



**Pan American
Health
Organization**



**World Health
Organization**

REGIONAL OFFICE FOR THE **Americas**

REGIONAL CONSULTATION ON DISEASE ELIMINATION IN THE AMERICAS

12-13 MARCH 2015



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**NEGLECTED, TROPICAL AND VECTOR-
BORNE DISEASES UNIT (VT)**

**COMMUNICABLE DISEASES AND HEALTH
ANALYSIS DEPARTMENT (CHA)**

ACRONYMS

ACD	Active case detection
AMI	Amazonas Malaria Initiative
AMRO	The Americas Regional Office of WHO
Bolivia	Plurinational Nation of Bolivia
BMGF	Bill and Melinda Gates Foundation
CDC	U.S. Centers for Disease Control and Prevention
CHAI	Clinton Health Access Initiative
CIDEA	Comprehensive Infectious Disease Elimination Agenda
CME	Continuing Medical Education
CRS	Congenital rubella syndrome
CWW	Children Without Worms
DEC	Diethylcarbamazine citrate
ECC	Eastern Caribbean countries
EMRO	WHO Eastern Mediterranean Region Office
EOT	Elimination of Transmission
EPG	Eggs per gram
EPHP	Elimination as a public health problem
EPI	Expanded program on immunization
GAELF	Global Alliance for the Elimination of Lymphatic Filariasis
GVT	Global Validation Committee
HaMEC	Haiti Malaria Elimination Consortium
HHR	Health and human rights
HIV	Human immunodeficiency virus
ICCPE	International Commission for the Regional Certification of Poliomyelitis Eradication
ID	Infectious disease(s)

INCOSUR	Southern Cone Initiative to Control/Eliminate Chagas Disease
ITFDE	International Task Force on Disease Eradication
ITN	Insecticide-treated net
IVM	Integrated Vector Management
IVR	Ivermectin
IVT	International verification team
JAP	Joint Application Package of WHO
LAC	Latin American and Caribbean
LF	Lymphatic filariasis
MCH	Maternal and child health
MDA	Mass drug administration
M&E	Monitoring and evaluation
MMDP	Morbidity Management and Disability Prevention
MOH	Ministry of Health
MTCT	Mother-to-child transmission
NID	Neglected Infectious Diseases
NMCP	National Malaria Control Program
NPELF	National Program to Eliminate Lymphatic Filariasis
NTD	Neglected Tropical Diseases
NVC	National Validation Committee
OEPA	Onchocerciasis Elimination Program for the Americas
PAHO	Pan American Health Organization
PC (or PCT)	Preventive chemotherapy (for NID)
PCD	Passive case detection
PEG	Post-elimination Guidelines

PM	Program Managers meeting (lymphatic filariasis)
PSAC	Preschool-age children
PTS	Post-treatment surveillance
RDT	Rapid Diagnostic Test
RVC	Regional Validation Committee
RVT	Regional Validation Team
SAC	School-age children
SAFE	Surgery, Antibiotics, Facial Cleanliness, Environmental improvement
SCH	Schistosomiasis
SEARO	WHO Southeast Asia Region Office
STAG	Strategic and Technical Advisory Group
STH	Soil-transmitted helminths
STI	Sexually transmitted infections
TAG	Technical Advisory Group
TB	Tuberculosis
TIPAC	Tool for Integrated Planning and Costing
TF	Follicular trachoma (trachomatous inflammation - follicular)
TT	Trachomatous trichiasis
TI	Trachomatous inflammation - Intense
TAS	Transmission Assessment Survey (for lymphatic filariasis)
TFGH	Task Force for Global Health
USAID	U.S. Agency for International Development
Venezuela	Bolivarian Republic of Venezuela
VC	Vector Control
VPD	Vaccine-preventable disease
WASH	Water, sanitation and hygiene
WHA	World Health Assembly
WHO	World Health Organization
WPRO	WHO Western Pacific Region Office

EXECUTIVE SUMMARY (ANNOTATED)

8

The countries of the Americas, in collaboration with the Pan American Health Organization (established in 1902 as the Pan American Sanitary Bureau), regional office of the World Health Organization (PAHO/WHO) have been pioneers in the elimination of infectious diseases (and their vectors), perhaps we can say ever since the early 1700s beginning with the deployment of variolation to vaccinate against smallpox in Boston and elsewhere. After the confirmation of the “germ theory” of infectious disease and the discovery of tick and insect vector transmission in the late 1800s, countries of the Americas developed the campaigns of the 1910s-1920s to eliminate the yellow fever vector *Aedes aegypti* in Cuba, Panama and Mexico by drainage and improved housing, and to eliminate human hookworm in the southern USA and Brazil by treating infected persons, improving basic sanitation and health education. In addition, in the 1930s the Region also undertook the work to eliminate a species of the African malaria vector complex *Anopheles gambiae sensu lato* from NE Brazil.

Aside from smallpox elimination in the Americas which built up over the last century (and was declared eliminated in the Americas in 1971 and eradicated globally in 1979), the intense work to protect all children against polio and measles by mass vaccination began wholeheartedly in the 1950s led by Jonathan Salk, Albert Sabin and (later) Ciro de Quadros; and cumulated in the 1980s and 1990s with their elimination in the Americas. Regional measles elimination has been sustained since 2002, though a few outbreaks occur from imported cases. Efforts to eliminate rubella and congenital rubella syndrome (CRS) were incredibly successful in the Americas as well. No

endemic cases of rubella had been reported since 2009, and the last endemic congenital rubella syndrome case was also reported in 2009; hence elimination of rubella and CRS in the Region was confirmed by WHO in April 2015. Additionally, in June 2015, Cuba received validation from WHO that it has eliminated mother-to-child transmission of HIV and syphilis, and other countries will follow. Similar light is already envisioned in the Region to pursue elimination of hepatitis B virus.

Aside from these vaccine-preventable infections, the Americas began in the 1950s and 1960s the Region’s work to eliminate vectorial transmission of malaria based on the widespread application of the insecticide DDT. The global initiative to eradicate malaria was launched by WHO in Mexico in the mid-1950s (until by mid-1970s insecticide resistance and other operational problems arose). Today, several countries in the Americas are now malaria-free. Argentina is preparing for external verification of elimination of malaria, which may be followed soon by Paraguay, Costa Rica, El Salvador and a total of ten more countries of the Americas. Indeed, the countries of Mesoamerica and Hispaniola have pledged to eliminate malaria transmission by 2020. As additional examples of success, more recently in multiple countries where vectorial transmission of Chagas disease exists (by the principal intradomiciliary vector), elimination of the main vector and/or interruption of vectorial transmission of disease has been achieved in part or the whole territorial endemic area, along with universal screening of blood banks for the parasite to interrupt blood-borne transmission of Chagas disease. And the story continues, because much more recently onchocerciasis transmission was

found by WHO eliminated in three (Colombia, Ecuador, Mexico) of six countries and in additional foci (in Guatemala and northern Venezuela). Similarly three of seven countries of the Americas are no longer considered by WHO as endemic for lymphatic filariasis. The Region has long achieved the WHO goal of leprosy elimination as a public health problem at the first subnational level in all but one country.

Building on this momentum and expanding and refining the way forward in further disease elimination in the Americas, on 12-13 March, 2015, the Pan American Health Organization's Neglected, Tropical and Vector-borne Diseases Unit of the Department of Communicable Diseases and Health Analysis held a Regional Consultation on Disease Elimination in the Americas. The consultation was intended to bring together experts in elimination and control of infectious diseases – particularly neglected tropical diseases and malaria -- and public health, to provide PAHO with guidance related to the elimination of neglected infectious diseases. The experts were tasked with advising PAHO in helping to shape a conceptual framework to move forward with infectious disease elimination efforts through the Americas in the coming years.

To set the stage during the meeting, PAHO used the 2012 WHO released publication called Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases: Roadmap for Implementation. The report called for the eradication of Guinea-worm by 2015 and of yaws by 2020, the global elimination by 2020 of trachoma as a public health problem, human African trypanosomiasis, leprosy, and lymphatic

filariasis, and prescribed eight regional elimination targets, including some specific to the Americas:

- **2015:** Elimination of onchocerciasis and human rabies transmitted by dogs in Latin America; schistosomiasis in the Caribbean; and Chagas disease through blood transfusion.
- **2020:** Schistosomiasis in the Americas (and globally); and intra-domiciliary transmission of Chagas disease in the Americas.

In defining categories of control, elimination and eradication, WHO adheres to the following terminology and definitions established in April 2014 by the WHO Strategic and Technical Advisory Group (STAG) on Neglected Tropical Diseases [as amended by the WHO STAG NTD in April 2015]:

- **Control:** reduction of disease incidence, prevalence, morbidity, and/or mortality to a locally acceptable level as a result of deliberate efforts; continued intervention measures are required to maintain the reduction.
- **Elimination as a Public Health Problem (EPHP):** A term related to both infection and disease. It is defined by achievement of measurable global targets set by WHO in relation to a specific disease. When reached, continued actions are required to maintain the targets and/or to advance [towards] the interruption of transmission. The process of documenting elimination as a public health problem is called “validation”.

- **Elimination of Transmission (EOT) (also referred to as “interruption of transmission”):**

reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, as a result of deliberate efforts; continued actions to prevent re-establishment of transmission may be required. The process of documenting elimination of transmission is called “verification”.

- **Eradication:** Permanent reduction to zero of a specific pathogen, as a result of deliberate efforts, with no more risk of reintroduction. The process of documenting eradication is called “certification”. Editor’s note: Certification occurs under an International Commission. In a similar process, as a part of the Global Polio Eradication Initiative, in 1994 the WHO Region of the Americas was certified polio-free.

- **Extinction:** Eradication of the specific pathogen so that it no longer exists in nature or the laboratory, which may occur with or without deliberate efforts.

The capacity to demonstrate that targets and/or goals have been reached is dependent in part on the diagnostic tools that are available. In some cases there are no diagnostic tools to satisfactorily demonstrate the interruption of transmission, and the next-best declaration is to deem a disease as being eliminated “as a public health problem”. This will remain as a pending challenge worth putting effort to overcome.

In the final discussions of this Regional Consultation, and after disease-specific discussions on several vaccine-preventable diseases (polio, measles, rubella, congenital rubella syndrome); as well as HIV, congenital syphilis, TB, neglected infectious diseases (lymphatic filariasis, trachoma and schistosomiasis) and malaria, the following points were highlighted.

1. COLLABORATION AND INTEGRATION

The consultation revealed many synergies and opportunities for collaboration and integration in some of the disease elimination programs. Organizing technical meetings to help identify where some of these harmonies are would be helpful. Moreover, placing elimination activities under the auspices of an institutional operational framework could create a natural partnership with the International Task Force for Disease Eradication. Despite the utility of integrated health systems, it remains likely that vertical approaches that employ a targeted focus will be used during the last steps in the path toward elimination in some countries. Determining when and how vertical approaches could be useful or not, would be helpful not only regionally but globally as well. PAHO should make greater efforts to gather more information on this topic.

2. CLARIFYING TERMINOLOGY AND OTHER GUIDANCE FROM WHO

It will continue to be important to work with WHO to clarify and (when possible) improve terminology used as part of the disease elimination path. Particularly related to instruments and documents for verification or certification and the post-elimination phase. Providing additional guidance would help to locate where elimination has been successful and use those experiences to move forward in the region overall. The value of using “linguistic discipline” and a common vocabulary that is technically robust and clear to minimize confusion was cited as very important.

3. THE NEED FOR OPERATIONAL RESEARCH AND AN OVERALL RESEARCH AGENDA

An appropriately focused research agenda would be helpful to overcome obstacles and support a comprehensive elimination agenda for the region. This agenda would focus on providing immediately usable solutions in the field, and help countries reach elimination goals as soon as possible. Guidelines for operational research would be helpful. Research is also needed to determine which other diseases are amenable to the types of interventions that have already been undertaken with malaria, lymphatic filariasis, schistosomiasis, trachoma; perhaps with taeniasis/cysticercosis/neurocysticercosis, fascioliasis, and vaccine-preventable diseases. Quality surveillance data is always needed, as it underpins the decisions that are made towards elimination and post-elimination.

4. MOVING FORWARD

The Americas is in “elimination mode” and there is enthusiasm to advance public health efforts towards elimination of diseases with public health importance; as well as improving available research funding. The NID community needs to capitalize on this. PAHO has incredible standing, respect, and influence in the region, and it is imperative that this is maintained and cultured going forward. This will allow PAHO to work with individual countries and within the region to develop a concerted plan to address NID, including the development of a realistic comprehensive elimination strategy, with priorities for the Americas. In this regard, one of the greatest contributions that PAHO can make is in the area of cross-border activities. Some of the cross-border issues are disease specific but in other cases, diseases occur in multiple countries that may be contiguous. In these situations, PAHO

is positioned to develop a shared, regionally embraced set of goals. PAHO should set the tone that once a disease is targeted for elimination; all countries in the region have a shared interest and obligation to support that effort. The region has a history of disease control and elimination upon which to build this type of regional support, even if a given disease does not occur in a specific country. PAHO is already conforming a regional technical advisory group (TAG) to help guide activities in the Neglected, Tropical and Vector-borne Diseases arena to ultimately benefit countries of the Americas.

Sir George Alleyne, Chairman of the regional consultation group and PAHO/WHO Director Emeritus, ended the meeting with these observations:

- It is clear that PAHO staff have planted seeds that have led to a culture of elimination within the organization. The outstanding question is how to involve other sectors and other regions in disease prevention, control, and elimination in both conceptual and programmatic ways.
- The concept of health and human rights and tackling inequities should be pursued as an overarching framework for eliminating neglected infectious diseases, and underpin the implementation of PAHO activities as an organizing force.
- PAHO would be proud to serve as a learning laboratory regarding successes and failures in disease elimination, and inform other regions about its activities and experience.
- Political will remains a vexing issue. It is not always understood why some diseases generate interest and others do not. Public outcry and interest sometimes translates into political interest. Ultimately, understanding the political landscape in each area and knowing how to maneuver through it is the most effective means to bring issues to the fore and engender support.

CONTENTS

1. Collaboration and integration	10
2. Clarifying terminology and other guidance from WHO	10
3. The need for operational research and an overall research agenda	11
4. Moving forward	11

I. INTRODUCTION AND BACKGROUND 15

A. Purpose of the Meeting	15
B. List of Objectives and Expected Results	15

II. REGIONAL BACKGROUND 16

A. Where Are We in the Eliminating Neglected Infectious Diseases in the Americas?	16
B. Malaria Elimination: Using and Adapting the WHO Certification Processes in the Americas	22
1. Certification Process	23
C. Certification of Chagas Disease Elimination in the Americas	24
Chagas disease prevention and control	25
D. Process of Certification/Verification of Elimination of Vaccine-preventable Diseases in the Americas	27
1. Polio	27
2. Measles, Rubella and Congenital Rubella Syndrome (CRS)	27
E. Process of Validation of Elimination of Mother to Child Transmission of HIV and Congenital Syphilis in the Americas; Perspectives of Elimination for TB and Viral Hepatitis	29
1. HIV and Congenital Syphilis	29
2. Tuberculosis	30
F. Discussion from Initial Presentations	30
1. Clear and consistent terminology, processes, and approaches	31
2. Partnerships, political will, and commitment	31
3. Integrated platforms	31

III. CONCEPTUALIZATION

33

A. WHO Road Map Targets for Neglected Tropical Diseases	33
B. Guiding Regional Disease Elimination Efforts - the Key PAHO Resolutions on Disease Elimination and their Indicators	34
C. Disease Control, Disease Elimination, and Post-Elimination Actions - Is There Any Difference from the Health and Human Rights Perspective?	39
D. The International Task Force on Disease Eradication (ITFDE): How Can the Lessons Learned be Applied to the Americas?	39
E. What is on the Short List for Malaria Elimination and Eradication Strategies in Today's Multi-actor Global Public Health Arena?	40
1. Case Detection and Treatment	41
2. Surveillance	41
3. Vector Control	42
4. Partnerships	42
5. Future Steps	42
F. Elimination of Lymphatic Filariasis -- Reaching the "End Game" of NTD?	43
1. Transmission Assessment Survey	44

IV. CROSS CUTTING ISSUES IN DISEASE ELIMINATION 46

A. Overarching Themes for Discussion	46
Comprehensive elimination agenda	46
Regional roles	46
Risk of losing elimination status and means to sustain elimination	46
Focality	47
Historical endemicity	47
Definitions of elimination	47
Dossiers	47
B. Capturing Lessons Learned from Global and Regional Experiences	48
1. Comprehensive elimination agenda	48
2. Regional roles	49
3. Risk of losing elimination status and means to sustain elimination	49
4. Focality	49
5. Historical endemicity	50
6. Definitions of elimination	50
7. Dossiers	50

V. DISEASE-SPECIFIC TOPICS 51

A. Lymphatic Filariasis Elimination in the Americas	51
1. Acknowledging country success in elimination	51
2. Clarification in terminology	51
3. Countries behind schedule in achieving elimination goals	52
4. Operational research and surveillance	52
B. Malaria Situation in the Americas: Impact of Efforts and Achievements	53
1. Feasibility of elimination	53
2. Reintroduction of Malaria	53
3. Integration with other programs	54
4. Community involvement in elimination effort	55
C. Elimination of Trachoma as a Public Health Problem in the Region of the Americas	55
D. Schistosomiasis Elimination in the Region of the Americas	56
1. Evaluation and Use of Diagnostic Tools for Elimination	57
2. Vector management and animal reservoirs	57
E. Final Comments from Experts	58
1. Collaboration and integration	58
2. Clarifying terminology and other guidance from WHO	58
3. The need for operational research and an overall research agenda	58
4. Moving forward	59

VI. WRAP UP AND NEXT STEPS 60

A. PAHO Closing Remarks	60
B. Next Steps	60

Annex A -- Agenda	61
Annex B -- List of Participants	67
Annex C -- Definitions of NTD Control, Elimination, and Eradication	74
Annex D -- Resources	75
Annex E -- 2013 Extract of the 2nd WHO Global Report on NTDs, Annex 3a	78
Annex F -- 2009 PAHO Directing Council Resolution	80
Annex G -- 2013 World Health Assembly Resolution	96

A. PURPOSE OF THE MEETING

On 12-13 March, 2015, the Pan American Health Organization's Neglected, Tropical and Vector-borne Diseases Unit of the Department of Communicable Diseases and Health Analysis (CHA/VT) held a Regional Consultation on Disease Elimination in the Americas.

The consultation was intended to bring together experts in elimination and control of infectious diseases – particularly neglected tropical diseases and malaria -- and public health, to provide PAHO with thoughts, experience, and wisdom related to the elimination of neglected infectious diseases. The experts were tasked with advising PAHO in helping to shape a conceptual framework to move forward with infectious disease elimination efforts through the Americas in the coming years.

Other attendees included PAHO unit chiefs, regional advisors, specialists, and focal points responsible for coordination of elimination of infectious diseases; and observers. A copy of the agenda is provided in Annex A. A complete list of participants is provided in Annex B.

B. LIST OF OBJECTIVES AND EXPECTED RESULTS

PAHO identified the main objectives for the meeting as to:

1. Review and discuss advances in the definitions, guiding principles, understanding, evidence and consensus on what constitutes “elimination” of infectious diseases, and the

pathways to get there (to the “end game”), including priority neglected infectious diseases (NID) and malaria, in the context of PAHO's disease elimination agenda for the Americas.

2. Undertake an analysis of PAHO's Directing Council Resolution CD49.R19 (2009) on “elimination of neglected diseases and other infections related to poverty”; and other PAHO and WHO resolutions on control and elimination of infectious diseases including NID and malaria. Consider the guidance of the WHO Strategic and Technical Advisory Group (STAG) on Neglected Tropical Diseases (NTD) on definitions of disease elimination.

3. Facilitate an exchange of experiences between experts and staff of PAHO technical programs engaged in efforts to eliminate infectious diseases (including NID, malaria, mother-to-child transmission of syphilis and HIV, and vaccine-preventable diseases, mainly).

4. Make recommendations to PAHO/WHO regarding the questions at table.

During this part of the consultation, speakers made presentations on the process of certification and verification of elimination for diseases such as malaria; Chagas disease; vaccine-preventable diseases; congenital syphilis, hepatitis C and tuberculosis.

