



LYMPHATIC FILARIASIS ELIMINATION IN THE AMERICAS

*Regional Program Manager's
Meeting*

Washington, DC
24-26 February, 2010



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Tribute to Dok Pagenel and the victims of the 2010 Earthquake

List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
APOC	African Program for Onchocerciasis Control
CCA	Circulating Cathodic Antigen
CCT	Conditional Cash Transfer
CD	Compact Disc
CDC	US Centers for Disease Control and Prevention
CDD	Community Drug Distributors
CENCET	National Center of Tropical Disease Control
CEO	Chief Executive Officer
CNTD	Center for Neglected Tropical Diseases
COMBI	Communication for Behavioral Impact
CR	Costa Rica
CSC	Congregation of Holy Cross
CV	Curriculum Vitae
DALY	disability-adjusted life year
DDT	Dichlorodiphenyltrichloroethane
DEC	Diethylcarbamazine
DFID	Department for International Development
DNA	Deoxyribonucleic Acid
DPP	Diflucan Partnership Program
DR	Dominican Republic
EG	Executive Group
ELISA	Enzyme-linked Immunosorbent Assay
FIOCRUZ	Centro de Pesquisas Aggeu Magalhães
GAELF	Global Alliance for the Elimination of Lymphatic Filariasis
GELF	Global program for Elimination of Lymphatic Filariasis
GNNTD	Global Network for Neglected Tropical Diseases
GPELF	Global Program to Eliminate Lymphatic Filariasis
GSK	GlaxoSmithKline
GWU	George Washington University
HHVI	Human Hookworm Vaccine Initiative
HIV	Human Immunodeficiency Virus
HSC	Hôpital St. Croix
ICT	Immunochromatographic
IDB or IADB	Inter-American Development Bank
IDP	Internally Displaced Persons
IEC	Information, Education and Communication
IMA	Interchurch Medical Assistance or IMA World Health Organization
IP	Positive Index
IRS	Indoor Residual Spraying
ITFDE	International Task Force for Disease Eradication
IVM	Integrated Vector Management
IVU or IVUmed	International Volunteers in Urology
KAPB	Knowledge, Attitude, Perception and Belief
LAC	Latin America and the Caribbean
LDCs	less developed countries
LF	Lymphatic Filariasis
M&E	Monitoring and Evaluation

MDA	Mass Drug Administration
MNEFP	Haitian Ministry of Education
MS	Michigan State University
MSPP	Haitian Ministry of Health and Population
ND	Neglected Diseases
NGDOs	Non-governmental Development Organizations
NGOs	Non-governmental Organization
NIDs	Neglected Infectious Diseases
NTDs or NTD	Neglected Tropical Diseases
OCHA	Office for Coordination of Humanitarian Affairs
OEPA	Onchocerciasis Elimination Program for the Americas
OIM	Organization for International Migration
Oncho	Onchocerciasis
OV16	Onchocerca volvulus antigen
PAs	Physician Assistants
PAP	Port au Prince
PAHO	Pan American Health Organization
PCR	Polymerase chain reaction
PDA	Personal Digital Assistant
PDNA	Post Disaster Needs Assessment
PELF	Program for Elimination of Lymphatic Filariasis
PHC	Primary Healthcare
PIH	Partners in Health
PNEFL	National Program to Eliminate Lymphatic Filariasis
POA	Plan of Action
PRG	Program Review Group
PTS	Post Treatment Surveillance
QTLs	Quantitative trait loci
R&D	Research and Development
RCG	Representative Contact Group
RFP	Request for Proposals
RIDL	Release of Insects carrying a Dominant Lethal gene
RMR	Recife Metropolitan Region
RPRG	Regional Program Review Group
RTI	Research Triangle Institute or RTI International
STH	Soil Transmitted Helminths
TB	Tuberculosis
TBD	To Be Determined
T&T	Trinidad and Tobago
UND	University of Notre Dame
UN	United Nations
US	United States
USAID	United States Agency for International Development
USC	Union of Communal Health
WASH	Water, Sanitation and Hygiene
WFP	World Food Program
WHA	World Health Assembly
WHO	World Health Organization
WSA or WAS	Water and Sanitation
ZL	Zanmi Lasante

Welcome and Opening Remarks

Chairman: Dr. Steven Ault, PAHO Advisor on Neglected Diseases

Dr. Ault opened by the meeting by welcoming all the participants to the meeting. He briefly introduced Dr. Jarbas Barbosa, Area manager, Health surveillance and disease management, PAHO/WHO, and Dr. Kazuyo Ichimori, Global Programme for LF Elimination, WHO, prior to their opening remarks.

Dr. Jarbas Barbosa, Area manager, Health surveillance and disease management, PAHO/WHO

Dr. Barbosa opened the meeting by welcoming everyone to PAHO Headquarters for the 9th Regional Meeting of the Lymphatic Filariasis Program Managers, which was held in Washington, DC for the first time. He noted that in October 2009, PAHO's Directing Council approved the first Resolution to end the neglect of NTDs and other poverty-related infections in the Americas. The Resolution shows that there is political will in the region to eliminate neglected diseases and other poverty-related infections in the Americas, Dr. Barbosa explained. He said that in it, PAHO Member States have pledged to strengthen efforts to eliminate five NTDs: lymphatic filariasis, onchocerciasis, blinding trachoma, Chagas disease and schistosomiasis in the Caribbean, as well as to drastically reduce the burden of schistosomiasis and soil-transmitted helminthes by the year 2015. Dr. Barbosa concluded his remarks by saying that free and low-cost drugs and other effective interventions are available, and by expressing his confidence that with stepped-up efforts and mobilization of resources, he believes the goals set in the Resolution are within reach. He also asked participants to introduce themselves briefly.

Dr. Kazuyo Ichimori, Coordinator, Global Programme for LF Elimination, WHO

Dr. Ichimori said that the WHO Global Programme's goal is to eliminate LF by 2020. She indicated that the WHO is currently reviewing the first 10 years of the Programme's operation, as well as creating a strategic plan for the coming 10 years. She mentioned that her programme has an integrated approach with other NTD programmes, and she is looking forward to learning from the successes and experiences of the PAHO LF elimination program.

Dr. Steven Ault, PAHO Advisor on Neglected Diseases

Dr. Ault began his remarks by offering a special welcome to Gustavo de Azevedo Couto, Secretary of Health of Recife, Pernambuco, Brazil, and extending a warm welcome to all the participants.

Dr. Ault said that the meeting would begin with country presentations and he summarized the main milestones and challenges facing some of the countries present. He indicated that Haiti had scaled up MDA, with 3 million people were being reached by the end of 2009 and morbidity programs in place. The recent earthquake will require many adjustments, however, he said.

He indicated that the Dominican Republic has been proceeding with the evaluation of the SW focus to see if transmission has been interrupted. He said that Guyana has been linking STH deworming with its LF program as a pilot project and is planning scale-up. He mentioned that three municipalities in Recife, Brazil, have been scaling up MDA and have drafted a shared action plan to eliminate and control several NTDs, including LF, in pilot areas.

Continuing to lay out the meeting agenda, Dr. Ault said that in the afternoon, there would be a special meeting, a Multipartners Dialogue for the Rebuilding of the Neglected Diseases Program in Haiti.

The next day will be devoted to the Voices from the Field, with technical presentations and discussions

continuing on from the previous day, he said. On that day, program managers from Haiti and the Dominican Republic will present more details about the impacts of the earthquake. Other topics for the day include integrated approaches to NTD control, interruption of onchocerciasis transmission in Colombia, morbidity management, vector control, reports from several research programs, and M&E for LF programs, he said.

The last day of the meeting will include a workshop with program managers and key partners, Dr. Ault said. Together, participants will develop a mini-proposal aimed at integrated NTD control with elimination of LF transmission, morbidity management and vector control, along with the creation of synergies with other health programs and related sectors. The complete program agenda can be found in the annex.

Dr. Ault concluded his opening remarks by asking Dr. Manuel Gonzalez to present an update of the advances and challenges of the program in the Dominican Republic.

Executive Summary

Country's NTD Program Needs

Dominican Republic

- national surveillance system and in mapping the location of Haitian immigrants. Support in developing the
- on efforts to integrate NTDs into one national program. Support in following up

Suriname

- process for certification of elimination. To finalize and finish the
- sentinel site and to coordinate closely with Guyana on border control. Support to develop a

Guyana

- reporting process for all countries; and especially facilitate reporting to the WHO. To streamline the annual
- testing and issuing medication to migrants, possibly at border points between Suriname and Guyana, in order to catch cases that come into countries through migration. Support with surveillance,

Costa Rica

- dossier and certification documentation. Support in preparing the
- COMBI not only for LF, but for other vector-transmitted disease programs, as well. Support in implementing

Brazil

- the metropolitan region, increase integration and strengthen the working relationship with the local PAHO office in Brazil. To intensify the focus on
- learning about the work of Dr. Gonzalez on surveillance relating to migration and identifying LF cases prior to presentation of symptoms. They are interested in
- tools and determining which tools are the best for conducting evaluation is very important, not just epidemiology, but evaluation of the program as a whole (i.e. program effectiveness, processes, management, and results). To look at evaluation

Recommendations for Future Regional Activities

- the use and strengthening of tools for use in planning methodologies such as COMBI and integrated vector management (IVM). Dr. Chadee and PAHO are interested in working on a research project to create and test tools at the programmatic level. They would like to work with countries to create tools and/or a toolkit. We have been discussing
- would also like to help the DR and Suriname in creating a surveillance system for migration issues using COMBI and IVM to better understand migrant behavior, tailor messages and reach migrants. PAHO and Dr. Chadee

Action Items

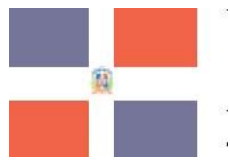
- Meet with Dr. James Fitzgerald, PAHO's senior advisor in drug systems, management and supply, to discuss the possibility of his joining the RPRG as a technical expert. [PAHO Secretariat]
- Send the names and CVs of other individuals with expertise in endgame surveillance and drug management to Dr. Ault for consideration for RPRG membership. [RPRG members and meeting observers]
- Contact Drs. Leann Fox, Ana Maria Aguiar, Victor Pou and Dave Addis to discuss their ability and interest either in working with RPRG or with countries in the area of morbidity management and its integration into primary health care systems. [PAHO Secretariat]
- Search for a monitoring and evaluation expert for inclusion in the RPRG, obtain candidate CVs and circulate them for group discussion prior to submitting the names to the WHO for a decision. [PAHO Secretariat]
- Discuss and decide on Guyana's request to change Dr. Chadee's status from RPRG member to permanent observer. [PAHO Secretariat]
- Communicate with Dr. Telorio in the PAHO Brazil office that he needs to arrange a meeting with Brazil's LF program representatives. [PAHO Secretariat]
- Send application form to PAHO Secretariat, Guyana and Brazil [WHO Secretariat, PAHO Secretariat]
- Dr. Saboyá will work with Dr. Gonzalez and Dr. Nicholls to design an optimal surveillance plan for the DR. [PAHO Secretariat and DR RPRG representative]
- Dr. Gonzalez will contact the UN's OIM and OCHA to determine if either has information about post-earthquake migration patterns between Haiti and the DR that can be used in the DR's mapping effort. [DR RPRG representative]
- Dr. Ichimori will consult with the WHO Secretariat and follow up with PAHO Secretariat on the feasibility of having an interim verification step prior to certification of elimination for LAC countries, as well as provide guidelines for such an interim step. [WHO and PAHO Secretariat]
- LAC countries may use Dr. Lammie's dossier and the China model as guidance for beginning to prepare their own dossier for internal elimination, however they must wait for the WHO certification guidelines and establishment of the certification committee before presenting their official documentation for certification of elimination to the RPRG. Dr. Ault will share with the countries the draft dossier document so that they can begin working on it for themselves if they wish. [PAHO Secretariat and LAC countries]
- WHO will publish the guidelines for certification of elimination and establish the international certification committee by 2011. [WHO Secretariat]
- Dr. Ault asked Dr. Del Aguilar to inform the Costa Rican government that they should convey their documentation to Dr. Ichimori so that she can become familiar with it. [PAHO CR]
- Dr. Ault will consult with Dr. Ehrenberg to find out if the RPRG had reviewed and written a report on the Costa Rican government's documentation for elimination, which was completed three years prior. [PAHO Secretariat]
- Dr. Ault asked Dr. Martha Saboyá to help Suriname develop a sentinel site and work with Suriname and Guyana on border surveillance. [PAHO Secretariat, Suriname, Guyana]

Topic 1: LF Surveillance, MDA and Progress towards Interruption of Transmission 2008-2010

Chair: *Dr. Steven Ault, PAHO Advisor for Neglected Tropical Diseases*

The meeting began with presentations from the countries where lymphatic filariasis (LF) is still endemic (Dominican Republic, Haiti, Guyana and Brazil) or where the goal of elimination is believed to be close at hand (Suriname and Costa Rica). Each of the country presentations, with the exception of Costa Rica, was accompanied by comprehensive PowerPoint presentations. This report serves mainly to highlight the major achievements and also covers the discussion that followed each country presentation.

Country Presentations



DOMINICAN REPUBLIC

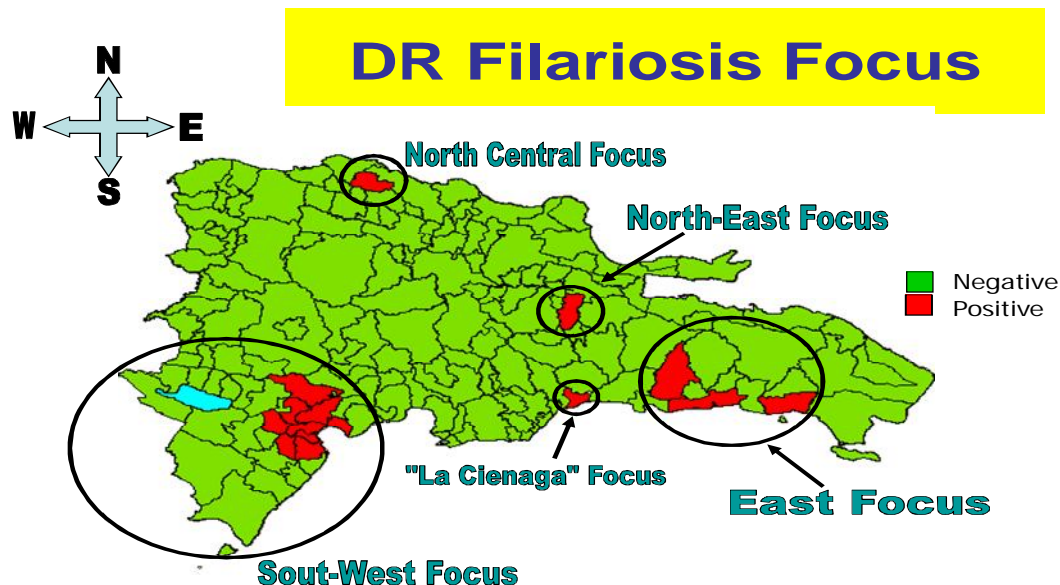
Dr. Manuel González, Coordinator of the LF Program, Centro Nacional de Control de Enfermedades Tropicales (CENCET), Secretaría de Estado de Salud Pública y Asistencia Social, Santo Domingo, República Dominicana

PELF Chronology

- The National Center of Tropical Disease Control (CENCET) was established in 1998 and the national filariasis mapping survey was completed in 2008.
- With funding from the Gates Foundation through Emory University, CENCET began a more aggressive intervention in areas where LF existed.
- Sentinel sites were initiated in the end of 2002 in five focus areas, with particular priority given to two in particular: the Southwest and La Cienaga in Santo Domingo
- The first MDA was given in the Southwest focus area in December 2002, and in La Cienaga in the middle of 2004, and in 2007, a fifth round was given in the Southwest area.
- CENCET also participated in the second phase of a LF study in Atlanta to determine the optimum point to stop administering medication.

Overview of mapping

- The map includes the country's 154 municipalities, with the presence of LF identified in five geographic foci: Southwest (the most important), La Cienaga, the East (which contains several municipalities in close proximity to each other), the North-East and the North Central focus areas.
- La Cienaga is a priority because in spite of its small size, the concentrated population in that focus area is significant.
- Red indicates positive, green indicates negative. A total of 154 municipalities were surveyed.



Presence of LF in the DR

- At present, LF has been identified in seventeen municipalities in the DR, with a total population of almost 639,000 residents.
- The Southwest focus area contains 10 positive municipalities, the East has four, and La Cienaga, the North-East and the North Central have one, each.

MDA interventions by focus area

- There have been four MDAs in the Southwest, plus one additional very focused MDA, between 2002-2007. CENCET believes that MDA (DEC and Albendazol) coverage is good in this focus area; at least 70% of the population has been covered in all 29 municipalities; and eleven exceed 85% coverage.
- In La Cienaga, three MDA were given between 2004-2006. Unlike in the Southwest, in La Cienaga the primary healthcare system is not well developed and as such, the strategy used was to have community volunteers administer the medication house to house.
- In 2007, the MDA in the Southwest was limited to municipalities with high LF prevalence due to Tropical Storm Noel.

Monitoring and evaluation

- CENCET has monitored the effect of the MDAs in 3 municipalities in the Southwest and in La Cienaga, as well, to see if LF had been eliminated.
- Samples were taken from two groups in the Southwest focus area: 1,701 children ages 6-7 and 1,017 adults ages 16-45, between Sept. 2009 – Jan. 2010. Of those sampled, no children tested positive and only 6 adults tested positive for LF. Of the 6 positives, 3 are considered “imported cases,” since those persons had lived in the Southwest fewer than 9 months prior.
- Given the encouraging results of Southwest assessment, CENCET has concluded that LF has been eliminated in the Southwest and La Cienaga municipalities. The conclusion regarding La Cienaga was added because most of the migration into La Cienaga comes from the Southwest, and because in a sample of 100 families in La Cienaga, no positive cases were found.

Preliminary Findings on South-West Focus Prevalence Assessment Sept 2009-January 2010

Samples Groups	No. Localities	Sample Size	Positives
Core Group: Children Between 6-7 years old	40	1,701	0
Adult Group: males and females between 16-45 years old	30	1,017	6
Observations	3 of six adult positives was immigrant with less than a year at the community (imported cases)		

Challenges ahead

- Scaling up program efforts to the other focus areas where LF has not yet been eliminated will require additional funding to continue the operation and maintenance of the program.
- The earthquake that hit Haiti recently is producing additional immigration into the DR from Haiti, especially in the border municipalities, creating a danger that new focus areas may develop or others may be reactivated. CENCET will need to step up its vigilance and conduct studies in areas with significant immigration to ascertain if new cases have occurred.

Discussion following the Dominican Republic Presentation

Comment 1

- Congratulations on the success in the DR. You indicated that the program has not begun MDA interventions in three remaining foci due to financing issues. Perhaps we can work together at this meeting to create a budget to meet the DR's needs in this regard.

Question 1

- Has CENCET carried out any interventions between 2006-2009, after the four MDAs you mentioned in the Southwest focus area?

Response to Question 1

- In 2007, we had a very localized fifth MDA, principally in the high risk parts in the twenty Bateyes in the Southwest area (comprising 8% of that focus area). We were unable to expand that MDA further due to the impact of Tropical Storm Noel, which created unsanitary conditions and left significant damage in its wake.
- In 2008-2009, we didn't do any MDAs because we were participating in the evaluation study during that time. Since we were trying to determine if the previous MDAs had been effective, we were precluded from administering additional MDAs because doing so would have negated the study.

Question 2

- In the last meeting of this group in the DR, you spoke about the primary healthcare system's involvement in administering the MDAs. Do the smaller focus areas that still need treatment in the DR have primary healthcare infrastructure in place to be able to administer MDAs in those areas?

Response to Question 2

- The primary healthcare facilities have been undergoing development throughout the country. They are least developed in the national district, probably because the population is so concentrated in these very small areas. But in the smaller focus areas that still need intervention, the primary care facilities should be in a position to assist in administering MDAs.

Question 3

- You indicated that due to the weather conditions, CENCET had to change their strategy [with the fifth MDA]. While before CENCET was intervening in the whole region, the decision was made to focus on very localized areas instead. Can you explain why the strategy changed?

Response to Question 3

- We first decided to intervene region-wide because we thought that if intervened only in the municipalities that had positive cases, then other similar municipalities may continue being transmission points for LF. Therefore, we decided to extend the MDA intervention in the entire

region.

- The decision to focus more specifically was fortuitous. We evaluated the situation after the storm, and we saw that there was still a high level of transmission in the area of Los Bateyes. So, we understood that in the other two sentinel sites, which were periurban areas, LF had already been pretty much eliminated, but that wasn't the case in Los Bateyes. So, we decided to focus specifically on Los Bateyes because the health system wasn't available to help with the MDA efforts there at that time.



HAITI

Dr. Marie Denise Milord, University of Notre Dame and former chief of the National Program for the Elimination of Lymphatic Filariasis, Haiti

Overview

- Dr. Milord again welcomed everyone to the Third Regional Program Manager's Meeting on the elimination of LF and said that she is standing in for Dr. Francois, the current chief of Haiti's National Program for the Elimination of LF, and that her presentation of the country's current situation is not complete.
- LF is widespread in Haiti, and 117 of the country's 133 communes are affected.
- The national LF program in Haiti began in 2001 and is similar to the programs of most other countries, including social mobilization, morbidity management and MDA components.

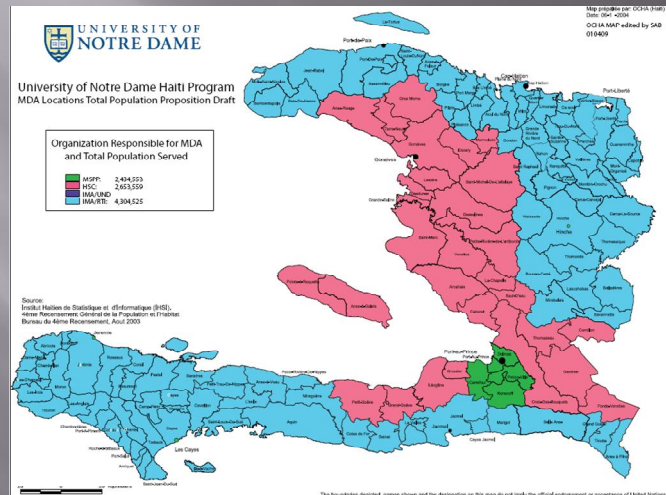
Social Mobilization

- Prior to the MDA, the program trained 3,819 leaders, educators and distributors in 9 communes. MDA was carried out in 4 communes prior to the earthquake. Now, program coordinators are working to determine when MDA activities can be resumed or rescheduled.
- IMA is also working in 76 communes; they have achieved MDA activity in 41 communes. Dr. Milord doesn't have social mobilization for IMA, but she said they are back in the field working to evaluate the situation and reschedule activities.
- The current plan is to begin doing social mobilization work in metropolitan areas using a multi-faceted strategy that differs somewhat from that used in more rural areas. Rather than relying on healthy educators and community leaders, the intention is to use mass communication methods such as TV and radio, as well as increased collaboration with medical associations based in metro areas.

