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A. PLAN OF ACTION FOR THE ELIMINATION OF NEGLECTED INFECTIOUS DISEASES AND POST-ELIMINATION ACTIONS 2016-2022: MIDTERM REVIEW

Background

1. The purpose of this document is to report to the Governing Bodies of the Pan American Health Organization (PAHO) on progress in the implementation of the Plan of Action for the Elimination of Neglected Infectious Diseases and Post-elimination Actions 2016-2022 (Document CD55/15 and Resolution CD55.R9 [2016]) (1, 2).

Analysis of the Progress Achieved

2. To varying degrees, progress has been made in meeting the indicator targets of the six strategic lines of action established in the plan of action. The main sources of information used in this midterm review were the reports that the countries submit annually to PAHO and the World Health Organization (WHO), the reports of the technical cooperation visits, and the reports of regional or subregional meetings on the matter. A summary of the progress in each strategic line of action, objective, and indicator is presented below.

<i>Strategic Line of Action 1: Strengthen innovative and intensified disease surveillance, diagnosis, and clinical case management of neglected infectious diseases (NIDs)</i>	
Objective 1.1: Reduce the lethality rate of visceral leishmaniasis and the proportion of children with cutaneous leishmaniasis	
Indicator, baseline, and target	Status
1.1.1 Number of endemic countries that have reduced the lethality rate of visceral leishmaniasis by 50% Baseline: 0 Target: 5	As of 2017, four of the five countries had met the target (the countries are expected to meet the indicator target within the established timeframe), instruments for diagnosis, treatment, and surveillance of visceral leishmaniasis were developed (3, 4), and drugs were procured at a better price through the Regional

Indicator, baseline, and target	Status
	Revolving Fund for Strategic Public Health Supplies (Strategic Fund).
<p>1.1.2 Number of endemic countries that have reduced the proportion of children under 10 years old with cutaneous leishmaniasis by 50%</p> <p>Baseline: 0 Target: 8</p>	<p>As of 2017, five countries had reduced the proportion of cutaneous leishmaniasis cases in children under 10, and two of the three remaining countries had met the target.</p> <p>The countries are expected to meet the indicator target within the established timeframe.</p>
Objective 1.2: Accelerate actions to interrupt domiciliary transmission of Chagas disease by the principal vectors	
Indicator, baseline, and target	Status
<p>1.2.1 Number of endemic countries and territories where the entire endemic country or territory, or the endemic territorial subdivision, has a domestic infestation index (either by the principal triatomine vector species or by the substitute vector) of less than or equal to 1%</p> <p>Baseline: 17 Target: 21</p>	<p>As of 2018, 17 countries had a domestic infestation index of less than or equal to 1%. Although the numerical indicator was unchanged, it should be noted that qualitatively, Honduras and Nicaragua went from <1% to elimination of the vector (<i>Rhodnius prolixus</i>) throughout their territory. Paraguay also interrupted vector-borne transmission throughout the country, including in the Chaco region, and Argentina had added Corrientes Province (and with it, all of Mesopotamia, Argentina) to the territory in which vector-borne transmission has been interrupted.</p> <p>New guidelines were published for the diagnosis, treatment, and surveillance of Chagas disease (5), and access to drug donations were facilitated.</p> <p>It is very unlikely that all the targeted countries will meet the targets by 2022.</p>
Objective 1.3: Further reduce the burden of leprosy	
Indicator, baseline, and target	Status
<p>1.3.1 Number of endemic countries and territories with a high burden of leprosy that have less than one new case per million population with grade 2 disabilities at diagnosis</p> <p>Baseline: 3 Target: 7</p>	<p>As of 2017, six countries had a high burden of leprosy and less than one new case per million population with grade 2 disabilities. Only one of the target countries had not met this objective, but it has exhibited a gradual reduction and is expected to achieve the objective by 2022.</p> <p>Instruments have been developed for the diagnosis, treatment, and surveillance of leprosy (6), and access to drug donations have been facilitated.</p>