A. WHERE ARE WE IN THE ELIMINATING NEGLECTED INFECTIOUS DISEASES IN THE AMERICAS?

Presented by Steven Ault

The presentation provided an overview of the elimination of NID in the Americas, first referring to PAHO's NID Control and Elimination program plan

2010-2015, and PAHO Resolution CD49.R19 (2009) on elimination of neglected diseases and other infections related to poverty. There have been some significant successes in the elimination of NID in the Americas. For example, as of 2013, all countries except Brazil achieved elimination of leprosy at the national level. Eighteen countries have eliminated leprosy as a public health problem at the first subnational administrative level. Colombia and Cuba are close to achieving leprosy elimination at the second subnational administrative level.

Highlights in 2014 and activities for 2015 for lymphatic filariasis, schistosomiasis, trachoma, onchocerciasis, leprosy/Hansen's disease, and soil-transmitted helminths were shared, as were activities in the pipeline for 2015. This information is organized in the table below. The table includes additional details provided by the editors and not presented at the meeting due to time limitations.

16

NID INTEGRATED PLANS OF ACTION

2014 HIGHLIGHTS

- 17 out of 23 priority countries have NID plans, programs, or strategies in place.
- 6 countries launched NID integrated Plans of Action (Honduras, Brazil, Guatemala, Colombia, El Salvador and Nicaragua)
- 3 countries have a draft.
- Honduras has eight subnational operational plans.
- 1 TIPAC training workshop conducted (Brazil, March 2014)
- 1 NID Program Manager training workshop for 7 countries held (Ecuador, December 2014)
- 12 countries using the WHO "Joint Application Package" (JAP). Eight requesting medicines

2015 PIPELINE

- 6 modules for the integrated monitoring of public health interventions, developed by the immunization and NID programs
- 1 TIPAC training workshop for 3 countries and Integrated NID/IDM-Malaria costing tools
- Adjust NID Program Manager Modules - online version and a training workshop in Brazil
- Scale up the number of countries using the WHO JAP
- 1 integrated monitoring training workshop for 7 priority countries
- Regional disease elimination consultation
- NID atlas and online databank (in development)

LYMPHATIC FILARIASIS

2014 HIGHLIGHTS

- 4 LF endemic countries
- 12 million people requiring PC (92% in Haiti)
- 7.1 million people treated (99% in Haiti), 2013
- 3 countries classified as non-endemic (Costa Rica, Suriname, Trinidad & Tobago) (2011)
- 3 countries received drug donation (Haiti, Dominican Republic and Guyana)
- 1 TAS training workshop (Brazil, March 2014)
- 3 countries conducted TAS (Brazil, Haiti, Dominican Republic)
- 1 Morbidity Management and Disability Prevention (MMDP) training workshop - Lymphedema (Guyana, November 2014)
- 15th LF regional PM and RPRG meeting and 1 workshop to analyze lessons learned and next steps for NPELF and formerly endemic countries (Costa Rica, August 2014)

2015 PIPELINE

- 1 country conducting TAS (Haiti Nord and Nord Oeust departments)
- 1 country compiling a dossier for requesting validation/verification of LF elimination (Brazil)
- 1 MMDP training workshop - Lymphedema (Dominican Republic)
- PM meeting - emphasis on TAS surveillance and LF dossiers (Brazil, June 2015)
- Regional consultation on LF, Leishmaniasis and Leprosy MMDP (Washington, DC)

SCHISTOSOMIASIS

2014 HIGHLIGHTS

- 10 endemic countries and territories
 - 1.6 million people requiring PC in 2 countries (Brazil and Venezuela)
 - 2 countries may have residual transmission in some foci (Suriname and St. Lucia)
 - 6 countries and territories may have eliminated transmission (Puerto Rico, Montserrat, Martinique, Guadalupe, Antigua and Barbuda, and Dominican Republic)
 - 2 countries (Suriname, Venezuela) implementing targeted treatment versus MDA
- Dominican Republic conducted an STH & SCH survey - report expected in 2015
 - Schistosomiasis regional meeting - to define the road map towards the elimination of SCH in AMRO (Puerto Rico, August, 2014)
 - 1 SCH & STH laboratory diagnosis & morbidity management training workshop, along with a Continuing Medical Education session (Saint Lucia, August 2014)
 - Systematic review on schistosomiasis prevalence and intensity of infection, 1942-2014

2015 PIPELINE

- Compile evidence on SCH elimination for Puerto Rico & Dominican Republic; and Martinique & Guadalupe
- Support 3 countries to update their epidemiological status in order to address the required PH interventions - Venezuela, Suriname and Saint Lucia

TRACHOMA

2014 HIGHLIGHTS

- 4 endemic countries (Brazil, Colombia, Guatemala & Mexico)
 - 11 Million people living in endemic areas
 - 178,000 people were treated in 2013
- Mexico has compiled a dossier to request the verification of elimination of trachoma as a public health problem
 - Colombia implemented its 3rd MDA and 4th TT surgery campaign
 - Brazil implements SAFE strategy in the areas where there are active foci, with targeted PC - Conducted an integrated campaign for STH, leprosy and trachoma
 - Publication of PAHO/WHO Manual on Trichiasis Surgery for Trachoma in Spanish and Portuguese

2015 PIPELINE

- 3rd Regional Meeting of program managers for the elimination of trachoma as a public health problem (Brazil, August 2014)
- Mexico will finalize and implement protocol to confirm absence of trachoma in municipalities known as non-endemic in Chiapas
- Guatemala will finalize & implement a protocol to evaluate impact of MDA round in Sololá department before starting the post-treatment surveillance phase
- Colombia & Brazil will sustain SAFE strategy
- Colombia will implement a trachoma baseline survey (TF & TT) in 6 departments bordering the known focus of trachoma

ONCHOCERCIASIS

2014 HIGHLIGHTS

- 4 endemic countries (Brazil, Venezuela, Guatemala, México)
- ~25,000 people requiring PC in 2 countries (Yanomami population)
- >85% PC coverage since 2003 in the Region as a whole
- Colombia and Ecuador received the verification of elimination in 2013 and 2014
- México completed the elimination dossier & has submitted the request of verification of elimination to PAHO/WHO
- Guatemala achieved the elimination and is compiling the dossier to request the verification of elimination
- Venezuela and Brazil signed a collaboration agreement to treat Yanomami population at the border area during the WHA in May 2014

2015 PIPELINE

- Guatemala requests the verification of onchocerciasis elimination
- Organize and coordinate an International Verification Team to verify onchocerciasis elimination in México & Guatemala 2015-2016
- Bi-national meeting (held in February) to complete an operational plan of action to treat Yanomami population at risk at the border between Venezuela and Brazil

ONCHOCERCIASIS

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2015 PIPELINE

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- Bi-national meeting (held in February) to complete an operational plan of action to treat Yanomami population at risk at the border between Venezuela and Brazil

LEPROSY/HANSEN'S DISEASE

20

2014 HIGHLIGHTS

- 24 countries
 - 33,084 leprosy cases notified (2013)
 - 6.6% cases grade 2 disability
 - Eliminate leprosy as a public health problem (indicator: under 1 case/10,000 inhabitants at first subnational level)
- 2013 highlights:
 - Elimination of leprosy reached at the national level in all countries except Brazil
 - 18 countries have eliminated leprosy as a public health problem at the first subnational administrative level (states, provinces, et.)
 - Colombia and Cuba appear close to achieving leprosy elimination at the 2nd subnational administrative

2015 PIPELINE

- Country technical cooperation missions to priority countries
- Continued provision of donated medicines
- Training workshops held in WHO Collaborating Centers
- LAS trainings
- Case management trainings

SOIL-TRANSMITTED HELMINTHS

2014 HIGHLIGHTS

- 24 countries have children at risk of STH infection (out of 35 countries in AMRO)
 - 46 Million children under 15 years old requiring PC (13.1 Million PSAC & 33.3 Million SAC)
 - 29 Million children treated in 12 countries (6.2 Million PSAC & 22.7 SAC)
 - 8 countries receiving drug donation for 2015.
 - Brazil & Guyana have enough stock from previous years' donations.
 - Belize & Mexico are purchasing medicines locally
-
- Dominican Republic*, Haiti & Nicaragua implemented STH (*and SCH) surveys -reports available in 2015
 - Paraguay & Mexico developed a protocol of STH + Malaria survey - to be implemented in 2015
 - Paraguay, El Salvador & Colombia developed operational guidelines for the control of STH (+M&E component)
 - Resources Mobilization - Izumi Foundation/CWW, BMGF & Sabin granted 4 country proposals (Paraguay, Nicaragua, Honduras & Mexico) to expand STH control program integrated with WASH activities & EPI - to be implemented in 2015

2015 PIPELINE

- Dominican Republic will conduct monitoring of STH PC coverage after the MDA campaign - May, 2015
- Honduras is strengthening the M&E component of the STH program - including an anthelmintic drug efficacy study.
- 2 countries will develop integrated monitoring for several NID through sentinel sites & spot check sites
- 3 countries will conduct an STH (& other NID) survey

PAHO provides several channels through which to obtain information on NID: webpages, fact sheets and maps by disease; epidemiologic profiles by country; and soon-to-come success stories to be published by the PAHO NID Regional Program.

B. MALARIA ELIMINATION: USING AND ADAPTING THE WHO CERTIFICATION PROCESSES IN THE AMERICAS

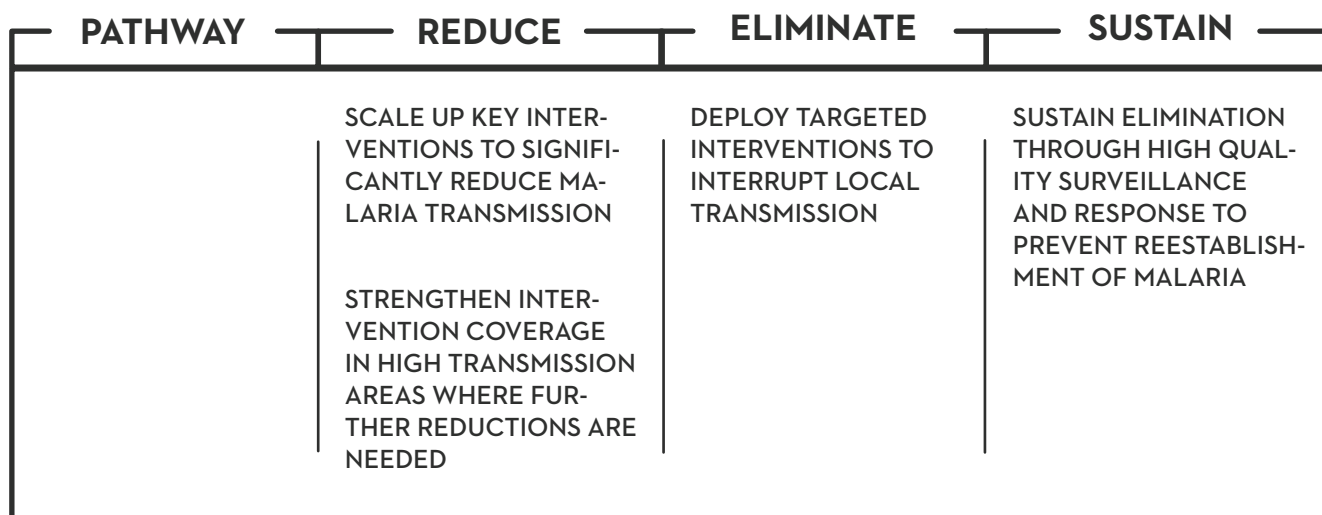
Presented by Keith Carter

This presentation provided a history and overview of malaria in the Americas, from 1902 when malaria transmission was discovered in the Americas to the present, with the Strategic Plan of Action for Malaria in the Americas, 2011-2015. This strategic plan calls for the:

- Further reduction of malaria morbidity by 75%
- Further reduction of malaria related deaths by 25%
- Implementation of efforts to eliminate malaria in areas deemed feasible (particularly in Mesoamerica and specific countries in the southern cone)
- Reversal of the trend in countries that saw an increased number of malaria cases between 2000-2010 (particularly the Dominican Republic, Haiti, and Venezuela).

- Prevention of the reintroduction of malaria endemicity in countries that have been declared malaria free, mainly in the Caribbean.

There is a circumscribed process that each country must undertake to achieve elimination of malaria. According to the WHO Draft Global Technical Strategy for Malaria 2016-2030 [which was recently adopted by the World Health Assembly in May 2015], the Malaria Pathway to Elimination is depicted in the table below.



Countries are placed in phases of transition from control to elimination of malaria, as illustrated in the table above. The phase and transition in the process are determined by the existing status of each of the following variables in each country:

- Epidemiological status
- Diagnosis and Treatment
- Surveillance, Monitoring and Evaluation
- Program Goal
- Vector Control and Prevention
- Health Systems and Financing

At present, the Pre-elimination and Elimination Candidates officially listed by WHO are: Argentina, Belize, Costa Rica, Ecuador, Mexico, Panama, and Paraguay. Other countries in the Region are working towards elimination in the near future.

1. Certification process

Elimination must be certified via official recognition of malaria-free status granted by WHO. Certification confirms that the country, at that point in time, has halted local transmission of malaria for 3 consecutive years and has created an adequate health and surveillance system for preventing its re-establishment. The burden of proof of elimination falls on the country requesting certification.

Specific steps that each country must take in the WHO malaria elimination certification process are as follows¹.

1. The country, after reporting zero locally acquired malaria cases for the last three consecutive years, submits an official request

for certification to the WHO Regional Director. Worth noting that in the Americas this process is deeply supported and accompanied by PAHO.

2. The WHO Secretariat and the country jointly prepare a plan of action and timeline for the certification process. This takes place during an initial WHO/PAHO assessment mission.

3. The country finalizes the required national certification documentation and submits the national certification report to WHO.

4. An independent (and international) external evaluation team visits the country to verify the national certification report; it prepares a comprehensive report on its findings and recommendations.

5. A wider group of external and WHO experts reviews the independent evaluation report.

6. The WHO Expert Committee on Malaria reviews all the evidence and formulates a recommendation to the WHO Director-General.

7. The WHO Director-General makes a final decision on granting malaria-free status and communicates this in an official letter to the national government.

8. WHO publishes the certification in the Weekly Epidemiological Record.

9. The country continues its efforts to prevent the reintroduction of local malaria transmission and annual reporting to WHO on the maintenance of the malaria-free status.

The required national certification documentation

¹ WHO. Malaria elimination: a field manual for low and moderate endemic countries (2007)
http://whqlibdoc.who.int/publications/2007/9789241596084_eng.pdf

that each country must submit to WHO to be considered for certification include:

- Proof of absence of local transmission and ability to detect and respond to any malaria case
- National report including complete history of disappearing local transmission and how prerequisites for certification met, based on:
 - National malaria case register with individual case investigation forms on all malaria infections detected in country for past 3 years
 - Annual malaria surveillance reports covering past 10 years
 - Full information about active malaria foci in 5 years prior to last indigenous case
 - Reports of quality-assurance activities for diagnosis
 - Central repository of information related to entomological monitoring and application of chosen vector control interventions
 - Access to timely quality anti-malaria drugs

Since the early 1960s, WHO has published a Register of Areas Where Malaria Elimination Has Been Achieved (see <http://www.who.int/malaria/areas/elimination/overview/en/>). Overall, 33 countries and territories have been certified and entered in the WHO official register as having eliminated malaria. Of these, 10 are in the Americas: Cuba (1973), Dominica (1966), Grenada (1962), Jamaica (1966), North Venezuela (1961), Puerto Rico (1970), St. Lucia (1962), Trinidad and Tobago (1965), United States (1970), and U.S. Virgin Islands (1970). Note that in the 1960s WHO was registering in some cases only certain parts of some countries as having “eradicated” malaria; this was the case of “North Venezuela”. Today, Venezuela would have to be considered as a whole with respect to having to meet the criteria of elimination.

C. CERTIFICATION OF CHAGAS DISEASE ELIMINATION IN THE AMERICAS

Presented by Dr. Luis Gerardo Castellanos, on behalf of Dr. Roberto Salvatella

Chagas disease, also known as American trypanosomiasis, is caused by the protozoan parasite *Trypanosoma cruzi* (T.cruzi). It is predominantly vector-borne and usually transmitted to humans by contact with feces of infected triatomine bugs. About 6 million people are estimated to be infected in Latin America where Chagas disease is still endemic in 21 countries.

In the 1980s and early 1990s, the impact of Chagas disease in Latin America included:

- Estimated annual deaths: >45,000
- Estimated human cases: 30 million
- New cases/year: 700,000
- Population at risk: over 100 million
- Countries with active transmission: 21

As of 2010, for Latin America these figures have decreased, as noted below (data from the WHO Weekly Epidemiological Record, 6 February 2015):

- Estimated total human cases: 5.742 million
- Estimated new human cases/year: 38,593 (29,925 vectorial; 8,668 congenital)
- Estimated population at risk in Latin America: 70.199 million

As of 2015, among countries with active vectorial transmission, 15 have areas (cities, municipalities, Departments, Provinces and/or states) of interruption: Argentina, Bolivia, Brazil, Chile, Colombia Paraguay, Peru, Uruguay in South America; Belize, El Salvador, Guatemala, Honduras and Nicaragua in Central America,

and Mexico. Six countries have areas without interruption: Ecuador and Venezuela; as well as Guyana, Suriname, French Guiana, and Panama (in which these last four are dependent on the sylvatic cycle of transmission of the pathogen).

CHAGAS DISEASE PREVENTION AND CONTROL

Chagas disease prevention, control, and medical care consist of:

- Integrated Vector Control of domiciliary triatomines via chemical control, environmental control, and information, education and communication.
- Universal donor screening in blood banks.
- Diagnosis and treatment of congenital infections.
- Establish food safety to avoid contamination by *T. cruzi*.
- Universal screening of donors and recipients of organs in transplantation.
- Development of biosafety measures in laboratories working with *T. cruzi*.
- Comprehensive care (and treatment) of patients infected by *T. cruzi*, at different levels of complexity of national health systems.

The Southern Cone Initiative to Control/Eliminate Chagas Disease (INCOSUR, formally established in 1992 with members of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay) outlined several Chagas disease objectives in 1991, as follows:

- Elimination of the bug vector *Triatoma*

infestans in housing and peridomicile spaces in endemic areas and “probably endemic areas”

- Reduction and elimination of domestic infestations by other triatomine species present in the same areas occupied by *T. infestans*
- Reduction and elimination of transmission by blood transfusion by strengthening the network of blood banks and effective donor screening

The three additional Subregional Initiatives Areas for South-South Technical Cooperation among Countries of the Americas include the following:

- Central American and Mexico Initiative for Chagas Control (IPCA-M), 1997: includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Since 2012, Mexico has been included.
- Andean Initiative for Chagas Control (IPA), 1998: Colombia, Ecuador, Peru and Venezuela.
- Amazon Initiative for Chagas Prevention and Surveillance (AMCHA), 2004: Brazil, Ecuador, Colombia, Bolivia, Peru, Guyana, Venezuela, Suriname and French Guiana.

To show the interruption of vectorial transmission, countries must show²:

- The absence of active transmission of *T. cruzi*, expressed by the negative serology (and epidemiology) of Chagas disease in children 1-15 years of age (although 0 to 5 years can be used as the minimum concentrated age group for study/detection)

^{2,3} “Guía de evaluación de los procesos de certificación de avances en el control de la enfermedad de Chagas.” OPS Taller de revisión de los procesos de vigilancia, control y eliminación de un vector de área endémica, Chile, Santiago de Chile, OPS, 10 -12 September 2013.

- Compulsory and thorough epidemiological verification/investigation of any positive case (positive serology), and proving its possible congenital origin or link to sylvatic cycle of *T. cruzi* origin (if it exists).
- Complementary information (entomological and epidemiological) with reference target values (considered as “control values”), but not necessarily as indicators of situation:
 - house infestation index (intra + peri-domicile area) equal to or less than 1%;
 - Intra-domiciliary (inside the home) infestation index equal to or less than 0.1%;
 - peri-domestic infestation index equal to or less than 1% (for allochthonous vectors) and 5% (for indigenous vectors);
 - dispersion index (of vector) reduced by over 50% as compared to baseline data, in the territorial sub-units of work, to the scale equivalent to or considered Municipality.

All indicators should be considered entomological results of technical man-hours of work conducted by trained personnel, and the use of chemicals for vectorial “cleaning/dislodging” at a frequency of three treatment cycles per year.