Mass treatment (MDA) activities

- The University of Notre Dame and Hôpital of Saint Croix targeted 22 communes for this year; over 668,300 out of 750,000 people, or 89% of the population, were treated before the earthquake hit.
- IMA treated 41 of the 76 communes they targeted before the earthquake, comprising 96% of the population (2,300,000 out of 2,400,000 people).
- The plan for MDA is to move quickly toward national coverage. The map shows how the partners involved would achieve national coverage, with IMA (blue) covering most of the communes and most of the population, UND/HSC covering the communes in pink, and the Ministry of Health (MSPP--green) would cover the 38% of the population living in the metro areas.
- Funds have not been identified so far to start the work in the metropolitan area.

MDA PLAN



Morbidity management

- Haiti has two main treatment centers for morbidity management: Hôpital Sainte Croix in Léogane for Lymphedema, which has seen 752 patients, and Hôpital Cardinal Lger for urogenital manifestations, which has conducted 30 hydrocele repair surgeries.
- The plan calls for opening two new hydrocele clinics and two new lymphedema clinics so that patients in other parts of the country who need such care can get it.
- Training is also envisaged for health care personnel in hydrocele resection techniques and morbidity management measures; and support from US surgeons is being obtained for plastic surgeries.
- Long term, the goal is to integrate LF morbidity treatment into primary healthcare, namely by integrating LF morbidity management training in medical and nursing school curricula.

Discussion following the Haiti Presentation

Question 1

- You mentioned that the goal is to integrate morbidity management into the primary care level. Will hydrocele surgeries also be performed at the primary care level?

Response to Question 1

- Integration of morbidity management into the primary care level refers mainly to lymphedema. We're still working on offering hydrocele care management in other settings beyond where it is now, but given the costs of the surgery, it's not clear whether we can integrate it into primary care or not yet.



SURINAME

Dr. Lesley Resida, Head, Bureau of Public Health, Suriname

Historical overview

- Dr. Resida began his presentation with a historical review of Suriname's control activities against LF, which began over sixty years ago.
- Suriname's LF program was based on mass screening and treatment using polyclinics and encouraging citizen participation via health education campaigns.
- They also monitored the sanitary environment and the sewer system, especially in the capital, as well as distributed nets and sprayed periodically for mosquitoes (though this was mostly done via other disease prevention programs, such as the Dengue program; it was not specifically for *Culex* mosquitoes).
- In an ICT card survey of schoolchildren in 2001, no cases of LF were found.

Current assessment of the situation

- In 2006, they did another survey in Nickerie in the West and found 2 cases, both of which were considered "imported" from Guyana because the children traveled there frequently. Both children were treated with Hetrazan.
- LF is not present in metropolitan areas or in the interior of the country; there are only a few isolated cases in the West.
- LF transmission is under control in Suriname; it is not occurring among children.
- *Culex* breeding sites have been reduced in large cities.
- Cross-border cooperation with Guyana is needed, as is support for and financing of surveillance and monitoring activities.

Discussion following Suriname Presentation

Question 1

- You mentioned that Suriname has a malaria elimination program. Is the strategy for that program IRS, or spraying, or treated nets?
- You have vector control for Dengue fever and Yellow fever; the day biting mosquitoes. Can vector control work for the malaria control program, with the night biting mosquitoes, too?

Response to Question 1

- The main strategy is to use IRS bed nets for malaria control.
- Suriname does have vector control programs for the day biting mosquitoes.
- Malaria in Suriname is concentrated in the Southern part of the country, in the Amazon region, while transmission of LF and other diseases is concentrated in the Northern part of the country.

Question 2

- The use of DDT in the 1950s and early 1960s affected not just the malaria-transmitting mosquitoes, but also the *Culex*. It may be inaccurate to say that no vector control program was in place due to the collateral benefits that were obtained via the use of DDT in the past. Although there is a large area within the Maroon population where malaria still exists, Suriname

no longer has a malaria elimination program along the coastal areas because the mosquitoes that transmit malaria were eliminated there due to the collateral benefits from spraying.

Response to Question 2

- There was no focus on the *Culex* mosquito, but we did get benefits from spraying for the Dengue and Yellow Fever mosquitoes, which was done as recently as just last year for Dengue mosquitoes. So, while there was no campaign directed towards the *Culex* mosquito, there were collateral benefits.
- However, there were probably not collateral benefits from the use of DDT, because it was used only in the South of the country in the 1960s. Its use was not widespread in coastal areas.

Question 3

- I understand there was a plan to do border surveillance in Nickerie, along the border with Guyana. Did Suriname ever obtain resources to support that plan?

Response to Question 3

- No, no funds have been obtained for that plan. The plan is to establish a sentinel site in that area.

Question 4

- As I recall, Dr. Chadee offered to assist with the entomological side of that surveillance work.

Response to Question 4 (Dr. Chadee)

- I visited Nickerie and looked at the risk factors; there are many risk factors for transmission LF in that area.

Question 5

- Dr. Resida, can you comment on the sanitary situation in regards to sewerage and drainage systems in Nickerie and in the capital and along to coastal areas? Is there a program in place to improve those systems in the areas mentioned? How active is it?

Response to Question 5

- In the capital and surrounding areas, there are two large districts where the majority of people live. More than 80% of the population lives along the coast, and most of them live in Paramaribo and in surrounding areas. There is an active system of drainage improvement; it started when the water company was built and there was a program to get rid of open systems—water gates, drains and gutters—which have been covered by pipes. In the capital, the drainage system and improvements are very good.
- In other districts where agriculture is the main industry, there is still a system with open waterways, so there is a discrepancy because such systems still exist there. This is the case in the West, in Nickerie, where agriculture and rice production is important to the economy, and where they lag behind in improving the sanitary situation. In Nickerie and similar sites, the system is not advanced.

Question 6

- Is there any integration between the programs for schistosomiasis elimination and LF elimination? Particularly in terms of the water and sanitation situation. Have there been any cases of schistosomiasis reported in Nickerie or the Western district?

Response to Question 6

- There are probably two reasons for this: the water coming into Nickerie's coast is salt water,

which makes the soil not hospitable to snails. Also, because of widespread spraying of rice fields; we believe that the snails in the fields and ditches have gone elsewhere.

- We have included Nickerie in the schistosomiasis survey, however, and we have included a request for funds to buy test materials for both schistosomiasis and LF tests, so that we can integrate both when we go into schools.

Question 7

- We'll be happy to work with you to facilitate that. I'd like to ask Dr. Chadee, if the BOG were available to come in and work with you on a technical mission, would you be available to do that?
- So, that is another resource that is available to you.

Response to Question 7 (Dr. Chadee)

- Yes.

Final comment (Dr. Ault)

- Dr. Resida mentioned the schistosomiasis survey that started last week is the first nationwide survey that has been done in several decades. It has taken a lot of collaboration and we are very happy to see the fruits of this work coming out now.
- We hope by summertime there will be data from the schistosomiasis survey. Once the data is available, we will examine it carefully to see if there are opportunities to integrate the schistosomiasis and LF elimination efforts, if both are still be transmitted in the Western part of the country.



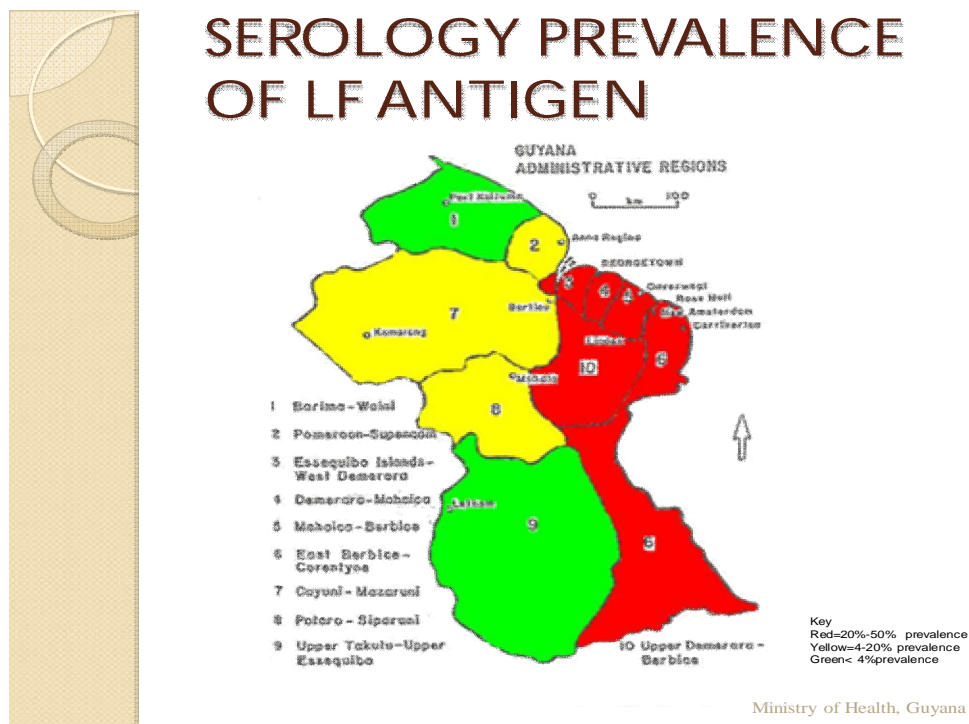
GUYANA

Dr. Shamdeo Persaud, MBBS, MPH, Manager, Infectious Diseases, Ministry of Health, Georgetown, Guyana

Dr. Persaud began with an assessment of the LF elimination program in Guyana and then went through the country's elimination program.

Assessment of the problem

- A 2001 nationwide mapping of school children showed that 9.3% of the population was positive for LF. Six to 10 regions had even higher prevalence, particularly in urban areas such as Georgetown, New Amsterdam and Linden; also malaria was a problem in some areas.
- The six regions with the highest prevalence are among the most populated, with 679,000 total population.
- In 2008-2009, there were 1,377 cases of early (stage 0, 1 or 2) lymphedema and 72 cases stage 3 or higher registered; in addition, 198 hydrocele cases were treated in public facilities and 121 in private facilities.



General plan of action

- Assess the extent of the problem via mapping, morbidity assessment and Knowledge attitude, perception and belief survey (KAPB).
- Maintain a national task force comprised of a coalition of partners to monitor and evaluate the

situation and procure funding.

- Develop and implement the action plan and program aimed at relieving suffering and preventing transmission

Treatment efforts

- Integrate lymphedema treatment into primary health care, including lymphedema staging and the Skin CARE program, supervised by Skin Services and HD, to prevent secondary bacterial and fungal infections.
- Surgical repair of hydrocele.
- Provide support groups and health education.

Prevention efforts

- Phase one of the plan, implemented in 2003-2007, focused around the use of DEC salt, and included social mobilization, promotion and distribution of the salt, and monitoring and evaluation and sentinel sites.
- Piggy-backed with the use of iodine fortification in salt, which was familiar to the public already and increased public acceptance.
- Problems included the salt turning blue prior to importation in 2004, and a hurricane that hit Jamaica, disrupting production until a new plant was commissioned in 2005.

Sentinel Site	Microfilaria %			Antigen (ICT) %		
	2003	2006	2008	2003	2006	2008
Lodge	11.2	7.2	NA	38	17.7	18.2
Tucbur	2.6	2.9	1.7	17.5	10.9	12
Spot Check Sites						
Queenstown	NA	NA	0.8	NA	NA	6.2
Bush Lot	NA	NA	3.7	NA	NA	14.6

Sentinel Site	Lymphedema			Hydrocele		
	2003	2006	2008	2003	2006	2008
Lodge	7.6	8.5 (N)	NA	2.1	1.1 (N)	NA
Tucbur	2.4	0.6 (N)	NA	1.7	2.3 (N)	NA
Spot Check						
Queenstown	NA	NA	0.4	NA	NA	1.3
Bush Lot	NA	NA	6.9	NA	NA	4.3
Program Data (National)						

- By 2007, some 60% of the target population of 690,000 was using DEC fortified salt, according to sentinel surveys. After 2007 the MDA pilot began because salt was no longer available and phase two commenced.
- Phase two (2008 – 2010) centered around MDA with DEC and Albendazol, along with further evaluation of phase one as well as monitoring and evaluation of phase two, re-mapping to identify “hot spots,” and identifying possible synergies with other neglected disease elimination programs, such as Soil Transmitted Helminth (STH).
- Problems have included limited shelf life of the Albendazol, as well as the condition established by the donors to use the Albendazol as part of the school’s deworming program.
- Later, the donors relaxed that condition and allowed the drugs to be used in other populations, as well, to treat the entire at LF risk population, so that the pills did not expire.
- In July 2009, a fire destroyed the program’s office and all the information was lost. Therefore, we don’t how much of the population was treated in regions two and six, and some of the sentinel site information is missing, as well. The data that we do have is presented in the two tables above.
- More people with hydrocele did come forward due to the social mobilization efforts; and many were treated.

Plan for 2010 – 2015

- The National coordination program needs to be re-established.
- A small KAPB was done, but it needs to be expanded.
- Conduct a second mapping exercise, though it depends on budget and resources, of both LF and STH. It might be challenging to do so, but they are studying the options to see if they can do it as a part of the exercise.

- Elaborate the MDA plan and the social mobilization program further to move forward and increase its organization.
- Maintain the sentinel sites and evaluate the work of the morbidity program, depending on additional resource availability.
- Integrated entomological vigilance and vector control together with the malaria and dengue programs; particularly in border areas.

Discussion following Guyana's Presentation

Question 1

- Maybe the problem with Albendazol's limited shelf life could have been eliminated with GSK's donation of Albendazol for the program.
- Dr. Ault added that PAHO would be happy to work with Guyana on the application for GSK's donation.

Response to Question 1

- I would need to look at what has already been arranged for the Family Health Program in terms of donations for the school's deworming program.
- They have also developed a program for deworming for pregnant women, also using Albendazol, so we'd need to look at that to see how much Albendazol is coming in to make sure there are no bottlenecks or accumulation. Thank you very much, I'm sure we will want to prepare an application.

Question 2

- Did you give any special consideration about the strategy of shifting away from salt?
- Was any consideration given to the issue of the side effects that are occurring now? People may not have expected that, since they may have been thinking about how the salt worked without side effects, but now they were occurring.

Response to Question 2

- Yes, that's one issue the Health Minister wanted to raise, because this has happened. Some people in the government, in the parliament have asked why the strategy changed. People do still want to have the salt option, because of the side effects with the pill program, as opposed to almost no side effects with the DEC salt.
- We didn't initially have a strategy to continue the administration of DEC salt, but maybe we can discuss this later on, as it is a concern with the population.

Question 3

- There has been some reduction in the ICT prevalence. This brings the ICT prevalence to a range where we are seeing rapid results with MDA; the goal is still within reach.
- In the 3 regions where you did the MDA, did any issue come up that would be an obstacle in scaling up that strategy? Particularly is it something that can be done in urban areas like Georgetown?

Response to Question 3

- The main challenge is that the population was exposed to salt, which was gentler intervention, so moving to pills will require more social mobilization. The coverage in the pilot region was 81%, but there still was a reasonable amount of resistance to taking medication.
- We'll have to be careful in developing the social mobilization program, and here again, we are seeking assistance and expert advice in this effort.

- We may have to do a revised mass campaign or community interventions with new messages. We want to say that the DEC salt did its job in the general population, but there are still some pockets left.
- The mapping is a key part of the strategy; we now need to go door to door in those pockets that are left to administer the drug.



BRAZIL

Dra. Helen Freitas, Gerente, Programa Nacional de Eliminação de Filariose Linfática, MS, Brasília

Dra. Denise Santos Correa de Oliveira, Diretoria de Vigilância à Saúde, Secretaria Municipal de Saúde, Recife

Dr. Abraham Rocha, Depto de Parasitología, Centro de Pesquisas Aggeu Magalhães (FIOCRUZ), Recife

Brazil's presentation was divided into three parts. The following is the presentation by Dr. Freitas.

Historical overview

- As of 2007, there were two regions where LF was still a problem: the metropolitan area of Recife and the city of Maceió in the state of Alagoas.
- In Maceió, a survey done in 2007-2008 tested over 20,000 students showed all negative results, as did a PCR vectoral infection analysis on 3,500 mosquitoes and an immunological (ICT) survey in mid-2009, in over 3,000 students in 50 neighborhoods, of which 1,400 were living in known endemic areas.
- Based on these negative results in all three surveys, the Ministry of Health has concluded that LF has been eliminated in Maceió.

Evaluation and results

Nocturne students survey: 2007-2008

- 50 Maceió districts
- 143 (80%) schools
- 20,152 students investigated
- Result → All negative

Vectorial infection analysis by PCR:

- 3,500 captured mosquitoes in endemic areas: all negative - "Xenomonitoring"



Immunologic survey – July/August, 2009:

- Sample of 50 Maceió districts
3,017 children → 00 Ag +
- Sample of ancient endemic areas
1,415 children → 00 Ag +

We are admitting that Maceió focus is eliminated

- This left us with one LF focal area in the metro area of Recife, where there are still positive

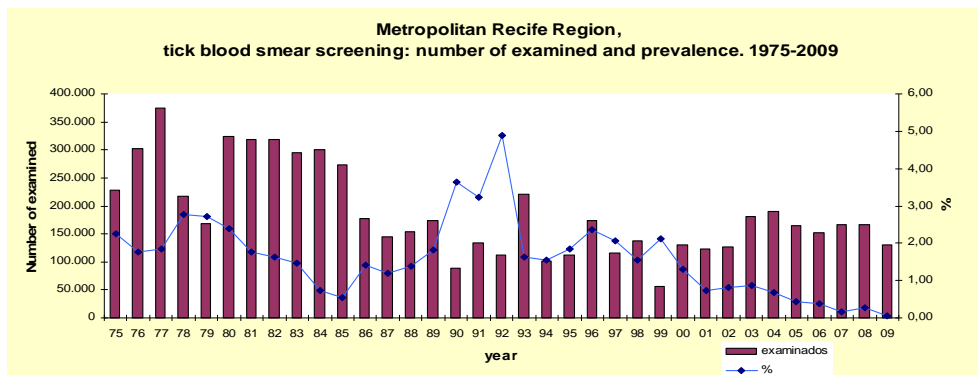
cases in municipalities of Paulista, Olinda, Recife, and Jaboatão dos Guararapes, which are home to almost 3 million people. Of those, 1,780,000 are considered to be at risk for LF.

- In the city of Recife, 960,000 of the 1.7 million residents are considered to be at risk, and initial LF prevalence in 1999-2000 was 1,3%, and ranged from 0-9% in the various districts of the city. These numbers are based on thick blood smears of 70,000 people.
- In Olinda, some 60% of the population of almost 400,000 is considered to be at risk for LF; while initial LF prevalence was found in 1.3% of the population. Approximately 40,000 people have been covered by MDA or other interventions in Olinda.
- Of the more almost 320,000 people living in Paulista, less than 1% tested positive for LF using thick blood smears of 22,000; most of the positive individuals live on the border with Olinda. The blood smear tests in Paulista were done by the municipality itself, and have produced good information on prevalence.
- The situation in Jaboatão dos Guararapes is not as clear. The municipality has a population of almost 700,000, and although it is not well mapped, some 60% of the population is thought to be at risk of LF. Current LF prevalence is also not clear, and may be anywhere between 0.7 – 11.1%. They have not carried out MDA there.

Interventions

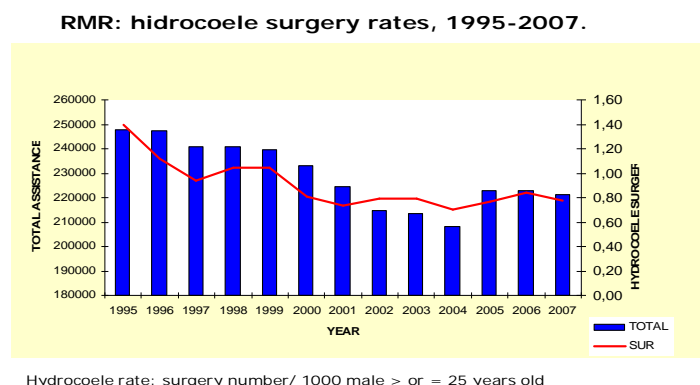
- MDA treatment in the Recife Metropolitan Region (RMR) increased from 19,141 people in 2003 to 230,213 people in 2008, before dipping to 176,276 people in 2009. Reasons for the decrease in 2009 aren't known.
- A similar drop was seen in thick blood smears between 2008, when 120,938 were done, compared with 2009, when 94,374 were performed in the RMR.
- In Recife and Olinda, vector control measures have also been in place and have helped decrease LF prevalence in both regions.

Effect of interventions:



- There was a new law that came into effect two years ago that centralized resource distribution for environmental vector control efforts, as well. This new priority given to biological control has helped significantly.

- Just as there has been a significant decline in LF prevalence in Brazil, and especially in the RMR, there has also been a reduction in hydrocele surgeries, as the chart below indicates. The chart shows both the surgeries as well as the public assistance received for such surgeries.



- In Paulista an ICT card survey was done, but the results are not easily explained. The survey was given at 945 homes, representing 25% of the total number in Paulista. In those homes, 424 exams were given to a total of 30.3% of the population, including 376 children, or 26% of children ages 5-14.
- The initial results came back with 38 positive cases and 386 negatives; but when the exams were repeated a second time on the initial positive cases, only 19, or 50%, had a positive result; while 15 came back negative. We have not been able to explain why this occurred.

Monitoring activities in Brazil

- We continue to conduct monitoring activities in other parts of the country, especially in areas that had had LF endemics in the past.
- In the city of Salvador in Bahia, there had been 5 endemic areas previously. However, in the past two years, over 11,000 thick blood screenings, seromonitoring of over 23,500 female mosquitoes and ICT card tests of over 500 children all showed negative results.
- Therefore, we have concluded that LF is not endemic in those areas currently.
- We also produced a guidebook that has been distributed to 12,000 family healthcare teams that details what to do when a case of LF arises; the guidebook sets out the standards of care for LF.

Financing the program

- MDA costs are shared by the federal government and the municipalities. Supplies run about R\$70,000 per year (US\$40,000), and personnel costs are minimal, since existing family health teams have taken on MDA as part of their provision of care.
- DEC pill costs are financed by the federal government and total R\$18,000 (US\$11,000).
- The federal government also purchased 6,000 ICT cards, each, for the years 2008 and 2009. We are requesting 9,000 ICT cards for the respective years of 2010 and 2011.

- The cost of the 14,000 guidebooks that were printed ran R\$48,000 (US\$30,000).

Discussion following Dr. Freitas' Presentation

Question 1

- In regards to the MDA that was given in Recife, who received the medication, just the at risk population?

Response to Question 1

- In the slide shown, we saw that a total of 270,000 people received a treatment in Recife and Olinda.

Question 2

- In 1999-2000, there were four municipalities with endemic LF prevalence, and three had a greater than 1% prevalence, which is why MDA was given in those three municipalities. But one municipality had a much higher prevalence than 1%. What is the plan for that municipality? Is MDA being used there?