Indicator, baseline, and target	Status
<p>1.3.2 Number of endemic countries that have eliminated leprosy as a public health problem at the first subnational level</p> <p>Baseline: 16 Target: 23</p>	<p>As of 2017, 18 countries had eliminated leprosy. Countries are making significant progress.</p> <p>All the target countries are very likely to accomplish this by 2022.</p>
<p>Objective 1.4: Implement diagnosis and case management of cystic echinococcosis/hydatidosis patients</p>	
Indicator, baseline, and target	Status
<p>1.4.1 Number of endemic countries that have implemented sensitive serological and ultrasound screening for cystic echinococcosis/hydatidosis in endemic areas</p> <p>Baseline: 2 Target: 7</p>	<p>As of 2018, five countries were implementing this screening. Instruments have been developed for the diagnosis, treatment, and surveillance of cystic echinococcosis/ hydatidosis (7).</p>
<p>1.4.2 Number of endemic countries that monitor and characterize the number of treated people screened for cystic echinococcosis/ hydatidosis in endemic areas</p> <p>Baseline: 2 Target: 7</p>	<p>As of 2018, five countries were monitoring and characterizing the number of treated people. The countries will meet the indicator target within the established timeframe.</p> <p>To facilitate diagnosis, early detection, and treatment monitoring and improve surveillance, the South American Initiative for Control and Surveillance of Cystic Echinococcosis/Hydatidosis has been launched.</p>
<p>Objective 1.5: Strengthen case and event management of human plague in the framework of the IHR through improved clinical and diagnostic protocols</p>	
Indicator, baseline, and target	Status
<p>1.5.1 Number of plague-endemic countries with improved surveillance and clinical and laboratory network diagnostic capabilities</p> <p>Baseline: 1 Target: 5</p>	<p>As of 2018, only one country had made progress toward meeting this objective. In 2017, Peru's 2010 prevention and control regulations and algorithm for clinical and laboratory diagnosis of plague were revised to include the proper use of rapid diagnostic tests in primary care in endemic areas of the country. This will also be done in Bolivia, Brazil, and Ecuador. Some countries had difficulties accessing training, but four may ultimately accomplish this.</p>

Strategic Line of Action 2: Strengthen preventive chemotherapy and increase access to basic health care for NIDs	
Objective 2.1: Increase access to preventive chemotherapy for populations at risk of selected NIDs according to PAHO/WHO recommendations	
Indicator, baseline, and target	Status
<p>2.1.1 Number of endemic countries that have achieved the recommended treatment target coverage¹ of the population at risk of lymphatic filariasis, STH, schistosomiasis, trachoma, and/or onchocerciasis necessary to interrupt transmission, depending on the country's epidemiological situation</p> <p>Baseline: lymphatic filariasis, 2; soil-transmitted helminthiasis, 5; schistosomiasis, 0; trachoma, 2; onchocerciasis, 1</p> <p>Targets: lymphatic filariasis, 4; soil-transmitted helminthiasis, 25; schistosomiasis, 2; trachoma, 3; onchocerciasis, 2</p>	<p>As of 2018, the countries' situation in terms of the recommended treatment target coverage of the population at risk of selected neglected infectious diseases was as follows:</p> <p>Lymphatic filariasis: three countries had achieved coverage. In 2017 and 2018, Guyana achieved the minimum target coverage of 65% in the four known endemic regions. The indicator target is expected to be met by 2022.</p> <p>Soil-transmitted helminthiasis: six countries have achieved the coverage. Ten countries are conducting deworming in the preschool population, and 11 are deworming school-age children (8). The number of countries meeting the target is expected to increase by 2022.</p> <p>Schistosomiasis: no country has achieved coverage. Only two countries needed to introduce mass administration of drugs as one of the interventions for eliminating this disease.</p> <p>Trachoma: no country has achieved the coverage. Colombia has fallen below the baseline, although 67% of its endemic districts has $\geq 80\%$ coverage (9), and Brazil is reassessing the epidemiological situation. The targets for this indicator should be revised, as there is a risk that they will not be met.</p> <p>Onchocerciasis: no country has achieved the coverage. Optimal coverage has been achieved in some communities in Brazil and Venezuela, but, despite these countries' efforts, minimum coverage of 85% in all rounds of treatment has not been achieved in all endemic communities.</p> <p>Access to donated drugs has been facilitated for countries that needed it, and instruments had been developed to improve the planning, implementation, and monitoring of mass drug administration (10, 11).</p>