The characteristics of Chagas disease “elimination as a public health problem” are³:

- defined as (confirmed) interruption of *T. cruzi* vectorial transmission with more than five years of “certification”;
- an index of intradomiciliary infestation of zero;
- house infestation rates less than 0.1% (this includes intra and peri-domicile area);
- if positive, peri-domicile type, with no values greater than 0.1%, in up to 5 houses, located in up to two non-adjacent/contiguous locations;
- a vectorial dispersion index, calculated at the first (acceptable) territorial subdivision,

found in up to 25% of endemic geographic areas of the country; this uses biological, ecological and sanitation criteria.

The process used by the PAHO regional Chagas disease program to verify elimination of vectorial transmission provided a rationale for the operational and strategic importance of a disease elimination process, as follows:

- It addresses the total or partial completion/solution of a public health problem: elimination or elimination as a public health problem.
- It establishes objectives and quantifiable goals that stimulate the political will of national and local authorities, health workers and affected communities.
- It allows competitiveness in health when setting of priorities and budgets
- It stimulates pursuable, fundamental, and final solutions.
- It convenes more and improved international, national and South-South technical cooperation efforts, among institutions, and governments.
- It has shown to be cost-effective and with high impact results.
- It offers a perspective of a public health problem as something affordable and solvable.
- It reinforces the commitment of authorities, media, and stakeholders.
- It builds trust, which in case of partial or complete successes, encourages to addressing similar health problems in similar ways.
- It convenes intersectoral and inter-institutional actions.

D. PROCESS OF CERTIFICATION/VERIFICATION OF ELIMINATION OF VACCINE-PREVENTABLE DISEASES IN THE AMERICAS

Presented by Alba Maria Roperó-Alvarez

There have been significant achievements in vaccine-preventable diseases in the Americas. Polio was eradicated in 1990 (zero cases), Measles was eliminated in 2000 (zero cases), rubella was eliminated in 2010 (zero cases) and Tetanus was eliminated as a public health problem in 1995, with under 1 in 1000 live births per municipality. The success has largely been attributed to political commitment and coordinated governmental effort toward active participation in elimination and certification activities. This has mostly been through stimulation created by PAHO's Governing Bodies Resolutions. Other helpful factors have included strategic alliances and partners, interagency cooperation, and the establishment of independent international and national commissions.

1. Polio

It was noted that many lessons could be gleaned from the polio eradication certification process. First, there should be an absence of cases for three years, confirmed by adequate surveillance. In other words, there should be an adequate period of time between the last known case and certification. Second, surveillance documentation should be comprehensive, and include laboratory strengthening and high vaccination coverage through routine health services and mass campaigns such as National Immunization Days. Third, there should be strong political support to comply with the certification data, and fourth, there should be a high level of competence and diligence required of the official certification committee reviewing the national data.

For each area of the Americas or sub-regions, one or two commissioners of the Independent International Commission for the Regional Certification of Poliomyelitis Eradication (ICCPE) oversaw certification procedures. National commissions were organized in each country to review and oversee pre-certification activities, which included each country preparing a national report to be reviewed by the responsible ICCPE commissioner.

2. Measles, Rubella and Congenital Rubella Syndrome (CRS)

Efforts to eliminate measles, rubella, and CRS have been incredibly successful in the Americas. Regional measles elimination has been sustained since 2002, no endemic cases of rubella have been reported since 2009, and the last endemic CRS case in the Americas was also reported in 2009. Even though the Americas is currently facing measles outbreaks in the post-elimination era, political commitment is high to contain the outbreaks.

The importance of strong political support was underscored in 2007, when PAHO passed a resolution (Resolution CSP27.R2) that urges all member states to establish national commissions that would compile and analyze data to document and verify measles, rubella, and CRS elimination. This documentation would then be reviewed by an expert committee. The resolution also requests that an International Expert Committee be formed and be responsible for documenting and verifying the interruption of endemic measles virus and rubella virus transmission in the Americas.

PAHO has provided its member countries with guidance in preparing and providing the necessary evidence to verify that endemic measles and rubella virus transmission has been interrupted based on valid, complete, representative, and consistent data. The basic principles underlying the documentation and

verification process for measles and rubella elimination in the Americas are as follows:

- The area for documenting the interruption of endemic transmission is the Region of the Americas as a whole.
- Progress in the documentation and verification process is considered by geographic area (e.g., North America, Central America, the Caribbean, Andean, and Southern Cone).
- An International Expert Committee should be formed to verify the achievement of the measles, rubella, and CRS elimination goal in the region.
- The International Expert Committee will provide a standard plan of action to ensure uniformity in the criteria that will be used to verify elimination.
- Each country will establish a national commission, with the exception of the Caribbean countries, where a subregional commission will be established.
- Each country (or subregion) will prepare a plan of action for the documentation process and a timeline for evaluating the achievement of the verification goal in collaboration with the national commission.
- Documentation will be based mainly on the achievement and sustainability of the documentation and verification components

Once the elimination goal is met, countries of the region must also continue surveillance and vaccination strategies to maintain the interruption of endemic transmission; the timely detection of imported and import-related cases and effective response measures; and monitor indicators for elimination including the incidence of measles, rubella, and CRS cases.

The essential criteria of elimination consist of the following components/steps:

- Verify the interruption of endemic measles, rubella, and CRS cases in all countries of the Americas for a period of at least three years from the last known endemic case, in the presence of high-quality surveillance (zero cases of endemic transmission).
- Implement and maintain high-quality surveillance system sensitive enough to detect imported and import-related cases (>2 suspected cases per 100,000 population adequately investigated).
- Verify the absence of endemic measles and rubella virus strains through viral surveillance in the Region of the Americas (measles and rubella genotype assessed on 80% of outbreaks).
- Demonstrate that 95% of population cohorts aged 1-40 years have received a measles-rubella containing vaccine.

There are myriad challenges in maintaining these achievements. Maintaining the elimination and eradication of VPD requires the highest political agenda and commitment to ensure the implementation of plans of action. Due to global interconnectivity and travel, eradication and elimination of VPDs will always face the risk of virus importations.

Surveillance in itself is a multi-faceted challenge. Countries must maintain vaccination coverage higher than 95%, measured by high quality surveillance that meets all of the surveillance indicators. There is also a need to intensify vaccination and surveillance in high-risk municipalities due to problems or challenges of low coverage, epidemiological silence, previous outbreaks, tourism, airports, high traffic borders, and indigenous populations.

Opportunities that were identified during the presentation were the importance of disseminating the lessons learned from the process of documenting and verifying elimination process; sharing these lessons learned from measles/rubella elimination with other

communicable diseases efforts; developing an inter-programmatic agenda for the establishment of new elimination goals; establishing common elimination frameworks for some communicable diseases; informing and conducting advocacy, communication and collaborative partnerships; and promoting health systems strengthening with integrated approaches.

E. PROCESS OF VALIDATION OF ELIMINATION OF MOTHER TO CHILD TRANSMISSION OF HIV AND CONGENITAL SYPHILIS IN THE AMERICAS; PERSPECTIVES OF ELIMINATION FOR TB AND VIRAL HEPATITIS

Presented by Massimo Ghidinelli

The goal of this presentation was to share perspectives obtained from work with other diseases that could be useful to consider in the framework of elimination, particularly with regard to elimination of mother-to-child transmission (MTCT) of HIV and syphilis; and elimination of tuberculosis and viral hepatitis.

1. HIV and Congenital Syphilis

the goal of elimination of MTCT of HIV and syphilis as a public health problem is based on the achievement of a combination of impact and coverage targets including having under 50 cases of congenital syphilis per 100,000 live births; having an HIV MTCT case rate of under 30 new paediatric HIV infections per 100,000 live births; and a MTCT rate of under 2%. Coverage targets are antenatal care (1 visit) of at least 95%; coverage of HIV and/or syphilis testing of pregnant women of $\geq 95\%$; anti-retroviral (ARV) coverage of HIV-positive

pregnant women of $\geq 95\%$; treatment of syphilis seropositive pregnant women of $\geq 95\%$.

Nine countries in the Americas have met the HIV/MTCT elimination goal (under 2% estimated HIV MTCT rate); eight countries have been close to the HIV MTCT elimination goal (2-5% estimated HIV MTCT rate; 17 countries have progressed to the HIV MTCT elimination goal (over 5% estimated HIV MTCT rate); and 20 offer insufficient information to ascertain their progress. With regard to syphilis MTCT the 15 countries have met the syphilis MTCT elimination goal (under 0.5 per 1,000 live births); 18 are progressing but not meeting the syphilis MTCT elimination goal; and 19 provide insufficient information to ascertain progress.

There are seven countries and territories in the Americas that, as of the end of 2013, report data compatible with the dual elimination of MTCT of HIV and syphilis: Anguilla: Barbados, Canada, Cuba, Montserrat, Puerto Rico, and the United States.

Currently, validation requests have been received from Cuba (NVC, report received and pre-validation visit conducted) and Jamaica (NVC, (informal) draft report received for review). Countries preparing for validation are: British Virgin Islands (NVC, draft report received for review); Belize (NVC, report in progress); Guyana (NVC, report in progress); Barbados (NVC, report in progress, February); Anguilla (NVC, draft report submitted to ECC office for review); and Antigua and Barbuda, Dominica, Montserrat, St. Lucia, and St. Kitts (NVC, report in progress, March-April).

To qualify for validation (to attest that a country has successfully met criteria for EMTCT of HIV and/or syphilis at a specific point in time and implies that countries will need to maintain ongoing, routine, effective program interventions and quality surveillance systems to monitor EMTCT of HIV and/or syphilis), countries must meet the following criteria:

Provide national-level evidence of achievement of the EMTCT validation process indicator targets for two years and achievement of validation impact indicator targets for two years.

- Provide evidence that elimination of MTCT of HIV and/or syphilis has been achieved in at least one of the lowest-performing sub-national administrative units.
- Present validation criteria met in a manner consistent with basic human rights considerations.
- Have an adequate “validation standard” national monitoring and surveillance system that can capture service delivery and outcome data from both the public and private health sectors; and detect the majority of cases of MTCT of HIV and/or syphilis.

Similar to the validation processes for other neglected infectious diseases, the steps for validation covering EMTCT of HIV and/or syphilis are as follows:

- 1.** The country submits a validation request from the Minister of Health to the PAHO Director (the secretariat together with UNICEF)
- 2.** Secretariat notifies Regional Validation Committee (RVC)
- 3.** Pre-validation phase: Country prepares report; Establishment of Regional Validation Team (RVT) by RVC; RVC/RVT review of country report; RVC preliminary visit to country if needed
- 4.** Validation phase: country assessment
- 5.** RVT prepares and submits report to RVC
- 6.** RVC submits report to Global Validation Committee (GVC)
- 7.** GVC declares elimination status country

2. Tuberculosis

The WHO Framework towards TB elimination provides an adaptation of the global TB strategy post- 2015 “End TB” for low incidence countries. Low incidence is defined as under 100 cases per million. Under 10 cases per million is considered to be in the pre-elimination stage, and under 1 case per million signifies elimination. In the Region of the Americas there is a group of countries with low incidence and it the pre-elimination stage, a group that meets regularly since 2000 under the auspices of PAHO. These countries implement plans for TB control according to the priority lines of action of the Framework, and work in close cooperation and exchange of experiences between countries (South-North). Editor’s note: TB incidence (incident TB) is lowest in North America, and low in Mexico and Central America, followed by the non-Andean countries of South America (Tuberculosis in the Americas: Regional Report 2012. Epidemiology, Control and Financing. Washington, DC : PAHO, 2013). Low incidence rates point to certain countries becoming eligible to be placed in a pre-elimination category.

F. DISCUSSION FROM INITIAL PRESENTATIONS

There were many commonalities observed across diseases and experiences. The participants discussed a variety of these issues, including the need for clear and consistent language and processes; the importance of political commitment and goals; and the need to use integrated platforms across sectors. Additional comments on these topics also were discussed at the end of the first day of the consultation.

PAHO staff discussed supporting an organizational “culture of elimination” that incorporates health services and health systems strengthening, health promotion, and other services, and recognizing how each contributes

to elimination of diseases and, more broadly, to sustainable development across countries that will help to maintain disease elimination and even more, better quality of life.

The Region of the Americas was cited as a “learning laboratory” for disease elimination efforts that can help to pilot and test, document, systematize, write and share information of activities done, with other regions, especially with regard to collaborations and integration of disease elimination into other platforms, and maintaining the functioning of surveillance systems before, during, and after elimination.

1. Clear and consistent terminology, processes, and approaches

The experts agreed that there is a need for clear definitions and criteria for elimination that are based on consensus of experts including those at the country level. The processes for documentation, verification, and certification should also be straightforward and consistent. Currently, there are contrasting approaches in considering elimination of diseases; some are geographically limited while others are not. There is a contrasting conflict between eliminating a disease versus eliminating a disease “as a public health problem” as established in each individual definition.

The process for malaria elimination, for example, requires that the entire country have zero cases for three consecutive years (including asymptomatic cases), which is a difficult metric to provide, especially where the ability to diagnose cases may be weak. Editor’s note: In comparison, elimination of Chagas disease and leprosy is challenging to measure due to different transmission dynamics than malaria; here too complex and difficult-to-measure epidemiological indicators come into play, and there is a need to invest significant resources to make accurate measurements though we also have limited tools to do so. All three diseases

require post-elimination surveillance, though in different manners.

2. Partnerships, political will, and commitment

Across all disease elimination efforts, the commitment of national governments, the presence of national committees, national plans and national goals, as well as partnerships to help move them forward was cited as a critical factor in moving the agenda forward. The polio eradication effort was cited as an example of the importance of having national committees around which other agencies were coalescing. The leadership of WHO and strategic, global partnerships that underscore commitment to eradication of each disease, were also deemed crucial to attaining elimination.

In addition to political support, financial support is also key. Monetary support not only helps to buttress MDA, vaccines and other interventions, but also the human resources required to implement the activities and create sustainability through ongoing surveillance and required interventions.

It was observed that the cost of elimination without eradication is greater for at least some vaccine preventable diseases as compared with certain infectious diseases controllable via mass drug administration. One way to address this is via advocacy with other WHO regions to help countries maintain the costly vaccine interventions for as much time as needed to reach global eradication goals.

3. Integrated platforms

The theme of integrated platforms across sectors was cited as an essential factor in achieving elimination as well as maintaining it in the post-elimination era. Integration across

platforms such as and across sectors such as WASH, was discussed. Examples of additional areas or platforms where disease elimination work could be integrated include child immunization programs, HIV services, MCH services, and STI services. There is a challenge to connect universal access to health care efforts with disease elimination on site. The work in MTCT of HIV and syphilis has been successful mostly because it has been integrated into a MCH package, along with screening, treatment and counseling. Including NID as part of antenatal care is critical and should be encouraged at every opportunity, maybe starting with Chagas disease.



CONCEPTUALIZATION

A. WHO ROAD MAP TARGETS FOR NEGLECTED TROPICAL DISEASES

Presented by Dirk Engels

In 2012, WHO released a publication called *Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases: Roadmap for Implementation*. The report called for the eradication of Guinea-worm by 2015 and of Yaws by 2020.

WHO also called for global elimination by 2020 of trachoma as a public health problem, human African trypanosomiasis, leprosy, and LF, and prescribed eight regional elimination targets:

- **2015:** Elimination of onchocerciasis in Latin America; human rabies transmitted by dogs in Latin America; schistosomiasis in the Eastern Mediterranean Region (EMRO), Caribbean, Indonesia and Mekong River basin; and Chagas disease through blood transfusion
- **2020:** Human rabies transmitted by dogs in the South East Asia Region (SEARO) and Western Pacific Region (WPRO); SCH in the Americas (AMRO) and WPRO; visceral leishmaniasis in the Indian subcontinent; and intra-domiciliary transmission of Chagas disease in the Americas.

Seven diseases were marked for control: Buruli ulcer, cutaneous leishmaniasis, dengue, echinococcosis, food-borne trematodes, STH, and taeniasis/cysticercosis.

A second NTD report was released by WHO in 2013, *Sustaining the Drive to Overcome the*

Global Impact of Neglected Tropical Diseases. The report assessed opportunities and obstacles in the control, elimination, and eradication of several NTD in light of the need for refinements in control strategies, and new technical tools and protocols. Moreover, increases in donations of medicines called for mechanisms to simplify and refine delivery strategies. The report provided more clarity in indicators and endpoints the global community should be working towards. [A third NTD report was launched in Spring 2015 which focused on investing to overcome the global impact of NTD.]

In these publications and processes, WHO adheres to the following terminology and definitions established in April 2014 by the WHO STAG on NTD (this version, the most current available, is written as amended by the WHO STAG NTD in April 2015):

- **Control:** reduction of disease incidence, prevalence, morbidity, and/or mortality to a locally acceptable level as a result of deliberate efforts; continued intervention measures are required to maintain the reduction.
- **Elimination as a Public Health Problem (EPHP):** A term related to both infection and disease. It is defined by achievement of measurable global targets set by WHO in relation to a specific disease. When reached, continued actions are required to maintain the targets and/or to advance [towards] the interruption of transmission. The process of documenting elimination as a public health problem is called “validation”.
- **Elimination of Transmission (EOT) (also referred to as “interruption of transmission”):** reduction to zero of the incidence of infection

caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, as a result of deliberate efforts; continued actions to prevent re-establishment of transmission may be required. The process of documenting elimination of transmission is called “verification”.

- **Eradication:** Permanent reduction to zero of a specific pathogen, as a result of deliberate efforts, with no more risk of reintroduction. The process of documenting eradication is called “certification”. Editor’s note: Certification occurs under an International Commission. In a similar process, as a part of the Global Polio Eradication Initiative, in 1994 the WHO Region of the Americas was certified polio-free.

- **Extinction:** Eradication of the specific pathogen so that it no longer exists in nature or the laboratory, which may occur with or without deliberate efforts.

34

The capacity to demonstrate that targets have been reached is dependent in part on the diagnostic tools that are available. In some cases there are no diagnostic tools to demonstrate the interruption of transmission, and the next-best declaration is to deem a disease as being eliminated “as a public health problem”.

Most NID require continued intervention after reaching control or elimination targets. Moreover, there are always residual cases of diseases (or chronic cases) that are not identified as part of the path towards elimination. Those afflicted by these diseases still require treatment that may not be provided (as part of the elimination effort) if the illness is deemed to be eliminated.

In addition, elimination goals cannot be standardized across diseases because elimination is much more difficult to achieve (due to a complex epidemiology) - or not sustainable - for diseases such as HIV, Chagas disease or human rabies transmitted by dogs, than for others.

Proposed next steps included the following:

1. Clarifying control, elimination, and eradication terminology during the STAG NTD meetings.
2. Clearly defining end-point criteria for the elimination/eradication targets as formulated in the WHO Roadmap and Annex 3a of 2nd WHO Global NTD Report.
3. Proposing a standardized process across all NTD for “validation” of elimination as a public health problem, “verification” of elimination of transmission, “certification” of eradication regionally and globally, and the various types of “acknowledgement” can be granted by WHO (and its Regional offices) as the outcome of such a process.
4. Striving for the elimination of diseases beyond NID, namely maternal and neonatal tetanus, malaria, MTCT of HIV and syphilis, hepatitis B and C, TB and others.

B. GUIDING REGIONAL DISEASE ELIMINATION EFFORTS – THE KEY PAHO RESOLUTIONS ON DISEASE ELIMINATION AND THEIR INDICATORS

Presented by Steven Ault

An overview of PAHO goals and indicators, as well as WHO operational definitions for malaria, Chagas disease, leprosy/Hansen’s disease, lymphatic filariasis, schistosomiasis, onchocerciasis, and trachoma, are presented in the table below (modified from March 2015).

CHAGAS DISEASE

PAHO GOALS AND INDICATORS

PAHO goals & indicators (Resolution CD49.R19, 2009)

- **EOT:** To interrupt domestic vector-borne transmission of *T. cruzi*. PAHO Indicator (Resolution CD49.R19, 2009): domestic triatomine infestation index of less than 1% and negative seroprevalence in children up to five years of age, with the exception of the minimum represented by cases in children of seropositive mothers.
- **EOT:** To interrupt transfusional transmission of *T. cruzi*. PAHO Indicator (Resolution CD49.R19, 2009): 100% blood screening coverage.
- **MMDP:** To prevent the development of cardiomyopathies and intestinal problems related to Chagas disease, offering adequate health care to those affected.
- **Health systems:** To integrate diagnosis of Chagas disease in the primary health care system, in order to provide treatment and medical care to all patients for both the acute and chronic phases and to reinforce the supply chain of the existing treatments within countries to scale up access.

