 shoe covers, and 2,000 bouffant caps. PASB has also supported the strengthening of the epidemiological surveillance system, conducted investigation of suspected cases and contact tracing among travelers and returned migrants, and contributed to the publishing of the National Bulletin. PASB has substantially contributed to the expansion of molecular diagnosis in Venezuela, by channeling the procurement and donation of supplies to the National Reference Laboratory, as well as equipment and supplies to open a new regional laboratory in Yaracuy to decentralize the COVID-19 diagnosis workload. Finally, PASB is providing ongoing advisory through its established field offices in the border states and collaborates with NGOs in the field to deliver life-saving interventions to indigenous communities.

PASB has been exploring alternative support mechanisms to ensure continuity in access to essential medicines in Venezuela, along with key partners, other UN agencies, and specific civil society groups. The country participates in the PAHO Strategic Fund, which it has used to procure antiretrovirals (ARVs), TB medicines, and antimalarials with its own funds up to 2017. After a reduction in the level of procurement for Venezuela in 2016, PASB, in coordination with MPPS, increased its

support for the procurement of high-priority medicines such as immunosuppressant drugs, medicines for maternal and child health care, medicines for high-prevalence chronic diseases, and reagents for diagnostics and blood. These medicines are provided to the health services networks of both MPPS and the Social Security Institute. PASB has also provided technical support in the rational selection of medicines to optimize available resources, and in the analysis of supply options for strategic public health supplies. In 2018, PASB, with the support of various partners, supported the acquisition of US\$ 12.6 million (\$2.1 million in 2018; \$4.9 million in 2019; \$5.6 million in 2020) of essential medicines through the Strategic Fund, including immunosuppressive medicines, ARVs, antimalarials, anti-TB medicines, insulin and other medicines used for diabetes, antihypertensives, thyroid hormones, rapid tests for diagnostics, and reagents for monitoring viral load in persons living with HIV, as well as essential medications to prevent and/or address the main maternal and perinatal causes of severe morbidity and mortality.

PASB has also supported direct procurement of essential medicines and supplies for the country through channels outside the PAHO Revolving Fund and Strategic Fund. From March 2018 to July 2020, with the contributions from strategic partners and donations, PASB has distributed over 934.71 tons of medical and WASH supplies, equipment, and medicines to prioritized health facilities, laboratories, and health partners who provide life-saving services in the 23 states and the Central District in Venezuela. As of July 2020, 2,170 Interagency Emergency Health Kits (IEHKs) were provided to benefit 21.7 million patients in emergency services and in communities. PASB also distributed 128 reproductive health kits, 25 malaria kits, 254 NCD kits, 112 light trauma kits, 128 ERH kits,

71 basic IEHK modules, 320 PPE kits, 30 trauma surgical kits, and 473 other kits. Other medicines and supplies were also distributed, including: 150,000 sachets of oral rehydration salts; 16,000 ampoules of oxytocin postpartum treatment; 1,100 adrenaline treatments; 4,000 bottles of trimethoprim/sulfamethoxazole treatments for children's urinary and respiratory infections; 12,000 tablets of carbamazepine anxiolytic treatments; 800,000 mebendazole antiparasitic tablets; 500,000 metformin tablets for diabetes; 20,000 metronidazole antimicrobial tablets; 1,900 treatments for influenza; 28,000 tacrolimus immunosuppressant tablets; 500 liters of benzyl benzoate for scabies; 9,426,747 vaccines; 2,493,610 vitamins and minerals; 98,400 nutritional supplements; 226,996 cleaning supplies; 2,801,620 water treatment supplies, among others. Medical equipment distributed by PASB includes electromedical equipment, laboratory supplies and reagents, refrigerators, surgical equipment and

supplies, cold chain equipment, ITS and telecommunications equipment, among others.

In collaboration with MPPS, UNAIDS, civil society, and other partners, PASB led the development of a master plan to strengthen the response to HIV, TB, and malaria from a public health perspective [30]. The plan was finalized in July 2018 and has been instrumental in defining priorities and facilitating the coordination of international technical cooperation with the actors involved in the response to HIV, TB, and malaria. During 2019, with support of an exceptional donation from the Global Fund for non-eligible countries in crisis, PASB supported the purchase of ARVs, namely 705,312 bottles of a fixed-dose combination of tenofovir, lamivudine, and dolutegravir (TLD) through the Strategic Fund, thus ensuring access to the WHO-recommended preferred fixed-dose combination. A second exceptional donation from the Global Fund for US\$ 5.85 million was approved at the end of 2019, to support the



PASB has been support the continued procurement and deployment of essentials medicines and supplies, including treatment and diagnostics for HIV, TB, and malaria, to palliate shortages.

procurement and deployment of medicines and diagnostics for HIV, TB, and malaria. It includes funds for continued procurement of TLD, as well as ARVs for alternative regimens and reagents for HIV viral load monitoring. Unfortunately, delivery of these items to Venezuela has been affected and delayed due to the COVID-19 pandemic. Considering the ongoing stock-out of reagents for HIV viral load monitoring, PASB mobilized technical support and resources to implement a population-based survey, to estimate treatment response in persons living with HIV who have transitioned to the new dolutegravir-based regimens. The survey is temporarily on hold due to the COVID-19 pandemic. In 2020, the collaboration between PASB, UNICEF, and UNAIDS contributed to ensuring the distribution of ARV drugs, while mitigating the risk of shortages resulting from the low availability of fuel and the COVID-19 containment measures in place. The distribution of ARVs has been implemented through a two-fold strategy: a) distribution of ARVs and other drugs for the treatment of sexually transmitted diseases and opportunistic infections to the 37 HIV pharmacies in the 23 states and Central District; and b) delivery of multi-monthly treatment (MMD) to the HIV community, scheduling and rescheduling services to consult medical specialists, provision of technical support to social organizations, and establishment of delivery points to facilitate access to communities with restricted channels of transportation. In total, it is estimated that these actions have benefited over 44,912 persons living with HIV as of 30 June 2020. PASB, in coordination with the Government and partners, supported the purchase and donation of first- and second-line anti-TB drugs, covering more than 80% of the estimated funding for anti-TB drug needs for the first year of the master plan. Needs for the second year are being 100% covered with funds from the Global Fund. With funding from partners, PASB has also facilitated the donation of two GeneXpert machines with cartridges for rapid

molecular diagnosis and other laboratory equipment (one centrifuge and one biosafety cabinet) for the National Reference Laboratory. Brazil and private sector partners also donated important quantities of ARVs to Venezuela. There is ongoing coordination with MPPS and partners to address remaining gaps in the master plan [66].