Response to Question 2

- Our interventions in Olinda and Recife were based on objective prevalence. However, in Paulista and Jaboatão, we are working based on annual screening data of 20,000 that are done in those municipalities each year. In those screenings, very few cases were ever found. However, last year an ICT card screening was available, which was different than the screening done in the past. The results surprised us, as we were unaware of the true number of cases. Now we're trying to determine exactly what the prevalence is in those municipalities, as well as what the treatment needs are for both primary and secondary care.
- We have three municipalities that are our main focus areas: Jaboatão, Recife and Olinda. These are the municipalities with the highest prevalence, now about 1.3% on average. In some areas of these municipalities, the prevalence may have been as high as 10% in the past, some ten years ago. Some areas within those municipalities, such as Olinda, were selected to receive MDA treatment, and that treatment has been expanded. At the same time, mass screenings were given each year, with selective treatment given to people who tested positive. So there has been a mixed strategy of giving selective treatment to positive cases, along with mass treatment to the more than 100,000 people who have been examined annually, as well, in those three main municipalities. The plan is to expand the treatment further within these three municipalities.
- Regarding your reference to Jaboatão, the answer is 'no,' because in Brazil, municipalities are autonomous. Jaboatão has not yet organized an effort similar to that which has occurred in Olinda or Recife, where MDA was initiated 7 or 8 years ago. In Jaboatão, they continue to use thick blood smear screenings as their primary intervention; it is a selective intervention. Last year, there was a change of government in that municipality, and at the same time, there was a delay in the availability of MDA supplies, which affected Olinda, as well.
- On the situation in Paulista, we know there are positive cases, but we didn't know what the prevalence was exactly. We did a survey using ICT to evaluate children ages 5-14 and found the prevalence was around 10%; then the survey was expanded to find out what the current situation was in the entire municipality of Paulista. The data is very preliminary, it was compiled just a week ago, but it's very important for us to continue evaluating the situation in Paulista to be able to do MDA there.

Comment by Dr. Ault

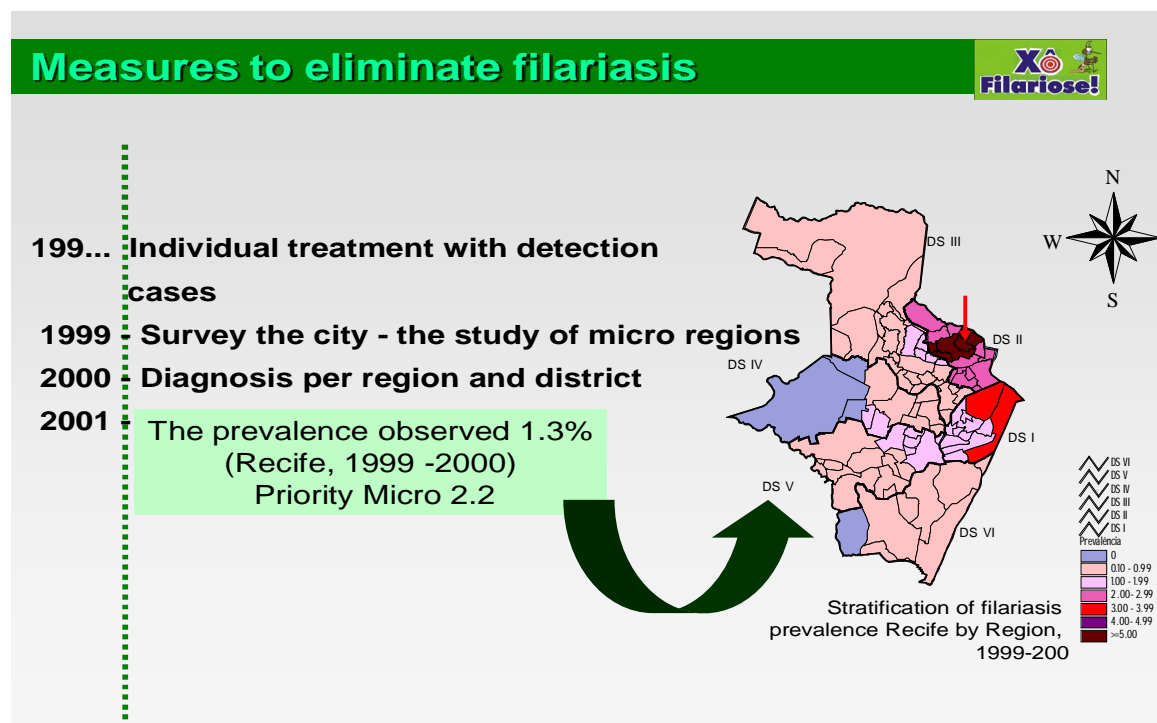
- It is clear that there is a need to support the effort to expand the survey in Paulista and we'll be happy to collaborate with you on that, as needed.
- We are hopeful that with the new demonstration project that we are undertaking with Recife, Olinda and Jaboatão, that we'll be able to work with Jaboatão to strengthen their program and getting their MDA efforts underway.

Dra. Denise Santos Correa de Oliveira, Diretoria de Vigilância à Saúde, Secretaria Municipal de Saúde, Recife

Dr. de Oliveira's presentation focused on the LF situation in the city of Recife.

Measures to eliminate LF in Recife

- In the 1990s, individuals found to have LF were treated on a case by case basis.
- A survey of the city was done in 1999 to study its 18 microregions, in anticipation of the start of a mass treatment program. Prevalence levels can be viewed in the slide below.
- In 2001, it was determined that overall LF prevalence in Recife was 1.3%, and microregion 2.2 was identified as a priority area for starting treatment.



- In 2002, Recife's Health Ministry restructured the LF program, giving it a new name-- Plan XÔ Filariasis—and identified areas to begin mass treatments.
- They set a goal of reducing LF prevalence to less than 0.007% within two years.
- At the same time, they implemented an integrated environmental monitoring program based on defining areas of social and environmental risk to health. Environmental risk levels by district can be viewed in the slide below. The program works not only with LF risk, but also other zoonoses, as well as vector and waterborne diseases.

Measures to eliminate filariasis



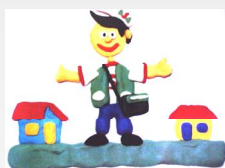
2002- Restructuring of the control (Plan XÔ Filariasis)

- mass treatment priority areas
- Elimination goal : Prevalence <0.007%

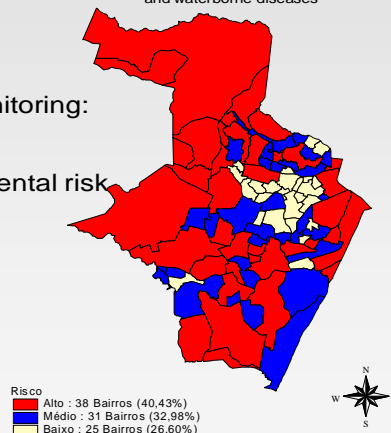
- The implementation of environmental monitoring:

Environmental Health Program

Definition of areas of social and environmental risk



The environmental risk of zoonoses, vector borne and waterborne diseases



- In 2003, two manuals were produced with protocols for LF surveillance and mass treatment at the primary level. That same year, the first MDA was given in 2 microregions, where 18,087 people were treated, comprising 96% coverage.
- In 2004, another microregion was added to the MDA treatment program; a total of 39,154 people were treated, representing 103% coverage. A strong social mobilization effort was made prior to the two-day MDA campaign in 2004.
- Further expansion of the MDA program occurred in 2005, when 2 more microregions were added. The number treated was 41,163, or 81% coverage.
- MDA treatment continued in those 5 microregions in 2006, and coverage was 83%, or 49,109 people.
- In 2007, a sixth microregion was added to the MDA treatment program, with total coverage up to 65,094 people, comprising 84%. In this year, we also initiated a pilot going house to house to do the treatments. This was done in the newest microregion.
- In 2008 and 2009, there was a major expansion, as seven new microregions were added, bringing the total to 13. The total number of people covered rose to 147,663, comprising 84% (2008), and 142,485, or 83% (2009). A tremendous amount of social mobilization done to obtain these numbers. The house to house pilot was expanded in these years, as well, which required anywhere from 30 to 90 days in the seven microregions.

Program cost comparison

- The cost of a 30-day house to house component is lower than that of a two-day campaign: \$0.42 per person treated, compared with \$0.78. Personnel required are also much lower.

Financial value

Comparison of strategies for the collective treatment of Lymphatic Filariasis. Recife, 2007

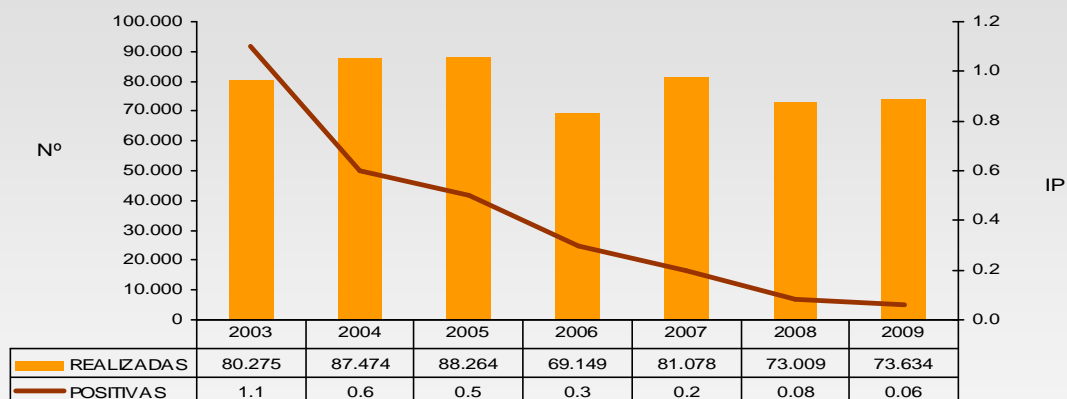
Elementos Operacionais	Campanha	Casa a casa
Período do tratamento	2 dias	30 dias
População Alvo	62.729	13.964
População tratada	53.283	11.811
Nº profissionais envolvidos	500	100
Nº voluntários envolvidos	300	-
Mobilização social (tempo)	2 meses	1 mês
Cobertura	85%	84,6%
Custo total		
R\$	99.183,50	12.032,09
US\$	41.673,73	5.055,50
Custo por pessoa tratada/ano		
R\$	1,86	1,01
US\$	0,78	0,42

Fonte : Avelar et al. 2008

Monitoring and diagnosis

- In areas where MDA has been administered, coverage rates were over 80%.
- We use epidemiological data such as LF positivity indices and detection rates in our monitoring efforts, as well as vector infectivity monitoring.
- Ten sentinel sites in treated areas were monitored, and we found positive results in 4 of the 10, representing 0.03% of the 164,000 exams performed.
- ICT tests on children ages 2-6 during the 4th MDA showed a positivity index of 2.0%, but last year during the 6th MDA, ICT tests on 1,300 children a decline in the positivity index, to 0.81%.
- Hemoscope tests were given to 72,334 people last year, as well, and only 0.04% tested positive.
- We also had a prospective cohort from the first treatment area, which began in 2003.
- The chart below shows the number of LF tests given annually from 2003-2009, as well as the sharp decrease in positive results during that period. The IP index in 2003 was 1.1, but by 2009, it had declined to 0.06.

Filariasis: Number and rate of positive. Recife, 2003-2008



Fonte: Laboratório Municipal do Recife

- In 2003, there were 61 LF cases detected per 100,000 residents, but by 2009, that number had dropped to less than 3 cases per 100,000.
- The table below shows the results of annual pre-treatment surveys in 2003-2009, again reflecting a drop from 92 positives in 2003, to 2 positives in 2009.



Cohort of microfilariae in annual surveys of pre-treatment. Recife, 2003 a 2007..

	2003		2004		2005		2006		2007		2009	
	Pré-tto		2º Tto		3º Tto		4º Tto		5º Tto		7º Tto	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
1 a 50mf/ml	29	23,6	26	21,1	9	7,3	3	2,4	2	1,6	2	1,6
51 a 100mf/ml	11	8,9	9	7,3	2	1,6	0	0,0	0	0,0	0	0,0
101 a 500mf/ml	45	36,6	14	11,4	1	0,8	0	0,0	0	0,0	0	0,0
> 500mf/ml	7	5,7	4	3,2	0	0,0	0	0,0	0	0,0	0	0,0
Positivo	92	74,8	53	43,1	12	9,7	3	2,4	2	1,6	2	1,6
Negativos	12	9,8	46	37,3	76	61,8	67	54,5	49	39,8	71	57,7
Não realizou coleta	19	15,4	24	19,5	35	28,4	53	43,1	74	60,2	50	40,7
Total	123	100,0	123	100,0	123	100,0	123	100,0	123	100,0	123	100,0

Vector control

- In addition to the vector infectivity monitoring already mentioned, the environmental health

- program used a biological larvicide—*Bacillus sphaericus*—to treat potential breeding sites.
- That program also monitored vector density using 56 light traps during the night in 7 districts, some in areas where MDA had been administered while others in areas that had not.

Challenges in 2009-2010

- It has become increasingly difficult to test and ramp up MDA and hemoscopes in many affected neighborhoods due to violence, including high homicide rates.
- We are investigating the possibility of starting MDA treatment in two new districts this year.
- In collaboration with PAHO and with IDB financing, we are conducting active surveillance in schools for neglected diseases.
- We have asked the Ministry of Health for resources to purchase more ICT cards in order to reduce the number of hemoscopes that need to be done.
- Our goal is to get 600 health professionals involved in mass treatment in primary health care, not only for LF testing and treatment, but also to help with other neglected diseases, as well.
- We also need to train health personnel continuously, at least every two or three years, because of changes in their ranks and to refresh their knowledge.
- We need to keep monitoring and evaluating our work, because to run a program like this one in a densely populated urban area like Recife is a huge challenge, and we need to keep expanding our efforts and improving.

Discussion following Dr. de Oliveira's Presentation

Question 1

- You defined the elimination goal as 0.007%; where did that number come from?
- In the information presented on costs, it showed that a two-day campaign cost more than a 30-day campaign. Were the personnel costs included in the cost figures shown? How can something that takes 30 days cost less than something that takes 2 days?

Response to question 1

- In 1998, the Brazilian government put out a document showing that nation-wide LF prevalence was 0.007%, so Recife chose that number as its initial elimination goal based on that official document. I think that we will be reevaluating that number in the future.
- Personnel costs were not included in the costs presented for either the 2-day campaigns or the 30-day program. It wasn't easy to figure out the costs of the program—every single aspect of collective treatment program had to be included; and the biggest cost was mobilization. Getting almost 200,000 people to the health posts and many other places where the drugs were given, the costs of using the community centers, the churches, social centers, and many other points of distribution, even transportation costs, and large communication and social mobilization costs, and supervision and logistics costs. It was very difficult. The personnel were people who were already working for the municipality on municipal health teams; and they weren't hired or paid anything additional for collaborating with the 30-day LF program. We found it more cost effective to use health personnel that were already working for the city and to have them include the MDA as part of their daily tasks in going home to home, rather than doing an intensive 2-day campaign specifically for doing the MDA.

Comment 1 on Question 1

- Regarding the use of ICT, it was done in areas receiving the 5th MDA, and 30 groups of 10 children each were chosen from across the districts. The children were ages 2-6 years old, so they were born during the MDA period. So although they totaled 1,300 in all, they were actually blocks of 300 children in each area (30 groups of 10), and maybe 3 or 4 tested positive using

ICT in each block, so it was deemed necessary to continue with the MDA treatments in those areas. Although we have had some problems with the ICTs that I will show you a little later. We confirmed those results with night testing and the Elisa assay test.

Comment 2 on Question 1

- Regarding the number mentioned of 0.007%, I don't remember that in a health ministry document. We followed the WHO ICT card guidelines, testing 3,000 children with no positive cases expected.

Comment 3 on Question 1

- I want to support the idea that it is possible to carry out an extensive treatment effort at the same cost or even lower cost than an intensive two-day campaign. In the Dominican Republic, we did three intensive treatment efforts and two extensive campaigns, and while the extensive effort didn't cost less, we did get much better coverage, so from a cost-benefit standpoint, the extensive effort was better.
- In our program, we worked only with promoters, and we did not include the costs of those promoters in our cost figures because in the DR, promoters are volunteers. And if they do receive some type of incentive payment from the Health Ministry, they receive it whether they work with the MDA effort or not, so that would be a permanent cost, regardless of whether or not the promoters were utilized for the MDA.
- In the DR, we went from using about 2,000 people to give the MDA and supervise the effort in the intensive 2-day MDA campaigns; down to using just 600 people for the more extensive 10-day effort in the field, so the extensive effort was much more cost effective.

Comment 4 on Question 1

- I want to make a few comments that I think are important to keep in mind to understand our efforts to eliminate LF. First, in 2001-2002, the municipal health system was just starting in Recife—including establishing primary care, organizing care in the city. Also, the poverty situation meant that demand for public health care was high; now we cover 54% of the city's population. Also, the environmental health coverage was extending in the city at the same time.
- Another important fact is that neglected diseases were not a priority of the government, but later they did become a priority and efforts to combat them were integrated into the whole government—there was mobilization in many different ministries, not just the health ministries, and also into the municipalities, as well, such as against Dengue. LF was added as a priority then, as well.
- Urban sanitation became a priority in Recife and other cities in the past few years, and major efforts have been taken to clean up the city and improve sanitation.
- Social mobilization has also been important and should be remembered in this discussion; not just engaging the population in general, but also there was an intervention where we held town hall meetings in the neighborhoods to find out what the priorities were in the community. Through those meetings, we had 1,000 people discussing the municipality's public health plan, so the public was very involved in all this, and this public involvement was very important in making the plan and carrying out health programs including this one for LF elimination.

Comment 5 on Question 1

- I want to add one more thing; integrating our work is so important. We did a campaign focusing on men using a soccer tournament as the forum to give MDA. It was interesting because there was also a serious alcohol abuse problem in the area where we did this, as well as tuberculosis, as well. And through these soccer games, we were able to reach a large number of men with MDA.

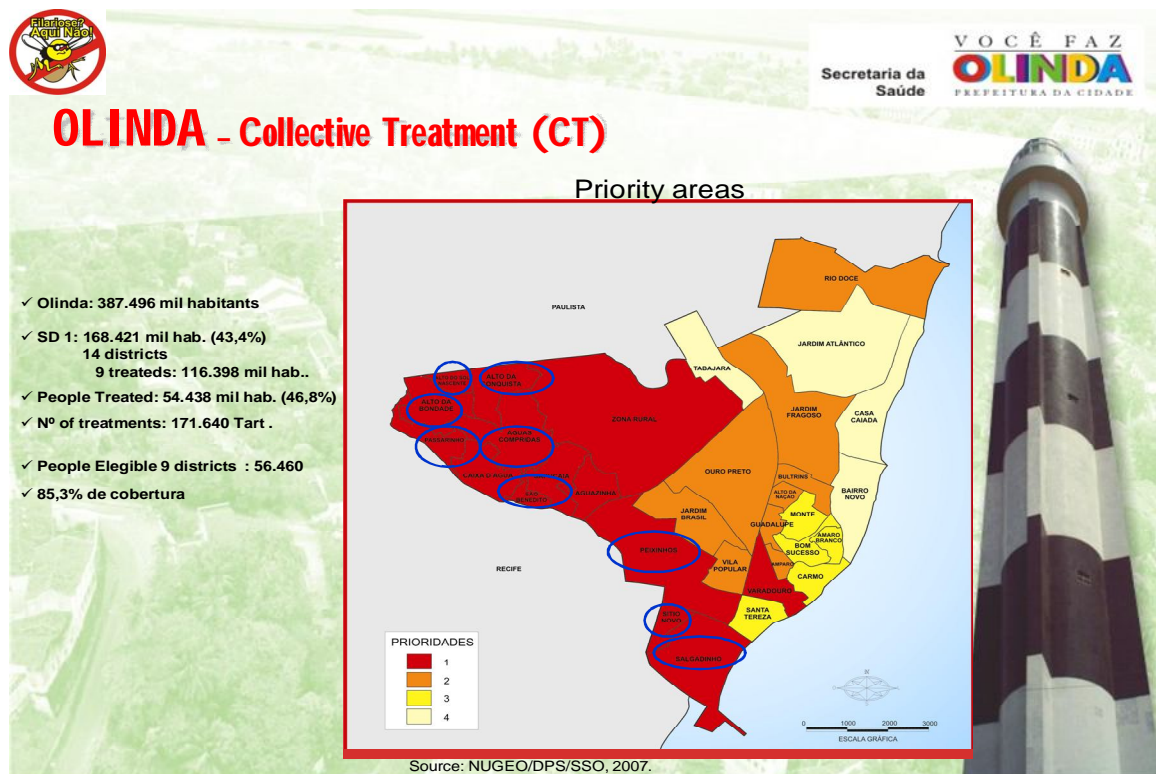
Dr. Abraham Rocha, Depto de Parasitología, Centro de Pesquisas Aggeu Magalhães (FIOCRUZ), Recife

Overview

- Olinda has 53% residential sanitation coverage, and it currently is participating in a large federal project (Prometropole project) to increase that coverage.
- In the education sector, there have been monitoring efforts on students treated with DEC in four schools. There has also been an integrated neglected diseases project involving 20 municipal schools and almost 5,200 students. The latter focused on LF, STH, Schistosomiasis and Leprosy.
- Olinda's LF program aims to prevent, control and eliminate LF in Olinda. Its three main tenets are preventing transmission, vector control, and preventing and providing care for morbidity. They have social mobilization efforts in place in all 3 areas.

Collective treatment in Olinda

- 9 areas of Olinda have been treated, with 85.3% coverage, or 54,438 people treated out of 56,460 who are eligible.

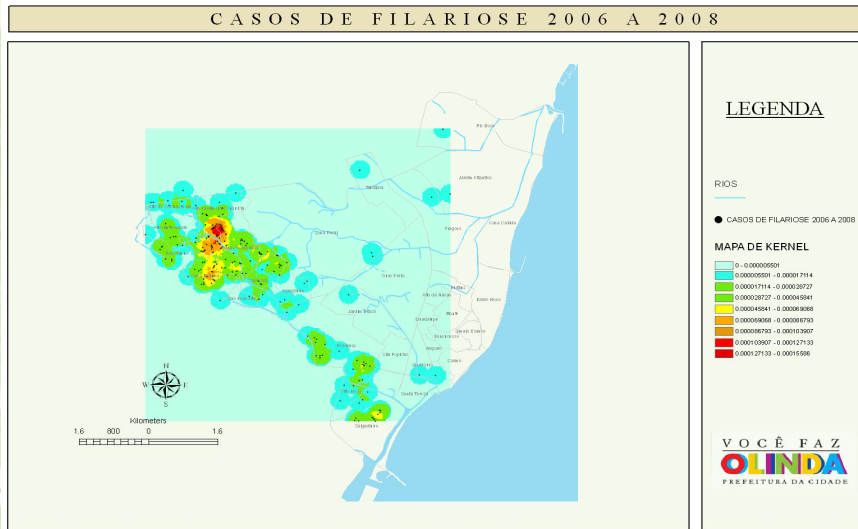


- Olinda began giving collective treatment in 2005. The map below shows the hot areas where LF infection has been detected in the city. Among the neighborhoods with the highest rates of infection are Alto da Bondade (19% positive) and Alto da Conquista (14% positive), according to tests conducted in 2008.



OLINDA - Collective Treatment (CT)

Kernel Map - 2006 to 2008



Source: NUGEO/DPS/SSO, 2009.