¹ Treatment coverage is the proportion of the group at risk of each disease for which treatment is provided. The targets for minimum treatment coverage each year are: lymphatic filariasis, $\geq 65\%$; soil-transmitted helminthiasis, $\geq 75\%$; schistosomiasis, $\geq 75\%$; trachoma, $\geq 80\%$; and onchocerciasis, $\geq 85\%$.

Objective 2.2: Eliminate NIDs that are targeted for preventive chemotherapy, including collection of evidence to support elimination	
Indicator, baseline, and target	Status
<p>2.2.1 Number of endemic countries that have eliminated transmission of onchocerciasis and schistosomiasis and have eliminated lymphatic filariasis and blinding trachoma as a public health problem</p> <p>Baseline: onchocerciasis, 4; schistosomiasis, 0; lymphatic filariasis, 0; trachoma, 0</p> <p>Target: onchocerciasis, 6; schistosomiasis, 4; lymphatic filariasis, 3; trachoma, 4</p>	<p>As of 2018, Colombia, Ecuador, Guatemala, and Mexico had eliminated onchocerciasis transmission. No country has eliminated schistosomiasis. There is evidence that some Caribbean countries may have eliminated schistosomiasis, but this has yet to be documented. Brazil and the Dominican Republic are on the way to eliminating lymphatic filariasis (they are expected to do so by 2022). Mexico eliminated trachoma in 2017. Brazil and Guatemala may meet the target, while Colombia is at risk. Peru documented a trachoma focus for the first time in 2017 and began interventions (12).</p>
Objective 2.3: Increase access of at-risk and exposed people to quality rabies immune globulin (RIG) and rabies human vaccine	
Indicator, baseline, and target	Status
<p>2.3.1 Number of endemic countries with prompt availability of cell culture vaccine and RIG for at-risk and/or exposed people</p> <p>Baseline: 0</p> <p>Target: 11</p>	<p>As of 2018, nine countries had prompt availability of cell culture vaccine; one country was not making frequent use of the cell culture vaccines recommended by WHO for post-exposure human rabies prophylaxis; one country depended on donations because it lacked a procurement mechanism; and three countries had available rabies immune globulin.</p> <p>The indicator target is expected to be met.</p>

Strategic Line of Action 3: Strengthen integrated management of vectors

Objective 3.1: Strengthen integrated management of NID vectors	
Indicator, baseline, and target	Status
<p>3.1.1 Number of NID-endemic countries that have applied strategies related to the integrated management of vectors, according to their epidemiological situation</p> <p>Baseline: 0</p> <p>Target: 6</p>	<p>As of 2018, six countries had competent human resources trained in integrated vector management. In 2018, the 56th Directing Council approved the Plan of Action on Entomology and Vector Control 2018-2023 (Document CD56/11 [2018]) (13) to strengthen regional and national capacity for the prevention and control of key vectors.</p> <p>This indicator target was met before the established deadline.</p>

Indicator, baseline, and target	Status
<p>3.1.2 Number of endemic countries that have strengthened their capacity in terms of NID entomology, according to their epidemiological situation</p> <p>Baseline: 0 Target: 10</p>	<p>As of 2018, there were eight countries with integrated vector management capabilities and two with consolidated vector surveillance and control systems, and entomological capacity had been strengthened through technical cooperation, including support through seed funds for priority countries.</p> <p>The indicator target is expected to be met by 2022 or earlier.</p>