Since April 2017, PASB has scaled up support to MPPS in order to strengthen services in high-priority level I, II, III, and IV hospitals and the primary health care network, and MPPS dependencies in major cities, including Caracas, in 19 states. Some 452 health facilities and organizations are now being supported, up from the 58 targeted in July 2019 (44 outpatient services, 113 ASICs, 3 blood banks, 4 Comprehensive Diagnostic Centers (CDI), 3 indigenous health coordination offices, 24 MPPS dependencies, 6 municipal health directorates, 24 regional health directorates, 6 hospitals of the Venezuelan Social Security Institute (IVSS), 86 MPPS hospitals, 2 laboratories, 28 NGOs, 24 regional epidemiology programs, 21 regional immunization programs, 12 regional environmental health programs, 12 regional maternal and child health programs, 12 regional HIV programs, 7 HIV pharmacies, 4 comprehensive rehabilitation rooms, the Venezuelan Red Cross Society, and 6 offices of the University of Health Sciences). Activities include staff training on hospital safety and prevention of health care-associated infections; implementation of hardware and software for use of the Logistics Support System (LSS/SUMA) to manage health supplies, and evaluations of essential capabilities, including warehousing of supplies in these hospitals; development of hospital emergency contingency plans; training on key technical areas of emergency response, including incident management system for hospitals, establishment and operations of health emergency operations center (EOC), triage, clinical management of



PASB trained health professionals and cluster partners in the use of the Logistics Support System for Supply Management (LSS/SUMA) and SISTOCK.

critical patients in emergency services, diagnostics in emergency services, clinical management of infectious diseases, basic principles of epidemiology for infection control, situation rooms, WASH, and COVID-19 emergency management. As of July 2020, more than 1,484 health professionals have participated in the trainings provided by PASB from 13 hospitals, 14 ASICs, 2 People's clinics, 10 outpatient services, 1 specialized center, and 1 comprehensive diagnostic center. An additional 159 professionals from 32 hospitals and 6 outpatient services in 15 states and the Capital District, and 46 persons from 10 health cluster partners have been trained in LSS/SUMA and SISTOCK. Furthermore, 21 hospitals in eight states (reference hospitals in Anzoátegui, Apure, Bolívar, Capital District, Miranda, Táchira, Vargas, and Zulia) continue to receive support to strengthen emergency room response capacities and have been provided with essential supplies and equipment, such as 17 trauma kits and four surgical supply kits, as well as on-site training in triage, patient flows,

infection control, and emergency room management, and crash cart. Warehouses that supply these emergency rooms are being strengthened through the procurement of equipment and provision of training to improve safety and security conditions.

In coordination with MPPS, PASB has also been monitoring and reporting on the operational status of vital lines (water, electricity, medical gases, supplies and medicines, food, and waste) and essential services (emergency, operating room, ICU, delivery room, X ray, ultrasound, laboratory, sterilization, blood bank, morgue) in 107 hospitals in 23 states and the Central District (39 type I, 25 type II, 20 type III, and 23 type IV) on a regular basis through the mobile "collect tool." The available information from a sample of hospitals during 2019 shows that some critical units operate intermittently (51% of operating rooms, and 10%-20% of intensive therapy units, and 50% of the laboratory and imaging centers) and that there is a shortage of medicines commonly

used in emergency rooms (49%) and operating rooms (28%). This situation is made worse by cuts in the water and energy supply in the country, with 78% of hospitals reporting water supply interruption and 63% reporting power outage [65].

PASB is also working with MPPS to strengthen the national primary health care network, prioritizing 61 ASICs, 61 comprehensive diagnostic centers, and 458 community health centers. With PASB's support, equipment, medicines, and supplies have been provided, and professionals from many states have been trained in essential methodologies to improve obstetric and other medical services, the detection and treatment of mental health problems, and the management of diphtheria and measles cases. Over 301 Basic IEHKs were delivered in 2019 to address basic health care needs at the primary care level for approximately 301,000 people over three months. These were provided to 14 ASICs in Amazonas, Anzoátegui, Aragua, Bolívar, Capital District, Carabobo, Delta Amacuro, Lara, Monagas, Sucre, Táchira, and Zulia; to 12 MPPS institutions; and to 9 NGOs (Acción Solidaria, Acoana, AVESSOC, Aviación para la Salud, Caritas Venezuela, Fe y Alegría, Misioneras de Madre Laura, Proyecto Esperanza, Fundación Proyecto Maniapure). Customized kits with basic healthcare supplies and equipment (thermometers, stethoscopes, blood pressure monitors, basic medicines, and stationery) have also been provided to community leaders and comprehensive community doctors.

Since 2016, recognizing the challenges that malaria presents, PASB, in coordination with the Venezuelan Government, has supported the purchase and/or donation of essential supplies for malaria treatment and control (antimalarial drugs, rapid diagnostic tests [RDT], and insecticidal mosquito nets) as well as essential supplies and reagents to

strengthen diagnostic capabilities and supplies for the management of complicated malaria. Since 2017, PASB, with the support of various partners, has supported the purchase and/or donation of 738,400 RDT, 214,800 long-lasting insecticidal nets (LLIN), 226,000 artesunate vials for the treatment of severe malaria cases, as well as various antimalarials for the treatment of uncomplicated malaria cases (366,328 treatments of artemether-lumefantrine, 6,228,810 tablets of chloroquine, 325,000 tablets of primaquine 5 mg, 91,730 tablets of primaquine 7.5 mg, and 11,775,000 tablets of primaquine 15 mg).