- In most of the neighborhoods, infection rates have dropped. The tests done were thick blood smears and they may not accurately reflect reality, however, but these are the data we have.
- The chart below reflects the collective treatments that were given in the various neighborhoods, including the year of administration and the number and percent of the population covered.
- The chart shows treatments up to 2009, but collective treatment is continuing in 2010, especially in areas where collective treatment was recently initiated and where coverage is still low.
- The collective treatments given in the 30-day program is being done by family health agencies in Olinda. These family health professionals are already giving treatments for other diseases in the community. Adding LF treatments to their regular agenda when they visit homes that they needed to visit anyway, does not occasion any additional costs in terms of personnel.



OLINDA - Collective Treatment (CT) 2005 to 2009

District	year	Nº of doses	Eligible Population	Treated	% of treated
Alto do Sol Nascente	2005	1ª	5.000	4.672	91.8%
	2006	2ª	5.767	3.584	9.5%
	2007	3ª	3.554	3.447	96.9%
	2008	4ª	4.714	4.440	94.0%
	2009	5ª	6.425	5.060	96.4%
Sítio Novo	2006	1ª	5.190	5.029	73.0%
	2007	2ª	5.160	4.295	83.2%
	2008	3ª	3.346	3.045	91.0%
Salgadinho	2009	4ª	3.632	2.960	81,5%
	2006	1ª	9.688	9.305	70.0%
	2007	2ª	10.215	7.505	73.5%
	2008	3ª	7.726	6.837	88.5%
Aguas Compridas	2009	4ª	5.563	4.758	85.5%
	2006	1ª	17.970	17.086	80.0%
	2007	2ª	17.431	15.125	86.8%
	2008	3ª	13.566	11.970	88.0%
Alto da Bondade	2009	4ª	7.402	6.796	91,8%
	2007	1ª	7.263	6.243	85.9%
	2008	2ª	6.806	6.200	91.0%
	2009	3ª	5.335	4.882	91,5%
Alto da Conquista	2007	1ª	8.104	7.465	92.1%
	2008	2ª	7.598	7.228	95.0%
	2009	3ª	8.029	7.599	94.6%
	2009	1ª	17.753	13.821	77,9%
Peixinhos	2009	1ª	5.607	4.527	80,7%
Passarinho	2009	1ª	7.963	6.080	76,4%



- In Alto da Sol Nascente after the 5th collective treatment, the study [mentioned in a previous presentation] was done on the 30 groups of 10 children, and 14 tested positive by ICT card. However, duplicate tests were given immediately to the 14 children, and 9 of them tested positive the second time.
- It is important to be aware that with ICT card tests, the results must be read exactly 10 minutes after the test is administered. We had a supervisor who was in charge of reading the results at exactly the 10-minute mark in this case.

Monitoring

- In the four schools where monitoring was conducted in 2007, about 10% of the 672 children tested positive for LF using ICT cards, and these children are being followed and treated.
- Among positive cases, microfilaria density has been monitored using the filtering technique, pre-dose during 2007-2009. We have seen an almost 84% drop in density, from almost 215 mf/ml in 2007 to 35 mf/ml in 2009, as well as a decrease in positive tests from 81 in 2007 to 14 in 2009.

Vector control

- Olinda uses biological control (*Bacillus sphaericus* or BS) to control mosquitoes in the entire city (100% coverage).
- A survey has been done every six months since 2007 in the sentinel neighborhoods, those with high prevalence, to examine *Culex* larva susceptibility to BS using biological assays.

Morbidity

- In a 2007 study done on cases of referred morbidity in the Alto da Bondade and Alto da Conquista neighborhoods, of the 395 people in the study, 55 had lymphedema/elephantiasis, 170 had hydrocele, 2 had milky urine and 194 had erysipelas.
- In Brazil, it isn't known exactly how many people are infected with LF.
- Whenever collective treatment is done in Olinda, they now routinely ask about and track

morbidity.

- Through this routine tracking, cases of morbidity have been identified in the districts of Peixinhos, Passarinho, C. D'Água, S. Novo and Salvadinho as follows: 12 of elephantiasis, 38 of lymphedema, 239 of erysipelas, 7 of milky urine, and 89 of hydrocele.

Goals and challenges for 2010-2011

- Olinda needs an estimated 1,091,047 units of DEC for mass and selective treatments in 2010, and an additional estimated 1,256,117 units in 2011, to expand the collective treatments and extend the coverage area.
- Surveillance needs to be maintained in the areas bordering Recife and Paulista.
- Train more professional staff.
- Study sentinel sites before and after treatments.
- Monitor and control vectors.
- Extend treatment coverage to people who were previously ineligible, who refused medication previously, or who live in non-covered areas, but who may in fact be infected.
- Compare the efficiency of DEC and Albendazol in treatments.
- Reinitiate follow-up activities for persons suffering from morbidity (this program was suspended due to lack of resources), and develop an epidemiological profile of LF morbidities.
- Develop training materials and social mobilization materials based on best practices and the research conducted to date.
- Begin a dialogue to create a LF elimination and control program for the state of Pernambuco.

Obstacles

- Finding qualified personnel to develop and maintain an information system to house a collective treatment bank and data on *Culex* vector monitoring.
- Obtaining entomology support to implement vector monitoring and control activities.

Discussion following Dr. Rocha's Presentation

Question 1

- What is the collective treatment?
- Olinda's objectives are prevention, control and elimination of LF, but what are the targets?
- In the previous presentation, the slides mentioned that you were investigating the need to start treatment in two new districts. Are these completely new districts?

Responses to question 1

- Olinda's objectives are LF control and elimination via vector control, work with infected humans, and work with morbidity cases. We don't do country-wide MDA in Brazil. Instead, we identify the focal points and focus our treatments on those areas. We don't use the term "MDA" in Brazil, but instead we do "collective" treatments on people living in areas of LF prevalence.
- Our goal is to eliminate LF and the illness in our city. The complexity of doing this in urban areas is quite different from the logistics required in rural areas. In the two new districts mentioned, we've seen a progression of the areas covered, because we prioritize the need for treatment in the various districts, and the two new districts are lower prevalence than the ones where treatment has already been in place, according to surveys.
- Mobilizing a health response is very difficult in urban areas, so we felt there was a need to investigate first if there really is a need to begin collective treatment in areas of lower prevalence before we actually go in and begin the treatments. Doing this kind of research before starting collective treatment has been our modus operandi for the 7 years we've been doing the treatments and it has brought us good results up until now.

Comment on question 1

- Health officials in Brazil have traditionally been leery of mass treatments for any disease and have preferred selective treatments when the need arose. However, in the case of LF in Recife, health authorities realized the need to treat large numbers of individuals, but since it is very difficult to do mass treatment in Brazil, they chose the more progressive treatment plan of doing collective treatment in areas of high LF prevalence rather than city-wide mass treatment.



COSTA RICA

Dr. Roberto del Aguila, OPS/OMS, San Jose, Costa Rica

Current situation

- According to the most recent LF surveys, Puerto Limón on the east coast in Costa Rica was the only known area endemic for LF.
- In 2003, a survey was done on 3,000 college students and 100% of the students were negative for LF.
- In 2007, a commission went to Costa Rica in order to produce a final report declaring that LF had been eliminated in that country. However, there were no guidelines in existence for producing this type of report, and part of the reason why I am at this meeting is to request that guidelines be drawn up showing how to construct final reports declaring disease elimination in a country.

Topic 2: Report Outs: Towards LF Elimination

Chair: Dr. Ruben Santiago Nicholls, Neglected Diseases Regional Program, PAHO

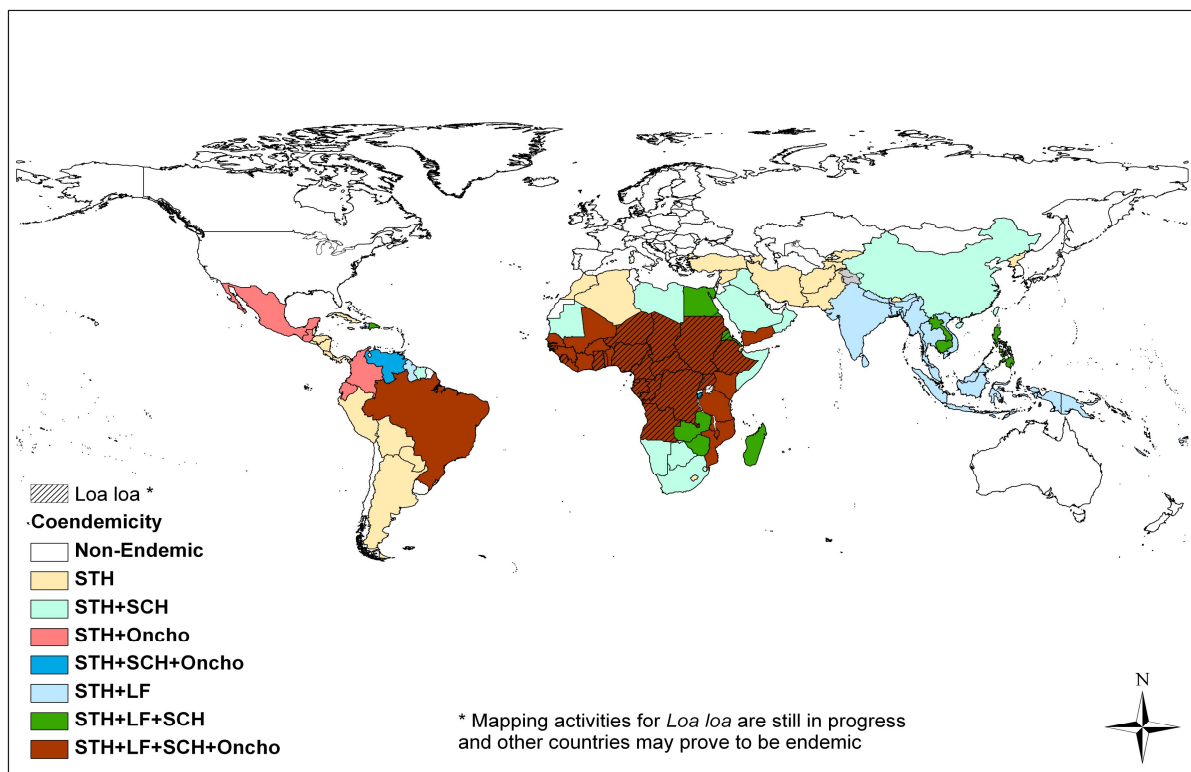
Presentations: Dr. Kayuzo Ichimori, Coordinator, Global Programme for LF Elimination (GELF), WHO; Dr. Minnie Iwamoto, Manager, Lymphatic Filariasis Programme, GlaxoSmithKline; Dr. Steven Ault, PAHO Advisor on Neglected Tropical Diseases; Dr. Ignez Tristão, Social Sectors, IDB

Dr. Kayuzo Ichimori, GELF, WHO

Global PELF Overview

- Worldwide, the number of countries and people treated is increasing. In about 50 countries, over 500 million received monotherapies and about 250 million received combination therapies (NM & Albendazol or DEC & Albendazol) in 2008.
- The Americas represent only about 1% of worldwide LF infections; the global hotspots are Africa (30%) and Southeast Asia (India in particular), with 65%.
- There 81 endemic countries in the world and all have started MDA treatments except for 17 countries in central Africa that are endemic, but that haven't yet started MDA activities.
- The map below shows global prevalence of four neglected disease, one of which is LF.

Geographical distribution of Lymphatic filariasis, Soil-transmitted helminthiasis, Schistosomiasis and Onchocerciasis



- The Global PELF began in 2000 with a goal of worldwide elimination by 2020.

- The program's main goals are to prevent transmission and control morbidity.
- In addition, the program aims to achieve a deworming benefit through the use of Albendazole, and to strengthen health services.
- Many more partners have joined in on the elimination efforts since the program began.
- There is no longer a global PRG, only regional PRGs now. Likewise, there is no global technical advisory group looking at LF any longer; now, there is only an integrated approach being considered at WHO headquarters.

Steps toward LF elimination

- Step one is to start MDA in countries that don't have it yet (20 in all, none in the Americas).
- Step two is full MDA, which is occurring in 4 countries in the Americas and 43 countries elsewhere.
- Step three is stopping MDA after 5 treatments are completed. Four countries have done this worldwide.
- Step four is certifying LF elimination. Ten countries have reached this point, including 3 in the Americas.
- This whole process takes more than 10 years to complete in each country, so we are behind schedule in the countries that have not yet started MDA.
- We need to think about the category of "endemic" countries that don't have any LF cases. We are working on a strategic plan and we will include this priority in that plan.

The Americas Region

- We understand that four countries—Brazil, Guyana, Haiti and Dominican Republic—have MDA underway currently; and three countries—Costa Rica, Suriname and Trinidad & Tobago do not have LF cases, although they were endemic in the past.
- We need to have guidelines in place for certifying countries as "free from LF," but we don't have them currently.

LF Activities at WHO 2010-2011

- Complete the Strategic Plan 2010-2020 by June 2010
- Report to the World Health Assembly (WHA) in May 2010.
- Produce a clear WHO statement on LF as well as a fact sheet.
- Develop a clear mechanism and management strategy and practices for the integrated approach to NTDs, covering both mass drug treatments and vector control.
- Develop guidelines for certification, which would require creation of a WHO expert committee or global steering committee.

Discussion following Dr. Ichimori's Presentation

Question 1

- Can you give us some idea of where things stand on the preparation of guidelines for certifying elimination?

Response to question 1

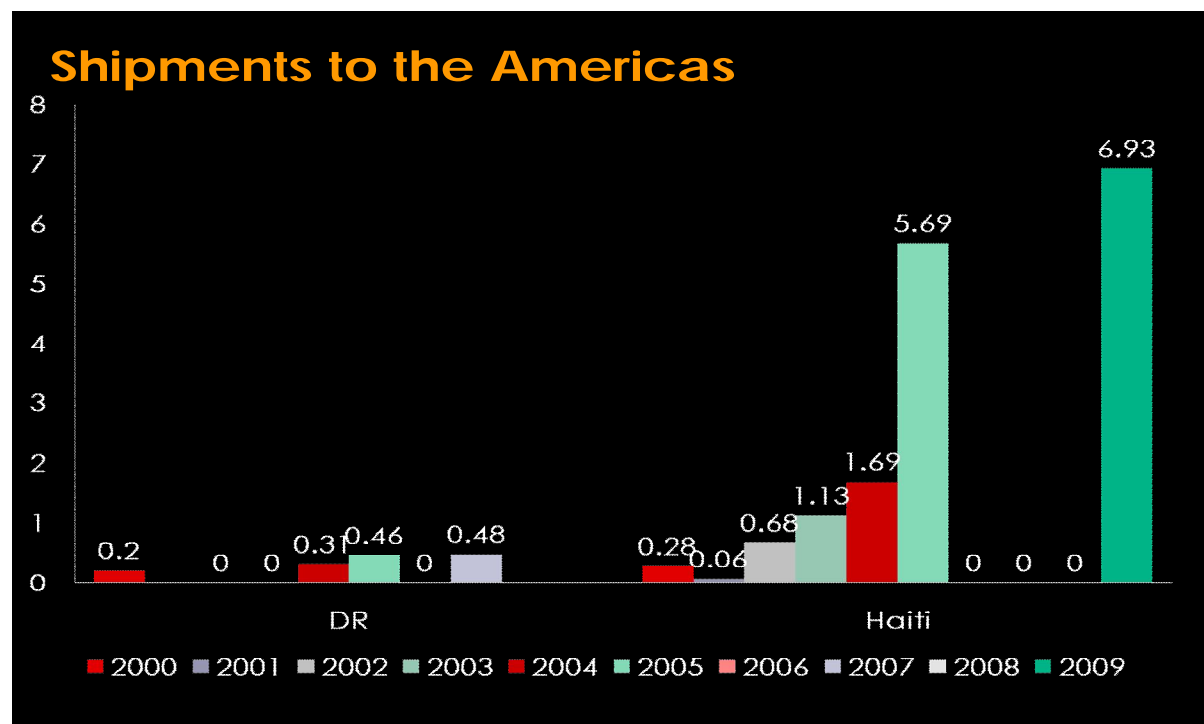
- For the first six months of 2010, we intend to focus on developing the strategic plan for 2010-2020.
- After those are finished, we will hold a consultative meeting to discuss the process for developing the certification guidelines. The technical information is already there, but the defining a process for certification is what is still missing.

- The guidelines themselves will be ready next year.

Dr. Minnie Iwamoto, GlaxoSmithKline

GSK's recent commitments to global health

- Their new CEO has taken a more flexible approach to intellectual property in less developed countries (LDCs) – such as a patent pool for medicines against NTDs.
- GSK has committed to reducing prices for patented medicines in LDCs to no more than 25% of the prices at which they are sold in developed countries.
- Build greater collaboration in fighting tropical diseases by bringing researchers into GSK facilities, particularly to work on malaria compounds.
- GSK will reinvest 20% of the profits medicines sold in LDCs into strengthening health infrastructure in those countries.
- Sustainable pricing for malaria candidate vaccine; it will be sold for just above cost and will not be a profit-making enterprise for GSK.
- Albendazole is produced in Capetown already, and the company has a new production site in India, as well. GSK is committed to the LF program and will continue to meet the medication needs for that program beyond 2020.
- As of December 2008, GSK had donated over 1.4 billion doses of Albendazole in over 50 countries worldwide; 1% of those donations have gone to the Americas.
- The chart below details Albendazole shipments to the Americas since 2000.



Discussion following Dr. Iwamoto's Presentation

Question 1

- Regarding the commitment to reinvest 20% of the profits of medications sold in LDCs into strengthening the health infrastructure in those countries, how will that work? Will it be a competitive process?

Response to question 1

- The company is working out the details still. One question is whether to reinvest the profits from each country back into that same country, or whether to pool the profits globally and then direct to priority areas. Things seem to be headed toward the latter approach right now.
- The first year, the funds were directed toward 7 LDCs in Sub-Saharan Africa; it went to 6 different NGOs. A panel of business leaders decided how to distribute those funds.
- Going forward, I think GSK will look for a global NGO partner with a presence in the LDCs, so geographically it might be more spread out past Sub-Saharan Africa.
- It hasn't been decided yet whether or not it will be done through a competitive process.

Question 2

- With diseases like LF, the approach has been to attack microfilaria in order to eliminate the filarial parasite. Has there been any recent research done on macrofilarial drugs from your end? Particularly when it comes to other worm infestations such as STH?

Response to question 2

- Globally, yes, there is, but not within GSK. Dr. Lammie is probably better-versed on this topic.
- [Dr. Lammie] Yes, there are two efforts in this area; there is potential to see a macrofilarial drug come out of them. WHO is doing clinical trials on Moxidectin® (for Onchocerciasis). It's in the same class as Ivermectin®, so we don't expect it to have a macrofilarial side effect, but the microfilarial side effect is much longer than that with Ivermectin®.
- The Gates Foundation has just funded a new project in 3 US institutions—the University of Washington, St. Louis, Case Western Reserve, and Michigan State (MS). The MS study is to resurrect a drug used in the 1980s in animal studies called Flubendazo®l. It was an injectible back then and was not found suitable for human use because it caused lesions to develop at the injection site, but they are looking at ways to reformulate it, with the idea that it could serve as a macrofilaricide for the program. We won't see any benefits from this for years.
- For those of you who have used DEC, a microfilaricide which also kills anywhere from 30-50% of adult worms, you'll recall that the worms in males are in the lymphatic vessels of the spermatic cord, so a macrofilaricide will certainly see intense scrotal reactions in the first year. Therefore, a macrofilaricide will really be needed towards the end of the program to mop up remaining cases that don't respond effectively to other treatments.

Question 3

- Since GSK supports the integrated NTD program and LF is part of that program, can you tell us what is the company's policy regarding using Albendazol for STH eventually?
- In some countries, the LF program may become an integrated NTD program that focuses on LF and other diseases, as well. Will this be acceptable for GSK donations?
- As we move toward integrated programs, we may also need to reforecast the amount of drugs that are needed, so those numbers may change. This is one of the challenges we face with integrated programs.

Response to question 3

- GSK's donation of Albendazol is for LF elimination, and while we are pleased with the ancillary deworming benefit, the donation is for LF.
- GSK does not have plans to donate Albendazol for STH.
- Having an integrated NTD program is acceptable in so far as that program fits in with the country's LF elimination plan.
- If a country has an NTD elimination program, Albendazol would still be available for areas of

the country that are endemic for LF, but not for areas with STH but no LF.

Dr. Steven Ault, Advisor for NTDs, PAHO

Moving toward NTD elimination in the Americas

- Each Fall, PAHO meets with Ministers of Health from the region in the Directing Council meeting to decide the focus for the institution over the coming year.
- Last year at this meeting, we presented a report and resolution titled “Elimination of Neglected Diseases and Other Poverty-related Infections,” which is based on an epidemiological profile document, background research, and negotiations with health ministries.
- Highlights from that report include reflections how the NTD program fits into PAHO’s strategic plan and the Agenda for the Americas (another policy document adopted by the ministers of health in the past few years), and the global plan for 2008-2015 on combating tropical diseases.
- The ministers have agreed to commit to eliminating a number of tropical diseases as public health problems, and in the case of two diseases, reduce the burden significantly.
- LF is one of the diseases that is marked for elimination; and the new target date the ministers have set for elimination of LF is 2015.
- There are two groups of diseases mentioned in the report: group one are diseases marked for elimination, including Chagas, congenital syphilis, LF, onchocerciasis/river blindness, human rabies transmitted by dogs, neonatal tetanus, trachoma, leprosy, malaria (in Haiti, the Dominican Republic, Mexico and Central America) and the plague; group two are the diseases marked for drastic reductions, including STH and schistosomiasis.
- PAHO will be focusing on eliminating schistosomiasis in Suriname and St. Lucia; PAHO will also review cases in the Dominican Republic (DR).
- Venezuela and Brazil are more challenging countries in the case of schistosomiasis, and elimination in those countries may not seem feasible by 2015, although great advances are being made and morbidity and mortality are decreasing year by year.
- Other NTDs such as leishmaniasis and leptospirosis and others were discussed, but weren’t included in the resolution because it was felt that the tools for eliminating them or drastically reducing their burden aren’t here yet.
- The resolution represents great progress and it challenges program managers for these diseases; but it also gives us political weight and leverage to ensure that external resources as well as resources from within the ministries of health and finance continue to be made available for these programs.
- Internal advocacy will be necessary for LF and other NTDs, but we think this resolution and the agreement of the ministers represent a very important tool.

NTD trust fund

- Two years ago, we began a process parallel to the work in preparing the resolution, to work for the establishment of a trust fund for infectious and neglected diseases of poverty.
- The Sabin Institute was successful in obtaining a grant for \$34 million for work globally toward controlling NTDs. The American region has received part of that grant.
- PAHO has been involved in a technical role in this effort, and the IDB is involved with establishing the trust fund itself.
- Using grant funds, PAHO will work with countries to develop national plans for NTD control and complete the mapping or remapping of certain NTDs to compliment the work of the epidemiological profiles document (published last year).
- PAHO and IDB will implement two demonstration projects for integrating NTD control and elimination efforts in Chiapas, Mexico, and Recife, Brazil. More demonstration projects may be added in the future. This is a collaboration with the IDB, the countries, the Sabin Institute and

CDC.