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

WHO goals (WHO NTD Roadmap, 2012):

- **EOT** through blood transfusion, by 2015
- **EOT** intra-domiciliary transmission in Region of the Americas by 2020

WHO operational definition (WHO NTD Roadmap, 2012)

Interruption of transmission of *T. cruzi* through blood transfusion and intra-domiciliary vectors

WHO indicator: Incidence of cases of Chagas disease due to blood transfusion and intradomiciliary vectors

LEPROSY/HANSEN'S

PAHO GOALS AND INDICATORS

PAHO goals and indicator (Resolution CD49.R19, 2009)

• **EPHP:**

- To eliminate leprosy as a public health problem from the first sub-national political/administrative levels.

PAHO Indicator (Resolution CD49.R19, 2009): Less than 1 case per 10,000 people.

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

WHO goals (WHO NTD Roadmap, 2012):

- **EOT:** Global elimination by 2020

WHO operational definition (Roadmap NTD, 2012):

- Reduction of new cases with Grade 2 disabilities due to *Mycobacterium leprae* below one per million population.
- **WHO indicator:** Incidence of cases with Grade 2 disabilities.

SCHISTOSOMIASIS

PAHO GOALS AND INDICATORS

PAHO goals and indicator (Resolution CD49.R19, 2009)

• EPHP:

- To reduce prevalence and parasite load in high transmission areas to less than 10% prevalence as measured by quantitative egg counts.
- **PAHO indicator (Strategic Plan 2014-2019):** Numbers of endemic countries that reached preventive chemotherapy for $\geq 75\%$ of school-age children that live in at-risk areas

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

• WHO goals (WHO NTD Roadmap, 2012):

EOT:

- EOT Regional elimination by 2015 in Caribbean [*S. mansoni*], Eastern Mediterranean Region, Indonesia and the Mekong River Basin.
- Establishing surveillance systems in the Bolivarian Republic of Venezuela, Saint Lucia, and Suriname as to detect transmission foci, thereby facilitating more efficient targeting of interventions (treatment, sanitation, safe water).
- EOT Regional elimination by 2020: Americas [*S. mansoni*] [including Brazil] and Western Pacific Regions.
- **WHO Indicators:** Prevalence of infection with ≥ 400 epg (Kato-Katz method, *Schistosoma japonicum*, *S. mansoni*, *S. mekongi*); ≥ 50 eggs/ml (urine filtration for *S. haematobium*)

LYMPHATIC FILARIASIS

PAHO GOALS AND INDICATORS

PAHO goals and indicator (Resolution CD49.R19, 2009)

• EPHP:

- Less than 1% prevalence of microfilaria in adults in sentinel sites and spot-check sites in the area.
- Interrupt its transmission (no children between ages 2 and 4 are antigen positive).
- To prevent and control disability
- **PAHO indicator (Strategic Plan 2014-2019):** Numbers of endemic countries that reached preventive chemotherapy for $\geq 65\%$ of population that live in at-risk areas

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

- WHO goals (WHO NTD Roadmap, 2012):

EPHP:

- By 2017, 70% of all 81 endemic countries will have met the criteria to stop interventions and entered the post-intervention surveillance phase.
- By 2020, 100% of all endemic countries [i.e. globally] will have been verified as free of transmission or will have entered post-intervention surveillance.
- **WHO Indicator:** Prevalence as defined for the species/vector complexes in Transmission Assessment Surveys (TAS)

ONCHOCERCIASIS

PAHO GOALS AND INDICATORS

PAHO goals & indicators (Resolution CD49.R19, 2009)

- **EOT:**

- To eliminate ocular morbidity and to interrupt transmission.
- **PAHO indicator (Strategic Plan 2014-2019):** Numbers of endemic countries that reached preventive chemotherapy for $\geq 80\%$ of population that live in at-risk areas [coverage at $\geq 80\%$ stops transmission over time].

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

- WHO goals (WHO NTD Roadmap, 2012):

EPHP:

- EOT Latin America by 2015: eliminate transmission in Latin America. (A three-year post-treatment surveillance period is needed prior to determination of elimination, per 2001 WHO guidelines)
- EOT Selected countries in Africa by 2020:
- **WHO Indicators:** Prevalence of specific antibodies in children and prevalence of infective larvae in Simulium flies.

TRACHOMA

PAHO GOALS AND INDICATORS

PAHO goals and indicator (Resolution CD49.R19, 2009)

- **EPHP:**

- To eliminate new cases of blindness caused by trachoma (reduction in the prevalence of trachomatous trichiasis (TT) to less than 1 case per 1,000 (general population) and reduction in the prevalence of follicular or inflammatory trachoma (TF and TI) to less than 5% in children aged 1-9 years).

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

- **PAHO indicator (Strategic Plan 2014-2019):** Numbers of endemic countries that reached preventive chemotherapy for $\geq 80\%$ of population that live in at-risk areas

- WHO goals (WHO NTD Roadmap, 2012):

EPHP:

- EPHP globally by 2020
- 10% of endemic countries are expected to have achieved the Ultimate Intervention Goal (UIG) by 2013
- In 2016, 40% of endemic countries should have met the criteria to stop large-scale medicine interventions and entered post-endemic surveillance (3 years post intervention surveillance); and by 2020, 75% of countries will have been verified as free from trachoma as a public-health problem.
- **WHO Indicators:** Prevalence of unmanaged trichomatous trichiasis in all ages; prevalence of follicular trachoma in children 1 to 9 years old, coverage of FE elements of the SAFE strategy

MALARIA

38

PAHO GOALS AND INDICATORS

- PAHO goals and indicator (Resolution CD49.R19, 2009) (Resolution CD51.R9, 2011)

EOT:

- To eliminate malaria in areas where interruption of local transmission is feasible (Argentina, the Dominican Republic, Haiti, Mexico, Paraguay, and Central America). (Resolution CD49.R19, 2009)
- Support efforts to consolidate and implement activities to further reduce endemicity and progress toward meeting the targets indicated in the Strategy and Plan of Action for Malaria, including the elimination of malaria where this is considered feasible (Resolution CD51.R9, 2011)

Operational Definition of Malaria Elimination: Elimination (zero local cases for 3 consecutive years); official certification process can be pursued with WHO if deemed warranted

WHO GOALS, OPERATIONAL DEFINITIONS AND INDICATORS

- WHO Global Goals (Global Technical Strategy for Malaria 2016–2030, adopted by WHA, May 2015)

EOT (as one of four Goals):

- Eliminate malaria from at least 10 countries (globally) by 2020, at least 20 countries by 2020 and at least 35 countries by 2030
- **WHO Indicators:** Impact indicator for elimination – Number of countries that have eliminated malaria since 2015

C. DISEASE CONTROL, DISEASE ELIMINATION, AND POST-ELIMINATION ACTIONS – IS THERE ANY DIFFERENCE FROM THE HEALTH AND HUMAN RIGHTS PERSPECTIVE?

Presented by Javier Vasquez

The framework of health and human rights (HHR) has long been used by PAHO/WHO in the areas of HIV, mental health, tobacco control, gender equality, and indigenous populations, to name a few. HHR instruments can similarly be used to address neglected diseases because the populations that are usually affected by NID are those whose human rights are often imperiled. Indeed, public health and human rights are synergistic: health is essential to human rights, and human rights are essential to health.

Violations of health and human rights continue to occur, partly due to limited knowledge of human rights obligations in the health sector, and limited implementation of policies to ensure the right to health services.

Under the umbrella of HHR, there are three main challenges to consider for NID in the Americas:

1. Populations whose rights are at stake, especially indigenous people and afro-descendants, tend to not be guaranteed rights to health services.
2. Neglected diseases are invisible in the national plans of many countries. Treatments and vaccines for NID are not often considered by the private sector.
3. How could developed countries make their laws more flexible to export their vaccines and treatments to areas that do not have access, or otherwise increase availability?

To move forward with placing NID in the

framework of HHR, the following issues should be considered:

- Strengthening the technical capacity of health workers to address NID considering the human rights instruments and context. This has already been done by PAHO's HIV team.
- Strengthening the capacity of health authorities in the formulation of policies and plans related to NID. Health authorities and workers are not always empowered to review policies and plans in a manner consistent with human rights policies of each country. A human rights approach should be incorporated into both prevention and treatment activities.
- Disseminating human rights norms and standards. Over the past 10 years, PAHO has invested significantly in disseminating these norms and standards in its member countries.

The experts were urged to continue a dialogue on how to develop and include HHR instruments in their work, and in the NID work of PAHO.

D. THE INTERNATIONAL TASK FORCE ON DISEASE ERADICATION (ITFDE): HOW CAN THE LESSONS LEARNED BE APPLIED TO THE AMERICAS?

Presented by Don Hopkins

The International Task Force for Disease Eradication was formed at the Carter Center in 1988 to evaluate the potential for eradicating infectious diseases including:

Guinea worm, polio, mumps, rubella, lymphatic filariasis, cysticercosis, measles, and yaws.

Currently supported by the Bill & Melinda

Gates Foundation, the task force reviews progress in status of diseases selected for control or eradication, and recommends action steps.

Based on the work under ITFDE, it was argued that terms in the WHO NTD lexicon need to be clarified. It also noted that there may not be a clean, clear-cut distinction between elimination and eradication in all languages, though there is in English, Spanish, and French. As a result, not having a clear understanding, across countries and cultures, of these terms can hamper efforts and affect the credibility of public health. It may be useful to confirm if this is not a problem in the Americas.

The problem with “language credibility” also contributes to confusing messages in the media and among other non-technical populations. In addition, because these terms provide powerful motivation and competition (and are attractive to donors), they are at risk of being used broadly and inappropriately). The NID community should not contribute to this by using imprecise terms. The use and application of standard terms and procedures (as much as technically possible) must be seen as a need.

Quantitative targets should be attached to all of these terms to mitigate confusion and misinterpretation.

Other learnings from the Carter Center/ITFDE experience include that:

- There should be a comprehensive elimination agenda that ranges from disease control to eradication, with quantifiable goals for each step along the way.
- Even though there are some diseases that are not good candidates for elimination, it might be worthwhile (and realistic) to control them (to the best level possible) and relieve suffering of certain affected populations.
- Eradication is inherently unstable. If a disease is not eradicated everywhere, it is not completely eradicated due to the mobility of

populations. In other words, if not completely eradicated, it is simply not eradicated. This is why the verification and certification processes play an extremely important role.

- It is important to attack the most heavily affected areas first, because they will take more time to address.
- Innovation and research will continue to evolve and move elimination efforts forward with development of new treatments, vaccines, and other interventions.

Finally, although private foundations are becoming more prominent in disease elimination, they are reluctant to put money into issues that are politically sensitive. PAHO has a role in helping to bridge these gaps between funders and countries, as well as bridging gaps between countries, such as at border areas: for example, the case in Hispaniola where PAHO and The Carter Center facilitated bi-national meetings (Haiti-Dominican Republic) on LF elimination, and on the border of Venezuela and Brazil, where PAHO and WHO facilitated the signing of a 2014 letter of agreement between Brazil and Venezuela to cooperate in onchocerciasis elimination in their shared focus.

E. WHAT IS ON THE SHORT LIST FOR MALARIA ELIMINATION AND ERADICATION STRATEGIES IN TODAY'S MULTI-ACTOR GLOBAL PUBLIC HEALTH ARENA?

Presented by Trent Reubush

The progress in malaria control in the Americas has been dramatic. The number of malaria cases has fallen from over 1 million in 2000 to under 450,000 in 2013. Of the 21 countries that still have

endemic malaria, 13 have achieved and sustained a 75% reduction in cases. Only Haiti, Venezuela, and Guyana have reported an increase in cases. Nevertheless, there are consistent signs of concern in countries like Peru where the number of cases has been steadily increasing over the last couple of years.

In addition, several countries in the Americas are currently at a point where it is realistic to consider moving towards malaria elimination. These countries have very low baseline prevalence of malaria, particularly *Plasmodium falciparum*; generally strong national malaria control programs and health infrastructures; and well-established malaria case detection, treatment, and reporting systems already in place.

The transition from control to elimination, however, will require a major shift in how malaria programs operate in these countries. Although the interventions will remain the same, the quality of implementation will need to be nearly perfect. Countries will have to target interventions to the foci of infection (e.g., localities/ groups of localities) rather than aiming for high coverage of larger population groups. They will also have to improve both the quality and the timely use of data, which will likely require decentralization of decision-making as well as greater flexibility in adapting to changing situations. For example, malaria programs should intervene when they see an upswing in cases.

WHO grants certification of malaria elimination to countries that: have interrupted local transmission for at least three years, have high-quality malaria surveillance systems, and have the data to prove the interruption of transmission.

Most countries approach malaria elimination in a staged fashion. They tend to focus on localities with the highest transmission rates and then readjust that focus annually. Some countries try to attack malaria from the peripheries, and then move inward.

Typically, when there is higher baseline malaria transmission, higher intervention coverage is needed to achieve progress. If the level of transmission is already low, as in Mesoamerica, moderate improvement in interventions may yield greater results. Moving from low malaria prevalence to elimination can take longer than an initial reduction from moderate to low prevalence.

Experience has shown that *P. falciparum* is usually more responsive to control measures and disappears before *Plasmodium vivax* (for *P. falciparum* there are no persistent liver stages leading to relapses and the duration of developmental cycle in humans and mosquitoes is longer).

1. Case Detection and Treatment

Case detection and treatment is often the most cost-effective way to reduce the pool of infected individuals. Case detection requires diagnosis as close as possible to where infections occur and is based on parasitologic testing. Microscopy remains to be the diagnostic method of choice in the Region of the Americas while rapid diagnostics tests (RDTs) are acceptable alternatives in places where microscopy is not feasible or practical.

While awaiting results of testing, some countries are giving presumptive treatment to a clinical malaria case. In countries where chloroquine resistance occurs, a single dose of primaquine is added to artemisinin-based combination therapy (ACT) to eliminate *P. falciparum* gametocytes. If *P. vivax* is confirmed, in this Region primaquine is given for 7-14 days against liver stages.

2. Surveillance

Active case detection (ACD) normally assumes a more important role in surveillance

than Passive Case Detection (PCD). In the Americas, NMCPs already have well-established PCD systems based on volunteer malaria workers in each village.

To transition from control to elimination, there needs to be epidemiologic investigation of all cases, and ACD should be considered around confirmed cases. Line listings and mapping of cases by locality and improving the speed of reporting and analyzing data is helpful for targeting interventions.

3. Vector Control

Vector control is targeted to localities with the highest transmission. This primarily consists of indoor residual spraying (IRS), which has been used for many years in Central America. In the region, the NMCPs are well trained and widely accepted by residents. Insecticide-treated nets (ITNs) are also used, but their effectiveness is highly dependent on user compliance. There is a limited role for larval/environmental control.

In their early stages, elimination programs require a boost in funding to allow them to intensify activities. Once elimination is achieved, program costs will fall somewhat, but countries and their funders must continue to invest in a strong surveillance system. There needs to be a commitment for longer-term funding to ensure sustained surveillance and control in order to prevent resurgences and reintroduction of malaria.

4. Partnerships

Partner organizations that help to fund activities related to malaria elimination in the Americas include the Global Fund to Fight AIDS, TB, and Malaria; the Bill & Melinda Gates Foundation; and the U.S. Agency for International Development. In collaboration with PAHO, technical support is provided by the U.S.

Centers for Disease Control and Prevention, the Clinton Health Access Initiative (CHAI), the Carter Center, and Instituto de Salud Global de Barcelona (ISGlobal).

Funds and related support are also contributed by the following organizations.

Global Fund Malaria Elimination Grant (EMMIE) - EMMIE is aiming for malaria elimination in Mesoamerica and the Island of Hispaniola by 2020. EMMIE provides a \$10 million regional grant in addition to country-specific funding for the eligible countries: Haiti, El Salvador, Guatemala, Honduras, and Nicaragua. About \$2 million of those funds are earmarked for malaria elimination activities; the remainder is spent on performance-based awards to Ministries of health.

Haiti Malaria Elimination Consortium (HaMEC) - HaMEC intends to eliminate malaria on Hispaniola by 2020 using \$30 million in funding from Bill & Melinda Gates Foundation. Supporting partners include CDC, Carter Center, CHAI, PAHO, and Tulane University. (Editor's note: Since May 2015, HaMEC is known as Malaria Zero).

Amazon Malaria Initiative (AMI) - With USAID funding of \$3 million per year, AMI focuses primarily on strengthening malaria control efforts in the Amazon Basin countries. Smaller amounts of funding are available for Belize, Guatemala, Honduras, Nicaragua, and Panama. AMI partners include PAHO, USAID, CDC, and a variety of NGO technical partners with expertise in supply chain management, drug quality testing, and advocacy and communication.

5. Future Steps

Despite all of this activity, the malaria elimination effort requires an overall lead agency for coordinating elimination efforts in Mesoamerica and Hispaniola that could work

closely with NMCPs and ministries of health; coordinate between different partners; ensure uniformity/technical rigor of approaches; build regional commitment around elimination; and promote cross-border collaboration. In addition, individual countries should establish national elimination monitoring committees.

Countries should consider identifying a malaria elimination “champion” (i.e., a well-known retired political figure or a celebrity from the sub-region) to promote the effort. They should also take advantage of the new five-year PAHO Plan of Action for Malaria (currently under development) to highlight their elimination efforts, and adapt existing guidelines/manuals on malaria elimination to situation in Americas. Operational research would help to overcome bottlenecks and to support elimination efforts.

There are a variety of challenges to malaria elimination at the country level, first and foremost an uncertain level of national political commitment. There is a risk that malaria elimination may be seen as a separate or competing program from other public health activities, and therefore not a health priority. There may also be pressure to integrate with other health programs. From a human resources perspective, there are often NMCP budget and staff shortages, as well as malaria workers who are not 100% dedicated to elimination activities. In cases when there is an outbreak of another disease, malaria workers are often diverted to respond. They need to be dedicated to the malaria program or malaria eradication efforts will be hampered. Decentralization of authority over malaria activities and workers also contributes negatively to the challenge.

In South America overall, the focus of malaria elimination efforts should remain on intensifying control measures to drive down malaria transmission broadly. The Guiana Shield will present the greatest challenge to elimination, as it is the sub-region where the risk of the development of artemisinin resistance is

highest. Haiti also poses a problem because its malaria control program and health care system overall are weak. Also, the Amazon basin area will remain a big challenge for the Region.

The Pacific Coast of Peru, Ecuador, Colombia and the Atlantic Coast of Venezuela and French Guiana may be the next most feasible targets for elimination within the next five to seven years. Outside of South America, elimination is most possible in Mexico and most of Central America, particularly in El Salvador and Costa Rica.

F. ELIMINATION OF LYMPHATIC FILARIASIS -- REACHING THE “END GAME” OF NTD?

Presented by Patrick Lammie

The essence of the LF elimination strategy is to (i) reduce the levels of microfilaria in the blood as measured in an eligible target population where the prevalence of infection in sentinel and spot-check sites is below 1% (for the presence of microfilaria in the blood) or below 2% (for the presence of antigen in the blood using the immunochromatographic test (ICT) card or the new Filaria Strip Test (FST), and (ii) interrupt transmission through annual mass drug treatment. Safe, single-dose treatment is available, including the medications in the table below:

IVERMECTIN	DIETHYLCARBAMAZINE CITRATE (DEC)	ALBENDAZOLE
<ul style="list-style-type: none"> • Single dose kills microfilaria in the blood • Does not kill adult worm • Safe in areas with co-existing onchocerciasis 	<ul style="list-style-type: none"> • Kills microfilaria in the blood • Kills ~ 40% of adult worms • Single dose as effective as 12-day course 	<ul style="list-style-type: none"> • Broad spectrum de-worming drug • Limited effect on microfilaria • Kills an unknown proportion of adult worms

Committed donors of these treatments are GlaxoSmithKline (albendazole), Merck (ivermectin), and Eisai (DEC). In addition, catalytic funding from the Bill & Melinda Gates Foundation launched the Global Alliance for the Elimination of Lymphatic Filariasis (GAELF), which brings together public and private health partners and mobilize political, financial, and technical resources. According to GAELF worldwide statistics for 2014, MDA has not been started in 12 countries; 22 countries offer MDA with under-100% geographical coverage, 23 countries offer MDA at 100% geographical coverage, and 16 are in the surveillance stage.