PASB has also provided priority guidelines, communication materials, tools, and training for health workers. Approximately 700 healthcare workers have been trained in case management of uncomplicated malaria in Anzoátegui, Aragua, Bolívar, Carabobo, Delta Amacuro, Mérida, Monagas, Sucre, and Zulia states; 300 doctors and nurses have been trained in management of artesunate in severe malaria; and 100 health workers have been trained in malaria detection and surveillance in Sucre and Delta Amacuro. In addition, two workshops were held for certification of microscopists and training in quality assurance in microscopy, with 26 microscopists certified. In 2018, PASB supported MPPS in finalizing and launching the Action Plan for Malaria Control 2018-2021, and helped implement a plan for prevention and management of malaria in pregnancy in municipalities in Bolívar (Callao, Sifontes, Heres, Caroni), Anzoátegui (San Cristóbal, El Carmen, Puerto La Cruz), Zulia (Machiques de Perijá, Jesús María Semprún, Mara, Sucre), and Sucre. PASB also provided technical support at the national and local levels for the organization and implementation of malaria control actions, including distribution of 200,000 long-lasting insecticidal nets to the states with the highest malaria transmission rates (Amazonas,



Anzoátegui, Bolívar, Carabobo, and Sucre), and for the development of projects and protocols for malaria surveillance and response. During 2019, PASB provided technical support on the response to malaria outbreaks in four states (Carabobo, Mérida, Nueva Esparta, and Zulia). Support was also provided for information management, which has been enhanced with the standardization of epidemiological surveillance databases for malaria. Ten situation rooms have been set up (seven located in the Regional Directorates of Amazonas, Apure, Bolívar, Capital District, Carabobo, Miranda, and Monagas; one in the Vice Ministry of Public Health Networks; one in the General Directorate of Epidemiology; and one in the PAHO/WHO Representative Office). PASB also supported evaluation of the national malaria situation and associated planning exercises, resource mobilization actions including representation to the Global Fund jointly with WHO for Venezuela's eligibility during the 2020-2022 allocation period, as well as updating of the strategic lines and priorities of the Master Plan. Additionally, PASB supported the strengthening of malaria surveillance actions in border areas of Brazil, Colombia, and Guyana.

PASB and Venezuela are collaborating on a comprehensive plan to prevent and control noncommunicable diseases, promote mental health, and prevent violence. Areas of action

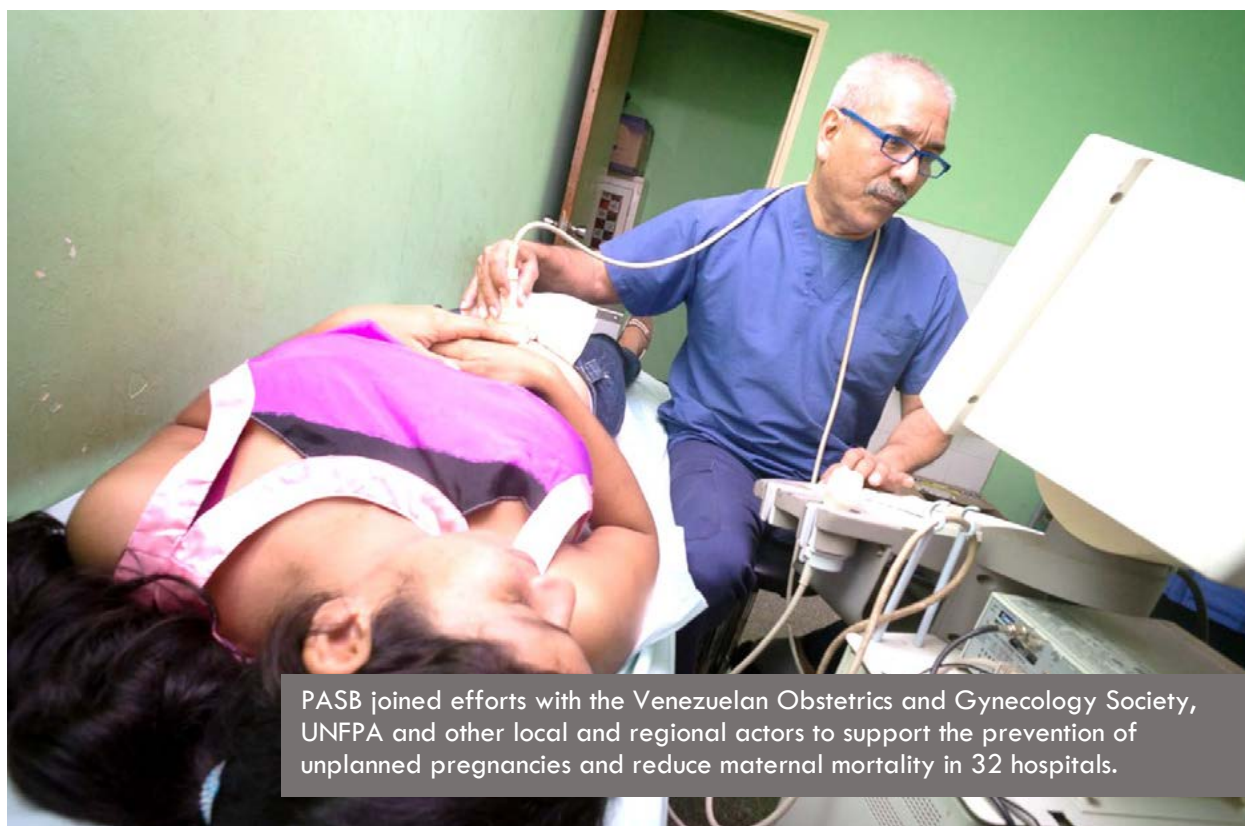
include increasing the multisector response to NCDs through the creation of interinstitutional committees and plans for physical activity and alcohol reduction; greater access to essential medicines for the treatment of various diseases; management of hypertension and diabetes; provision of basic equipment to primary and specialized care centers; and training to increase health workers' ability to identify and manage people with NCDs and mental health conditions. PASB supported MPPS in the definition of a medicines, supplies, and equipment list for the management of NCDs, including mental health services, in affected populations. Engagement with donors around this list has made possible, during the period 2019-2020, the mobilization of over 37 million units of essential medicines to serve approximately 1.7 million persons through the MPPS health network and civil society organizations, the distribution of basic equipment to 11 emergency rooms, and the training of more than 400 health professionals on the clinical management of NCD complications. PASB has also contributed to the development of the national strategy on the management of mental health conditions resulting from the COVID-19 pandemic, under implementation in 2020. PASB is working with the National Nutrition Institute (INN) on a project to improve the detection and management of acute malnutrition in children who are receiving care in communities and in nutritional recovery centers around the country. Other health interventions are being coordinated with the immunization program, such as provision of vitamin A and antiparasitic agents to children under 5. PASB experts have also supported trainings and have helped update and develop tools and protocols to detect nutritional deficiencies in order to strengthen the surveillance and management of malnourished children in communities and at the Education and Nutritional Recovery Services (SERNS) in prioritized states. PASB procured 220 kits for