- Draft NTD action plans have been developed for Chiapas and Recife, though they are still under review.
- Grant funds will also be used to work with the countries to target hot spots where quick control advances (so-called “quick wins”) can be made, such as with the few cases of schistosomiasis transmission in St.Lucia.

Dr. Ignez Tristão, IDB

NTD trust fund

- The grant that Dr. Ault mentioned is coming from the Gates Foundation; it is a seed grant to set up the trust fund, finance demonstration projects and mobilize additional resources for the trust fund.
- The trust fund will be a multi-donor fund, and the Sabin Institute and the IDB are working very hard to attract further resources, with the goal of financing many other projects and programs in the region.
- The fund will be located at the IDB and its objective is finance projects and programs to combat, treat and eliminate NTDs in the region.
- We will be accepting proposals from governmental and non-governmental institutions. Strong emphasis will be given to projects that involve coordination among actors and across sectors (i.e. not just health, but water and sanitation as well) and that take advantage of existing distribution channels or programs. Also, emphasis will be placed on “quick wins.”
- We plan that the trust fund will begin working by June 2010, and a call for proposals will be out by then. It will be done using a competitive process.
- We are working with PAHO and Sabin to provide training to countries on preparing proposals, as well. We hope that the proposals will have enough materials and formats available to make it very easy for the countries to respond with proposals.

Discussion following Dr. Tristão's Presentation

Question 1

- One of the sub-objectives of the global program is building health systems. I know this is something that the IDB project is trying to do—shifting from vertical programs towards more integrated programs that will build the system. How much emphasis will the trust fund place on building health systems capacity? For example, with LF and the morbidity control part of that program. Also, will the program allow for things that are specifically geared toward NTD elimination, such as building a laboratory?

Response to question 1

- That is an example of something we would like to see, with the development of the morbidity management component of the LF program, and its integration into the health care system.
- The other part of it is to look at the other NTDs in the country and work towards an integrated plan. Such as linking STH and LF elimination efforts in Guyana, looking at a multi-disease approach in morbidity management, vector control, and prevention of transmission, as well as creating linkages with water and sanitation and other sectors in the countries. These are the kinds of proposals we are hoping to see coming from the countries.
- The guidelines for the RFPs have not yet been developed, but when they become available, they will contain very clear guidelines to help the countries prepare their proposals, while still be flexible enough to meet the different epidemiological circumstances that are unique to each country.

Question 2

- The situation we have in my country (Guyana) is with leprosy and what we really need to develop is a skincare program. Skin and fungal infections are a big challenge for us, but they are not usually addressed in NTD elimination programs. There needs to be a greater emphasis on morbidity control, because a complication of lymphedema is many different skin infections. If we can improve skin services, I think we will be addressing many different areas, including leprosy and other NTDs, but also are an issue in non-communicable diseases such as diabetes.

Response to question 2

- One area where we see integration efforts come together as part of strengthening health systems is in monitoring and surveillance of diseases. In some of the health programs with NTD components that the IDB has worked on in recent years, countries did not have a baseline or a very clear strategy for surveillance for some of the associated conditions, even for very specific interventions. In addition to providing medications and specific resources, we are working to help them develop better surveillance systems for those conditions. So that is something we will be very interested in doing with the fund.

Topic 3: Partners and Collaborators

Chair: *Dr. Minnie Iwamoto, Manager, Lymphatic Filariasis Programme, GlaxoSmithKline*

Presentations: *Dr. Patrick Lammie, Neglected Tropical Disease Program, CDC; Dr. Joan Fahy, Programme Coordinator, LF Support Centre and GAELF Secretariat, School of Tropical Diseases, University of Liverpool; Dr. Linda S. Lloyd, Public Health Consultant, PAHO*

Dr. Patrick Lammie, CDC

Regional Approaches to NTD Control and Elimination

- There has been a shift away from talking about LF or other specific diseases, towards talking about NTDs. This has been very good in terms of awareness and funding.
- NTDs have captured interest in a crowded global health landscape; LF elimination in particular, was specifically mentioned as a priority in the Obama Global Health Initiative.
- The Global Network for Tropical Diseases is receiving support from USAID and DFID, and the probability for increased bilateral support is high.
- Although each country in LAC is unique, a regional approach allows for adapting programs to local epidemiology and priorities and promotes regional ownership and innovative partnerships.
- Having a regional focus also improves advocacy and resource mobilization synergies and allows for the development and use of technical and managerial capacity available in the region; particularly in terms of health systems development.
- The table below shows how much the NTD picture differs by region. In LAC, LF and schistosomiasis aren't even on the list of the top 5 priorities.

NTD Priorities Ranked by DALYs

Latin America/Caribbean		Sub-Saharan Africa	
Infection	DALYs (range)	Infection	DALYs (range)
Hookworm	0.13– 1.9 million	Hookworm	0.5-7.5 million
<i>Ascaris</i>	0.12– 1.1 million	Schistosomiasis	1.6-4.2 million
<i>Trichuris</i>	0.26-1.1 million	<i>Ascaris</i>	0.4-2.2 million
Chagas	0.66 million	LF	2.0 million
Dengue/DHF	0.07 million	<i>Trichuris</i>	0.5-1.7 million

Data from Hotez et al., 2008 and Hotez and Kamath, 2009

Regional Initiative Success Stories

- The Onchocerciasis Elimination Program for the Americas (OEPA) is on track for interruption of transmission by 2012.

- The African Program for Onchocerciasis Control (APOC) treated over 50 million in 2008.
- The Southern Cone Initiative has seen dramatic reductions in Chagas disease in 6 countries.
- What can we do as a community to make sure that NTD efforts and integrated NTD programs will be as successful as some of these disease-specific programs?

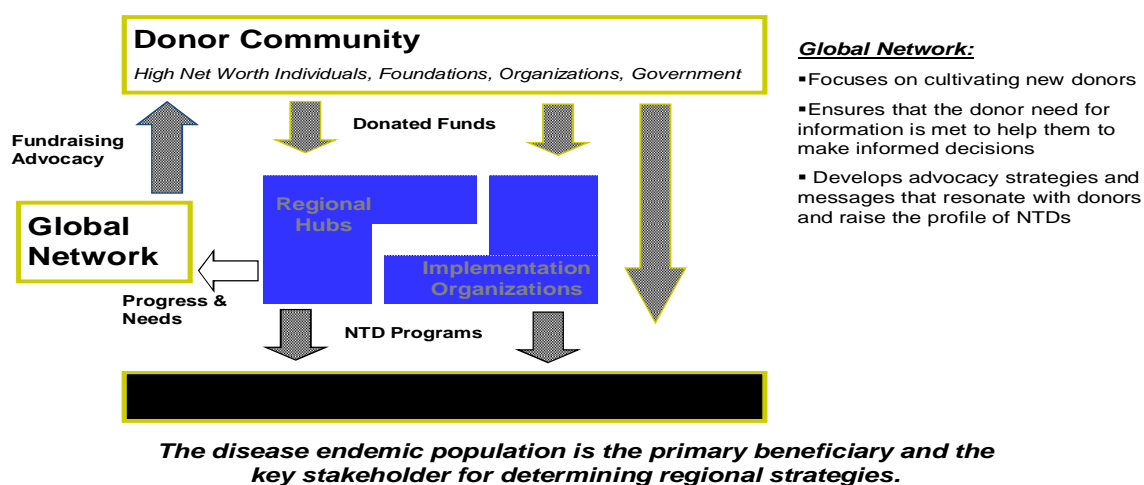
Gates Foundation Support

- Last year, the Gates Foundation awarded the Sabine Institute a five-year (12/2008 – 1/2014) \$34 million grant to make regional efforts a reality.
- The goal of the grant is to raise an additional \$200 million in private money that would complement the US, DIFD and other government programs in supporting global coordinating mechanisms to treat no less than 230 million individuals.

The Global Network for NTD Control

- The Global Network for NTD Control is an advocacy organization dedicated to ending the suffering from NTDs; it was just founded in 2006.
- Its purpose is to use advocacy to raise the profile of NTDs among policymakers and the public, as a global health problem for which a solution exists.
- Its intent is resource mobilization, so policymakers will discuss funding for NTDs at the same time as they are discussing funding for AIDS, malaria, TB and other health priorities.
- It will focus on global NTD solutions, such as helping to support a global campaign to control and eliminate the most common diseases of poverty and forming a network of regional NTD trust funds and cross-regional working groups to catalyze the formation of regional strategies and financing mechanisms.
- Its objectives are to cultivate new donors through regional advocacy strategies, support the development of regional plans for scaling up treatment, support implementation of integrated NTD control and elimination programs according to country and regional plans and leverage regional funding by strengthening existing partnerships and financial structures to increase national support for integrated NTD control programs.

The Focus of the Global Network



- The purpose of the Gates Foundation grant is really to identify and cultivate new donors, to

create regional structures like the trust fund that will help to bring resources to the region, and to look for integrated approaches to NTDs, such as opportunities for morbidity and vector control, as well as for coordination with other sectors such as education and nutrition.

- We are looking for integration in a big sense, because if NTDs are firmly entrenched in the public health program, it will be easier to earn support for them from governments.
- The Global Network is not trying to be the middleman in the fundraising scheme. Rather, we are trying to engage donors to give financial support to trust funds and regional organizations, which will funnel those funds to governments.
- In LAC, sometimes the rich people and poor people live in the same cities. We are not looking for financial support only from the developed countries.
- A portion of the money from the grant will go directly to the NTD offices within WHO and the regional offices to help with the regionalization process, including developing and adapting regional monitoring and evaluation processes.
- The funds will support efforts to develop a global NTD resolution similar to the PAHO one, as well as to identify global funding needs and work toward policies to promote sustainability, to improve global coordination and information sharing, and to improve partnership opportunities with other disease specific programs and across sectors at the global level.

NTD Trust Fund

- The three primary objectives of the Fund include: scaling up rapid-impact health interventions to control and eliminate NTDs, supporting the strengthening of national and local health systems, and harnessing the potential of inter-sectoral and inter-programmatic approaches.
- First year objectives of the trust fund include development of trust fund policies and the RFP, mapping and development of country plans, development of protocols for ‘hot spot’ projects, and determining quick wins, such as regional elimination of onchocerciasis, lymphatic filariasis, schistosomiasis and trachoma.

Current Status of Regional Hubs

- When we look for money for NTDs in the LAC region, we’re happy when we get \$1 million. Every year, the IDB spends \$500 million on water and sanitation projects. Instead of looking for money to deliver drugs, we need to look for ways to build NTD programs into development projects.
- The people at the Global Network are marketing and business people; they “sell” things by creating excitement. At the 2009 Clinton Global Initiative in New York, there was a specific focus on the Americas. The Global Network used the event to help drive donor enthusiasm about the NTD trust fund and the NTD solutions, around the “Deworm the World” theme.
- The Brazilian National Soccer Team got involved in NTD elimination efforts via a video. There were also had the different Miss Universe contestants and others, generating a lot of excitement about NTDs, which generated \$30 million in commitments from private philanthropists as well as the Bank for NTD control and elimination.
- Brazil is critical because so many of the NTD infections happen in Brazil. In Brazil, they should use the 2014 World Cup and 2016 Olympics as end points for eliminating NTDs. Then, Brazil can provide the technical support and leadership for the rest of the region.

Garnering Support to Reach Elimination Goals in the Americas

Brazilian National Soccer Joins the Fight

- Increasing awareness
- Building political will
- Garnering support



Elimination Goals

Elimination of trachoma
Elimination of lymphatic filariasis
Elimination of onchocerciasis
75% reduction in prevalence of STHs
75% reduction in prevalence of schistosomiasis

Plans for other regions

- We are trying to make similar efforts in other regions.
- In the African region, there was an NTD stakeholders meeting with 25 countries represented in Uganda in November 2009.
- In Southeast Asia, the initial stakeholder meetings were held in Laos (Oct. 2009), Papua New Guinea (Nov. 2009); and one is scheduled for Bangkok (June 2010).
- In the Middle East, an initial stakeholder meeting is scheduled for Egypt (May 2010).
- We try to provide support to the regional offices, so they can help the countries develop regional plans and activities; and we try to get regional donors to offer support.

Expanding to other NTDs

- In the Americas region, maybe we should be looking at NTDs for which we don't have a ready solution, such as fasciolis in Peru, or strongyloides infections in Argentina, where prevalence exceeds 20% in some settings.
- The LAC region is in a position to develop solutions to such diseases and then export them to the other regions, due to LAC's long experience in disease control and elimination. Examples include polio and measles.
- I am challenging this group to use the trust fund mechanism not only as a funding tool, but also a coordination tool and as a way to share the region's experience with other regions and to provide leadership.

Integration beyond MDA

- Total integration for NTDs should include water, sanitation and hygiene education components, morbidity reduction such as surgical interventions, and enhanced surveillance.
- Integration with other programs should also be a priority, such as with campaigns for child health (i.e. child health days, national immunization campaigns, and Vitamin A campaigns), malaria, and HIV.

Discussion following Dr. Lammie's Presentation

Question 1

- Would you please elaborate on the 2009 Clinton Global Health Initiative and the \$30 million commitment that came from that? How might that take shape for the countries?

Response to question 1

- The key is to get the cash into the trust fund. The initial pledge was \$10 million in support, but we have not seen the check yet. It is part of the responsibility of the group to hold the donors to that pledge. These are discussions that the IDB really needs to push.
- The specific efforts in Brazil can be one of the topics we pick up in the RPRG discussions tomorrow, such as the distinction between mass treatment and collective treatment.
- In Brazil, in particular, there is an opportunity to use the rich information you have to drive the collective treatment agenda.

Question 2

- With so many fundraising opportunities, there needs to be very strong coordination with the organizations that can contribute funds; and access to these funds must be as free of red tape as possible, because the countries often have a very difficult time accessing these funds.

Response to question 2

- That is the reason to have a trust fund mechanism, so IDB and PAHO work with the donors and convince them to use a single mechanism, and then the countries have a single application process to send proposals. The trust fund is meant to deal with just that need.

Question 3

- On the information presented on the 20% strongyloides prevalence in some parts of Argentina, it is important to have international data on diseases such as this one. How these diseases affect different segments of the population internationally, and how emphasis is now being placed on treating segments of populations rather than on mass treatments? This is especially important for children, as diseases that affect them can lead to secondary conditions, making them adults affected by morbidity in the future.
- We published a study in Recife evaluating products sold in open markets and supermarkets. In some parts of Recife, 100% of the lettuce sold was infected with strongyloides parasites. Access to funds is extremely important to doing such evaluations, especially since strongyloides is a very intelligent parasite and very difficult to beat once a person is infected.

Response to question 3

- We need to take the research capacity that the region has and harness it to the program.

Question 4

- How do we coordinate the technical inputs quickly once funds are available? Especially in the countries?

Response to question 4

- The coordination will happen on two levels—at the regional level, IDB and PAHO will coordinate the effort with the countries; at the country level, coordination will take place by the PAHO and IDB offices in country, working with governments.
- The first step in empowering the countries is to have a small workshop to teach the program managers how to prepare proposals to access the funds.

- Dr. Ault said, with the anticipation of funds being available through the trust fund very soon, we have devoted tomorrow afternoon to preparing an initial draft for you as program managers, to help you begin developing the beginning of a draft integrated proposal. Also, through June 2010, we'll be developing a set of guidelines for development of integrated action plans. Next semester we will be holding a series of workshops in various regions to share that with you and blend it in with the RFP call that is coming out later this year. We intend to prepare you to submit proposals to the trust fund for funding, and that is briefly how we see the process taking shape in 2010.

Dr. Joan Fahy, University of Liverpool

Center for Neglected Tropical Diseases (CNTD)

- In 2008, the program changed its name to CNTD, as well as its leadership; Prof. Moses Bockery is the new CNTD director.
- CNTD still works mostly on LF, but they always aim to integrate with other NTDs.
- Their funding has been, since 2000, from the Dept. for International Development and GlaxoSmithKline, with some previous funding from the Gates Foundation.
- In 2000-2009, CNTD funded activities in the Americas, including research, personnel and various activities in Costa Rica, the DR, Guyana and Trinidad and Tobago.
- In 2008, DFID announced a 50 million pound commitment for NTDs; and they invited CNTD to apply for some of that funding. They have been awarded 10 million pounds for NTDs; but their directive requires focusing on their priority countries, which do not encompass LAC countries to a large degree.
- However, we do have a substantial amount of funds for DEC procurement. We will send the money to WHO for procurement, as well as work closely with them regarding where to direct the DEC. The Americas is an area that can receive some of this DEC.
- There is also about \$2 million available for operational research, and CNTD held a workshop two weeks prior to identify areas for operational research, including stopping MDA, surveillance and seromonitoring, urban program implementation, impact of bed nets on LF/NTDs, vector control synergies, program impact on primary health care systems, doubling MDA in problem areas, funding routes into countries, and compliance.
- A call for proposals will be sent out in the next couple of months; there are opportunities for the Americas to apply for operational research funding.
- The rest of the 50 million pounds from DFID went to hookworm (10 million, including 5 million each to the Carter Center and WHO); 5 million went to the African program for Onchocerciasis control; 25 million is still there, though the date for submitting bids has close. It is earmarked for schistosomiasis control (10 million for implementation and 15 million for medication purchases).

Global Alliance for Elimination of LF (GAELF)

- GAELF is an alliance of partners supporting the Global Programme Countries, including the WHO, World Bank, academic/research institutions, NGOs, pharmaceutical companies, international development agencies, advocacy and resource mobilization, all of whom make up the Representative Contact Group (RCG).
- RCG elects the Executive Group (EG) biennially. The EG has 6 members, one of whom is Patrick Lammie, as well as 4 other members and 2 co-opted countries—Burkina Faso and Sri Lanka. WHO, GSK, Merck are observers, as well.
- From the Americas region, Dr. Jean-Francois Vely from Haiti is the Americas chair, and Dr. Manuel Gonzalez from the DR and Dr. Marie Denise Milord from Haiti are country

representatives.

- The country representatives' main responsibility is to communicate with constituency groups/countries regarding Global Alliance initiatives undertaken by the RCG and EG, and providing feedback regarding regional meetings to the GAELF.
- The EG's responsibilities include adhering to a work plan developed following the recommendations of each biennial GAELF meeting. They primarily focus on high-level advocacy, fundraising/support and communication.
- David Mullenhue is the chair of the EG at the moment; and he works on raising the profile for LF. He has been the main promoter of pulling in LF under the NTD arm, which has brought in most of the funds of late.
- The 6th GAELF meeting will be held in Seoul, South Korea on June 1-3, 2010. We always fund the RPRG group chairs' trips. Dr. Vely will be there from Haiti, as well as Dr. Direny, who may be the speaker from the Americas for the meeting. We will also look to fund one additional person to represent the group at the meeting in Korea. However, they encourage all to attend.
- Agenda topics for the meeting will include progress updates since the previous meeting, morbidity control, future research and application, major technical challenges, alternative strategies for 2010-2020, strategy for the next decade, resourcing the strategy, and the future of the GAELF partnership.

Discussion following Dr. Fahy's Presentation

Question 1

- Is the 10 million pounds from DFID specifically for LF, or is it for all NTDs?
- Is there a priority given to LF in the operational research funds?

Response to question 1

- The funds are specifically for LF, but bringing in NTDs when possible. For example, when we go into a new country and do mapping, we will map for all NTDs, not just for LF, due to cost effectiveness. Whenever we can, we will integrate with NTDs.
- The operational research funds must at least be based on LF primarily, although there can be a component for other NTDs.

Question 2

- I'd like to suggest that our colleague Josh Wood consider attending the Korea meeting, as well, due to the morbidity management discussion that is envisioned.

Response to question 2

- We have worked extensively with IVUmed in the past and we will move forward with that in the future.

Dr. Linda Lloyd, Public Health Consultant, PAHO

Background on Communication for Behavioral Impact (COMBI)

- COMBI is a planning methodology that was designed to help program managers plan their strategic behavioral interventions better. The goal is to understand behavior, develop behavioral objectives and communicate them in ways that are appropriate and effectively reach our target audience.
- It is important to be very responsive and strict around messaging, and communicate messages clearly.
- Sometimes things don't go as planned in programs because although ideas sound good initially, the behaviors haven't been thought through. It is very important to plan around behaviors.

- Not just what do these interventions have in common, but what are the behaviors of the people receiving those interventions? If they come for one intervention, will be they open to receiving the other as well? For example, will a woman reject bed nets because although her family is eligible for four nets for her four children, she cannot physically carry them home at that time?
- COMBI blends theory—particularly behavior change and communication theories—with integrated marketing communications practices.
- Because behavior change is a process, not an event, it is critical to measure the impact of public health communications programming.
- PAHO, WHO and CDC have used COMBI for the Dengue program at the request of program managers.

COMBI Principles

- Identify key, specific behaviors linked to prevention and control program objectives.
- Conduct a market situational analysis to define the behavioral and communication objectives as part of the formative research.
- Develop a strategic communications (COMBI) plan.
- There are 15 steps to COMBI, but we are revising them currently, and they may be condensed down to 10 or so steps.

COMBI in Haiti

- The behavior objectives must be reassessed in Haiti, post-earthquake, and a determination must be made as to whether they are still relevant, or whether they need to be changed.

15 Steps to COMBI

1. Assemble a multidisciplinary planning team, so that everyone on the team is on board with the activities you are planning and developing.
2. Research behaviors and establish preliminary behavioral objectives. It is important to include members of your target audience on your research team. Having a participatory research team will give you a very good feel for what is going on and will strengthen the commitment you'll be able to get from the ministry and other authorities because you have such a clear understanding and a participatory approach in listening to their needs and respond in ways that are practical and feasible.
3. Plan and conduct formative research, including situational analysis.
4. Invite feedback on the formative research.
5. Analyze, prioritize and finalize the behavioral objectives, limiting them to 3 or less.
6. Segment target groups.
7. Develop the communications strategy.
8. Pre-test behaviors, messages and materials.
9. Establish a monitoring system.
10. Strengthen staff skills and build internal capacity.
11. Set up systems to manage and share information.
12. Structure your program.
13. Write a strategic plan (a COMBI plan).
14. Determine your budget.
15. Conduct a pilot test and revise your COMBI plan.

Measuring behavioral impact

- In order to know what is happening, we must be able to measure it and know what the impact is. If you don't know what the impact is, you can't improve it.
- Measuring behavior is one of the more difficult challenges we face because there are few good behavior indicators in many of our programs.

- When you include members of your target audience in your research team, get a very good feel for what is going on and what the behaviors are, you can find ways to measure those behaviors by creating indicators that measure the uptake of the individual steps in your program

Achieving communications goals through social mobilization

- You need to match your communication to when you expect the behavior to take place, as well as use reminders to reinforce the message and make sure the target audience understands the positive benefit or result of the behavior that you are trying to influence or reinforce.
- Social mobilization is one method of communications, and it is very labor and resource intensive, though very important for LF campaigns.
- The most successful social mobilization campaigns are carried on out many levels, from individual to community to political, using multiple channels.
- Social mobilization campaigns are about motivating people to take action, with a sense of shared responsibility.