1. Transmission Assessment Survey

WHO has published a standard methodology called the Transmission Assessment Survey (TAS) to assess whether a series of MDA have successfully reduced the prevalence of infection to a point where MDA can be stopped. TAS is recommended as a standard component of M&E for elimination programs. The survey provides a simple survey design for documenting that the prevalence of lymphatic filariasis among 6-7 year-old children is below a predetermined threshold [based on a cluster sample design with statistical cut-off points depending on the target population used; see the WHO LF TAS manual, 2011, for details and formulas]; provides the evidence base for program managers that MDA can be stopped; and assures national

governments that national programs have achieved their EPHP goal.

WHO guidelines recommend post-MDA surveillance. This should include periodic repeated TAS surveys, and on-going surveillance of special populations at risk, as well as testing blood samples collected for other disease control programs. Ideally, post-MDA surveillance will be able to document the interruption of transmission after 4 to 6 years of the first TAS. Additional approaches to post-MDA surveillance are under evaluation by WHO, and include antibody assays and xenomonitoring (direct assessment through PCR of parasites in mosquito vectors), which require national or regional laboratories, in contrast to the ICT point-of-care assay currently used for surveillance (WHO LF TAS Manual, 2011, page 33).

Overall, almost all of the countries in the Americas are progressing along the pathway towards elimination. Haiti represents a continual challenge because approximately 10-45% of children have LF. Some of this is due to the disruption of donor funding in the early 2000s because of civil unrest and led to almost two years of program inactivity; as well the country has faced other challenges such as the 2010 earthquake and subsequent cholera epidemic.

In 2014, LF prevalence rates decreased in Haiti, and the country developed a timeline for post-MDA surveillance (a TAS schedule). Steps to move forward in Haiti are to complete MDA

in high prevalence settings and metropolitan Port au Prince; integrate LF surveillance with malaria elimination efforts; develop a strategy for maintaining soil-transmitted helminth (STH) treatment even in the absence of LF treatment; and promote inter-sectoral linkages with WASH programs.

Programmatic challenges persist, however. An ambitious program based on DEC-fortified salt in the capital city of Haiti was not successful, MDA has not scaled up nor been consistently implemented there, and external support is consistently needed for the national program. On the positive end, surveillance for NID will be included as part of the testing for the 2015 malaria indicator survey in Haiti.

Editor's note: Guyana has a long-time challenge to scale up LF MDA beyond Regions 4 and 5 (the metro capital area and environs), while Dominican Republic is preparing to undertake MDA in a small residual focus in an agricultural region. Brazil is preparing to undertake TAS in its last residual focus, where transmission is stopped or nearly so.

There are opportunities for operational research to carry out integrated surveillance and verify the elimination of NID (including LF, onchocerciasis, schistosomiasis, trachoma, and yaws). An integrated surveillance platform could be developed to assess program effectiveness and monitor universal coverage.

Presented by Luis G. Castellanos and Steven K. Ault

A. OVERARCHING THEMES FOR DISCUSSION

PAHO outlined 7 overarching/cross-cutting issues in disease elimination relevant to the Americas. For each of these issues, PAHO posed several questions for discussion and reflection for panelists and participants.

The issues and accompanying questions are listed below. Discussion of these issues is provided in Section B below, along with other issues that were discussed by the group at the end of the first day.

46

COMPREHENSIVE ELIMINATION AGENDA

- What would be a Comprehensive Infectious Disease Elimination Agenda (CIDEA) for this region? What sort of framework would it have? Where are we now and what are the next candidate infectious diseases (ID) that could be in such an agenda?
- How do we maintain elimination achievements in the countries? (Through an interprogrammatic agenda in the health sector?)
- Looking beyond the health sector, how can we use elimination of ID to promote sustainable development, equity, and human rights?
- How do we create an Institutional culture of Elimination and equity in health (particularly within PAHO)?

REGIONAL ROLES

- How to declare a region “free” of an ID or NID (especially if there are only a few endemic countries)? How do we need to look at regional and country risk factors in this context?
- Do we pursue Country and Regional Verification (for Elimination or EPHP) but Global Certification (for Elimination and Eradication)? Do we use the WHO STAG NTD model or malaria model? Are there other models to consider from HIV or vaccine-preventable disease?
- What roles should PAHO play as a Regional Office? PAHO doing verification (with WHO endorsement), WHO doing certification and re-certification (with PAHO’s support)? Any role for PAHO-supervised external evaluations, or country (self) evaluations? At what frequency-every 5 or 10 years or only if re-introduction occurs? Other roles or ways?

RISK OF LOSING ELIMINATION STATUS AND MEANS TO SUSTAIN ELIMINATION

- What puts regional ID or NID elimination at risk once achieved? What is the future of vaccine-preventable and non-vaccine-preventable diseases? What would be the approach to disasters, migration, etc.?
- How to monitor and mitigate such risks? What should the role of PAHO be in maintaining post-elimination status?

- What are the basic post-verification/post-elimination actions needed? (surveillance and monitoring?). Do we need (can we have) standard (regional) Post-Elimination Guidelines (PEG)?
- What are the best pathways (or means) to sustainability of post-verification/post-certification? How to sustain elimination? The supportive and complementary role of Water-Sanitation-Hygiene (WASH); Universal Access to Health Care; Primary Health Care; Sustainable Development Goals and sustainable development, equity and human rights?
- Role of indicators and how to set them and use them? At what scale (local, national, Regional); at what frequency/how often? Is there a role for standard (regional) PEG?
- Are there common indicators to use to determine if Elimination status is lost or Sustainable elimination achieved? How often should it be monitored at country level (on site vs self-referred)?

FOCALITY

- How to declare an entire country free of an infectious disease or NID, when there is only local endemicity (focality)? Must the whole country be evaluated? (a case for trachoma and maybe others)

HISTORICAL ENDEMICITY

- Historically endemic countries: What evidence is needed to say a country was historically endemic but no longer endemic? Recent epidemiological data? A dossier? A verification

process? A surveillance system? Defining the role of countries, PAHO and WHO.

DEFINITIONS OF ELIMINATION

- Applying definitions of elimination: elimination vs. elimination “as a public health problem”
- Do we need a definition of elimination for each mode of transmission and/or for each disease?
- At what scale (local, national) should elimination be measured (city, municipality, state-province, national)?
- Should we (PAHO/WHO) mandate PEG, and what should be done next?
- How should we (PAHO/WHO) handle remaining morbidity/sickness (leprosy, LF lymphedema, chronic Chagas disease)? Role of PAHO underlined?

DOSSIERS

- Are there standard (minimal) elements to include in a dossier for any infectious disease or NID targeted for elimination? Is it possible to standardize such content or not? Should we look into what we have? (immune preventable, sexually/blood and neglected and vector-borne diseases)
- Is there efficiency of linking dossier preparation with International Verification Team (IVT) missions as is done for onchocerciasis and malaria, or can a dossier stand alone?
- Should the dossier include a discussion of Post-elimination strategies?

For the purposes of the discussion, the disease elimination concepts and terminology from Section II.D above will be used.

B. CAPTURING LESSONS LEARNED FROM GLOBAL AND REGIONAL EXPERIENCES

At the end of the first day of the consultation, the participants discussed their first gleanings (preliminary observations, conclusions, recommendations) from the day's presentations and discussions, and addressed some of the overarching/cross-cutting issues posed by PAHO (as outlined in Section A. above).

It was repeated by many of the experts that the LAC region is a laboratory for successes and failures from which other regions and countries can learn. To that end, it was recommended that PAHO should develop a publication (e.g., position paper or discussion paper) on its previous and upcoming activities in disease elimination that includes definitions and examples that show the breadth of experience being pioneered so that other countries can benefit. It was also suggested that the expert group should reconvene every few years to discuss the status of elimination efforts and how well PAHO is advising its member states.

PAHO noted that it would be creating a technical advisory group (TAG) (an external and independent group of experts) to help guide activities in the Neglected, Tropical and Vector-borne Diseases Unit.

Many participants were in favor of using the Health and Human Rights Framework to underpin disease-elimination efforts.

Comments from Day 1 related to the overarching/cross-cutting issues are as follows.

1. Comprehensive elimination agenda

Most of the group was in favor of pursuing a comprehensive elimination agenda (CIDEA), and noted that the development of such an agenda would be helpful for planning purposes. It was suggested that PAHO consider engaging the assistance of someone (one or more) skilled in setting priorities to shape a reasonable agenda. This would include ranking the diseases in terms of cost, timeline, readiness to implement interventions, and likelihood of success.

It should be made clear to PAHO leadership and member countries that all of the diseases are important, but that as a result of constraints, only a few will be pursued at one time. This will be especially important for PAHO itself, as internal human resources are limited and would be stretched too thin covering an exhaustive list of diseases, even if only technical assistance is provided. One of the greatest risks to PAHO is having too many priorities, such that only minimal action can be taken on any one disease, versus making much more significant advances if a limited number of diseases are tackled at any one time. It would also serve PAHO well to identify exactly what contributions they can make to each disease area, as well as reasonable expectations of country (and country partner) capacity to undertake multiple programs simultaneously.

Participants also suggested that an elimination agenda should consider integrated platforms. NID elimination efforts could be combined with existing programs related to surveillance, immunization, vertical disease control programs, MDA, health education, community mobilization, WASH, and MCH, among others. There was some disagreement about whether certain platforms could be strengthened to support more than one disease, and whether they could be re-purposed for other public health problems after elimination. These comprehensive and integrated systems require significant funding and other resources, however, and might not be feasible. A next-best

scenario would be to prioritize which activities could be integrated with other platforms. Some participants noted that, at some point or for some diseases, vertical approaches might be more effective than integrated approaches to reach elimination goals. Also, it will be useful to consider hybrid models (vertical final phase to eliminate, transitioning into a horizontal post-elimination phase to reach sustainability)

The importance of having quantitative targets and goals for each stage in the process (and reflected through indicators) was highlighted as a priority. Any disease added to a comprehensive elimination agenda should meet the basic criteria of being reasonable and rational. These criteria should include the existence of effective diagnostics and interventions as well as data that suggests feasibility and a reasonable end-point. The process would also be facilitated by using consistent language, standardized by WHO/PAHO, to avoid confusion (as discussed in the Definitions of elimination section below).

2. Regional roles

Participants underscored PAHO's critical role in socializing governments into common positions. The group agreed that PAHO supports a culture of elimination in a variety of ways, including convening consultations and supporting member countries by facilitating partnerships, providing guidance on integrating NID elimination activities into existing platforms, and identifying resources that move elimination activities forward.

PAHO also has a leading role to play in helping agencies address competing urgencies. An example of this would be to provide guidance on how to balance large-scale outbreaks that impact countries (e.g., dengue, Chikungunya and other viruses) and regions; while at the same time keeping an eye on diseases that are on the elimination agenda. This is critical at both

the institutional level and the staff level, where the loss of critical personnel for several months has the potential to disrupt and significantly set elimination programs back.

3. Risk of losing elimination status and means to sustain elimination

Because the risk of reappearance is always a threat due to today's increasingly mobile and interconnected society, effective surveillance systems are of paramount importance and must be maintained indefinitely.

4. Focality

Many NID in LAC are very focal in their distribution, even within areas of a country. This is critical to program implementation, especially for elimination, where by definition all areas within a country are required to interrupt transmission. As a starting point, it was recommended that an exhaustive review of medical records, available literature, and even verbal histories should be taken to map existing information about disease distribution. In Somalia, for example, this type of information was used to certify the country as being free of guinea worm based in great measure on the absence of historical records indicating that Guinea worm occurred in the country.

For diseases where good records do not exist and there are valid questions about occurrence of infection, transmission, or disease, a targeted survey will likely be required.

In countries where there is only local infection/disease documented, it would make sense to focus on those areas first, especially if resources are limited or the country is trying to achieve control of the disease as a public health problem. Trachoma in Guatemala would be a good example of this.

5. Historical endemicity

Areas where there is a history of endemicity do not always have current data regarding ongoing transmission. This makes them high-priority areas for initial evaluation to determine whether they are endemic or non-endemic.

Evidence of historical endemicity should indicate that appropriate conditions may exist -- not only in these areas but in other areas of the country -- for transmission, and this may signal that additional surveillance or other surveys will be required before the country can be deemed free of infection or transmission.

6. Definitions of elimination

A lack of precision with regard to use of the term “elimination” may lead to confusion and contribute to a lack of credibility. Some panel members suggested that the term “elimination as a public health problem” (EPHP) should not be used and noted a more appropriate term would be “control as a public health problem.”

It was underscored that control of a debilitating NID as a public health problem is a laudable goal and brings great relief to the population. However, all programs that are currently working towards “elimination as a public health problem” are at risk of having recrudescence of the condition to pre-control levels unless those efforts are maintained forever. Elimination carries the assurance that once accomplished, the disease will never come back or its reappearance is very unlikely.

7. Dossiers

An independent group should be used to assist and monitor data generated within countries. This should be done in a way that ensures country trust but also guarantees the validity of country data when submitted as a dossier

to PAHO/WHO for validation/verification/certification. The RPRG serves this purpose for LF, and could possibly be expanded to include other NID if epidemiologically meaningful for this region. This may prove to be challenging in terms of securing the needed expertise but should nevertheless be considered.

Dossiers are a crucial documentation tool to achieve elimination/eradication. If done correctly, they require a country to conduct a thorough review of the history of the disease in their country and of their program to eliminate or eradicate it. Therefore, countries should ensure that the dossier is exhaustive, inclusive, up to date and as accurate as possible.

There are examples of excellent dossiers on file that can be used as teaching tools and templates for countries to follow. These include relatively recent onchocerciasis dossiers in the Americas, and guinea worm dossiers from Africa.



DISEASE-SPECIFIC TOPICS

On the second day, the group focused on disease-specific topics related to lymphatic filariasis, malaria, trachoma, and schistosomiasis.

A. LYMPHATIC FILARIASIS ELIMINATION IN THE AMERICAS

Presented by Laura Catalá

PAHO provided three key issues for discussion during this session:

1. What are the surveillance system elements and actions needed for properly detecting introduced cases in non-endemic countries or parts of countries?
2. Do historically endemic countries and territories need verification/confirmation?
3. Do countries recently de-listed by WHO as endemic need verification/confirmation? Re-verification?

Additional questions that were posed included:

- How can the countries do the transition from the MDA surveillance phase (based on sentinel sites and spot check sites) to a more sustainable post MDA surveillance beyond the repeat TAS surveys (and/or post elimination surveillance, if any is needed)? Can all the countries implement the same kind of surveillance, or is there need of tailor made systems depending on the existing platforms, resources, capacities, etc. in the countries?

- How can stakeholders support move forward the lymphatic filariasis agenda of the countries that are behind scheduled to achieve the elimination goal?
- How can stakeholders support the countries to fill the financial gap on TAS implementation (and morbidity management)? Do we need more stakeholders/ philanthropy on board? Should we use bioethics and ethics models to grab the attention of potential donors?
- What to do in the evaluation units that did not pass the pre-TAS (even though they meet the remaining TAS eligibility criteria)?

1. Acknowledging country success in elimination

Participants agreed that countries that have been certified as successful in elimination of LF should receive an official/formal letter from WHO. This would reinforce to countries – and especially to volunteers and other workers -- that their work has been successfully completed and a cause for celebration. This would also build momentum for other programs, and also inspire neighboring countries to move towards elimination.

2. Clarification in terminology

Many of the experts questioned the terminology used by WHO that acknowledges the different achievements toward elimination. Currently, LF is targeted for elimination as a public health problem, but participants recommended that it be changed to elimination. The participant from WHO maintained that quality tools [for

verification of elimination of transmission] need to be in place to make this declaration [and make elimination of transmission a demonstrable goal]. The tools are currently in draft form and will soon be available for experimental use. Some of the countries in the Americas could be used to validate these tools.

WHO added that the issue could be discussed at the STAG NTD meeting in 2015.

PAHO requested a clear statement from WHO clarifying the terminology. The Organization also asked for a framework that could be used to educate the public health ministries and collaborators in member countries to help them understand where they are in the process and what is needed.

PAHO elaborated that diplomacy is important in addressing public health issues with countries. It is important to educate countries on the distinctions between different terms – such as elimination vs. eradication – so that they understand what is expected of them at each stage. Media and health care workers also need to be educated on these terms.

In response to concern over a lack of guidance with regard to verification for historically endemic countries and territories, WHO clarified that the term “verification” should be used to indicate the [demonstrable] interruption of transmission after intervention, and it requires more documentation than simply being declared non-endemic. For countries in this situation, consideration can be given to drafting a carefully-worded letter from WHO which could inform countries that they have been removed from the WHO list of LF-endemic countries. It is another point yet to be addressed during the 2015 STAG NTD meeting at WHO.

3. Countries behind schedule in achieving elimination goals

Participants discussed how stakeholder support could help to move the agenda forward for countries that are behind schedule in achieving the goal of LF elimination. In the case of Guyana, PAHO is evaluating a variety of different strategies to address challenges related to lack of political will and lack of human resources. Working with district health managers in the priority districts may help to identify a pathway to achieve higher treatment coverage. Optimizing the work in drug distribution will also help communities recognize the benefits of treatment and elimination. Experts urged an aggressive “catch-up plan” to move Guyana (and consequently the region) into the final stages of being LF-free. Nevertheless it was agreed that not much might happen without the responsible support and political commitment of the country’s central government.

4. Operational research and surveillance

Operational research was highlighted as a valuable tool to characterize elimination, including which specific age groups should be targeted and whether evaluation tools have been useful.

Discussion of surveillance tools and related issues should be included on the RPRG agenda so that tailored guidance can be adapted to the situation in each country, as well as educate PAHO on what systems are available in each country. WHO noted that tools are being developed to make it easier for the countries to build realistic and feasible long-term surveillance systems. This would include guidance on standard surveys and opportunistic surveillance.

Due to cost issues in general, surveillance tools should be used judiciously and focus on areas of greatest risk.

B. MALARIA SITUATION IN THE AMERICAS: IMPACT OF EFFORTS AND ACHIEVEMENTS

Presented by Keith Carter

As of 2013, there were 21 malaria-endemic countries (427,035 cases in 2013), a 68% reduction in confirmed cases since 2000 (74% *P. vivax*, 25% *P. falciparum*, and <1% *P. malariae*). In 2013, 82 deaths were reported, a 78% reduction since 2000. Fourteen PAHO member states are free of local malaria transmission, and Argentina filed an official request in 2014 to the WHO Director General to initiate the process of certification of malaria elimination.

Three key issues were then posed to the group:

1. Reflecting on successes and lesson learned in eliminating malaria in the region: What is the real feasibility of elimination in the Americas, in face of environmental and socioeconomic determinants including health care access and trends?
2. What is the real feasibility of eliminating malaria in the region in the face of current technical and operational challenges like malaria in the Amazon?
3. Having achieved or upon achieving elimination of malaria in a country what are the surveillance system actions needed to face the threat of reintroduction like Jamaica did.

1. Feasibility of elimination

The experts noted that Mesoamerica and Hispaniola would be the most feasible areas to pursue malaria elimination. Especially noteworthy is the island of Hispaniola comprising Haiti and the Dominican Republic. Although

the Haiti malaria program appears weak, a concerted effort to eliminate malaria from the island would go a long way towards making the entire Caribbean region safe from malaria. Although the anticipated costs to achieve this would be high, it might be a good investment to protect Haitians and also surrounding countries that have become malaria free.

Areas that would be more challenging are the Amazon Basin, where access is difficult. There are highly mobile, young male populations, with many travelling from Brazil into Guyana and Suriname. Also, due partly to cultural and language issues and geographic isolation, malaria persists in border areas (e.g., between Honduras and Nicaragua), and within indigenous populations. There are also technical and operational challenges in malaria vector control. Although the local vector may be highly resistant to insecticides, it is not a very effective vector and could conceivably be eliminated. Participants also mentioned the possibility of antimalarial resistance hampering elimination efforts.