severe acute malnutrition with medical complications (SAM/MC kits), which were delivered to the 24 SERNs that support nutritional recovery at their corresponding reference hospitals in all states. These kits benefited an estimated 8,082 children under 5 diagnosed with acute malnutrition without medical complications and saved the lives of 5,777 children under 5 who suffered from severe acute malnutrition with medical complications. The kit includes antibiotics, antifungals, deworming drugs, antimalarials, and anti-scabies medicine, as well as a rehydration mix to treat cases of severe acute malnutrition. In addition, 129,012 from all 24 states benefited from nutritional and anthropometric assessments.

Since 2017, PASB has provided systematic support to MPPS to strengthen the management of potentially severe neonatal and maternal complications in the eight jurisdictions with the highest proportion of maternal deaths (Anzoátegui, Aragua, Bolívar, Carabobo, Lara, Miranda, and Zulia states, and the Capital District), as well as the states of Delta Amacuro, Mérida, Nueva Esparta, and Sucre due to the high proportion of maternal deaths. As of July 2020, PASB, in coordination with national and local health authorities, trained 981 healthcare workers and professionals in essential interventions to reduce severe maternal and neonatal morbidity and mortality as well as an additional 49 health professionals in Apure, Mérida, and Nueva Esparta on contraception methods after obstetric events. Through the PAHO Strategic Fund, PASB also supported the purchase of essential medicines, including 103,012 amoxicillin/clavulanic acid tablets, 100,000 doses of dexamethasone, 80,000 misoprostol tablets, 9,000 doses of hydralazine, and 200 vials of pulmonary surfactant, among others. Additionally, PASB, in coordination with MPPS, developed a plan to prioritize the systematic use of immediate postpartum family planning at the same time

and location as facility-based childbirth care. “Training of trainers” methodology has been implemented and has already reached 1,476 health professionals (1,100 specialists and residents in obstetrics and gynecology, and 376 comprehensive community doctors) in 14 prioritized states, increasing local capacities to provide safe postpartum and post-abortion care to vulnerable populations. In 2019, PASB also convened a technical meeting and training focused on improving quality of care to mothers and newborns, and reproductive health services; implemented maternal and perinatal death surveillance and response actions; and conducted the assessment of essential capacities in maternity wards and neonatal services in 14 hospitals.

Since September 2018, PASB has been supporting MPPS in the implementation of the National Plan for Reduction of Maternal and Neonatal Mortality from a life-course perspective. In 2019, the plan prioritized actions in 14 states, including Anzoátegui, Aragua, Bolívar, Carabobo, Capital District, Lara, Miranda, and Zulia (the eight states with highest maternal mortality, which together account for 70.9% of the total maternal deaths reported in 2017), as well as Amazonas, Delta Amacuro, Guárico, Sucre, Táchira, and Vargas states (which also reported a high proportion of maternal deaths). In 2020, PASB expanded the prioritized states from 14 to 17 by including Apure, Mérida, and Nueva Esparta, due to the high proportion of maternal deaths reported in those states. PASB is helping MPPS to deliver interventions to improve neonatal and maternal health, with an estimated direct beneficiary population of 213,200 women, approximately one-third of the women hospitalized for childbirth or abortion in a year. The plan is guiding the efforts to strengthen local health facilities, ASICs, and reference hospitals to better manage potentially serious health complications in mothers and newborns,



building health personnel capacities, and contributing to the availability of basic health supplies and medicines in facilities that provide services to mothers and newborns. During 2019, PASB joined efforts with the Latin American Center for Perinatology, Women and Reproductive Health (CLAP-WR), the Venezuelan Obstetrics and Gynecology Society, the international NGO IPAS, DKT International, and UNFPA to implement actions focused on prevention of unplanned pregnancies to reduce maternal mortality in 32 hospitals. In that same year, PASB supported MPPS to implement technical visits to 31 of the 32 hospitals located in the 14 prioritized states. The technical cooperation provided in 2019 made possible the delivery of 30,882 medical interventions (placement of intra-uterine devices [IUD] and subdermal implants, injections of medroxyprogesterone, and manual vacuum aspiration [MVA]). In 2020, PASB is supporting MPPS to strengthen the Perinatal Network and Maternal Route, as well as the committee for surveillance, analysis, and response to maternal mortality

within the context of the National Plan for Reduction of Maternal and Neonatal Mortality. Equipment and supplies—including 101,870 IUDs, 41,400 subdermal contraceptive implants, 67,857 tablets of misoprostol, 205 MVA kits, and 25,600 medroxyprogesterone self-injectable ampoule, as well as 12 UNFPA emergency sexual and reproductive health kits—have been provided to prioritized hospitals and maternity rooms, enough to care for approximately 180,000 people for three months.