<i>Strategic Line of Action 4: Strengthen the prevention of select neglected zoonoses through a veterinary public health/One Health approach</i>	
Objective 4.1: Strengthen the prevention of prioritized zoonoses through a veterinary public health/One Health approach	
Indicator, baseline, and target	Status
<p>4.1.1 Number of endemic countries with established capacity and processes to control or eliminate human taeniasis/ cysticercosis (HT/C) and cystic echinococcosis/ hydatidosis (CE/H) through a veterinary public health/One Health approach</p> <p>Baseline: human taeniasis and cysticercosis, 0; cystic echinococcosis/hydatidosis, 1. Target: human taeniasis and cysticercoses, 4; cystic echinococcosis/hydatidosis, 7</p>	<p>As of 2018, just one endemic country had the established capacity and processes to control or eliminate human taeniasis and cysticercosis, and three had begun introducing processes for their control or elimination. The indicator target is expected to be met within the established timeframe.</p> <p>Five endemic countries have capacity and processes to control or eliminate cystic echinococcosis/hydatidosis. The indicator target is expected to be met within the established timeframe.</p> <p>For both diseases, the action taken involved a veterinary public health/ One Health approach.</p>
<p>4.1.2 Number of plague-endemic countries and territories that have established a specific cross-sectoral, integrative, and multidisciplinary plan or norm for plague prevention, surveillance, and control</p> <p>Baseline: 1 Target: 5</p>	<p>As of 2018, four countries had a plan to fight endemic plague. The intersectoral plague surveillance and control plans in Bolivia, Ecuador, and Peru have been updated.</p> <p>There has been good progress in this indicator, with four of the five countries reaching the target.</p>

Objective 4.2: Increase countries' capacity to eliminate dog-mediated human rabies	
Indicator, baseline, and target	Status
<p>4.2.1 Number of endemic countries and territories with established capacity and effective processes to eliminate dog-mediated human rabies</p> <p>Baseline: 28 Target: 35</p>	<p>As of 2018, 32 countries had effective capacity and processes to eliminate dog-mediated human rabies. A marked reduction in human cases has been observed: between 2016 and 2018, only three countries reported autochthonous cases of dog-mediated human rabies.</p> <p>The indicator target is expected to be met within the established timeframe.</p>
<p>4.2.2 Number of endemic countries and territories that can provide evidence confirming they had no autochthonous canine rabies cases in the last two years</p> <p>Baseline: 0 Target: 9</p>	<p>As of 2018, the nine countries had met this goal before the established deadline.</p>
Objective 4.3: Strengthen cross-border coordination to improve surveillance and control	
Indicator, baseline, and target	Status
<p>4.3.1 Number of endemic countries that work collaboratively to strengthen cross-border surveillance of animal sources of rabies, cystic echinococcosis/hydatidosis (CE/H), brucellosis, and visceral leishmaniasis</p> <p>Baseline: rabies, 0; cystic echinococcosis/ hydatidosis, 0; brucellosis, 0; visceral leishmaniasis, 0 Target: rabies, 12; cystic echinococcosis/ hydatidosis, 7; brucellosis, 12; visceral leishmaniasis, 4</p>	<p>As of 2018, six countries were collaborating to strengthen cross-border monitoring of animal sources of rabies; six for cystic echinococcosis/hydatidosis; four for brucellosis; and two for visceral leishmaniasis.</p> <p>The countries will meet indicator targets for these diseases within the established timeframe.</p>