Factors to keep in mind when using COMBI

- Knowing what the behaviors are is the critical first step, and it takes 80% of your planning time to decide what you want the behaviors to be, how to motivate people to comply, what the barriers are and how to minimize them.
- You also need to test the behaviors you're promoting for feasibility, practicality and appropriateness.
- When doing the research you need to plan your communications and behavior strategies, you must talk to your target audience to find out what the behavior means to them, why they may or may not do it, and what the program means to them.
- It is important to use communications channels that are available to and used by your target audience.
- When developing messages, consider the program's strengths and weaknesses as well as opportunities and threats that may affect it. Make sure your messages address these areas.
- Make sure the behavior you are asking your target audience to change is something that is feasible—something they can do—and that the target audience perceives that the benefits of making the change will outweigh whatever costs they perceive it to have.
- COMBI must be tailored to local conditions to be effective; it also requires significant planning and resources, both human and financial; and it has a learning curve, as countries in LAC have said it was hard to do it the first time, but easy after that. However, if done correctly, it can dramatically improve the success of health programs.

Use of COMBI in LF MDA campaigns

- In an MDA campaign, the COMBI behavioral goal is often to have 70% of the population receive anti-filariasis drugs on MDA day.
- In India, the use of COMBI resulted in 78% of the population (22 million people) getting medicated, compared to 30-40% in earlier campaigns.
- The strategy for success in India combined the use of audience-appropriate multiple communications channels, interpersonal communications and “selling” via volunteers who went door to door, and strategic public relations focused on reaching the mass media.
- In Zanzibar, Tanzania, where 83% of the population got 5 rounds of MDA, key components for success were high levels of political commitment, social mobilization (again using multiple communications channels), community involvement in drug distribution via multiple home visits by filarial prevention assistants, and morbidity management.
- The main lesson learned in COMBI campaigns against LF is that social mobilization is the key for success, but significant investments must be made in planning and implementing the social mobilization effort in order to achieve maximum impact on desired program behaviors.

Discussion following Dr. Lloyd's Presentation

Question 1

- We had a situation where we found it necessary to do a seventh MDA intervention; however, people in the community didn't want to participate because they—including some of the community leaders—thought that it was unnecessary because they had thought that the sixth MDA had been the last dose they needed. How could we use COMBI to work with communities in situations where MDA had been stopped, but then needed to be restarted, to increase coverage?

Response to Question 1

- COMBI can be used to understand what barriers will need to be faced to go back into a community. One thing you would need to do is talk very honestly to the community leaders and find out what their concerns are about having the program come back in.
- After identifying the barriers, you find ways to reduce them. Then, you talk to the broader community and address those barriers through your communication strategies.
- In this case, you may need to use door-to-door interpersonal communication due to the complexity of the issue.
- Interpersonal communication is expensive and time consuming, but it may be the best investment you can make to change behavior, especially if you're coming into a community that had a negative experience with a previous intervention.
- COMBI can help you plan specifically what to do in any particular community and context, but it requires doing formative research.

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Topic 4: Post-earthquake Challenges in the DR

This topic was moved to the RPRG meeting due to time constraints. See the summary of the DR's 2010-2012 action plan in the RPRG meeting section for further details.

Topic 5: Morbidity Management

Chair: *Dr. Steven Ault, PAHO Advisor for NTDs*

Presentation: *Joshua Wood, International Volunteers in Urology Med (IVUmed), Salt Lake City, Utah*

Overview of IVUmed

- IVUmed's mission is making quality urological care available to people worldwide. They accomplish this through partner sites in LAC, Asia and Africa, usually in teaching hospitals. This allows them to work with surgical care and all other aspects and providers of urological care.
- They work in some 30 countries and conduct over 20 workshops per year, of varying sizes and specializations, using live patients to provide hands-on training. Specialized professionals they work with include: urologists, nurses, PAs, anesthesiologists, gynecologists, orthopedists, pediatric surgeons, radiologists, as well as primary care doctors and general surgeons.
- The surgical education they provide focuses on urological diseases and includes hands-on training and classroom lectures, and education for patients and caretakers. They are also developing more online and printed guidelines, handouts and training materials.
- They worked on LF more intensely at the beginning of the decade, but are now looking to revamp their work in that area. Other IVUmed program areas include pediatrics, women's health, resident scholars and a domestic program in rural areas of the US. They also have one fellow working abroad and have started a senior fellow program to bring doctors to the US for training.
- In LAC, they work in Honduras, Nicaragua, Haiti, Cuba, Mexico, Peru, Jamaica, and Brazil.
- In addition to the training, the intense collaboration among participants during the workshops helps establish enduring collegial working relationships.

IVUmed Programs

- Pediatric urological problems are the third most common type of birth defects, and often involve reproductive issues.
- The Resident Scholars program enables learning among colleagues, as US physicians go abroad to work in one of our mentor hospitals. It provides broader surgical experience, exposes them to international surgical services, and allows for skill and knowledge sharing. The program has had 138 resident scholars and 41 mentors working in 29 sites.
- The women's health program addresses pelvic floor health, medical and surgical continence issues, vesicovaginal fistula repairs, pain, and urinary tract infections.
- Their internet education programs supplement the training they provide through videos, online courses, specialty forums, networking and news. People can also do some pretesting before attending workshops.
- In Haiti, IVUmed has sent Resident Scholars there on an annual basis for a week of general urology in a program led by Dr. Richard Williams. We are looking to send 3-5 teams there this year, mainly for general urology, although we are hoping to transition into more LF work.

IVUmed's work on LF

- IVUmed is a member of the Global Alliance; they work on morbidity.

- They have worked on LF in Haiti and West Africa.
- There was a report produced on the work in West Africa incorporating work in 5 countries, where hydrocele repair related to LF was taught using the WHO approach.
- The report found that the workshop and procedure were popular among surgeons and patients; it was easy to learn and carry out; patients required shorter hospital stays; and there were excellent surgical and socio-economic results when done properly in West African district hospital settings.
- Higher post-operative infection rates occurred when antibiotics were not properly implemented, when patients who live far away were discharged from hospital before the skin has closed properly, or when patients do not receive postoperative care right until the integrity of the skin has been reestablished (normally about 7 days when the procedure is done correctly).
- Additional conclusions of the report were that small details of surgery make a big difference, such as careful skin closure, correct application of bandaging, and good antibiotic cover pre- and post-operatively.

Discussion following Dr. Wood's Presentation

Question 1

- How does IVUmed get into contact with countries? Through governments or doctors?
- Also, what does a workshop look like? Does having a workshop mean just making the doctors available? Does your group provide the equipment for the workshops?

Response to question 1

- We only go to sites where our services have been requested, normally by a lead physician or hospital administrator.
- We have a rigorous site assessment process and we work with the hospital administration and the ministry of health to get their blessing for the program, and to make sure we adhere to local licensing restrictions, as well as to ensure that the operating rooms and staffing are available for the workshops.
- Local host logistics are carried out by local physicians and hospital staff.
- The workshops range from 1-2 weeks, typically about 7 days. It starts with a day of orientation, followed by a day of clinic and patient intake, where patients are evaluated and a surgical schedule is set.
- More complicated conditions are scheduled for the beginning of the workshop to leave sufficient time for follow-up; less complicated cases that do not require much follow-up are scheduled for the end, since the team leaves following the workshop.
- We bring with us all the supplies we'll need for that workshop; but we are careful not to bring in things that aren't available locally because the purpose is to teach and we want the procedures to be replicable. However, we bring all of the sutures, the antibiotics, the bandages and other supplies with us so as not to deplete hospital supplies. If there is a need for us to bring in fine instruments for delicate procedures, we will find ways to have those donated and also look for sites where they can be procured locally.

Question 2

- What is the bilingual capacity of the surgical teams, particularly those that do hydrocele repair? Are there staff at IVUmed that speak Portuguese, Spanish, French and Dutch?

Response to question 2

- We have one staff member each who speaks Portuguese, Spanish and French, and we also work with volunteers that speak those languages. We often make use of local translators and we work with the Peace Corps or NGOs in various countries according to the need for translation.

Question 3

- What is the procedure for filing a request for IVUmed's services? Is there a form or formula that needs to be filled out or followed?

Response to question 3

- An initial contact will get things started, with an expression of need or desire for our services. Then, we have a detailed need assessment form that we complete to evaluate the capacity of the facility where we'd be working and the staff, as well as an initial checklist to ensure that we have at least tacit approval or the knowledge and awareness of the ministry of health, the hospital administration, and all the key players involved.

Topic 6: Vector Control and IVM

Chair: *Dr. Steven Ault, PAHO Advisor for NTDs*

Presentation: *Dr. David Chadee, Dept. of Life Sciences, University of the West Indies*

Research and Trends for Vector Control Applied to LF and NTDs

- Conventional vector control for Dengue and LF in the Americas is using internal residual spraying, ultra-low volume spraying, space spraying, environmental source reduction, focal treatment of mosquito breeding sites, health promotion and community participation.
- Most of these vector control programs are reducing the population, but they are failing to reduce the vector population to below the disease transmitting threshold.
- Integrated vector management may be a solution to the problem.

Integrated Vector Management (IVM)

- IVM is a decision-making tool for the management of vectors, to reduce or interrupt transmission of vector-borne diseases.
- It involves selection of methods based on knowledge of local vector biology and disease transmission patterns, using a range of interventions, and obtaining the participation of the community and the health sector.
- IVM was used to combat Dengue in Trinidad, using cardinal points approach that limited the area where surveillance and monitoring needed to occur because they found when they studied the behavior of the mosquitoes that the mosquitoes did not venture more than 200 feet from the house where the infection occurred.
- They used QuickBird Infra-red image of a residential area to identify trees, houses, grassy area and areas with water, which helped them determine the areas for surveillance and monitoring.
- He developed a new technique for testing for transmission using seromonitoring/PCR of blood consumed by mosquitoes.
- Sticky tape is now in use to collect the adult mosquito samples for seromonitoring/PCR evaluation; the bait used to attract the *Culex* mosquitoes is potato skins that have fermented in water for 3 days. The use of sticky tape has dramatically increased the number of mosquitoes that are collected.
- Studies are currently being conducted with 5 out of 10 weeks completed; he will report the results at a future meeting.

Site Specific Strategies for Vector Management

- One strategy won't fit all. You need to look at what is unique about each habitat and tailor your strategy to fit that habitat. For example, in French Polynesia they are using *Wolbachia* in crab bait because they found that mosquitoes breed there.

New IVM technologies

- There is a new insect growth regulator that contaminates the mosquitoes' legs and is then transferred by it to breeding sites.
- Sterile release of males using radiation or chemical means is being studied currently.
- Release of Insects carrying a Dominant Lethal (RIDL) gene is being used to create flightless mosquitoes, which are released for breeding.
- Quantitative trait loci (QTLs), or stretches of DNA that are closely linked to genes that underlie specific traits in insects are being studied to look for the gene for vector competence, development of transgenics, sterile males, understand biochemical pathways in order to develop

drugs to interface with pathology, and the use of “effector genes” to develop refractory mosquitoes.

- Using sticky tape, lethal ovitraps are using knowledge of ovipositing females and attractive lures.

Summary

- Vector control has been effective in controlling and even eliminating transmission of *W. bancrofti* either alone or when implemented in an integrated LF program with MDA.
- In addition to reducing the risk of the re-establishment of LF, *Aedes* and *Anopheles* control for LF will reduce the risk of dengue and malaria transmission, respectively. Therefore, a multi-disease strategy is recommended.
- Vector control strategies that have proven effective in limiting the transmission of *W. bancrofti* can be implemented immediately, including the use of insecticide treated mosquito nets and polystyrene beads for control of transmission by *Anopheles* and *Culex*, respectively.

Discussion following Dr. Chadee’s Presentation

Question 1

- Have you had a chance to compare your sticky traps with Gravitraps?

Response to question 1

- Gravitraps do not collect as many. With the sticky traps, we collected 250 adults, which is a large number. Gravitraps are collecting 10 or 15, so the potential is there even if we just use it to reduce vector density.

Topic 7: LF and Other NTDs in the Context of Elimination and Control

Chair: *Dr. Joan Fahy, Programme Coordinator, LF Support Centre and GAELF Secretariat, School of Tropical Diseases, University of Liverpool*

Presentations: *Dr. Lesley Resida, Head, Bureau of Public Health, Suriname; Dr. Ruben Santiago Nicholls, Neglected Diseases Regional Program, PAHO*

Dr. Lesley Resida, Suriname Bureau of Public Health

Testing for NTDs

- In Suriname a survey is in progress in school age children for Schistosomiasis and STH; stool samples (for Kato-Katz), blood samples for Serology (ELISA) and anemia (hemoglobin), and urine samples for the CCA urine antigen test will be taken.
- In the district of Nickerie, which borders Guyana, the same sample of school children will be used to do antigen tests for Lymphatic filariasis tests with ICT cards, which have been requested but not yet received. They plan to reach Nickerie by the end of March 2010, piggybacking on the Schistosomiasis and STH survey.
- They have done this testing a few times before and found zero positives, but because Nickerie borders Guyana and has seen imported cases, they want to establish a permanent LF testing site there.
- The basic goal is to use the Schistosomiasis survey and combining it with our efforts to get more recent data on LF.

Questions and Answers for Dr. Resida

Question 1

- Do you see any opportunities for using COMBI in your planning process with these programs that are becoming linked?

Response to question 1

- Yes, in Suriname, we've applied the COMBI concept in the program against Dengue. We have not applied it to other processes yet, but it is something that we will do.

Dr. Ault's follow-up to question response

- We are at your disposition to assist with that, and we can perhaps facilitate a visit by Dr. Lloyd or otherwise assist you.

Question 1

- Initiatives that target more than one disease probably require expanding the monitoring and surveillance sentinel site principles that we apply, collecting stools and urine, and storing the stools for some time. We have done this as well as some of those samples are still awaiting testing. Do you have a plan for how you will address this problem?

Response to question 2

- In our program, samples are processed the same day. Urine samples are analyzed in the school setting within 20 minutes. Stool samples go to the lab, so results by the next day. All positive cases are treated by the end of the week. We're doing this with 1,600 children. The pilot was done in December 2009, and the actual program started last week.

Comment from PAHO

- Ideally, stool samples should be processed within 24 hours or less. Where that's not possible, there are other parasitological techniques that are less quantitative that involve preservation of stool in formula and then reading.
- You need to choose which parasitological methods will be used, provide training, and have the material supplies on hand. We will be addressing this in the guidelines that we'll prepare for the region on developing integrated action plans.
- PAHO is working very closely with Suriname now on doing the survey work to eliminate schistosomiasis in that country; the health minister of Suriname is very interested in this.

The interruption of Onchocerciasis transmission in Colombia

Onchocerciasis in Colombia

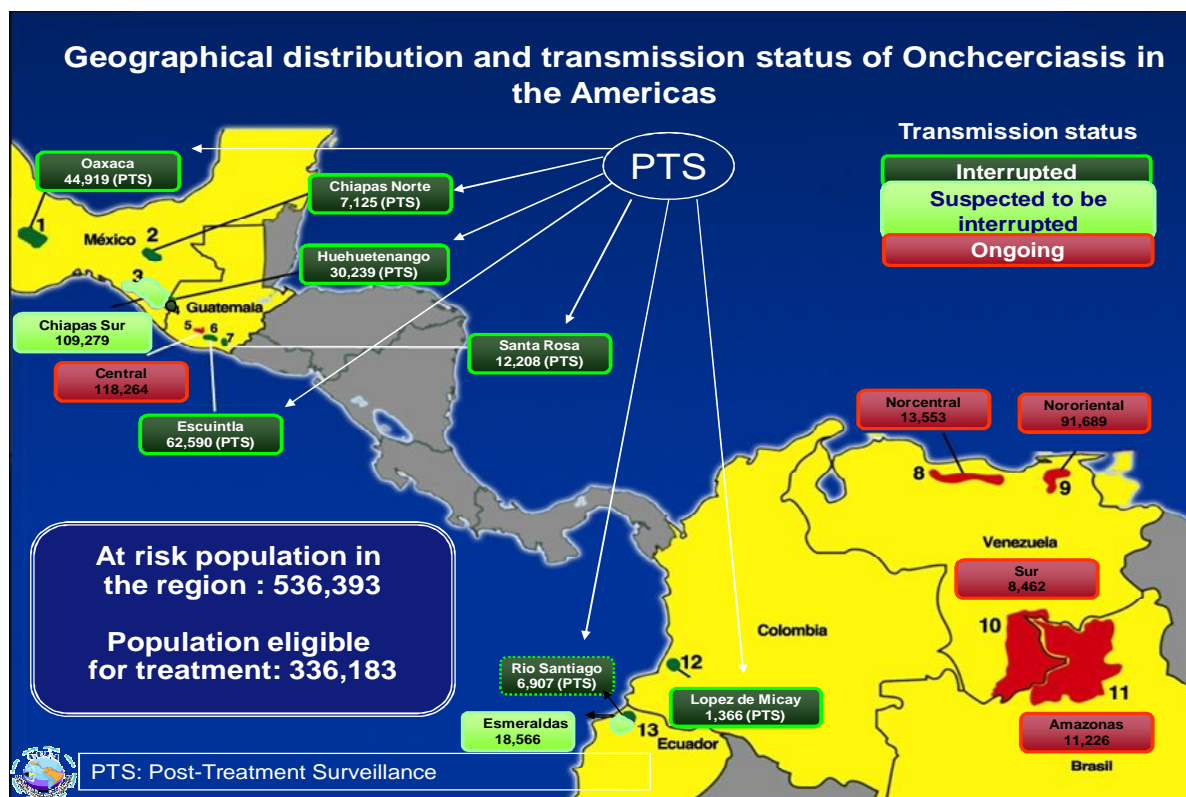
- The Onchocerciasis focus in Colombia was in Lopez de Micay, the smallest transmission focus area in the Americas, where baseline prevalence was 40% in 1995.
- MDA with ivermectin (Mectizan®, or Met) was given twice a year for 11 years, with 23 total rounds given to 85% of the eligible population (which is the Onchocerciasis Elimination Program in the Americas (OEPA) target goal for elimination), along with community education and social mobilization.
- By 2007, testing via skin snip biopsies showed prevalence of microfilariae had reached 0%.
- Serology testing using ICT and OV16 ELISA antibody test showed all negative results in children.
- We didn't do much ocular testing, but the tests that were done on 187 people showed no blindness or ocular pathology attributable to onchocerciasis.
- The entomological studies on black flies showed decreasing infectivity: in 1996, 3 in 281 flies were infected (1.07%), but by 2004, the rate was 0.19 in 2000 flies, which is well below the threshold for infectivity of 1 in 2000 flies.
- A mathematical model called SIMON-A was developed by Dr. John Davies at the University of Liverpool that uses demographic variables, MDA coverage and surveillance study results to predict when to stop MDA treatments and when interruption of transmission can be achieved.
- Next year, they expect to start the process for certification of elimination of onchocerciasis in Colombia, after the period of post-treatment surveillance has passed and an entomological assessment is done to confirm interruption of transmission at the end of 2010.

Current Status of Onchocerciasis Elimination in the Americas

- There are 13 foci in the Americas (see map). All have been receiving twice yearly MDA since 2001.
- In 9 foci of 4 countries—Colombia, Ecuador, México and Guatemala—the ocular morbidity was eliminated by 2007.
- In 7 foci—3 in Guatemala, 2 in Mexico, 1 in Colombia, 1 in Ecuador—transmission has been interrupted.
- In 2008, PAHO Resolution 12 of the 48th Directing Council calls for the interruption of transmission throughout the region by 2012.
- OEPA's goal is to end MDA treatments in 2012 and eliminate oncho transmission by then, as well, with post-treatment surveillance extending until 2015.

Factors for Success in Oncho Elimination

- Having a clear goal and strategy for elimination, along with political will and commitment, the OEPA program, international partnerships, and the participation of NGOs in some countries.
- The Mectizan® donation program, which provided the drugs for MDA coverage.
- Having the WHO guidelines for certification of elimination.
- Doing community education and social mobilization to encourage participation.
- Using an intersectoral approach, such as working with the World Food Program on food security.



Questions and Answers with Dr. Nicholls

Comment 1

- Foci 10 and 11 could be considered a single focus, bringing the total in LAC to 12. In those two foci, since oncho treatment involves MDA and in that part of the country, the population of mostly indigenous peoples and afro descendents is dispersed; administering MDA has been very challenging.
- In spite of the problems, we've had relatively satisfactory results on average; however, in some communities, coverage has been less than satisfactory.
- It is important to break out coverage reports, not just reporting one number for the entire focus, but indicating coverage at a community level. For example in areas bordering Venezuela, we've had communities with unsatisfactory coverage due to operational, political or logistical issues.
- We need to have an integrated program and work bilaterally with Venezuela on indigenous health issues, particularly on oncho elimination efforts, in order to meet the 2012 deadline.

Comment 2

- The oncho elimination program in Colombia is the first global example of disease elimination via human efforts; we're now seeing this success replicated in other areas.
- Another interesting aspect of the Colombia program is that it was carried out in a very remote area that was very difficult to reach with MDA; thus, it is an example that MDA can be done even in very challenging physical circumstances.
- The use of a mathematical model to determine when MDA should be stopped is interesting; it brings up the question of whether the research group in Recife could look into whether a mathematical model could be used to determine when MDA could be stopped with respect to LF.

Topic 8: Research Themes

Chairs: *Dr. Abraham Rocha, FIOCRUZ; Dr. Steven Ault, PAHO adviser for NTDs*

Presentations: *Dr. Maria Elena Bottazzi, Associate Professor, Vice Chair and Director for Product Development, Human Hookworm Vaccine Initiative (HHVI), George Washington University; Dr. Amy Klion, Laboratory of Parasitic Diseases, National Institutes of Health; Dr. Abraham Rocha, FIOCRUZ*

Dr. Maria Elena Bottazzi, HHVI/GWU

High Control Burden of NTDs

- Worldwide, 1.4 billion people are infected by NTDs, including 120 million with LF.
- Mebendazole/Levamisole is new anti-helminthic drug combinations; and there are 2 new anti-helminthic drugs: Aceto-nitriles (Novartis) and Tribendimidine (China).
- However, NTD drug research tends to be a neglected area because priority is often given to diseases that cause mortality, rather than those that cause morbidity; and because NTDs are not common in industrialized countries.
- Very little funding goes to NTD drug research; of the \$2.5 billion invested in new drug R&D in 2007, less than 25% went to all NTDs.

Recombinant Vaccine Research

- HHVI is a public-private partnership that develops recombinant vaccines for NTDs using genetic recombination.
- HHVI is doing clinical trials on the drugs it has developed in Brazil and it working with Instituto Butantan and other partners to produce the drugs there.

HHVI program in Brazil

- HHVI has a very strong clinical development capacity program in Brazil, which has been created using strong community preparedness.
- They have helped build a vaccine clinic in a region that didn't have one in Minas Gerais.

HHVI's projects

- They have a genome project that has mapped the genomes of many NTDs, including LF.
- They have vaccines under development for *Onchocerca*, blocking Malaria transmission, and Chlamydia.
- They are working toward a multivalent Helminth vaccine that will target hookworm and schistosomiasis.
- The head of HHVI, Peter Hotez, has written a new book called *Forgotten People, Forgotten Diseases*, available at www.plosntds.org

Questions and Answers for Dr. Bottazzi

Question 1

- Can you talk about the efforts to produce a vaccine for Leishmaniasis?