During technical visits to the 17 prioritized states, PASB has worked with health authorities to standardize the tools for the maternal deaths root cause analysis and the audit of neonatal deaths. PASB has provided technical advice to MPPS on the use of the coding system from the International Classification of Diseases (ICD) to include COVID-19 as a cause of death. PASB has also implemented actions to strengthen the children, adolescent, and women information

systems, including maternal and perinatal information, through the implementation of the Perinatal Information System (SIP) Plus, developed by PASB. The system facilitates the collection of information to assess the quality of women's health services, including maternal and neonatal health care, for timely decision-making. The most recent update of the system permits real-time access to health information from all levels of care, thus allowing decisionmakers to determine health policies and use of resources in a timely and efficient manner. The system is linked with the Unified Health System (SUIS) used by MPPS and is currently undergoing a pilot test in four public hospitals through five workstations (a server located at the central level in the MPPS, and another four for each of the hospitals). Additionally, in 2020, PASB and MPPS established a working group to improve the capacity of relevant health personnel and the information system to analyze maternal mortality. The working group, which will review the estimate of Maternal Mortality Ratio (MMR) for the period 2014-2018, is tasked to disaggregate late and external maternal mortality, establish the research methodology to avoid underreporting, and reclassify the basic causes of maternal death, in an effort to have more reliable statistics and information for decision-making and monitoring progress in women's, children's, and adolescents' health.

After the COVID-19 emergency was declared, PASB supported MPPS to identify 32 health facilities in 17 states (Amazonas, Anzoátegui, Apure, Aragua, Bolívar, Carabobo, Delta Amacuro, Guárico, Lara, La Guaira, Mérida, Miranda, Nueva Esparta, Sucre, Táchira, Zulia, and the Capital District) within the Integrated Network of Health Services (RISS) for timely referral and management of maternal and neonatal cases positive for COVID-19. Jointly with MPPS and UNFPA, between June and July 2020, PASB has delivered training to health personnel for

the response to positive cases of COVID-19 in maternal and neonatal patients, reaching a total of 170 health professionals trained from 15 states. PASB has provided essential equipment, supplies, and medicines, and has supported the improvement of infrastructure conditions, such as repairing air conditioning, in the Hospital Samuel Maldonado in San Antonio, Táchira. PASB contributed to the development of the guideline COVID-19: Recommendations for the Comprehensive Care of Pregnant Women and Newborns in the Bolivarian Republic of Venezuela jointly with MPPS and UNFPA [67], and prepared and distributed communications material targeting pregnant women and the community on the topic of COVID-19 management during pregnancy, childbirth, and breastfeeding. PASB also developed a tool to monitor suspected, probable, and confirmed cases of COVID-19 in pregnant and postpartum women, as well as in abortion situation, and neonates. The tool provides MPPS with technical information on the epidemiological and clinical response to COVID-19 in pregnant women and newborns.

PASB is supporting implementation of comprehensive community health services based on a life course approach, aimed at addressing the needs of indigenous communities in locations with difficult access. In 2019, PASB supported Amazonas and Delta Amacuro states to implement comprehensive healthcare campaigns, reaching over 1,000 daily interventions. The campaigns included prenatal and well-childcare services, immunizations, sexually transmitted diseases, malaria screening, nutritional assessment, cervical cancer prevention, sexual and reproductive health, and health promotion for older adults. In 2020, the support was expanded to reach the Achaguas and Pedro Camejo municipalities in Apure State. PASB also developed a diploma course in Women's, Childhood and Adolescent Health from a Life



PASB in coordination with UNICEF, has provided technical cooperation to strengthen the capacities of the health and WASH sectors to ensure WASH standards in healthcare facilities.

Course Approach to be delivered through the PAHO Virtual Campus for Public Health.

In response to the ongoing water shortages in 2019, PASB procured 4.5 million aquatabs to treat 121.5 million liters of drinking water. Of these, 4.5 million were distributed to hospitals in Anzoátegui, Apure, Bolívar, Delta Amacuro, and Táchira; just under 160,000 are in storage for emerging needs. PASB also procured 4,000 plastic drum barrels, seven small generators, 2,225 jerrycans, three water pumps for two hospitals and one ASIC, and two 5,000-liter bladder tanks. Since October 2019, PASB, in coordination with UNICEF, has provided technical cooperation to strengthen the capacities of the health and WASH sectors to ensure WASH standards in healthcare facilities. Support provided includes assessment of WASH conditions in health facilities in 12 states, delivery of 168 cleaning kits to 43 health facilities (29 correspond to sentinel establishments for

COVID-19), training of 248 professionals on WASH and infection prevention and control (IPC) issues, production of technical WASH and IPC material, strengthening of the coordination mechanisms of the health and WASH sectors, in coordination with the protection and accommodation cluster. In response to floods that affected an estimated 35,000 people in 111 municipalities in 2018 (mainly in Amazonas, Apure, Bolívar, and Delta Amacuro), PASB supported the provision of drugs and medical supplies in Amazonas and Bolívar to treat emergency-related health conditions. PASB also distributed 90,000 aquatabs in Bolívar to ensure access to safe water for three weeks for nearly 6,000 people living in shelters. In 2019, PASB opened five field offices in the border states of Zulia, Táchira, Amazonas, Bolívar, and Delta Amacuro, thus expanding its technical capacity coverage to 62.5% of the national territory. The new field offices are providing cooperation at the local level in