Another factor affecting feasibility is the plateau in cases. Indeed, over the past five years, the number of malaria cases in South America remained relatively stable and in fact has shown a slow decline (with the exception of recent increases in Guyana and Venezuela) in cases reported. That, combined with additional funding from the Global Fund in its targeted countries, increases the feasibility of elimination. Argentina and Paraguay have reported no indigenous cases in the last 3 years, and as noted above Argentina filed an official request in 2014 to the WHO Director-General to initiate the process of certification of malaria elimination.

2. Reintroduction of Malaria

There was concern about maintaining elimination when the infection is easily re-established. Reintroduction could occur in

a variety of ways, including migration from neighboring countries, individuals who stop prophylaxis and thus continue to infect mosquitoes, and cases arising from the continued growth of cities and peri-urban areas. Another example of this would be gold miners and agriculture workers encroaching into forested areas and thus being exposed to mosquitoes carrying the parasite in indigenous communities.

An intervention from Trinidad was mentioned as a possible option to help prevent the reintroduction of malaria (and LF): most health districts offered immunochromatographic tests (ICT) and evaluations for LF lymphedema, and had annual education activities to update doctors and nurses on the risk of malaria importation to Trinidad and that antibody rapid tests are available and held in stock in local health posts.

Ongoing vector control might also be worth considering, as would identifying the top 10 localities with cases and targeting them for intervention. Active case detection would be too costly, however. Syndromic surveillance (e.g., fever) may also be helpful, as it captures more than malaria and can help to mitigate the effects of other endemic comorbidities.

Another suggestion was to make both private physicians and general health services workers aware of imported cases. Most important is having a surveillance system that can quickly detect outbreaks and cases. Increasing population movement and resistance to antimalarials and insecticides compound efforts to prevent reintroduction. Novel ways to monitor and track population movements from endemic areas to malaria-free areas should be developed.

3. Integration with other programs

The experts did not agree on the benefits or feasibility of integrating NID efforts with existing platforms or activities for other diseases or development issues. Some asserted that on-

the-ground experience has shown that joint elimination efforts are not successful and that more success in NID elimination has been observed with vertical programs. When and how to move, from an integrated approach towards a more vertical approach would be valuable information, both regionally and globally.

Malaria: Some of the experts' experience with malaria programs specifically has indicated that malaria programs are resistant to having their volunteers distracted by other disease control measures. Moreover, because the malaria workers are volunteers, they are resistant to taking more time out of their day to engage in malaria work. It would benefit the global effort to examine how these volunteers could be mobilized without adding a significant burden to their workload.

Others maintained that the Infrastructure, training, and other organizational structures that are used to eliminate malaria could also be used to control and eliminate other diseases. Basic health systems strengthening could not only be useful for other NID.

It might be useful to conduct a pilot program to strengthen efforts in integrated/comprehensive national plans without sacrificing the success of the malaria programs.

One existing platform that could be easily used is the annual Vaccination Week in the Americas, which is usually held across all countries at the end of April. The vaccination platform could incorporate other activities such as deworming, health education, and dengue control, and reaches border and rural areas, as well as disadvantaged and neglected communities.

Generally, neglected communities are the communities that disproportionately suffer from NID. PAHO could consider convening a working group or discussion group to examine neglected populations in selected countries and determine if there are opportunities to work with other programs on NID that are of common concern.

4. Community involvement in elimination effort

Engaging communities is an important component of elimination efforts, particularly in neglected communities that are usually disempowered. These populations are also loyal to their communities and are more likely to mobilize to help their neighbors.

Moreover, disease elimination needs to be owned by the community and not imposed by external entities. It is more likely to be effective if it is home-grown and will be tailored to the problems in the specific community. This type of intervention could gather community members and pose questions along the lines of “these are the diseases we need to help you address in your community” and “what do you think would be the best ways to do this in your village.” A great example of this is the current situation of malaria affecting indigenous populations in several countries, and been considered the last hurdle, if malaria elimination is to be reached.

C. ELIMINATION OF TRACHOMA AS A PUBLIC HEALTH PROBLEM IN THE REGION OF THE AMERICAS

Presented by Sheila West and Beatriz Muñoz

Three key issues posed for trachoma – and some discussion points to consider -- were as follows:

1. How should PAHO evaluate countries without history of blinding trachoma but with populations with multiple risk factors (e.g., countries bordering Brazil, Colombia, Guatemala, and Peru, Bolivia, etc.)
2. Regarding morbidity management after reaching the elimination goal, how should the capacity and quality assurance for TT

surgery be maintained or assured in formerly endemic countries?

After reaching the elimination goal, we will have TT cases for several years that need comprehensive visual care, including good TT surgery [as occurred in Chiapas, Mexico]. How to meet this challenge?

3. For Post-Treatment Surveillance (PTS), what should be the duration of PTS, what should be the indicators used if TF <5%, and what are the opportunities for validation of elimination?

The group of experts commented, with regard to key issue 1, the challenges for trachoma include that there is no tool to accurately measure interruption of transmission and no vector to target. Currently, a combination of WHO indicators is used to validate EPHP, as part of the Dossier preparation. The largest problem seems to be how to effectively conduct surveillance in areas that do not have historical evidence of either infection or absence of infection. This may require active (costly) surveys in some areas to assure that no pockets of infection/trachoma-induced blindness exist.

With regard to key issue 2, the TT goal is TT <1/1,000 population. After TF <5%, is reached, there will still be TT cases from exposure that occurred many years ago. The question remains about whether this will slow down the declaration of elimination, as TT is also an elimination criterion. Additional outstanding issues are how TT reduction can be integrated into pre-validation surveys, and how to maintain the capacity and quality assurance of TT surgery post-elimination of TF.

With regard to key issue 3, there are new WHO guidelines that recommend another population-

based survey two years after the last treatment. The group considered whether to promote these recommendations widely, and identify the opportunities for validation of elimination once the country believes it has been reached and official documentation is presented.

Similar to trachoma, in the Americas onchocerciasis elimination efforts have made significant progress and the disease is on target for elimination. The risk of blindness from onchocerciasis now is minimal and the last documented case in the Region was reported in the mid 1990's.

D. SCHISTOSOMIASIS ELIMINATION IN THE REGION OF THE AMERICAS

56

Presented by Laura Catalá

The three key issues posed for schistosomiasis were as follows.

1. How should we handle historically endemic countries vis-à-vis elimination criteria?
2. How should we tackle verification of elimination of transmission today?
3. What are alternatives if national costs of verification of elimination exceed national resources available?

Additional key issues were identified:

- How can we support the countries to sustain or re take the challenge of walking the last steps of the path towards elimination? Should we dispel the myth of “asymptomatic/subtle schistosomiasis”?
- How do we tackle the animal and vector

reservoirs that threaten re-introduction? Do we need to expand the “One Health concept” (incorporating human and animal health and environment)?

- Other than PC, what are the key “co-adjuvant” interventions to move schistosomiasis elimination forward in the Americas?
- Is (integrated) vector control crucial in speeding up the process towards elimination? Should we build up capacity on entomology and IVM?

Participants noted that schistosomiasis has a relatively low risk of re-introduction. This supports and makes the goal of elimination feasible in the near term without the need for significant surveillance to prevent or detect re-introduction. Moreover, it was suggested that schistosomiasis provides the greatest number of opportunities to verify countries as being free of infection or, at least, interrupting the existing low-level transmission. Eight of the 10 countries with reported cases of the disease in past decades would require minimal effort to achieve elimination. Perhaps a “strike force” might be considered, whereby a team visits each of the countries either to validate that the disease is eliminated or to recommend conducting a round of MDA [the “strike force” idea is similar to technical mission to verify elimination or validate EPHP and make specific recommendations]. The other two countries, Brazil and Venezuela, might necessitate a longer-term strategy.

In countries where the disease is not considered to be a public health problem or a problem in general – but remains a problem for the global community aiming for elimination of transmission (EOT) -- external resources should be considered to support the effort. In limited-resource countries with myriad other challenges, the desire to eliminate schistosomiasis is more important outside rather than inside the country.

PAHO has a critical role to play in working with these countries to make sure they understand the importance of finishing up the process towards elimination. The case of Saint Lucia illustrates this situation.

1. Evaluation and Use of Diagnostic Tools for Elimination

To work towards elimination, proper tools need to be used to eliminate schistosomiasis transmission. At present, there is no WHO-approved tool for this purpose. It was noted that Suriname or St. Lucia might present an opportunity to evaluate any novel diagnostic tools, and as a result, the LAC region could potentially provide global technical support for using them. PAHO cautioned that the costs of using these tests might be prohibitive in smaller countries, especially when people need to be trained in their use. St. Lucia, for example, does not have the resources to pursue this option. Suriname is in the same situation at present, but perhaps tools could be used there in 5-6 years. It will all depend on the tool developed, the cost of implementing it, the country to work with and the overall support from stakeholders to move the agenda forward.

PAHO recalled that St. Lucia was recently provided with training to conduct a schistosomiasis survey but tackling a Chikungunya virus outbreak was considered more of a priority and diverted resources at the time. This is likely a challenge in other countries that may or may not have the political will and financial resources to pursue elimination. Moreover, the tools may not be available. A question that was posed was whether, by addressing other outbreaks and improving development and public health overall (e.g., building and using latrines rather than open defecation), transmission of schistosomiasis (and STH) would also be prevented.

2. Vector management and animal reservoirs

PAHO is planning to collaborate with countries in the Americas to enhance their technical capacity to address vector control and public health entomology overall. Because several countries have significant experience with snail control, they could provide guidance to others that do not.

There was concern that, in countries where there is documentation of an animal reservoir, it may not be possible to eliminate transmission from the area. One strategy for addressing the animal reservoir and human disease has been employed in China, where they monitored both animals and humans. This model could perhaps be considered.

In the Caribbean, PAHO noted that *S. mansoni*-infected wild rodents were reported found in St. Kitts and Guadalupe, and there was no evidence linking transmission to humans; the natural cycle might be just between rodents and snails. It was nevertheless suggested that perhaps a systematic review should be conducted to see if there are any more animal reservoirs in the region or in other countries. Other recommended embracing the “One Health” concept of considering the intertwined areas of human health, animal health, and environment.

Areas that should continue to receive attention in order to progress towards elimination of schistosomiasis include:

- Definitions for criteria and procedures for validation/verification of schistosomiasis elimination
- Development of sensitive and specific diagnostic tools that may provide a better understanding of the elimination phase in countries that have implemented control programs for many years
- Sustaining diagnostic treatment capacity among institutions and health workers in countries close to elimination

- Updating and adjusting tools and guidelines to scale down MDA, implement and/or strengthen ongoing surveillance after MDA, provide integrated monitoring, and scale-up MMDP.
- Making sure that surveillance systems include the private sector and embrace the concept of “One Health”
- Promoting community empowerment/engagement and developing strategic communication campaigns
- Continuing advocacy to appeal to human rights and an ethical imperative

FINAL COMMENTS FROM EXPERTS

58

In the final discussion session, participants mostly reiterated comments made earlier during the consultation. The following are highlighted.

1. Collaboration and integration

The consultation revealed many synergies and opportunities for (internal and external) collaboration and integration in some of the disease elimination programs. Organizing technical meetings (among PAHO teams) to help identify where some of these harmonies are would be helpful.

Moreover, placing elimination activities under the auspices of an institutional operational framework could create a natural partnership with the International Task Force for Disease Eradication.

Despite the utility of integrated health systems, it remains likely that vertical approaches that employ a targeted focus will be used during

the last steps in the path toward elimination in some countries. Determining when and how vertical approaches could be useful or not, would be helpful not only regionally but globally as well. PAHO should make greater efforts to gather more information on this topic. Editor’s note: Paraguay is a good example of a country where this issue could be evaluated.

2. Clarifying terminology and other guidance from WHO

It will continue to be important to work with WHO to clarify terminology used as part of the disease elimination path, particularly related to instruments and documents for verification or certification and the post-elimination phase. Providing additional guidance would help to locate where elimination has been successful and use those experiences to move forward in the region overall. The value of using “linguistic discipline” and a common vocabulary to minimize confusion was cited as very important.

3. The need for operational research and an overall research agenda

An appropriately focused research agenda would be helpful to overcome obstacles and support a comprehensive elimination agenda for the region. This agenda would focus on providing immediately usable solutions in the field, and help countries reach elimination goals as soon as possible. Guidelines for operational research would be helpful. Editor’s note: a useful reference is WHO, 2008, Framework for Operations and Implementation Research in Health and Disease Control Programs, and PAHO’s Health PAHO Research Promotion and Development program.

Research is also needed to determine which other diseases are amenable to the types of interventions that have already been

undertaken with malaria, LF, schistosomiasis, trachoma; perhaps with taeniasis/cysticercosis/neurocysticercosis, fascioliasis, or vaccine-preventable diseases.

Quality surveillance data is always needed, as it underpins the decisions that are made towards elimination and post-elimination.

4. Moving forward

There is regional enthusiasm for disease elimination, as well as available research funding. The NID community needs to capitalize on this.

PAHO has incredible standing, respect, and influence in the region, and it is imperative that this is maintained and cultured going forward. This will allow PAHO to work with individual countries and within the region to develop a concerted plan to address NID, including the development of a realistic comprehensive elimination strategy, with priorities for the region. In this regard, one of the greatest contributions that PAHO can make is in the area of cross-border activities. Some of the cross-border issues are disease specific, such as the onchocerciasis problem between Brazil and Venezuela, but in other cases, diseases occur in multiple countries that may be contiguous. In these situations, PAHO is positioned to develop a shared, regionally embraced set of goals.

PAHO should set the tone that once a disease is targeted for elimination; all countries in the region have a shared interest and obligation to support that effort. The region has a history of disease control and elimination upon which to build this type of regional support, even if a given disease does not occur in a specific country. PAHO will be creating a regional technical advisory group (TAG) to help guide activities in the Neglected, Tropical and Vector-borne Diseases arena to ultimately benefit countries of the Americas.

A. PAHO CLOSING REMARKS

As the first Regional Consultation on Disease Elimination in the Americas, the meeting provided a useful opportunity to examine both specific and general issues related to the elimination of NID and begin to define a collective path forward, including interprogrammatic opportunities.

WHO colleagues seemed to appreciate the discussions during the consultation, and indicated that they would take them into account within the WHO STAG NTD as well as with disease-specific groups within the Organization.

Experts commended PAHO for its leadership in generating enthusiasm, providing excellent technical advice, and encouraging countries to pursue disease elimination. As the fight against NID continues, there is no doubt that progress in PAHO will exceed expectations advances in other regions.

In future consultations, it was suggested that representatives from the other WHO regions be invited to share their experiences as well.

Sir George Alleyne, Chairman of the group and PAHO/WHO Director Emeritus, ended the meeting with his observations:

- It is clear that NID staff have planted seeds that have led to a culture of elimination within PAHO. The outstanding question is how to involve other sectors and other regions in disease prevention, control, and elimination in both conceptual and programmatic ways.
- The concept of health and human rights

and tackling inequities should be pursued as an overarching framework for eliminating NID, and underpin the implementation of PAHO activities as an organizing force.

- PAHO would be proud to serve as a learning laboratory regarding successes and failures in disease elimination, and inform other regions about its activities and experience.
- Political will remains a vexing issue. It is not always understood why some diseases generate interest and others do not. Public outcry and interest sometimes translates into political interest. Ultimately, understanding the political landscape in each area and knowing how to maneuver through it is the most effective means to bring issues to the fore and engender support.

B. NEXT STEPS

PAHO stated that another consultation might be convened in approximately two years (2017), and reunite participants in this consultation to discuss progress made in the elimination of neglected infectious diseases in the intervening years.

As noted above, PAHO plans to create a regional technical advisory group (TAG) to help guide activities in the Neglected, Tropical and Vector-borne Diseases arena.

Staff also asked the assembled experts to provide additional comments and recommendations on the issues discussed, particularly on the seven cross-cutting/overarching issues that were not addressed as much during the consultation.

ANNEX A – AGENDA

THURSDAY, 12 MARCH 2015		
OVERARCHING/CROSS-CUTTING ISSUES		
TIME	CONTENT	SPEAKER / MODERATOR
0830 - 0845 15 min	Words of Welcome	Dr. Sir George Alleyne (Chair)
0845 - 0900 15 min	Presentation of objectives of the meeting and the work methodology	Dr. Luis Gerardo Castellanos Dr. Steven Ault
REGIONAL BACKGROUND		
0900 - 0910 10 min	Malaria elimination: using and adapting WHO Certification processes in the Americas	Dr. Keith Carter
0910 - 0920 10 min	Where are we in eliminating Neglected Infectious Diseases in the Americas?	Dr. Steven Ault
0920 - 0930 10 min	Certification of Chagas disease elimination in the Americas	Dr. Luis Gerardo Castellanos, on behalf of Dr. Roberto Salvatella
0930 - 0940 10 min	DISCUSSION	Moderator: Dr. Maria de la Paz Adé
0940 - 1000 20 min	Process of certification/verification of elimination of vaccine-preventable diseases in the Americas	Dr. Alba Maria Ropero, on behalf of Dr. Cuauhtémoc Ruiz-Matus

1000 - 1020 20 min	Process of certification/verification of elimination of HIV and syphilis in the Americas, and opportunities with Hepatitis C and TB	Dr. Massimo Ghidinelli
1020 - 1030 10 min	DISCUSSION	Moderator: Dr. Monica Alonso
120 min total		
1030 - 1045 COFFEE / TEA BREAK (lobby)		
CONCEPTUALIZATION		
1045 - 1105 20 min	How do we reach the “End Game” for NTDs? - Perspective of the WHO Dept. of Control of Neglected Tropical Diseases on control and elimination of NTDs	Dr. Dirk Engels
1105 - 1125 20 min	What’s on the short list for Malaria elimination and eradication strategies in today’s multi-actor global public health arena?	Dr. Trent Reubush
1125 - 1145 20 min	What’s the best way forward for the global elimination of lymphatic filariasis (and reaching the “End Game” of NTDs)?	Dr. Patrick Lammie
1145 - 1230 45 min	DISCUSSION	Moderator: Dr. Luis Gerardo Castellanos
105 min total		
1230 - 1400 LUNCH		
CONCEPTUALIZATION Continued		

1400 - 1415 15 min	Guiding regional disease elimination efforts – the key PAHO Resolutions on disease elimination and their indicators	Dr. Steven Ault
1415 - 1430 15 min	Introduction to Overarching/Cross-Cutting Issues in disease elimination relevant to the Americas (See Annex 1): Priority for discussion: <ol style="list-style-type: none"> 1. Comprehensive Elimination Agenda 2. Regional Roles 3. Risk of Losing Elimination Status and Means to Sustain Elimination 4. Focality 5. Historical Endemicity 6. Definitions of Elimination 7. Dossiers 	Dr. Luis Gerardo Castellanos/ Dr. Ault
1430 - 1440 10 min	Disease control, disease elimination and post-elimination actions – Is there any difference from the health and human rights perspective?	Dr. Javier Vasquez
1440 - 1500 20 min	The International Task Force for Disease Eradication (ITFDE): How can the lessons learned be applied to the Americas?	Dr. Don Hopkins
1500 - 1530 30 min	GENERAL DISCUSSION: Capturing the Lessons Learned from Global and Regional Experiences (1st gleanings from today’s presentations and discussions)	Moderator: Dr. Eric Ottesen
120 min total		
1530 - 1545	COFFEE / TEA BREAK (room 1017)	

DELIBERATIONS OF GROUP OF EXPERTS - HARMONIZATION

1545 - 1715

90 min

PANEL OF EXPERTS DISCUSSION and GENERAL RECOMMENDATIONS to PAHO on Overarching/Cross-Cutting Issues (Annex 1) and Harmonization

Moderator: Dr. Sir George Alleyne

135 min total

FRIDAY, 13 MARCH 2015

DISEASE-SPECIFIC DISCUSSIONS

TIME

CONTENT

PARTICIPANTS

DELIBERATIONS OF GROUP OF EXPERTS ON DISEASE-SPECIFIC TOPICS

0900 - 0915

15 min

Information from the Chair and Secretariat

Dr. Sir George Alleyne/Dr. Steven Ault

0915 - 1015

60 min

PANEL OF EXPERTS DISCUSSION ON LYMPHATIC FILARIASIS:
3 key regional issues in elimination (see Annex 2)