Strategic Line of Action 5: Adopt intersectoral approaches to reduce the risk of NID transmission through increased access to safe water, basic sanitation, hygiene, and improved housing conditions	
Objective 5.1: Develop new partnerships and networks of partners and stakeholders in NID-endemic countries to tackle the social determinants of health and improve living conditions	
Indicator, baseline, and target	Status
<p>5.1.1 Number of NID-endemic countries that establish new networks or groups of partners and stakeholders to support the development and implementation of interprogrammatic and/or intersectoral actions designed to improve living conditions (e.g., potable water, basic sanitation and hygiene, improved housing) in communities at high risk of transmission of NIDs, depending on the country's epidemiological situation</p> <p>Baseline: 0 Target: 17</p>	<p>As of 2018, only two countries had met the target. Interprogrammatic and intersectoral advocacy and integration to tackle the social determinants of health to fight neglected infectious diseases continue to be a real challenge.</p> <p>There is a risk that the target for this indicator will not be met.</p>
<p>5.1.2 Number of endemic countries that have socio-ecologically characterized human plague in their plague-endemic areas</p> <p>Baseline: 1 Target: 5</p>	<p>As of 2018, only one country had characterized their human plague-endemic areas. Three qualitative and quantitative studies had been conducted on the social and ecological determinants of plague in Peru.</p> <p>There is a risk that the indicator target will not be met.</p>
Objective 5.2: Adopt the WHO WASH-NTDs strategy (2015), as adapted for NID-endemic countries in the Region	
Indicator, baseline, and target	Status
<p>5.2.1 Number of NID-endemic countries that use the framework of the WHO WASH-NTDs strategy as part of national or subnational approaches to tackling NIDs</p> <p>Baseline: 0 Target: 6</p>	<p>As of 2018, only two countries had made progress on this indicator. Efforts must be intensified to make water, sanitation, and hygiene part of national programs for NID control or elimination.</p> <p>There is a risk that the indicator target will not be met.</p>

<i>Strategic Line of Action 6: Incorporate innovative approaches supported by operational research and implementation science to eliminate disease transmission and address NID post-elimination actions and new priorities</i>	
Objective 6.1: Develop and implement actions to monitor and sustain the achievement of control and elimination of NIDs in countries that have reached specific elimination goals	
Indicator, baseline, and target	Status
<p>6.1.1 Number of NID-endemic countries that have achieved the goals of elimination of one or more NID and have developed and put in place measures to prevent disease resurgence or reintroduction of Chagas disease, onchocerciasis, lymphatic filariasis, blinding trachoma, dog-mediated human rabies, or cystic echinococcosis/ hydatidosis (CE/H)</p> <p>Baseline: Chagas disease, 9; onchocerciasis, 3; lymphatic filariasis, 3; trachoma, 0; dog-mediated human rabies, 28; cystic echinococcosis/ hydatidosis, 0</p> <p>Target: Chagas disease, 16; onchocerciasis, 6; lymphatic filariasis, 6; trachoma, 4; dog-mediated human rabies, 35; cystic echinococcosis/hydatidosis, 3</p>	<p>As of 2018, the NID-endemic countries had taken the following action regarding elimination:</p> <p>Chagas disease: 12 countries had reported measures to prevent its resurgence or reintroduction, with recertification of the situation.</p> <p>Onchocerciasis: four countries had met the elimination targets for this disease and had introduced measures to prevent its resurgence or reintroduction. It is unlikely that onchocerciasis transmission has been eliminated in the two target countries (Brazil and Venezuela), which means that the target for this indicator is not expected to be met.</p> <p>Lymphatic filariasis: three countries had met the elimination targets and had introduced measures to prevent its resurgence or reintroduction.</p> <p>Trachoma: Mexico was in the process of introducing post-elimination surveillance measures. There is a risk that indicator target will not be met.</p> <p>Dog-mediated human rabies: 33 countries had met the elimination targets. The countries will meet the indicator target within the established timeframe.</p> <p>Cystic echinococcosis/hydatidosis): no country had managed to eliminate it. It will be necessary to revise this indicator and review the PAHO/WHO definition of “elimination”. There is a risk that the indicator target will not be met.</p> <p>The United States Centers for Disease Control and Prevention and three countries are conducting a project in which serological surveillance is used as a complementary tool for communicable disease control (Multiplex Bead Assay or MBA).</p>