Through its decentralized field teams, PASB is facilitating public health surveillance, alert, and response in the context of the COVID-19 outbreak in Venezuela.

key areas of the emergency response such as health systems management, prevention and control of communicable and noncommunicable diseases, emergency response coordination, public health surveillance, and needs assessment. PASB has developed strong partnerships in the field to ensure synergies and coordinate the health sector response for increased impact of services delivered with state and municipal authorities (regional health directorates, indigenous health directorates, ASICs, local hospitals, and other organizations in the field). At this level, PASB leads the Subnational Health Clusters' work in the targeted territories. During the first year of operation of the field offices, PASB established coordination with the health authorities to respond to the health situation in the areas of influence, supported the implementation of situation rooms, managed health information for coordination and decision-making, and advised on prioritization of actions and health risk management. PASB field offices have been pivotal for the implementation of emergency actions to increase the capacities of the health facilities, health commodities management in warehouses and pharmacies,

health personnel capacity building, and to ensure access of the population to health services. Through the field offices, PASB has been able to coordinate the distribution of humanitarian aid, including medicines, health equipment and supplies, WASH equipment and supplies, cold chain equipment and supplies, electric generators, among others, to prioritized health facilities serving the most vulnerable populations in border states. Currently, the field offices are also facilitating public health surveillance, alert, and response in the context of the COVID-19 outbreak in Venezuela.

In July 2020, the Humanitarian Response Plan 2020, Venezuela, was published. PASB coordinated the prioritization of the health sector needs through its role as Health Cluster lead agency. PASB has appointed a Health Cluster Coordinator with exclusive dedication, and successfully added 65 partners to support the humanitarian response in Venezuela: 40 national NGOs, 12 international NGOs, 1 donor partner, 9 UN agencies, 1 MPPS entity, and 2 observers. With leadership from PASB, the Health Cluster was structured around six strategic

technical areas: a) Hospitals and Essential Services; b) Noncommunicable Diseases and Mental Health; c) Epidemiological Surveillance and Malaria; d) Immunizations; e) Maternal and Child Health and Sexual and Reproductive Health; and f) Logistics. The Health Cluster meets at least once a month and convenes ad hoc meetings when necessary.

PASB has also provided support in **neighboring countries** (Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Peru, and Trinidad and Tobago) and has established field offices in border areas and/or deployed additional personnel there. Activities are aimed at strengthening health system response in border areas, vaccination, and epidemiological surveillance at the local and national levels to detect and respond effectively to the needs of Venezuelan migrants and the host population.

In **Argentina**, PASB has supported the Ministry of Health in strengthening capacities for rapid detection and notification of measles cases in the country. Since September 2019, vaccination against measles has been carried out in the country with a focus on the most affected areas: Buenos Aires City and Buenos Aires Province. PASB is also working with partners to strengthen disease prevention and response in migrant communities. Support is being provided, along with other UN agencies, for the provision of social services as well as information on how to access the health system in shelters receiving Venezuelan migrants. Together with the International Organization for Migration (IOM) and the UN Refugee Agency (UNHCR), PASB is implementing a vaccination survey toward strengthening of vaccination services for Venezuelan migrants in Buenos Aires. In response to the COVID-19 pandemic, PASB has been collaborating with UNHCR, IOM, and other partners to sensitize and train organizations working in reception centers for



Venezuelans in prevention, early detection, and rapid response actions in case of suspected COVID-19 cases. Work has been done on communication campaigns, preventive measures, mental health care, and access to contraceptive methods as a human right.

In **Brazil**, PASB is providing ongoing support to national and local authorities for the control of communicable diseases, including immunopreventable diseases, malaria, and COVID-19, among others, as well support in data analysis, and implementation of an early warning system. Residents and Venezuelan migrants from 6 months to 49 years of age, mainly children under 15, have been vaccinated against measles. PASB has provided technical cooperation to strengthen vaccination activities, including support for implementation of the action plan for measles prevention and control in Boa Vista (Roraima) until measles was interrupted there; establishment of a vaccination post in Pacaraima (Roraima), on the border with Venezuela, which operated continuously 10 hours a day, seven days a week until it was transferred to the Brazilian Army in August 2018 under “Operation Welcome”; and training for representatives of all states on preparedness for a rapid response to measles outbreaks. As of 18 July 2018, 71,675 vaccines from the national vaccination program were administered to 127,875

Venezuelan migrants. Until April 2019, when the Brazilian Army took charge of all immunization activities in Roraima following reestablishment of endemic measles transmission, PASB provided support to improve case management and investigation through the implementation of infection prevention and control (IPC) protocols, isolation rooms, hospital screening, contact tracing, training of health professionals, active institutional and community research, and laboratory capacity-building, among other activities. A situation room was established with the support of PASB to coordinate measles response and monitoring at the state level. One of PASB's main areas of technical cooperation in Brazil for the remainder of 2019 will be the strengthening of local capacities in mental health and psychosocial support for Venezuelan migrants and the local host community in Boa Vista. PASB is also helping the country develop a national action plan for the sustainability of measles and rubella elimination. As part of the COVID-19 response, the Ministry of Health is providing additional funds for upgrading of health units, strengthening and expansion of hospital care, strengthening of primary health care, and acquisition of supplies, equipment, PPE, and vaccines. The municipalities of Pacaraima and Boa Vista received support for primary health care and to expand hospital care [41].

In **Chile**, PASB has supported the Ministry of Health in strengthening capacities for rapid detection and reporting of cases in the country. PASB has also provided technical support to the Ministry of Health to train epidemiological field teams within the framework of the International Health Regulations (IHR). Currently, PASB is supporting the Ministry of Health in the development of the National Plan for Migrants' Health, aimed at ensuring a

comprehensive health response based on their specific needs. PASB is also supporting the review of the national action plan for measles-rubella elimination, including integration of specific actions for the management of cases from Venezuela (permanent and focused monitoring of cases and contacts) and enhanced information flow through the National IHR Focal Point.