Moderator: Dr. Laura Catalá/
Dr. Steven Ault

1015 - 1030

15 min

PANEL'S DISCUSSION WITH AUDIENCE: LYMPHATIC FILARIASIS

Moderator: Dr. Laura Catalá/
Dr. Steven Ault

90 min total

1030 - 1045

COFFEE / TEA BREAK (lobby)

1045 - 1145 60 min	PANEL OF EXPERTS DISCUSSION ON MALARIA (<i>P. vivax</i> , <i>P. falciparum</i>): 3 key regional issues in elimination (see Annex 2)	Moderator: Dr. Keith Carter/ Dr. Prabhjot Singh/Dr. Rainier Escalada
1145 - 1200 15 min	PANEL'S DISCUSSION WITH AUDIENCE: MALARIA	Moderator: Dr. Laura Catalá/ Dr. Steven Ault
1200 - 1230 30 min	FLEXIBLE TIME	
105 min total		
1230 - 1400	LUNCH	
1400 - 1500 60 min	PANEL OF EXPERTS DISCUSSION ON TRACHOMA: 3 key regional issues in elimination (see Annex 2)	Moderator: Dr. Sheila West/ Dr. Beatriz Muñoz
1500 - 1515 15 min	PANEL'S DISCUSSION WITH AUDIENCE: TRACHOMA	Moderator: Dr. Sheila West/ Dr. Beatriz Muñoz/Dr. Steven Ault
COFFEE / TEA BREAK (Ad Lib, in room 1017)		
1515 - 1615 60 min	PANEL OF EXPERTS DISCUSSION ON SCHISTOSOMIASIS (<i>S. mansoni</i>): 3 key regional issues in elimination (see Annex 2)	Moderator: Dr. Laura Catalá/ Dr. Ana Lucianéz/
1615 - 1630 15 min	PANEL'S DISCUSSION WITH AUDIENCE: SCHISTOSOMIASIS	Moderator: Dr. Laura Catalá/ Dr. Ana Lucianéz/

1630 - 1715 60 min	SUMMARY/WRAP-UP of Experts' Recommendations on Disease-Specific Topics	Moderator: Dr. Sir George Alleyne
1715 - 1730 15 min	Words of Thanks and Meeting Closure	Dr. Sir George Alleyne Dr. Luis Gerardo Castellanos

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ANNEX C – DEFINITIONS OF NTD CONTROL, ELIMINATION, AND ERADICATION

DEFINITION OF NTD CONTROL, ELIMINATION AND ERADICATION (WHO 2014)	
CONTROL	<p>Reduction of disease incidence, prevalence, morbidity, and/or mortality to a locally acceptable level (potentially quantified) as a result of deliberate efforts; continued intervention measures are typically required to maintain the reduction.</p> <p>Effective control may lead to reduction of transmission and burden of disease such that a specific disease or impairment may cease to be of public health importance (elimination as a public health problem - is to be quantified if set as a target) or even to zero incidence of that specific disease, leading to elimination.</p>
ELIMINATION	<p>Reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area as a result of deliberate efforts; continued actions to prevent re-establishment of transmission may or may not be required.</p>
ERADICATION	<p>Permanent reduction to zero of the worldwide incidence of infection caused by a specific pathogen as a result of deliberate efforts with no more natural risk of reintroduction and therefore no more actions needed. Eradiation requieres a formal certification process.</p>
EXTINCTION	<p>Eradiation of the specific pathogen such that it no longer exists in nature or the laboratory (and any use of the pathogen is not possible anymore).</p>

ANNEX D – RESOURCES

PAHO REGIONAL PROGRAM OF NEGLECTED INFECTIOUS DISEASES (NIDs), PAHO/CHA/VT: <http://www.paho.org/neglecteddiseases>

From this hyperlink you may click on the information available for trachoma, LF, and schistosomiasis and several other NIDs present in LAC. A number of documents for NID control (meeting reports, manuals, infographics, technical guidelines etc.) are available only in Spanish)

- 2015 Prevalence and intensity of infection of schistosomiasis in the countries of Latin America and the Caribbean, 1942-2014: Systematic review (in Spanish only). Click on Schistosomiasis in the PAHO NID homepage shown above.
- 2014 PAHO/WHO Schistosomiasis Regional Meeting: Defining a road map toward verification of elimination of schistosomiasis transmission in Latin America and the Caribbean by 2020. (in Spanish only). Click on Schistosomiasis in the PAHO NID homepage shown above.
- 2014 PAHO/WHO Workshop on lessons learned and next steps of the National Programs of Elimination of Lymphatic Filariasis and formerly endemic countries (in Spanish only). Click on Lymphatic Filariasis in the PAHO NID homepage shown above.
- 2014 Third Regional Meeting of Program Managers – Trachoma Elimination in the Americas (in Spanish only). Click on Trachoma in the PAHO NID homepage shown above.
- 2014 Epidemiological Profiles (Situation and Distribution Map, 2014) of 10 LAC countries (in Spanish only; click on name of each country to download information).
http://www.paho.org/hq/index.php?option=com_content&view=article&id=9852&Itemid=41071&lang=en
- 2010 PAHO Directing Council Resolution on Strategy and Plan of Action for Chagas disease prevention, control and care.
<http://www2.paho.org/hq/dmdocuments/2010/CD50.R17-e.pdf>
- 2009 PAHO Directing Council Resolution on Neglected Diseases and Other Poverty-Related Infections.
<http://www2.paho.org/hq/dmdocuments/2009/CD49.R19-Eng.pdf>
- 2008 PAHO Directing Council Resolution on Towards the Elimination of Onchocerciasis (River Blindness) in the Americas.
<http://www1.paho.org/english/gov/cd/cd48.r12-e.pdf>

PAHO REGIONAL PROGRAM ON MALARIA: <http://www.paho.org/malaria>

- 2011 PAHO Resolution CD51/11: Strategy and Plan of Action on Malaria
 - WHO procedures for certification of malaria elimination (2014)
 - From malaria control to malaria elimination: a manual for elimination scenario planning (2014)
 - Guide for the Reorientation of Malaria Control Programs with a View Toward Elimination of the Disease (2010)
 - Malaria elimination: a field manual for low and moderate endemic countries (2007)

OTHER RELEVANT PAHO DIRECTING COUNCIL RESOLUTIONS AND RESOURCES:

- 2010 PAHO Directing Council Resolution on Strategy and Plan of Action for the Elimination of Mother-to-Child Transmission of HIV and Congenital Syphilis.

<http://www2.paho.org/hq/dmdocuments/2010/CD50-15-e.pdf>

- PAHO website on Human Rights and Health.

http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1178&Itemid=643&lang=en

- PAHO website on Vaccine Preventable diseases.

http://www.paho.org/hq/index.php?option=com_topics&view=article&id=63&Itemid=40779&lang=en

WHO DEPT. OF CONTROL OF NEGLECTED TROPICAL DISEASES (NTDs): http://www.who.int/neglected_diseases/en/

- 3rd WHO Global Report on NTDs (2015)

http://www.who.int/neglected_diseases/Third_report_2015/en/

- 7th Meeting of the WHO STAG on NTDs (2014)

http://www.who.int/neglected_diseases/seventh_stag/en/

- WHO comprehensive Resolution WHA66.12 on all 17 NTDs (2013)

http://www.who.int/neglected_diseases/mediacentre/WHA_66.12_Eng.pdf?ua=1

- http://www.who.int/neglected_diseases/9789241564861/en/

- WHO Roadmap on NTDs (2012)

http://whqlibdoc.who.int/hq/2012/WHO_HTM_NTD_2012.1_eng.pdf?ua=1

- List of all WHO NTD Resolutions

http://www.who.int/neglected_diseases/mediacentre/resolutions/en/

INTERNATIONAL TASK FORCE FOR DISEASE ERADICATION (ITFDE)/CARTER CENTER: <http://www.cartercenter.org/health/itfde/index.html>

ANNEX E – 2013 EXTRACT OF THE 2ND WHO GLOBAL REPORT ON NTDS, ANNEX 3A

ANNEX 3A. TARGETS AND MILESTONES FOR ELIMINATING¹ AND ERADICATING² NEGLECTED TROPICAL DISEASES, 2015-2020

DISEASE	2015			
	ERADICATION	GLOBAL ELIMINATION	REGIONAL ELIMINATION	COUNTRY ELIMINATION
Rabies ^B			✓ Latin America	
Blinding trachoma				
Endemic treponematoses (yaws)				
Leprosy				
Chagas disease			✓ Transmission through blood transfusion interrupted	
Human African trypanosomiasis				✓ in 80% of foci
Visceral leishmaniasis				
Dracunculiasis				
Lymphatic filariasis				
Onchocerciasis	✓		✓ Latin America	✓ Yemen
Schistosomiasis			✓ Easter Mediterranean Region, Caribbean, Indonesia and the Mekong River basin	

¹ Elimination (interruption of transmission) is the reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area as a result of deliberate efforts; continued actions to prevent re-establishment of transmission may be required (see Section 2.1).

² Eradication is the permanent reduction to zero of the worldwide incidence of infection caused by a specific pathogen as a result of deliberate efforts, with no risk of reintroduction. In some cases a pathogen may become extinct, but others may be present in confined settings, such as laboratories (see Section 2.1).

2020

ERADICATION	GLOBAL ELIMINATION	REGIONAL ELIMINATION	COUNTRY ELIMINATION
		✓ South-East Asia and Western Pacific regions	
	✓		
✓			
	✓		
		✓ Intra-domiciliary transmission interrupted in the Region of the Americas	
	✓		
		✓ Indian subcontinent	
	✓		
			✓ Selected countries in Africa
		✓ Region of the Americas and Western Pacific Region	✓ Selected countries in Africa

ANNEX F – 2009 PAHO DIRECTING COUNCIL RESOLUTION



PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION



49th DIRECTING COUNCIL
61st SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 28 September - 2 October 2009

CD49.R19 (eng.)

ORIGINAL: ENGLISH

80

RESOLUTION

CDR49.R19

ELIMINATION OF NEGLECTED DISEASES AND OTHER POVERTY-RELATED INFECTIONS

The 49th DIRECTING COUNCIL,

Having reviewed the document *Elimination of Neglected Diseases and other Poverty-related Infections* (Document CD49/9), and considering:

- the existence of previous PAHO and WHO mandates and resolutions to address neglected diseases and other infections related to poverty that can be eliminated or drastically reduced;
- the Region of the Americas extensive experience in implementing elimination strategies for communicable diseases and the encouraging advances in reducing the burden of these diseases;
- the need to fulfill the “unfinished agenda”, “since the proportion of those affected remains high among the poorest and most marginalized people of the Americas;

- the need to address the social determinants of health in order to effectively reduce the health, social, and economic burden of neglected diseases and other diseases related to poverty;
- the current opportunity to eliminate or drastically reduce the burden of these diseases with available tools;
- the importance of working to eliminate infectious diseases for which adequate and cost-effective public health interventions exist, but which still continue to afflict the peoples of the Americas;

RESOLVES:

1. To urge the Member States to:

- a.** commit themselves to eliminate or reduce neglected diseases and other infections related to poverty for which tools exist, to levels so that these diseases are no longer considered public health problems by 2015;
- b.** identify priority neglected diseases, vulnerable populations that have lagged behind, gaps in epidemiological information, and the priority geographic areas for intervention (“hot spots”) at subnational levels in the countries;
- c.** review existing specific national plans to control or eliminate these diseases and, where needed, develop new ones that rely on a comprehensive approach and consider social determinants of health, the International Health Regulations (2005), when appropriate interprogrammatic strategies, and inter-sectoral actions,;
- d.** work to provide sufficient resources to ensure the sustainability of national and subnational control programs, including personnel, drug supplies, equipment, health promotion materials, and other needs;
- e.** implement prevention, diagnostic, treatment, vector control, and elimination strategies in an integrated way and with broad community participation, so that they contribute to the strengthening of national health systems, including primary health care and the health surveillance systems;
- f.** explore and, where appropriate, promote a range of incentive schemes for research and development, including addressing, where appropriate, the delinkage of the cost of research and development and the price health products, for example, through the award of prizes, with the objective of addressing diseases which disproportionately affect developing countries;

- g.** mobilize additional resources and involve potential partners within the countries, as well as bilateral and multilateral development agencies, nongovernmental organizations, foundations, and other stakeholders;
- h.** provide support for the promotion of research and scientific development related to new and improved tools, strategies, technologies, and methods to prevent and control neglected diseases, such as the development of accessible diagnostic tests, safer medications, and timely diagnostic mechanisms to reduce late complications in these diseases;
- i.** approve the goals and indicators for the elimination and reduction of neglected diseases and other infections related to poverty considered as priorities by the Member States and listed in Annexes A and B of this resolution;
- j.** work to strengthen the monitoring mechanisms for neglected diseases and to increase access to available disease control tools.

2. To request the Director to:

- a.** continue advocating for an active mobilization of resources and promote the development of close partnerships to support the implementation of this resolution;
- b.** provide technical cooperation to the countries for preparing national plans of action and submitting financing proposals to the trust fund for the elimination of neglected diseases and other poverty-related infections and to other sources;
- c.** promote the identification, development, and use of evidence-based interventions that are technically and scientifically sound;
- d.** promote the implementation of current PAHO/WHO guidelines for the prevention and control of the included diseases;
- e.** promote research and scientific development related to new or improved tools, strategies, technologies, and methods for the prevention and control of the neglected diseases and their consequences;
- f.** support the strengthening of surveillance systems and primary health care, as well as the monitoring and evaluation of the national action plans being implemented;
- g.** strengthen cross-border collaboration among the countries which share the same diseases;
- h.** continue to support and strengthen the mechanisms for acquiring medications, such as the Strategic Fund, so as to treat neglected diseases at the best cost in order to increase access.

Annexes

(Ninth plenary, 2 October 2009)

PRESENCE OF NEGLECTED DISEASES AND OTHER INFECTIONS RELATED TO POVERTY, BY COUNTRY, AND TOTAL NUMBER OF COUNTRIES WHERE EACH DISEASE OCCURS IN LATIN AMERICA AND THE CARIBBEAN. ACCORDING TO THE CRITERIA SET FORTH BELOW¹

COUNTRY	DISEASE												
	CHAGAS' DISEASE	CONGENITAL SYPHILIS	HUMAN RABIES TRANSMITTED BY DOGS	LEPROSY	LYMPHATIC FILARIASIS	MALARIA	NEONATAL TETANUS	ONCHOCERCIASIS	PLAGUE	SCHITOSOMIASIS	SOIL-TRANSMITTED HELMINTHIASIS	TRACHOMA	
Anguila	-	...	-	-	-	-	-	-	-	-	X	-	
Antigua and Barbuda	-	...	-	-	-	-	-	-	-	-	X	-	
Argentina	X	X	X	X	-	X	-	-	-	-	X	-	
Aruba	-	...	-	-	-	-	-	-	-	-	X	-	
Bahamas	-	X	-	-	-	-	-	-	-	-	X	-	
Barbados	-	...	-	-	-	-	-	-	-	-	X	-	
Belize	X	X	-	-	-	X	-	-	-	-	X	-	
Bolivia	X	X	X	X	-	X	X	-	- ^b	-	X	-	
Brazil	X	X	X	X ^a	X	X	X	X	X	X	X	X	
Cayman Islands	-	...	-	-	-	-	-	-	-	-	X	-	
Chile	X	X	-	-	-	-	-	-	-	-	X	-	
Colombia	X	X	X	X	-	X	X	X	-	-	X	-	

¹ PAHO/HSD/CD. Epidemiological Profiles of Neglected Diseases and Other Infections Related to Poverty in Latin America and the Caribbean. Presented at the Consultation on a Latin American and Caribbean Trust Fund for the Prevention, Control and Elimination of Neglected and Other Infectious Diseases. Washington, DC, 15-16 December 2008. Available at: http://new.paho.org/hq/index.php?option=com_joomlabook&Itemid=259&task=display&id=37

COUNTRY	DISEASE												
	CHAGAS' DISEASE	CONGENITAL SYPHILIS	HUMAN RABIES TRANSMITTED BY DOGS	LEPROSY	LYMPHATIC FILARIASIS	MALARIA	NEONATAL TETANUS	ONCHOCERCIASIS	PLAGUE	SCHISTOSOMIASIS	SOIL-TRANSMITTED HELMINTHIASIS	TRACHOMA	
Mexico	X	X	-	X	-	X	X	X	-	-	X	X	
Montserrat	-	...	-	-	-	-	-	-	-	-	X	-	
Netherlands Antilles	-	...	-	-	-	-	-	-	-	-	X	-	
Nicaragua	X	X	-	X	-	X	X	-	-	-	X	-	
Panama	X	X	-	X	-	X	X	-	-	-	X	-	
Paraguay	X	X	-	X	-	X	X	-	-	-	X	-	
Peru	X	X	X	X	-	X	X	-	X	-	X	-	
Saint Kitts and Nevis	-	...	-	-	-	-	-	-	-	-	X	-	
Saint Lucia	-	...	-	X	-	-	-	-	-	X	X	-	
Saint Vincent and the Grenadines	-	...	-	-	-	-	-	-	-	-	X	-	
Suriname	X	...	-	X	-	X	-	-	-	X	X	-	
Trinidad and Tobago	-	X	-	X	-	-	-	-	-	-	X	-	
Turks and Caicos Islands	-	...	-	-	-	-	-	-	-	-	X	-	
Uruguay	X	X	-	X	-	-	-	-	-	-	X	-	
Virgin Islands (UK)	-	...	-	-	-	-	-	-	-	-	X	-	

COUNTRY	DISEASE												
	CHAGAS' DISEASE	CONGENITAL SYPHILIS	HUMAN RABIES TRANSMITTED BY DOGS	LEPROSY	LYMPHATIC FILARIASIS	MALARIA	NEONATAL TETANUS	ONCHOCERCIASIS	PLAGUE	SCHITOSOMIASIS	SOIL-TRANSMITTED HELMINTHIASIS	TRACHOMA	
Virgin Islands (USA)	-	...	-	-	-	-	-	-	-	-	X	-	
Venezuela	X	X	X	X	-	X	X	X	-	X	X	-	
Total number of Latin American and Caribbean countries where the diseases occur	21	25	11	24	4	21	16	6	3	4	ALL	3	

^a in these countries, the disease is only present as a public health problem

^b Previously endemic area

- No evidence

... No information

CRITERIA:

Chagas' disease:

Evidence of any type of transmission in the las 10 years. (1998-2007)

Schistosomiasis:

Evidence of the disease in the last 10 years (1998-2007)

Lymphatic Filariasis:

Evidence of the disease in the last 3 years (2005-2007)

Soil-transmitted helminths:

Evidence of the disease in the last 10 years (2005-2007)

Leprosy:

Evidence of the disease in the last 3 years (2005-2007)

Onchocerciasis:

Evidence of the disease in the last 3 years (2005-2007)

Human rabies transmitted by dogs:

Evidence of the disease in the last 3 years (2006-2008)

Trachoma:

Evidence of the disease in the last 10 years (1998-2007)

Neonatal tetanus:

Evidence of the disease in the last 3 years (2005-2007)

Congenital syphilis:

Evidence of the disease in the last 3 years (2005-2007)

Malaria:

Evidence of continuous local transmission in the last 3 years (2005-2007)

Plague:

Evidence of the disease in the last 3 years (2006-2008)

EPIDEMIOLOGICAL SITUATION, ELIMINATION GOALS, AND PRIMARY ELIMINATION STRATEGIES FOR SELECTED NEGLECTED DISEASES AND OTHER INFECTIONS RELATED TO POVERTY.²

This annex details the diseases proposed for elimination and the epidemiological situation, goals, and strategies. The strategies should be adopted by the countries in a manner consistent with their health policies, epidemiological situation, and structure of their health services networks.

GROUP 1: DISEASES THAT HAVE A GREATER POTENTIAL FOR BEING ELIMINATED (WITH AVAILABLE COST-EFFECTIVE INTERVENTIONS)

CHAGAS' DISEASE

87

EPIDEMIOLOGICAL SITUATION

- There was evidence of transmission in 21 countries of the Americas.
- It is estimated that 8 to 9 million people are currently infected.
- 40,000 new cases of vector-borne transmission per year.
- Vector-borne by the main vectors has been interrupted in several countries (Uruguay, Chile, Brazil, and Guatemala) and areas (Argentina and Paraguay).
- Most countries in Latin America are close to reaching the goal of implementing screening for Chagas in 100% of their blood banks.