Response to question 1

- We are aware of the vaccine development efforts for Leishmania. We're very close with the Idry group from Seattle, and especially the group in Minas Gerais. They're working a veterinary vaccine to address the issue in dogs; it is a therapeutic vaccine, not a preventative one. We haven't engaged on any of those, but there are some groups that are actively working on developing a vaccine for Leishmania; and they are working very closely with Brazil on that. We're not involved in the development, but I can give you the contact information.

Question 2

- How about the Chlamydia vaccine? What stage is that at?

Response to question 2

- We're starting to evaluate targets. There are two approaches: an approach to deal with vaginal infections is one, but we also want to do a Trachoma one. We need to test them in animal models; the group from California has a guinea pig model that we can use for evaluating ocular disease. The problem is that the Chlamydia proteins are very difficult to make in the laboratory; they are very sophisticated bacterial microproteins. It has been a challenge for us to make proteins that confer protection. However, we can get Chlamydia bacteria and make native extracts. The proof of principle that a Chlamydia vaccine can work come from those extracts. The key is to find out what part of the extract we can use to streamline and make into a vaccine. It's moving, but it's not going to happen soon.

Comment 1

- In Brazil from 2005-2008, we looked at more 20 million exams and found hookworm in about 10% of them all over the country; so prevalence is high.

Response to comment 1

- In Minas Gerais, we work in a region called Americaninhas, where hookworm prevalence is 80% and schistosomiasis prevalence is around 50-60%; it is very co-endemic there.

Research on Twice-Yearly MDA for LF Elimination in Mali

- It is very important to combine the work of programs and program managers with operational research.
- NIH has an International Center for Excellence in Research in Mali and they were approached by the Mectizan® expert committee regarding the program in Mali, so this is a unique situation of a study that involved both the program managers in Mali and the operational research team in the NIH Center.
- DEC isn't used for MDA for LF in Africa because of Onchocerciasis, so Albendazol and Ivermectin (Mectizan®) are used instead.
- The drugs have been donated, but the cost of the programs is very high and has been a problem.
- Data has shown that multiple DEC MDA treatment (twice yearly as well as a seven-day treatment) has been more effective than single doses; also, LAC data has shown that twice yearly treatment with Ivermectin has been effective at eliminating Onchocerciasis.
- Their research question was: can increasing the dose and frequency of Ivermectin be more effective at suppressing microfilarial levels, and affect adult worm burden in Mali?
- They ran tests giving double the WHO recommended dose of Ivermectin and Albendazol (400 mcg/kg and 800 mg, respectively) twice per year, and assessed the microfilarial and adult worm impacts.
- They worked with national authorities in choosing the two study sites to ensure that they could control drug distribution and that independent, government-sponsored MDA efforts would not interfere with the study results. Onchocerciasis was not present at either site, and LF infection rates were 53% and 36%, according to ICT tests.
- The treatments were well tolerated at the higher doses, though some of the expected side effects occurred with both the standard and higher treatment groups (angioedema, epigastric pain), but they were all mild and comparable in both groups.
- The *W.bancrofti* levels were significantly decreased in the high dose semi-annual group at 12 and 24 months, compared to the annual group.
- Microfilarial clearance was significantly more common at 12, 18 and 24 months with the biannual group. In the annual group, at 12, 18 and 24 months, there were between 16-20% of patients who had some detectable microfilaria; there were no subjects with detectable microfilaria in the biannual group after 12 months.
- Because there needs to be some microfilaria for transmission, we think we are blocking transmission completely at 12 months in the biannual group.
- The benefits of more frequent, higher doses may be on concomitant helminth infections. In the annual group, *mansonella perstans* levels remained the same or higher, but in the biannual treatment group, everyone had lower *mansonella perstans* levels by 24 months.
- The decreases in circulating antigen levels and worm nests were comparable between the 2 groups.
- Increasing the dose and frequency of Albendazol and Ivermectin can accelerate the interruption of LF transmission through increased microfilarial clearance; this is particularly important in areas where MDA has been interrupted.

Discussion following Dr. Klion's Presentation

Question 1

- Were the positive ICT card tests repeated for verification? In how many cases were worm nests detected by ultrasound in positive cases identified by ICT tests?

Response to question 1

- I have lots of data comparing ICT cards with Tropicbio ELISA. We find discordance in both directions using both in Mali, despite using new cards and doing comparisons on the same blood used on the cards to the Tropicbio ELISA. Villages are mapped using ICT cards, and we also use them for screening, to determine in whom to do microfilarial counts. All the people in the study had circulating microfilaria and they were all Tropicbio ELISA positive; 2 or 3 subjects had negative ICT card tests, but were known from other studies to be microfilaria positive. We had a problem with ICT cards in a different study (not this one), where many of the people who had tested positive with ICT, tested negative with Tropicbio ELISA and we found *W.bancrofti* prevalence was much lower than anticipated. Ultrasounds were done only on people who were microfilaria positive and circulating antigen positive. In another study, we've done ultrasounds on people with *Mansonella* and negative circulating antigens, and none have had worm nests. We've done about 100 people and have never found someone with a worm nest who had a negative Tropicbio ELISA.

Question 2

- Are you going to follow up over a longer time, maybe 48 months?

Response to question 2

- No, the study design was for 24 months, with an additional year of follow-up. I have the 30 month data already, and the two groups are comparable, with the annual group having caught up to the biannual group. But we're only planning to follow up until 36 months because the treatments have stopped, and now the villagers are just receiving the standard annual dose from the government treatment program.

Question 3

- From the data, it looks like there might be somewhat of an adulticidal effect, which would go against what the literature says. Do you have any thoughts on that?

Response to question 3

- I think it's from the increased Albendazole dose and frequency, and I think it's real. But we had trouble in a prior study when our radiologist was just learning the technique; and as he got better at it, it looked like the number of worm nests were increasing. I think he is experienced enough now to say that the data is real, and it looks like it's going in the other direction. It's true that most studies have not shown this. Maybe it's due to differences local to that area of Mali. Or it may be because the subjects had already received MDA treatment before the study started (the treatment stopped when we started the study so there wouldn't be duplicate doses given). It may be from the effect of multiple years of treatment, and now we're seeing the benefit now. But I don't know.

Research on LF at Centro de Pesquisas Aggeu Magalhães

- The first pilot study is on microfilarial infection; and the data presented are extremely preliminary in nature. It was done in a school in the Zapocaya neighborhood.
- Although COMBI wasn't done formally in this study, we did unknowingly apply some of the COMBI methods because we were working late at night in dangerous neighborhoods and doing exams that were somewhat painful.
- There was integrated coordination of the project with the Secretariat of Health, the schoolteachers, the children who participated and other actors. We hired bands and clowns to entertain the kids who participated to make it fun for them.
- We investigated a number of areas, including sociological factors as well as hygienic ones.
- A study of soil-transmitted helminths and lymphatic filariasis was carried out on children in the schools of Olinda.
- Since we were asking parents to take their children out at night in dangerous neighborhoods, we made extra efforts to talk with them to figure out where they would feel most safe (i.e. whether to use churches, community centers, or other sites), and to obtain their informed consent.
- We used the kits to collect blood samples; stool samples were collected on formalin and processed with the Hoffman sedimentation method.
- Of the 118 children in the pilot study, we did exams on 55 children, and we collected blood from some of the children but not all and looked for parasites.
- This sample that is presented here is from 143 people and we collected three fecal samples as well as samples that were analyzed for LF.
- 86 of the 143 people were positive for helminth infections; 47 were positive for intestinal infections; and of the group that were positive for LF, 50% were also positive for helminth infections.
- It appears that helminth infections somehow protect people with LF from getting the more serious complications; but we still have not reached any conclusions and are continuing to analyze the results.
- Regarding intestinal infection prevalence in children, we found a higher number of positive cases for *Trichuris trichiura* and we saw the consequences of infection with this parasite include reduced cognitive function, diarrhea, and severe enteric illness. Boys and girls were infected equally in this study.
- Another ongoing study is looking at parasite toxins and their allergenic effects, as well as *W.bancrofti* infections, since we know that infection with LF adversely affects the immune system.
- The hypothesis in the study was that adolescents infected with the LF parasite would respond worse to immune system challenges and also on a cellular level, compared to non-infected persons. This study, which is part of a doctoral dissertation, is still ongoing.
- In the biomolecular area, we're doing a study using PCR that looks at free LF antigen detection which is also part of a group member's doctoral work.
- It's important to note that detecting the LF parasite is possible using a variety of diagnostic tests, using both baseline and LF-positive data; we need to have available a database of *W.bancrofti*- adults and we are currently evaluating the results, so we don't have any concrete conclusions yet.
- We hope to be able to use the results to develop a diagnostic test that would allow us to obtain urine samples and evaluate them for the presence of free antigens, for example.
- For the *W.bancrofti* study, we are looking at various factors and using various instruments—PCR and others, as well as quantifying the DNA to look for the best approaches in creating diagnostic tests.

- In Paulista, where there were known cases of LF but prevalence is not known in 2005-2007, so starting in 2006, we went to the homes with children ages 5-14 using ICT cards and always verifying positive results with a different tests.
- We found the same false positive problems that we discussed earlier, where children tested positive using ICT cards, but then tested negative using a different test immediately afterwards.
- We found a prevalence of 9% among the 425 children tested; these results were used in implementing MDA in that area.
- We are also doing many other studies in support of the national program, providing technical assistance in investigating new areas for LF prevalence, participating in district census work, assisting municipalities' sentinel sites, doing lab work, working with the entomology department, and working with Olinda on issues relating to transit/transport and migration of infections.
- Integration is very important in research, as well, and requires good management, political will, community participation, participation of all the actors in local government—especially the health department—and a multidisciplinary team in the research institution that provides services, training and technical assistance to the other actors.

Discussion following Dr. Rocha's Presentation

Comment

- We are very pleased to hear of your close collaborations with the municipalities of Paulista, Olinda and Recife. Developing and maintaining such partnerships is very important to translate the knowledge learned through research into the public policy sphere.

Topic 9: Monitoring & Evaluation

Chair: *Dra. Denise Santos Correa de Oliveira, Diretoria de Vigilância à Saúde, Secretaria Municipal de Saúde, Recife*

Presentations: *Dr. Margaret Baker, Georgetown University; Dr. Patrick Lammie, Neglected Tropical Disease Program, CDC*

Dr. Margaret Baker

Mapping, monitoring, and surveillance of neglected tropical diseases: towards a policy framework

- The presentation is based on a paper that was recently published in the Lancet journal; it is part of a series on NTDs with many contributors and edited by David Mullehan
- The paper focused on co-implementation of MDA for 5 diseases: LF, STH, onchocerciasis, trachoma and schistosomiasis.
- The diseases have MDA use in common, but they also differ in infective agents, program goals (elimination or control), and secondary strategies (i.e. morbidity management)

Challenges in integrated mapping

- Mapping is important for developing action plans; and finding cost-effective ways to rapidly map areas at high risk for NTDs is a key challenge.
- Issues that must be addressed regarding integrated mapping are the different degree of detail required for different diseases (district vs village level maps), the use of different diagnostic tools for different diseases, the need to determine target audiences for treatment for some diseases, overlap of NTDs in a country or region and the fact that different programs may be in different stages.
- However, integrated mapping has been done in several countries, and success has been reported with the same surveyor using different diagnostic tools in doing the mapping.
- The study concludes that integrated mapping can save time and money, however a larger investment is required in the planning and coordinating stage due to the increased complexity of the exercise.
- The study also recommends looking at geospatial maps and their use in mapping NTDs.

Establishing appropriate monitoring systems

- The diseases all use MDA coverage as a monitoring metric.
- However, there are challenges regarding the different population denominators (i.e. census, registers) and definitions (i.e. eligible, target) used, the donors' reporting requirements.
- Doing post-MDA surveys for multiple diseases can also be a challenge, particularly if treatment was not uniform for all diseases in the area surveyed; also, recall may be inaccurate.
- Arriving at an agreed set of integrated and disease specific indicators may be possible using a multidisciplinary monitoring and evaluation (M&E) team; however, you must consider where it makes sense to integrate and where it doesn't.
- Sentinel sites can be used for all 5 diseases. However, we must consider how much we're asking of the people being surveyed—multiple samples, plus exams and questionnaires, all at one time.
- There are some cross-cutting, non-disease-specific indicators that can be measured, including anemia, nutritional deficiencies, disabilities and blindness. Additionally, contribution to

development indicators is also an area that could be measured.

- There may be ways to integrate post-intervention surveillance, as well, such as reference laboratories.
- Integration of M&E requires building capacity, developing new tools, and strengthening health systems.

Dr. Patrick Lammie, Neglected Tropical Disease Program, CDC

WHO Working Group on M&E for NTDs and What's in the Pipeline for LF

Sampling tools

- There are a limited number of tools available to assess program impact and to determine when it is safe to stop MDA.
- The first set of tests looked at the 8 diagnostic tests: blood tests for antibodies, antigens, DNA, and microfilaremia; a urine antibody test; and xenomonitoring.
- 8 assays were done in 8 countries, including field-based population surveys, surveys of school-aged children and mosquito studies in parallel.
- We obtained over 60,000 specimens, which made data management very difficult. Analysis is still ongoing.
- Since we need tools to decide about elimination, a group came together to examine the existing data. That group concluded that ICT is still the best tool for Bancrofti; and for Burgia, the PanLF (functional equivalent of ICT) is still the best tool. We also decided to look at xenomonitoring in some situations; and for elimination, the focus study population will be 6-7 year-old children.

Sampling strategy

- The sampling strategy is also a big issue. The CDC's Michael Demming has developed a integrated sampling strategy that can potentially be used for LF, Trachoma and some other NTDs. It has been provided to WHO and is in phase 2 testing now.
- The sampling strategy was developed as a simple computer program. Program managers need to look at the population of the area and the school attendance rate. With that information, the software tells you how many children to sample, where and how. Dr. Gonzalez has used this strategy in the DR already as part of the phase 2 testing.
- The manual guidelines tell program managers to determine their sample size for testing based on population, and how to set a pass/fail threshold based on number of positives.
- The system can be calibrated to the level of infection and geographical area.

Lessons for the Americas

- Testing is being done in many countries in various situations—some have MDA ongoing (some twice a year), others are making decisions about stopping MDA.
- Since PDA and smart phone technology is being used to generate high-quality data and facilitate data collection.
- The Gates Foundation is helping us work toward creating a better test that will solve the false positive problems of the ICT card tests. The target is to create a test that costs 10 or 20 cents, which will allow us to use the test more widely than we can currently.
- We need to focus on developing antibody tests, instead of antigen tests.

Questions and Answers for Drs. Baker and Lammie

Question 1

- We have had some uncertainty in Recife about when to stop MDA, so we appreciate your work and presentation. ICT cards are apparently sensitive tests, but not specific; however we've used them to determine elimination in Belem and Maceio on samples of 3000 children. All the tests were negative in both cities. However, in Recife, Olinda and Paulista, we've had poor results with ICT and very good results with another test. How do you account for that?

Response to question 1 (Dr. Lammie)

- One of the conclusions we've come to is that none of the tests are produced to a sufficient standard for us to use them well at the end points of the programs. There is some lot-to-lot variation in the ICT tests; the company has had many problems with false positives. That is why the Gates Foundation is supporting this effort. The ICT test is based on a monoclonal antibody that is specific; the problem is with the test cartridge kit, not the antibody. Right now, we have to just accept the problem with false positives because there isn't a better option. Every positive has to be repeated with the current test. As a community, we need to push hard for a better quality test. However, with the research laboratory capacity that you have in Recife, you don't have to be limited to commercial tests. The lab should be doing parallel testing to verify the ICT test results. I am happy to talk to Dr. Rocha to work through some of those types of studies. This is an area where Brazil can help the global program, by looking at options as to how to confirm the tests. If we had a good tool for confirming the ICT tests, it would make the work easier for all the countries.

Question 2

- Considering that LF prevalence in Recife is so low now, at what point do we say that MDA is no longer needed and LF is eliminated there?

Response to question 2 (Dr. Lammie)

- I propose that you use the methodology used in the DR; if the prevalence is below the threshold for using MDA, I would propose that you stop. There are programmatic issues where you should use the global standard; there are research issues that I would encourage you and the research team in Recife to follow up on. But programmatically, if your infection rate is below 0.1%, I think you have achieved success. It's really an issue that Dr. Ichimori from the WHO should address.

Response to question 2 (Dr. Ichimori)

- It may be appropriate to stop MDA now, but you need to continue doing surveillance surveys; and also to follow the criteria for elimination.

Response to question 2 (Dr. Lammie)

- In the guidelines NTDs, for every case of stopping MDA, there is still a surveillance requirement. After a period of 3 years post-MDA, the surveys must be done again. With LF, we don't know if we'll need one or two rounds of surveillance. We hope to answer that question from these studies.

Comment

- In Trinidad and Tobago, where LF has been eliminated, 101 surveillance centers have been monitoring for LF and have found 3 imported cases. It is important to have the surveillance programs on an ongoing basis, because such cases can cause re-infestation.

Comment (Dr. Lammie)

- It is important to distinguish between programmatic activities and operation research questions that can help the program. Brazil has the capacity to do the research that will tell us how many microfoci exist. In other countries where large numbers of people need treatment, it isn't possible to reach such a standard as you have in Brazil. We need your assistance to help answer the questions for the programs in other countries.

Comment (Dr. Ichimori)

- In Brazil, the surveillance method that you are using is good and can be continued. However, when we discuss elimination, we have to discover the set of criteria together.

8th Regional Program Review Group (RPRG) Meeting for the Americas

Chair: *Dr. Steven Ault, PAHO Advisor for Neglected Tropical Diseases*

Membership and Chair of the 2010 RPRG

- Guyana is elected by the group to be the new RPRG chair for LAC for 2010.
- The chair is responsible for reviewing the progress of country programs and annual applications for medication (through the RPRG) as well as facilitating communications among group members.
- Countries submit annual reports of program progress and applications for next year's medication needs to the Secretariat and WHO via the country's RPRG representative, after the RPRG decides whether or not such applications should go forward.
- Dr. Ichimori's team at WHO reviews the annual reports and applications and submits them to the Secretariat, along with their recommendations.
- The annual meeting of the RPRG will be held next year in Guyana.
- Dr. Lloyd and Dr. Chadee were reconfirmed as RPRG members for the coming year.
- Dr. Claudia Fontes, entomologist at FIOCRUZ, was suggested by Dr. Ault as a potential member of the RPRG, in the event that Dr. Chadee is unavailable.
- Guyana suggests including an expert in drug management in the group to assist LF endemic countries with determining the need for and availability of medication during the post-MDA surveillance phase of LF programs.
- Dr. Ault discussed having a RPRG member with expertise in morbidity management. Names mentioned for this area include Dr. Ana Maria Aguiar from FIOCRUZ, Dr. Leann Fox from CDC, Dr. Victor Pou from the DR, and Dr. Dave Addis (formerly at CDC, now at the Fetzer Institute).
- Dr. Ault suggests that the RPRG continue working with Dr. Fox on morbidity management for the time being, while the Secretariat contacts Drs. Pou, Addis and Aguiar to assess their interest and availability. Following that, RPRG members can vote to decide with whom they would like to work in this area.
- Brazil suggests adding a new RPRG member with expertise in program monitoring and evaluation.
- Drs. Ichimori (WHO), Lammie (CDC) and Dr. Iwamoto (GSK) will be permanent observers to the RPRG.
- Guyana suggested that Dr. Chadee become a permanent observer due to his entomology expertise. Dr. Ault indicated that more discussion and thought is required before making such a change and suggested that Dr. Chadee continue to be an RPRG member until the issue is decided.

- Dr. Chadee offered to structure his research program around the needs of LF endemic countries, and asked for input from Brazil, the Dominican Republic, Haiti, Guyana, Suriname and Costa Rica on the same.

Annual Report and Annual Applications [Dr. Ichimori]

- The WHO Global Program requests that countries submit annual reports and applications each year.
- RPRGs are responsible for collecting these reports, reviewing them, and reporting on them to the Global Program through the Secretariat.
- At the WHO Secretariat, they have a database and country profiles that contain information on LF, onchocerciasis, STH, and schistosomiasis. All the data in the database come only from the annual reports; the RPRGs are the only source for this data. If countries don't submit their annual reports, we don't have the information we need for the global program.
- The WHO Secretariat reviews and submits requests to the drug companies; it also uses the data from the annual reports to forecast the needs for Albendazol, DEC tablets, ICT tests, and other LF supplies.
- Brazil said that they had sent reports every year since 2005 to the PAHO Secretariat, and that they will send them again directly to Dr. Ichimori by email upon their return to Brazil.
- Dr. Ault said that those reports had been received and immediately forwarded to the WHO Secretariat; they were subsequently reviewed by the PAHO Secretariat.
- Dr. Ichimori said that it is possible that the gap in leadership at GELF contributed to the lack of data problem; she indicated that countries should send their annual reports to Dr. Ault at the PAHO Secretariat [via the local PAHO country office] at the end of February or early March, not directly to her.
- Brazil suggested changing the timeframe for submission of the annual reports or allowing countries to submit reports at the end of March instead, since they begin MDA in November or December and they don't have complete data by the end of February.
- Dr. Ichimori indicated that the end of March is acceptable.
- Brazil said that it was unclear who the local PAHO focal point is in Brazil.
- Dr. Ault indicated that Dr. Alfonso Tenorio is the focal point at PAHO Brazil, as well as his supervisor Dr. Enrique Gil.

Guyana 2010-2012 Action Plan (POA)

- This is the first year that Guyana is applying for Albendazol to support the national program (they had previously only used DEC salt).
- National coordination activities include:
 - Expanding the national oversight committee to advocate for NTD elimination and control (not just LF).
 - Including additional partners in the multi-disease technical work group.
 - Finalizing POA and the proposals for operational research and trust fund projects
 - Developing a monitoring and evaluation plan.
- National NTD mapping activities include:
 - Preparing a mapping protocol for LF and STH (Guyana has never had a national survey of STH).
 - Developing operational plans for this second phase of mapping to move from DEC salt to an MDA phase, between Mar – Jul 2010, including planning for training (due to staff turnover) and supply procurement, sampling schoolchildren (blood and stool), doing field work (June 2010) and analyzing and reporting by the end of July.
 - Finalizing the Chagas survey among pregnant women (ongoing)

- Continue with the second round of MDA (the first round was interrupted after 3 regions were treated in October, 2008 and March and April, 2009, respectively, as well as continue with the blood screening for Chagas.
- Implement social mobilization efforts using COMBI by conducting a baseline survey in March-April 2010, finalizing the operational plan, conducting training, and including medical and health workers, volunteers, mapping and sentinel site workers in the COMBI effort.
- They would like to receive Albendazol for MDA by October 2010; thus the social mobilization effort is planned from September – December 2010.
- The plan is to begin giving MDA in October 2010 and continue through the beginning of 2011.
- Guyana's tentative forecast of its needs for 2010 – 2012 is shown below, but DEC and Albendazol requirements depend on the weight chart. Also, once the mapping is completed, the country will have better numbers.