In **Colombia**, PASB continues to work with health authorities and partners to strengthen capacities at entry points in Arauca, Barranquilla, Cartagena, La Guajira, Nariño, Norte de Santander, and Vichada for immediate care and for immunization, detection, and follow-up of measles contacts, active case-finding in institutions and in the community, and vaccination of susceptible persons. From January 2017 to June 2020, Colombia administered 2,087,183⁴⁹ vaccines of various types from the national vaccination program to registered Venezuelan migrants. A total of 19,667 migrants also received mental health care in La Guajira, Norte de Santander, and Vichada through coordinated efforts by the local health system and PASB, while more than 507,000 migrants in 29 departments and 138 municipalities received primary health care services from 34 Health Cluster partners. Cumulatively, the Ministry of Health has reported a total of 6,999,671 medical services to 789,345 migrants between March 2017 and May 2020. Out of this total, 71.4% of medical services were medical procedures, 13.7% were emergency care, and 12.6% were outpatient services. In addition, 245,197 migrants (13.9% of the total migrant population registered in Colombia) have enrolled in the national health system.

PASB has also supported national and local authorities in: a) training healthcare workers for rapid response to imported measles cases,

⁴⁹ Expanded Program on Immunization, Ministry of Health and Social Protection, reports by vaccinators stationed along border areas



Immunization activities in a vaccination post for migrants and host communities supported by PASB in the border area of Paraguchón in La Guajira, Colombia

case management (including complicated malaria), effective vaccination strategies, nutritional screening of children under 5 years old, and management of the LSS/SUMA logistics system for supply management; b) stepping up epidemiological surveillance and health information reporting; c) strengthening diagnostic capacity by acquiring reagents for the National Health Institute and providing a virologist for expert support to the measles screening process (supporting the transportation of biologicals, as well as purchasing malaria rapid tests for health institutions); d) facilitating the establishment of vaccination posts in the departments of Arauca, La Guajira, and Norte de Santander, and supporting a surge in human resource capacity through the hiring of 200 vaccinators in Barranquilla (30), Cartagena (70), La Guajira (70), and Norte de Santander (30) to combat the measles outbreak; e) implementation of hospital contingency plans; f) coordination of binational actions with Ecuador to develop joint actions to strengthen the response capacity of health services, improve the health information system, share

best practices and lessons learned, and promote regional and local strategic partnerships to improve health care among Venezuelan migrants; and g) increasing the health care delivery capacity of local health institutions through the provision of basic emergency health kits, kits for obstetric emergencies, nutrient supplements, PPE, and communications equipment.

With respect to these supplies, 180 post-exposure prophylaxis (PEP) kits and 53 basic medicine kits were procured and distributed to 28 local health institutions in Arauca, La Guajira, and Norte de Santander; 80 nutritional supplement packs were delivered in La Guajira and Norte de Santander to improve the nutritional condition of children at risk, including malnourished Yupka indigenous children; 74 kits for emergency delivery and obstetrics, along with supplies and equipment for pediatric emergency rooms, were provided to hospitals in the departments of Arauca, La Guajira, and Norte de Santander; and 1,000 hygiene and dignity kits were delivered to the migrant population in the

departments along the border with Ecuador and Venezuela. PASB has also delivered medicines and essential equipment to increase the operations capacity in emergency services and maternity wards. Since the onset of the measles outbreak, PASB has delivered over 127 tons of health supplies and medicines to strengthen basic health care, immunizations, laboratory networks, diagnosis and treatment of communicable and noncommunicable diseases, maternal and child health care, sexual and reproductive health, WASH, mental health care, and emergency services. PASB has also delivered essential medicines and equipment to strengthen emergency services and maternity wards in 22 prioritized health facilities, has delivered supplies and equipment to five public health laboratories, and continues to support the availability of mental health services in 10 departments. In 2019, PASB supported the national authorities to implement a national vaccination campaign against measles by recruiting 228 vaccinators, providing vaccination kits, and delivering training to community leaders in La Guajira. PASB, with contributions from its partners, also procured 34,600 doses of influenza vaccine in June 2019 to vaccinate Venezuelan migrants. Between 2017 and first quarter of 2019, the Ministry of Health vaccinated 7,592 children and 25,575 pregnant women and adults 60 years of age and over against influenza. In the context of the COVID-19 pandemic, over 4,800 PPE have been delivered to Health Secretariats in 16 departments prioritized due to the incidence of COVID-19 and the high transit of migrant population.

Working with partners, PASB is also providing support for extra-institutional health care delivery, such as mobile health units and the distribution of personal and family protection kits to reduce health risks, thus improving the capacity for immediate response and expanded services through the delivery of supplies and medicines to prioritized public

health institutions. In this regard, as of July 2019, one mobile unit and three fixed care units were operating in Arauca and Nariño to provide direct clinical care to 7,006 people, dental care to 126 people, and sexual and reproductive health care to 101 women. PASB also hired four nutritionists to provide surge capacity in nutritional assessment and management of severe acute malnutrition in the departments of Cesar, La Guajira, Sucre, and Vichada.