Indicator, baseline, and target	Status
<p>6.1.2 Number of NID-endemic countries that have established and implemented cross-border initiatives to carry out joint prevention, control, and elimination actions related to onchocerciasis, lymphatic filariasis, and blinding trachoma in affected populations living in border areas</p> <p>Baseline: onchocerciasis, 1; lymphatic filariasis, 2; trachoma, 0 Target: onchocerciasis, 2; lymphatic filariasis, 5; trachoma, 4</p>	<p>As of 2018, two countries had established cross-border onchocerciasis initiatives and two, lymphatic filariasis initiatives. Two countries had made no progress in cross-border trachoma surveillance. Venezuela had begun border initiatives with Colombia for the prevention, control, and elimination of this disease.</p> <p>There is a risk that the indicator target will not be met.</p>
Objective 6.2: Develop and implement actions to address new NID priorities	
Indicator, baseline, and target	Status
<p>6.2.1 Number of NID-endemic countries that have mapped or documented the epidemiological situation and baseline capacities for other NIDs of national importance</p> <p>Baseline: Buruli ulcer, 0; brucellosis, 0 Target: Buruli ulcer, 4; brucellosis, 12</p>	<p>As of 2018, no country had made progress in documenting Buruli ulcer; three countries had documented the epidemiological situation of brucellosis; two, of ectoparasitic disease (tungiasis). The ectoparasitic disease and yaws situation has been documented in the Region of the Americas.</p> <p>There is a risk that the indicator target will not be met.</p>
Objective 6.3: Compile evidence of the epidemiological status of other NIDs that affect population groups living in vulnerable conditions	
Indicator, baseline, and target	Status
<p>6.3.1 Number of former endemic countries and territories that compile evidence to support the elimination of yaws, lymphatic filariasis, and schistosomiasis</p> <p>Baseline: yaws, 0; lymphatic filariasis, 0; schistosomiasis, 0 Target: yaws, 26 lymphatic filariasis, 6; schistosomiasis, 12</p>	<p>As of 2018, 31 countries had reported data to WHO on yaws; two, on lymphatic filariasis; and three, on schistosomiasis.</p> <p>The indicator targets are unlikely to be met for lymphatic filariasis and schistosomiasis but will be for yaws.</p>

Indicator, baseline, and target	Status
<p>6.3.2 Number of countries and territories where blinding trachoma has been suspected to occur and/or occurs in groups of people living in vulnerable conditions that compile evidence to update their current epidemiological status</p> <p>Baseline: 0 Target: 12</p>	<p>As of 2018, three countries were compiling data to update the epidemiological situation of blinding trachoma. Paraguay and Venezuela were implementing rapid trachoma screening in vulnerable population areas (12). Peru documented a trachoma focus in 2017. A trachoma vulnerability analysis was completed in municipalities in 22 countries. It is hoped that this analysis will promote information gathering. In Guyana and in Paraguay, serological studies are under way that include trachoma.</p> <p>There is a risk that the indicator target will not be met, mainly due to the problem's lack of visibility on domestic agendas. Planning for a trachoma surveillance initiative will begin with countries of the Amazon region (12, 14).</p>

Action Necessary to Improve the Situation

3. Urge the countries to:
 - a) Review the achievements and challenges in each indicator presented in this document in order to take the necessary action, close gaps, and sustain achievements.
 - b) Strengthen political commitment at the highest level and increase human, logistical, and financial resources to control and eliminate NIDs (including post-elimination surveillance).
 - c) Develop intersectoral synergies to tackle the social determinants of NIDs (water, sanitation, housing, education, hygiene, environment, work, tourism, etc.) within the framework of the Sustainable Development Goals and Health in all Policies.
 - d) Promote the inclusion of NID patients in existing social protection systems in the countries to offer them comprehensive services and optimal quality within the framework of universal access to health and universal health coverage.
 - e) Arrange for drug supplies and access to them at affordable prices for the prevention, treatment, and control of NIDs through various mechanisms, such as procurement through the PAHO Strategic Fund and donations through WHO.
 - f) Create the capacity for interprogrammatic NID control and elimination, offering comprehensive care to affected people and communities so that no one is left behind.

- g) Forge partnerships with national and international partners and stakeholders to make progress in meeting the targets of the Plan of Action for the Elimination of Neglected Infectious Diseases and Post-elimination Actions.
- h) Strengthen the regional program for neglected infectious diseases (including the programs for Chagas disease, leprosy, leishmaniasis, water and sanitation, zoonoses, and public health emergencies).

Action by the Directing Council

- 4. The Directing Council is invited to take note of this report and make the comments it deems pertinent.

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