GOALS

- To interrupt domestic vector-borne transmission of *T. cruzi* (domestic triatomine infestation index of less than 1% and negative seroprevalence in children up to five years of age, with the exception of the minimum represented by cases in children of seropositive mothers).
- To interrupt transfusional transmission of *T. cruzi* (100% blood screening coverage).³

² PAHO/HSD/CD. Epidemiological Profiles of Neglected Diseases and Other Infections Related to Poverty in Latin America and the Caribbean. Presented at the Consultation on a Latin American and Caribbean Trust Fund for the Prevention, Control and Elimination of Neglected and Other Infectious Diseases. Washington, DC, 15-16 December 2008. Available at: http://new.paho.org/hq/index.php?option=com_joomlabook&Itemid=259&task=display&id=37

PRIMARY STRATEGY

- To integrate diagnosis of Chagas' disease in the primary health care system, in order to provide treatment and medical care to all patients for both the acute and chronic phases and to reinforce the supply chain of the existing treatments within countries to scale up access.
- To prevent the development of cardiomyopathies and intestinal problems related to Chagas' disease, offering adequate health care to those affected by the various stages of the disease.
- To eliminate vectors in the home through chemical control.
- Environment management programs.
- Information / Education / Communication (IEC).
- Screening of blood samples in blood banks to avoid transmission by blood transfusion.
- Screening of pregnant women and treatment to avoid congenital transmission.
- Good practices on food preparation to avoid oral transmission.
- Etiologic treatment of children.
- Offer medical care to adults with Chagas' disease.

CONGENITAL SYPHILIS

EPIDEMIOLOGICAL SITUATION

- It is estimated that 250,000 cases of congenital syphilis occur each year in the Region.
- In a 2006 survey, 14 countries reported the incidence of congenital syphilis in live births, with a range varying from 0.0 cases per 1,000 live births in Cuba to 1.56 in Brazil.

GOALS

- To eliminate congenital syphilis as a public health problem (less than 0.5 cases per 1,000 live births).⁴

PRIMARY STRATEGY

- Obligatory notification of syphilis and congenital syphilis for pregnant women.
- Universal blood screening during the first prenatal visit (<20 weeks,) during the third trimester, during labor, and abortion/miscarriage.

³ Based on: WHO. *Elimination of transmission of Chagas Disease*. WHA51.14. Fifty-first World Health Assembly. 1998.

⁴ Based on: OPS. *Plan de Acción para la eliminación de la sífilis congénita*. 116^a Reunión del Comité Ejecutivo. CE116/14. OPS, 1995.

- Timely and adequate treatment for all expectant mothers with syphilis, and the same for spouses and newborns.

HUMAN RABIES TRANSMITTED BY DOGS

EPIDEMIOLOGICAL SITUATION

- The disease has been present in 11 countries in the past 3 years.
- Even though the number of human cases is low (16 in 2008) due to country efforts, the number of people who live in risk areas due to rabies in dogs is still high.
- The majority of the cases occurred in Haiti and Bolivia.

GOALS

- To eliminate human rabies transmitted by dogs (zero cases reported to the Epidemiological Surveillance System for Rabies (SIRVERA) coordinated by PAHO).⁵

PRIMARY STRATEGY

- Vaccination of 80% of the canine population in endemic areas.
- Care given to 100% of the exposed population at risk with post-exposure prophylaxis when indicated.
- Epidemiological surveillance.
- Education and communication to increase awareness of the risk of rabies.
- Control of the canine population.
- Action to prevent reintroduction.

LEPROSY

EPIDEMIOLOGICAL SITUATION

- There are 24 countries where the disease has been present in the last three years.
- Only in Brazil did the national prevalence not reach the “elimination as a public health problem” goal of fewer than one case per 10,000 population.
- In 2007, 49,388 cases of leprosy were reported in the Americas, and 42,000 new cases were detected.
- In the same year, 3,400 new cases (8% of the total) were detected with grade-2 disability.

⁵ Based on: PAHO. *15th Inter-American Meeting at the Ministerial Level on Health and Agriculture (RIMSA): “Agriculture and Health: Alliance for Equity and Rural Development in the Americas”*. CD48.R13. Forty-eighth Directing Council.

GOALS

- To eliminate leprosy as a public health problem (less than 1 case per 10,000 people) from the first sub-national political/administrative levels.^{6,7,8}

PRIMARY STRATEGY

- Intensified surveillance of contacts.
- Treatment with timely multi-drug therapy in at least 99% of all patients.
- Define the appropriated introduction of chemoprophylaxis.
- Early detection of grade-2 disabilities.

LYMPHATIC FILARIASIS

EPIDEMIOLOGICAL SITUATION

- The disease is present in Brazil, the Dominican Republic, Guyana, and Haiti.
- It is estimated that up to 11 million people are at risk of infection.
- The population most at-risk is in Haiti (90%).

GOALS

- To eliminate the disease as a public health problem (less than 1% prevalence of microfilaria in adults in sentinel sites and spot-check sites in the area).
- Interrupt its transmission (no children between ages 2 and 4 are antigen-positive).
- To prevent and control disability.⁹

PRIMARY STRATEGY

- Mass drug administration (MDA) once a year for at least 5 years with coverage of no less than 75% or consumption of diethylcarbamazine (DEC)-fortified table salt in the daily diet.
- Surveillance of LF morbidity by local health surveillance systems.

⁶ Based on: WHO. Adoption of Multidrug Therapy for Elimination of Leprosy as a Public Health Problem. Forty-fourth World Health Assembly. WHA44.9. Geneva: WHO, 1991.

⁷ Based on: WHO. Guide to Eliminate Leprosy as a Public Health Problem. Geneva: WHO, 2000.

⁸ Instead of the goal of elimination, Brazil will adopt the targets recommended for epidemiological surveillance of the disease contained in WHO document "Enhanced Global Strategy for Further Reducing the Disease Burden Due to Leprosy-2011-2015" (SEA-GLP-2009.4)

- Number of new cases detected per year and rate per 100,000 population
- Number of new cases with grade 2 disability per year and rate per 100,000 population
- Proportion of patients who complete their treatment in a timely manner as a proxy for cure

⁹ Based on: WHO. Monitoring and epidemiological assessment of the programme to eliminate lymphatic filariasis at implementation unit level. Geneva: WHO, 2005.

- Morbidity case management.
- Integration/coordination of MDA with others strategies.
- Communication strategies and education in schools.

MALARIA

EPIDEMIOLOGICAL SITUATION

- There are 21 malaria-endemic countries in the Region.
- Some countries, such as Paraguay and Argentina, are of low endemicity (fewer than one case per 1,000 population at risk) and have well established foci.
- In the Caribbean, only Haiti and the Dominican Republic are considered endemic, reporting approximately 26,000 cases in 2007 (90% in Haiti).

GOALS

- To eliminate malaria in areas where interruption of local transmission is feasible (Argentina, the Dominican Republic, Haiti, Mexico, Paraguay, and Central America).¹⁰
- Elimination (zero local cases for 3 consecutive years); pre-elimination (slide positivity rate = <5% and <1 case/1,000 population at risk).¹¹

PRIMARY STRATEGY

- Prevention, surveillance, early detection and containment of epidemics.
- Integrated vector management.
- Prompt diagnosis and appropriate treatment of cases.
- Intensive pharmacovigilance of possible resistance to treatment and use of results in definition of treatment policy.
- Strengthening of primary health care and integration of prevention and control efforts with other health programs.
- Community participation.

NEONATAL TETANUS

EPIDEMIOLOGICAL SITUATION

- The disease has been present in lower rates in 16 countries in the past 3 years.
- A total of 63 cases were reported in 2007 (38 in Haiti).
- It has been eliminated as a public health problem in all Latin American and Caribbean countries except Haiti.

¹⁰ Based on: PAHO. Malaria: Progress Report. 142nd Session of the Executive Committee. CE142/16. PAHO. 2008.

¹¹ Based on: WHO. *Global Malaria Control and Elimination: Report of a Technical Review*. 17-18 January, 2008. WHO. 2008. p.9.

GOALS

- To eliminate the disease as a public health problem (fewer than 1 case per 1,000 newborns per year in a municipality or district).¹²

PRIMARY STRATEGY

- Immunization of women of childbearing age with tetanus toxoid.
- Identification of high risk areas.
- Adequate surveillance.
- Clean delivery and post-delivery practices.

ONCHOCERCIASIS

EPIDEMIOLOGICAL SITUATION

- It is estimated that 50,000 people are at risk in the Region.
- 13 foci exist in Brazil, Colombia, Ecuador, Guatemala, Mexico, and Venezuela.
- In 6 foci, transmission appears to have been interrupted following massive drug administration with a coverage of at least 85% of the eligible population.
- They are currently undergoing a three-year post-treatment surveillance prior to certification of elimination.

GOALS

- To eliminate ocular morbidity and to interrupt transmission.^{13, 14}

PRIMARY STRATEGY

- Mass drug treatment administration at least twice a year in order to reach at least 85% of the eligible population in each endemic area.
- Surveillance of signs of ocular morbidity, microfilaria, nodules.
- Dermatological care through the primary health care system in areas where skin infection is a problem.

¹² Basado en: Organización Panamericana de la salud. *Neonatal tetanus Elimination: Field Guide*, Second edition. Scientific and Technical Publication No. 602, Washington, D.C., 2005.

¹³ Based on: PAHO. *Toward the Elimination of Onchocerciasis (River Blindness) in the Americas*. (CD48/10). Forty-eighth Directing Council of the Pan American Health Organization. Washington, DC: PAHO, 2008.

¹⁴ Based on: WHO. *Certification of elimination of human onchocerciasis: criteria and procedures*. Guidelines. WHO; 2001.

PLAGUE

EPIDEMIOLOGICAL SITUATION

- The disease is present in wild foci in 5 countries with sporadic cases: Bolivia (no reported cases during last 10 years), Brazil, Ecuador, Peru and United States.
- Currently the number of cases throughout Latin America is low (around 12 cases per year).
- Most of the cases reported are in Peru.
- Very few are fatal.
- The cases usually occur in small rural villages with extreme poverty.

GOALS

- To eliminate as a public health problem (zero mortality cases and avoid domiciliary outbreaks).

PRIMARY STRATEGY

- Early detection and timely case management.
- Surveillance of the wild foci.
- Housing and sanitation improvements.
- Rodent and vector control.
- Intersectoral programs for improvement for storage of crops.
- Adequate elimination of agricultural waste.
- Extra household installations for farming the “cuyes” (type of guinea pig used for food consumption).

TRACHOMA

EPIDEMIOLOGICAL SITUATION

- There is evidence of the presence of the disease in Brazil, Guatemala, and Mexico.
- Foci have been confirmed in Brazilian border states but no data was found for neighboring countries.
- It is estimated that around 50 million people live in areas at-risk and about 7,000 cases have been identified, mostly in Brazil.

GOALS

- To eliminate new cases of blindness caused by trachoma (reduction in the prevalence of trachomatous trichiasis to less than 1 case per 1,000 (general population) and reduction in the prevalence of follicular or inflammatory trachoma (FT and IT) to less than 5% in children aged 1-9 years).^{15, 16}

PRIMARY STRATEGY

- The “SAFE” strategy is used with the following components:
 - To prevent blindness through eyelid surgery to correct the inversion or entropion of the upper eyelid and trichiasis.
 - To reduce the transmission in endemic areas by washing of the face and by using antibiotics.

GROUP 2: DISEASES WHOSE PREVALENCE CAN BE DRASTICALLY REDUCED (WITH AVAILABLE COST-EFFECTIVE INTERVENTIONS)

SCHISTOSOMIASIS

EPIDEMIOLOGICAL SITUATION

- The disease is present in: Brazil, Saint Lucia, Suriname, and Venezuela.
- Studies are needed to confirm the elimination of previously endemic areas in the Caribbean.
- It is estimated that around 25 million people live at risk in the Americas.
- Around 1 to 3 million people are estimated to be infected.

GOALS

- To reduce prevalence and parasite load in high transmission areas to less than 10% prevalence as measured by quantitative egg counts.^{17, 18}

PRIMARY STRATEGY

- Preventive chemotherapy for at least 75% of school-age children that live in at-risk areas, defined by prevalence over 10% in school-age children.
- Improvements of excreta disposal systems and access to drinking water, education.

¹⁵ Based on: WHO. Report of the Global Scientific Meeting on Future Approaches to Trachoma Control. Geneva: WHO; 1996. p. 4-7.

¹⁶ Based on: WHO. Trachoma control: A guide for programme managers. WHO, 2006.

¹⁷ Based on: WHO. *Preventive chemotherapy in human helminthiasis*. Geneva: WHO, 2006.

¹⁸ Based on: WHO. *Schistosomiasis and soil-transmitted helminth infections*. Fifty-fourth World Health Assembly. WHA54.19. Geneva: WHO, 2001.

SOIL-TRANSMITTED HELMINTHIASIS

EPIDEMIOLOGICAL SITUATION

- It is estimated that soil-transmitted helminthiasis is present in all the Region's countries.
- Regional estimates put the number of school-age children at risk of the disease at 2.6 million in Latin America and the Caribbean.
- 13 of the 14 countries with information available there were one or more areas with prevalence of STH higher than 20%.

GOALS

- To reduce prevalence among school-age children in high risk areas (prevalence >50%) to less than <20% prevalence as measured by quantitative egg count. ¹⁹

PRIMARY STRATEGY

- Regular administration of preventive chemotherapy/or mass drug administration (MDA) for at least 75% of school-age children at risk, as defined by the countries considering the prevalence. If prevalence of any soil-transmitted helminthiasis infection among school-age children is $\geq 50\%$ (high-risk community), treat all school-age children twice each year. If prevalence of any soil-transmitted helminthiasis infection among at-risk school-age children is $\geq 20\%$ and $< 50\%$ (low-risk community), treat all school-age children once each year.
- Promoting access to safe water, sanitation and health education, through intersectoral collaboration.

¹⁹ Based on: WHO. *Preventive chemotherapy in Human Helminthiasis*. Geneva: WHO; 2006.

ANNEX G – 2013 WORLD HEALTH ASSEMBLY RESOLUTION

SIXTY-SIXTH WORLD HEALTH ASSEMBLY

WHA66.12

Agenda item 16.2

27 May 2013

NEGLECTED TROPICAL DISEASES

The Sixty-sixth World Health Assembly,

Having considered the report on neglected tropical diseases,¹ and recalling the previous World Health Assembly resolutions listed therein;

Recognizing that increased national and international investments in prevention and control of neglected tropical diseases have succeeded in improving health and social well-being in many countries;

Recognizing also the importance of the Global Plan to Combat Neglected Tropical Diseases 2008-2015;

Noting WHO's roadmap to accelerate the work to overcome the global impact of neglected tropical diseases;¹

Acknowledging the linkages between, and mutual supportiveness of, control and elimination of neglected tropical diseases will need adequately resourced national programmes functioning within effective health, education and other sectors in order to provide for an uninterrupted supply and delivery of quality-assured commodities and services;

Realizing that current approaches to the prevention and control of neglected tropical diseases, when implemented in an integrated manner and across all relevant sectors, are highly effective and contribute to stronger health systems and the achievement of the health-related Millennium Development Goals, but that there are still many challenges;

Appreciating the generous contribution of pharmaceutical companies in donating sufficient quantities of quality-assured essential medicines for the prevention and treatment of neglected tropical diseases, while acknowledging the need to ensure their continuous availability and affordability;

¹ Document A66/20.

Recognizing the contribution of bodies in the United Nations system, intergovernmental and nongovernmental organizations, academic institutions and civil society;

Recognizing also the diversity of neglected tropical diseases, their causative agents and relevant vectors and intermediate hosts, their epidemic potential (such as for dengue, Chagas disease, human rabies of canine origin and leishmaniasis), and their morbidity, mortality and associated stigmatization,

1. URGES Member States:

(1) to ensure continued country ownership of programmes for neglected tropical disease prevention, control, elimination and eradication;

(2) to further strengthen the disease surveillance system especially on neglected tropical diseases targeted for eradication;

(3) to expand and implement, as appropriate, interventions against neglected tropical diseases in order to reach the targets agreed in the Global Plan to Combat Neglected Tropical Diseases 2008-2015, as set out in WHO's roadmap for accelerating work to overcome the global impact of neglected tropical diseases and noting the London Declaration on Neglected Tropical Diseases by;

a. ensuring that resources match national requirements and flow in a sustainable manner as a result of thorough planning and costing of prevention and control activities and detailed analysis of associated expenditures;

b. enabling improvement of the management of the supply chain, in particular through forecasting, timely procurement of quality-assured goods, improved stock-management systems, and facilitating importation and customs clearance;

c. integrating neglected tropical diseases control programmes into primary health care services and vaccination campaigns, or into existing programmes where feasible, in order to achieve greater coverage and reduce operational costs;

d. ensuring appropriate programme management and implementation through the development, sustenance and supervision of a cadre of skilled staff (including other sectors than health) at national, district and community levels;

(4) to advocate predictable, long-term, international financing for the control of neglected tropical diseases;

(5) to enhance and sustain national financial commitments, including resource mobilization from sectors other than health;

(6) to strengthen capacity for prevention and control of neglected tropical diseases,

strengthening research, in order to accelerate implementation of the policies and strategies designed to achieve the targets set by the Health Assembly in various resolutions related to specific neglected tropical diseases as well as in the roadmap and the London Declaration;

(7) to strengthen national capacity for monitoring and evaluation of the impact of interventions against neglected tropical diseases;

(8) to devise plans for achieving and maintaining universal access to and coverage with interventions against neglected tropical diseases, notably:

a. to provide prompt diagnostic testing of all suspected cases of neglected tropical diseases and effective treatment with appropriate therapy of patients in both the public and private sectors at all levels of the health system including the community level;

b. to implement and sustain coverage with preventive chemotherapy¹ of at least 75% of the populations in need, as a prerequisite for achieving goals of disease control or elimination;

c. to improve coordination for reducing transmission and strengthening control of neglected tropical diseases taking into account social determinants of health, through provision of safe drinking-water, basic sanitation, health promotion and education, vector control and veterinary public health, taking into consideration One Health;

2. CALLS upon WHO's international partners, including intergovernmental, international and nongovernmental organizations, financing bodies, academic and research institutions, civil society and the private sector:

(1) to support Member States, as appropriate:

a. to provide sufficient and predictable funding to enable the targets for 2015 and 2020 to be met and efforts to control neglected tropical diseases to be sustained;

b. to harmonize the provision of support to countries for implementing a national plan based on WHO-recommended policies and strategies and using commodities that meet international quality standards;

c. to promote universal access to preventive chemotherapy, and diagnostics, case management, and vector control and other prevention measures, as well as effective surveillance systems;

(2) to encourage initiatives for the research and development of new diagnostics, medicines, vaccines, and pesticides and biocides, improved tools and technologies and other innovative instruments for vector control and infection prevention and to support operational research to increase efficiency and cost-effectiveness of interventions, taking into account the global strategy and plan of action on public health, innovation and intellectual property;

¹ Preventive chemotherapy means large-scale preventive treatment against helminthiases and trachoma with safe, single-dose, quality-assured medicines.

(3) to collaborate with WHO in order to provide support to Member States in measuring progress towards, and in accomplishing, their goals of elimination and eradication of selected neglected tropical diseases;

3. REQUESTS the Director-General:

(1) to sustain WHO's leadership in the drive to overcome neglected tropical diseases;

(2) to support the development and updating of evidence-based norms, standards, policies, guidelines and strategies and research for prevention, control and elimination of neglected tropical diseases in order to chart a course for reaching the related targets set in resolutions of the Health Assembly;

(3) to monitor progress in achieving the targets for neglected tropical diseases set in WHO's roadmap for accelerating work to overcome the global impact of neglected tropical diseases, and to provide support to Member States in their efforts to collect, validate and analyse data from national surveillance systems;

(4) to provide support to Member States to strengthen human resource capacity for prevention, diagnosis and control of neglected tropical diseases, including vector control and veterinary public health;

(5) to encourage and support initiatives to discover and obtain new diagnostic tools, medicines and vector control measures, and to support operational research to increase the efficacy and cost-effectiveness of interventions;

(6) to report, through the Executive Board, to the Sixty-eighth World Health Assembly on progress towards the elimination and eradication of targeted diseases.