In **Ecuador**, PASB has provided ongoing support to national counterparts to strengthen control and response for emerging and reemerging diseases, including measles, malaria, and diphtheria, within the IHR framework, and to ensure timely access to health services. PASB is working closely with the Ministry of Health on initiatives to improve epidemiological surveillance and field investigation, vaccination coverage, water and sanitation, and basic health care access for migrant populations, with emphasis on priority care for children under 5 years of age, pregnant women, elderly people, people with disabilities, and indigenous populations in the border area with Colombia. Capacity to deliver health care in the migration corridor along the northern and southern borders of the country (Rumichaca, San Miguel, Mira, Mascarilla, El Chaco, Ambato, Riobamba, and Huaquillas) has been enhanced with PASB's support. This includes providing experts for vaccination activities



and procuring essential medicines and medical supplies, renewable supplies, and PPE for health personnel. It also includes conducting training activities, including: a) training on rapid response to imported measles cases in order to activate rapid response teams at different levels of the health system and provide on-site technical assistance to nine health areas; b) development of skills in epidemiological surveillance; c) training for healthcare workers in the management of obstetric and neonatal emergencies; d) rapid training on mental health and psychosocial first response for 120 healthcare workers in the cities of Tulcán, Huaquillas, Ibarra, and Ambato; and e) training on water quality monitoring to improve the capacity of local government staff and water service providers in the provinces and border areas. Thanks to the support of PASB and partners, in coordination with national authorities, between January 2018 and April 2020, 681,969 persons received medical attention; 111,965 migrants under 15 years of age were screened for their vaccination status, and 51,298 were vaccinated. PASB and the Ministry of Health conducted a joint mission to the northern border in July 2020 to assess the situation of populations in situation of mobility in the context of COVID-19. Identified areas for cooperation included the strengthening of health care services, community surveillance, infection prevention and control, and the organization of health service networks.

In **Guyana**, PASB has been working closely with the Ministry of Public Health to monitor the condition of migrants and strengthen epidemiological surveillance, information management, detection, verification, risk assessments, and alerts on events related to epidemic-prone diseases, as well as early warning and outbreak response. This includes support for a syndromic surveillance system for acute respiratory illness, rash with fever, and undifferentiated fever in Regions 1 and 7.

PASB experts are also working with national authorities to conduct risk communication activities, assess immunization coverage and laboratory capacities to identify potential health needs in areas with migrants, and strengthen the immunization program, which includes vaccinating migrants on arrival. PASB has also been providing support for malaria outbreak response in Kaikan, an area along the border with Venezuela.

In **Peru**, PASB has been providing ongoing technical support to national counterparts to strengthen epidemiological field investigation and respond to local and imported measles cases. This includes mobilization of national experts to support an ongoing follow-up vaccination campaign aimed at vaccination of all children aged 1 to 10 years at the national level. PAHO is an active member of the interagency group for migrants and refugees (Grupo de Trabajo sobre Personas Refugiadas y Migrantes, GTRM), and is supporting Ministry of Health resource mobilization efforts to enhance the surge capacity of health services, particularly in areas with the greatest influx of migrants. With a view to ensuring an uninterrupted continuum of care and support for the most-at-risk populations, in coordination with the Health Directorate of Tumbes, PASB has coordinated the health sector response in locations with transiting migrants through joint operations with UNHCR and the Peruvian Red Cross. PASB also supported the procurement and distribution of essential medical supplies



and equipment for the Sagaro/Tumbes Regional Hospital emergency rooms (clinical beds, multi-parameter patient monitors for the intensive care unit, stethoscopes, oximeters, blood pressure monitors, and renewable supplies), and laboratory supplies and reagents to improve epidemiological surveillance in the reference laboratories of Tumbes and Iquitos. PASB mobilized a pediatric specialist to meet the high demand for maternal and child care, as well as a nurse to support health care in the emergency rooms and maintain triage and clinical records in the hospital. It also deployed personnel to provide 24-hour vaccination service at the point of entry in Tumbes (at the CEBAF), procured and delivered additional cold chain equipment to the CEBAF, and conducted a national workshop on rapid response to imported measles case. PASB trained 96 members of rapid response teams, in Tumbes (22), Piura (10), Iquitos (43), and the tri-national border region shared by Peru, Colombia, and Brazil (21), on early detection and response to outbreaks within the framework of the IHR; deployed an expert to support health authorities in Tumbes with the development of a regional health sector plan for outbreak response; and conducted an interagency training on coordination and response in Tumbes. Thanks to the support of PASB and partners, in coordination with the national authorities, between January and 4 July 2020, 7,538 Venezuelan migrants were vaccinated and 34,039 during 2019.⁵⁰

Since the start of 2019, PASB has supported **Trinidad and Tobago** in the purchase of antimalarial medicines and malaria rapid diagnostic test kits for the country, as well as an Interagency Emergency Health Kit. Since 2018, concerted technical support has been provided to strengthen the Expanded Program

on Immunization (EPI) in light of potential risk of introduction of measles, including support for planning and implementing a measles vaccination campaign. Training is also being provided on case detection of and outbreak response for vaccine-preventable diseases, particularly those not commonly seen in the country, with an emphasis on measles. In collaboration with the International Organization for Migration, PASB also provided support for the development, printing, and distribution of bilingual (Spanish and English) health education materials on mental health, arbovirus diseases, influenza, and other communicable diseases. PASB also collaborated with IOM for the development of a Flow Monitoring Survey as part of the Displacement Tracking Matrix for migrant population.

In compliance with the International Health Regulations, PASB has disseminated daily reports on potential public health emergencies of international concern, as well as monthly updated epidemiological reports and alerts to Member States on diphtheria and measles.⁵¹ These have included notifications of the increased number of cases in Venezuela and recommendations to: a) implement a high-quality surveillance system sensitive enough to provide timely detection of any suspected cases; and b) prevent the introduction and spread of measles and diphtheria through the vaccination of susceptible populations.

According to criteria included in the regional measles elimination plan, if transmission persists for 12 months or longer in a given geographic area, endemic transmission is reestablished. Thus, endemic transmission of measles has been reestablished in Brazil and Venezuela, but the other 33 PAHO Member States maintain their elimination status [67-69].

⁵⁰ Peruvian Ministry of Health Immunization Program

⁵¹ PAHO/WHO, Epidemiological Alerts and Updates. Available from:

https://www.paho.org/hq/index.php?option=com_content&view=article&id=1239&Itemid=2291&lang=en

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