Estimates

	2010	2011	2012
ICT Cards (Mapping, Sentinel sites Spot Check)	3200	2000	2000
Micro Slides (MF, Wet Prep)	6500	4000	4000
Stool cups	3200	3200	3200
Other supplies	TBD	TBD	TBD
DEC			
Albendazol (5,6,2)	204, 000	554,000	554,000
Region 4, 3)	350,000		
Total	554,000		

Comments and Discussion on Guyana Action Plan

- Guyana will need to submit a formal application through the RPRG.
- There is an application form for this purpose.
- The national action plan needs to be submitted to the RPRG as well.
- PAHO Secretariat asked WHO Secretariat to send the application form to PAHO; Dr. Ault will then send it to Guyana and Brazil.
- Suriname asked if Guyana plans to abandon DEC salt use.
- Guyana said there is still demand for DEC salt and asked for guidance on whether or not to continue its use, particularly considering the significant amount of mobility in the population.
- Dr. Ault said that Haiti is pursuing a dual strategy using DEC salt as well as DEC tablets, when feasible, in difficult-to-access neighborhoods in Port au Prince, but using MDA tablets in the rest of the country.
- There's no reason why Guyana couldn't use a dual strategy as well, Dr. Ault said. He recommended that Guyana focus on tablet distribution, and use its national oversight committee to discuss the pros and cons of using DEC salt and to ensure that it has the resources it needs.
- Guyana said that it needs DEC donations for salt fortification (the salt manufacturer in Jamaica also fortifies it with iodine and fluoride); Guyana also needs support in procuring the DEC donations (tablets or salt), as does Haiti; possibly this can be done via a joint effort between Haiti and Guyana.

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Dominican Republic Action Plan 2010-2012

- This plan was created prior to the earthquake and may need some readjustments.
- For the past 2 years, the LF Elimination Program (PELF) in the DR has had a very low profile. It has to be re-launched now, expanded to reach additional regions, and integrated operationally and financially with other NTD elimination programs (malaria and others).

Planned activities for 2010-2012

- Reestablishing and training the PELF National Team in epidemiologic surveillance (April), applied research (May), and others NTDs (beginning in September).
- Doing a prevalence assessment in La Ciénaga (May-June) to determine whether to stop MDA there.
- Doing a baseline assessment at new sentinel sites prior to starting MDA.
- Developing the system for national epidemiological surveillance for LF and other NTDs to verify elimination at the foci level, beginning with the North-Central and East Foci (June-July) and the North-East Foci (August). This is especially important post-earthquake, given higher migration levels, to to ascertain whether or not reinfection has occurred.
- Continuing with MDA as follows:
 - 4th Round at “La Ciénaga” Foci (if necessary)
 - 1st. Round North-Central and East Foci (August)
 - 1st. Round North-East Foci (November)
- In the area of morbidity management, developing and distributing audio-visual materials to train primary health care providers nation-wide (material development in April-July; distribution in August-December).
- Ramp up integration efforts with others NTDs (Malaria, Geohelminthiasis, Dengue) and plan activities such as joint mapping efforts.
- Establishing a mechanism to improve Haiti-DR coordination regarding LF and other NTDs.

Post-earthquake challenges for the DR

- LF transmission depends on migration patterns in the DR and Haiti.
- The capital is a small foci, but still important due to population density and increased transmission potential.
- The South-east is also an important foci due to high immigration.
- Other foci occur in areas of sugar cane production (an industry that employs mostly Haitians), and gold mining (also due to labor factors).
- What we don't know is if there are positive LF cases in other areas, such as along the border with Haiti, or elsewhere where Haitians may have immigrated after the earthquake.
- We need to do mapping and surveillance to find out if and where transmission and re-infection is occurring in areas where LF was eliminated or where it never existed previously.
- Our plan is to do the mapping jointly with the geohelminth program; however, we're bringing this issue to the group to get your opinions on whether such a plan is feasible and advisable.
- Inside the DR, challenges include scaling up the PELF, developing the LF national surveillance system, and rescuing the LF vector control and environmental component.
- Coordination challenges between Haiti-DR include consolidating the binational commitment to eliminate LF and others NTDs island-wide, defining a permanent coordination mechanism, and developing and implementing binational projects to fight LF and others NTDs.

DR's 2010-2012 Forecast and Request for Program Supplies

- The forecasts for 2012 are based on the assumption that MDA can be stopped in La Cienaga by then. The numbers requested in 2012 reflect only the needs of the four remaining known foci.
- MDA will be needed for 156,049 people in 2010 and 2011, and 107,500 people in 2012.
- 484,000 DEC (100 mg) tablets are requested for 2010 and 2011, respectively, and 335,000 additional tablets are requested for 2012.
- Their current Albendazol stock expires in September 2010. The DR's request for Albendazol is none for 2010 (they can use the supply they already have), 172,000 doses in 2011, and 119,000 doses in 2012.
- Before the earthquake struck, they estimated they would need 6,000 ICT cards in 2010, 3,000 in 2011 and 2,500 in 2012. However, the evaluation of La Cienaga and the new sentinel sites may change these requirements.

Comments and Discussion on DR Action Plan

Question 1

- Could you clarify your plans for MDA?

Response to question 1

- In La Cienaga, the most recent MDA was done in 2006. In the Southwest foci, medication was administered locally in Bateyes only, not comprehensively as with MDA; most recently this was done in 2007. Prior to doing a 3rd round of MDA in La Cienaga, they did surveillance and obtained negative results in the sentinel sites. Now they need to evaluate if further MDA is needed there.

Question 2

- The problem with the immigrants is a separate issue not yet addressed in the MDA plans presented here, correct?

Response to question 2

- We have a surveillance team in the Southwest foci that has been monitoring the situation, but that is not the case elsewhere in the country. We need to do surveillance in the rest of the country, and especially in areas with high immigration levels, to determine if re-introduction of infection has occurred and intervention is necessary.

Question 3

- Do you have an idea yet about how the national surveillance system will be developed? It will need to include both active and passive surveillance; and it will need to focus on new areas with high numbers of immigrants that have not been endemic previously, but where vectors are likely now present. I suggest that you include your ideas for developing the national surveillance system in your action plan.

Response to question 3

- It is in the action plan, though it may need to be spelled out in more detail and highlighted more than it is now. I'd appreciate your suggestions on how to go about developing a national surveillance system.

Comments and Discussion on DR Action Plan (cont.)

Comment 1[Dr. Chadee]

- Considering the funding that you have available from the malaria program, you have a great opportunity to integrate efforts across NTDs and sectors, such as water and sanitation. Now that you are developing a multidisciplinary task force, I'd recommend directing your attention to strengthening integration efforts. Your team approach could serve as an example to the region.

Comment 2 [Dr. Saboyá]

- We have the map from Haiti showing where people are leaving; now we need to map where the nuclei of immigrants to the DR are located. It is in these nuclei of immigrants where detailed maps of vectors, transmission and other factors need to be done. Forming the multidisciplinary technical team is critical to creating the DR's national surveillance system; but it will require a lot of training and time, so it's very important to include the establishment of such a team as one of your first action items. Epidemiologically, a multi-disease surveillance system is feasible; other countries such as Colombia have done so. PAHO can support the DR in planning the national surveillance system and training the technical team.

Response to Comment 2

- We welcome the offer of support, particularly any expertise you can provide in mapping immigration as well as coordinated disease mapping, not just for LF and NTDs, but for other diseases that have not yet been mapped, as well.

Question 4

- Is there an entity in the DR's government that regulates immigration? If so, can you work with that entity to facilitate the immigration mapping effort for NTD control and elimination?

Response to Question 4

- In theory, there is an entity that tries to control immigration and following the earthquake, the president issued an order to tighten border controls. However, experience has shown that tightening border controls doesn't stop immigration; it just makes it more difficult for immigrants. Some 98-99% of immigrants are illegal, so it wouldn't really be effective to establish sentinel sites in places where only 1-2% of immigrants live.

Question 5

- In Recife, we've had some experience with immigration, and we've only been able to figure out the LF hot spots from cases that have presented. Since you're trying to find the nuclei before the disease presents, you have a much greater challenge. I would be very interested in finding out the results of your work, once you've developed a way to detect LF infections before symptoms self-present. Have you figured out a way to do this already? Or if not, could you please share your work once you have determined how to do this?

Response to Question 5

- LF infections can take years before symptoms present, so I think we should focus our attention on finding ways to prevent transmission as early as possible; that's why we're so interested in having a national surveillance system and requiring healthcare workers to report cases to national authorities. But in order to detect LF cases before symptoms present, we first have to identify immigration nuclei and establish sentinel sites before we can even begin to try to detect such cases. Also, we'll be forced to rely on ICT tests, since we won't be able to rely on clinical case presentations. Night monitoring and testing is also important. But the main point is to figure out where immigrants are going; only then will we be able to put together an effective plan that will get the support of the Health Ministry and obtain funding from donors.

Comments and Discussion on DR Action Plan (cont.)

Comment 3 [Dr. Saboyá]

- Do the UN's Organization for International Migration (OIM) and Office for Coordination of Humanitarian Affairs (OCHA) have a presence in the DR? OIM has a lot of experience in mapping migration; and OCHA is doing mapping of migration in Haiti now, so they may know where immigrants are heading in the DR. You need to contact them immediately to find out if they have information that can help you in your mapping efforts.

Brazil Action Plan 2010-2012

- Evaluate the impact of last year's treatment in the two neighborhoods in the first treatment area. It's not clear whether or not we need to continue treatment there; there have already been six previous treatments.
- Evaluate whether there is a need to start individual or collective treatment in two new neighborhoods that border endemic neighborhoods, but are considered lower priority. We don't have ICT cards for those tests, so we are planning to use hemoscopes instead for those tests.
- Review the epidemiological protocol for stopping treatment activities in determined areas.
- Maintaining the 10 sentinel sites, where we plan to do 10,000 exams using nighttime hemoscopes.
- 75,000 nighttime hemoscope exams are planned for the city.
- To verify vector infections, we plan to do field work and research in collaboration with our laboratory personnel.
- In collaboration with Dr. Rocha's team, we plan to continue with the study we are doing on the people in the first treatment area.
- There are 13 intervention sites in the city; we plan to do an in-depth evaluation of 2 of these sites.
- 3 of the intervention sites have completed 6 collective treatments; if operational and program resources permit, we would like to evaluate these 3 sites, as well.
- If it is necessary to initiate treatment at the two new sites I mentioned, we expect to finish with MDA treatments in the city in 2015.
- We are continuing with the joint PAHO-Brazil pilot project to map two diseases: LF and STH in six schools in Recife. We will use ICT cards for this, though we may not have enough ICT cards due to budget limitations. The project is expected to continue for 3 years.
- We would like to start another pilot project similar to the one with the CDC to evaluate people in the second treatment area and we will be submitting an official project proposal on this.
- We would also like to explore using COMBI to find out why some people refused to get additional treatment after the 4th or 5th collective treatment.
- It's important to mention that these are priorities of the government of Recife, not just the LF program. We are working with a multidisciplinary team in the government to make sure everyone is on board with the priorities set forth here for Recife and Olinda.
- Olinda and Recife are planning the first conference on NTDs in Recife that will be multi-sectoral in nature, to report on program efforts, share information and improve integration.
- We also want to address areas that were previously focal areas, and that now have hydrocele issues.
- We used 14,000 ICT cards to test areas in Castro that were endemic previously.
- We plan to create an entity to do surveillance provide follow-up for positive cases.
- Once it becomes clear epidemiologically when to stop treatment, we will create specific operational definitions for positive cases in endemic as opposed to non-endemic areas. We need to continue monitoring non-endemic areas to make sure new foci don't develop.

- They have about 1.5 million DEC tablets in Recife now that we intend to use next year; so that will be enough to expand our collective treatments.
- We have 3,000 ICT cards available now, and we will need 9,000 additional ICT cards in 2010 and 2011, respectively.
- We plan to eliminate LF in Brazil by 2020.
- Recife would like to make a CD to help primary care providers with morbidity management issues; and which providers should provide which services at which level of morbidity.
- New regulations have recently been passed regarding implementing and financing health surveillance activities. The regulations spell out how integration of health care and related activities should occur.
- It is also very important to stress the importance of solidarity and cooperation among municipal governments in NTD prevention, control and elimination efforts.

Comments and Discussion on Brazil 2010-2012 Action Plan

Comment 1 [Dr. Ault]

- As implementation units close in the coming years, it is important to keep careful records. When it is time to certify LF elimination in Brazil, the WHO international team will want to see data from each implementation unit and municipality, such as ICT card results, blood survey results, and so on, to support your decision on stopping MDA. I'm pleased to hear that Brazil is interested in being a pilot for the evaluation phase of the WHO process for determining when to stop treatment.

Comment 2 [Dr. Ichimori]

- This is a good opportunity for Brazil to submit the elimination certificate. This is your program, but we are here to help you.

Comment 3 [Dr. Chadee]

- I can help Brazil entomologically in its endgame evaluation efforts. Are you going to take blood samples for thick blood films for LF parasites using nocturnal blood, or is it for the nuclear perforation method?

Response to comment 3

- The blood samples will be taken to verify the results of positive ICT card tests in treated areas, using nocturnal hemoscopes and the filtration method.

Comment 3 (continued)

- Films are not sensitive and specific when the microfilariae counts are very low. You may get false negatives with the thick blood films. Have you found a way to resolve this issue? Do you know what the threshold is when the thick blood films lose their sensitivity and specificity?

Response to comment 3(continued) [Dr. Denise and Dr. Rocha]

- We also use ICT cards, not just hemoscopes. We verify positive results with a second test, then use filtration when necessary. At levels below 30 microfilariae/ml blood, the thick blood test comes out negative. We are investigating this in our study on children ages 2-6 born during periods of collective treatment. Blood tests were collected from children who tested positive with ICT tests. Most tested negative with thick blood analysis, but we don't have the results yet.

Comment 3 (continued)

- You should publish your findings on thick blood tests' sensitivity. People need to know that, so they know when to change diagnostic tools.

Guidelines for Global Certification of Elimination [Dr. Ichimori]

- WHO will have elimination guidelines and a certification committee ready by 2011.
- There will be a consultation meeting in 2010.
- In addition to having clear guidelines in place regarding when to stop MDA and post-MDA surveillance, we also need to develop guidelines on determining when transmission has been stopped and what type of measures or evaluations are needed to make that determination.

Input of GELF Working Group into Certification Guidelines [Dr. Lammie]

- They are working on criteria for stopping MDA for LF and Trachoma; for Onchocerciasis, they will use the OEPA guidelines; for schistosomiasis and helminths, the decisions made on the programmatic level relate to treatment frequency.
- The key partner for developing the criteria for the elimination guidelines is Eric Ottesen's group, because they have funding to do the research.
- For certification, countries will have to have evidence for stopping MDA and data on post-MDA surveillance. The international certification teams will want to review original data in the countries.
- We also need to develop criteria to be able to make sure that LF is not endemic in areas that are not receiving treatments. Every country has some areas where there weren't enough positives to do MDA, but there were a few positive cases nonetheless. The group plans to develop such criteria for the WHO guidelines to ensure that there isn't an undetected focus of transmission.

Discussion regarding certification of elimination

- Dr. Ault suggested distributing the draft document/dossier that Dr. Lammie prepared.
- Dr. Ault said that three LAC countries: Trinidad and Tobago, Suriname and Costa Rica have been waiting more than patiently. Further delay would become politically complicated.
- Dr. Ichimori indicated that having countries begin preparing for certification using the dossier document would not be advisable due to the lack of an authority to which they would be presented.
- Dr. Ault asked how it was possible for China and Korea to declare elimination previously, and how their requests were handled by WHO.
- Dr. Lammie and Dr. Ichimori clarified that China and Korea did not receive certification of elimination, but rather verification of elimination, which is not a certification process and is not recognized by WHO.
- Dr. Del Aguila urged WHO to prepare the guidelines very quickly and said that Costa Rica has had been waiting for 3 years to present its data to certify LF elimination. CR has also made an official request to be removed from maps as an LF endemic country.
- Dr. Ault asked Dr. Ichimori if LAC countries could follow an interim process for verification of elimination similar to that followed by China and Korea, and if so, which guidelines and procedures could be provided for them to follow.
- Dr. Ichimori said that she need to consult with the WHO Secretariat and follow up with PAHO Secretariat on that, as well as provide guidelines; however she asked that they be considered guidance and not a formal process.
- Dr. Ault asked Dr. Ichimori to follow up with him on this issue before the end of March.
- Dr. Lammie indicated that in the case of China, the countries presented their data to the Asian RPRG, which reviewed the data and recommended verification of elimination be granted.
- Dr. Helen said that Brazil has used the China model that China to verify elimination in Belem and Maceio. She suggested that the WHO Secretariat review the documentation that Brazil has done.
- Dr. Ichimori said that the documentation needs to go to the RPRG and be used following the WHO guidelines to evaluate that documentation.

- Dr. Chadee has been asked by the T&T government to prepare the country's dossier using the China model. He has hired someone who is already working on this. He said he needs to know whether to continue or not.
- Given the lack of existing WHO guidelines, Dr. Chadee is also preparing documentation for verification of elimination of hookworm in T&T. He asked if the same procedure and guidelines that are being developed for LF will also apply to other NTDs.
- Dr. Ichimori said that China's case was done before the GELF began operations.
- Dr. Chadee said that T&T also finished its LF program before the GELF began.
- Dr. Ichimori said that countries that were previously endemic are still included on the map as endemic countries, even though they have verified elimination.
- Dr. Ault summarized the discussion as follows:
 - LAC countries can use Dr. Lammie's dossier and the China model as guidance for beginning to prepare their own dossier for internal elimination.
 - LAC countries must wait for WHO guidelines and establishment of the certification committee before presenting their documentation for certification.
 - Countries should use the CDC book on LF elimination as a reference when preparing their documentation.
- Dr. Persaud said that the documentation work that the countries are doing should not be stopped; but that they should continue with the document, and that such work could be reviewed by the RPRG and the Secretariats at WHO and PAHO, and any missing pieces could be added if necessary.
- Dr. Ault suggested that Dr. Del Aguilar inform the Costa Rican government that they should convey their documentation to Dr. Ichimori so that she can become familiar with it.
- Dr. Persaud suggested identifying a small group of people to support countries that can support countries in preparing their documentation.
- Dr. Ichimori asked if the RPRG had reviewed the Costa Rica documentation; and if a report had been written. She said that it is necessary to do this.
- Dr. Ault said that he would need to speak to Dr. Ehrenberg regarding that question.
- Dr. Chadee asked if T&T and Suriname could get some Albendazol and ICT cards for imported cases.
- Dr. Ault said that the ministries of health in such countries should communicate those needs to the local PAHO office; and that such requests would be honored immediately.
- Dr. Persaud said that such countries could also request small amounts of medication from countries with active programs.

Next year's RPRG Meeting

- The meeting will held in Guyana sometime in March, 2011 (date to be determined, depending on the holiday schedule).

2010 Country Requirements for Albendazol, DEC Tablets, Salt & Raw Materials, and ICT Cards

Country/Munic.	ICT Cards	Albendazol tablets	DEC tablets, salt and raw materials	Population at risk in 2010	Estimated no. to treat 2010
Brazil/Recife	14,600	TBD	None needed	1.5 million (in 4 cities)	
DR	Two 6,000 shipments (some months apart) in 2010	0 for 2010 172,000 for 2011 119,000 for 2012	484,000 (100 mg tablets) annually for 2010 and 2011 335,000 for 2012	156,049	
Guyana	3,200 for 2010 for remapping 2,000 annually for 2011 and 2012 for sentinel and spotcheck sites	554,000 annually for 2010, 2011, 2012	TBD	630,000 (but mapping needs to be completed in 2010)	554,000
Haiti		GSK will assume 8 million for 2010 until further notice	TBD	TBD	
Trinidad & Tobago	500 annually for 2010, 2011 and 2012				
Costa Rica	None				
Suriname	500 annually for 2010, 2011 and 2012				

Action Items Discussed in the 8th RPRG Meeting

- Meet with Dr. James Fitzgerald, PAHO's senior advisor in drug systems, management and supply, to discuss the possibility of his joining the RPRG as a technical expert. [PAHO Secretariat]
- Send the names and CVs of other individuals with expertise in endgame surveillance and drug management to Dr. Ault for consideration for RPRG membership. [RPRG members and meeting observers]
- Contact Drs. Leann Fox, Ana Maria Aguiar, Victor Pou and Dave Addis to discuss their ability and interest either in working with RPRG or with countries in the area of morbidity management and its integration into primary health care systems. [PAHO Secretariat]
- Search for a monitoring and evaluation expert for inclusion in the RPRG, obtain candidate CVs and circulate them for group discussion prior to submitting the names to the WHO for a decision. [PAHO Secretariat]
- Discuss and decide on Guyana's request to change Dr. Chadee's status from RPRG member to permanent observer. [PAHO Secretariat]
- Communicate with Dr. Telorio in the PAHO Brazil office that he needs to arrange a meeting with Brazil's LF program representatives. [PAHO Secretariat]
- Send application form to PAHO Secretariat, Guyana and Brazil [WHO Secretariat, PAHO Secretariat]
- Dr. Saboyá will work with Dr. Gonzalez and Dr. Nicholls to design an optimal surveillance plan for the DR. [PAHO Secretariat and DR RPRG representative]
- Dr. Gonzalez will contact the UN's OIM and OCHA to determine if either has information about post-earthquake migration patterns between Haiti and the DR that can be used in the DR's mapping effort. [DR RPRG representative]
- Dr. Ichimori will consult with the WHO Secretariat and follow up with PAHO Secretariat on the feasibility of having an interim verification step prior to certification of elimination for LAC countries, as well as provide guidelines for such an interim step. [WHO and PAHO Secretariat]
- LAC countries may use Dr. Lammie's dossier and the China model as guidance for beginning to prepare their own dossier for internal elimination, however they must wait for the WHO certification guidelines and establishment of the certification committee before presenting their official documentation for certification of elimination to the RPRG. Dr. Ault will share with the countries the draft dossier document so that they can begin working on it for themselves if they wish. [PAHO Secretariat and LAC countries]
- WHO will publish the guidelines for certification of elimination and establish the international certification committee by 2011. [WHO Secretariat]
- Dr. Ault asked Dr. Del Aguilar to inform the Costa Rican government that they should convey their documentation to Dr. Ichimori so that she can become familiar with it. [PAHO CR]
- Dr. Ault will consult with Dr. Ehrenberg to find out if the RPRG had reviewed and written a report on the

Key country messages for PAHO Secretariat

Dominican Republic

- They need support in developing the national surveillance system and in mapping the location of Haitian immigrants.
- They need support in following up on efforts to integrate NTDs into one national program.

Suriname

- They need to finalize and finish the process for certification of elimination.
- They need support to develop a sentinel site and to coordinate closely with Guyana on border control.

Guyana

- We need to streamline the annual reporting process for all countries; and especially facilitate reporting to the WHO.
- They need support with surveillance, testing and issuing medication to migrants, possibly at border points between Suriname and Guyana, in order to catch cases that come into countries through migration.

Costa Rica

- They need support preparing the dossier and certification documentation.
- They need support implementing COMBI not only for LF, but for other vector-transmitted disease programs, as well.

Brazil

- They need to intensify the focus on the metropolitan region, increase integration and strengthen the working relationship with the local PAHO office in Brazil.
- They are interested in learning about the work of Dr. Gonzalez on surveillance relating to migration and identifying LF cases prior to presentation of symptoms.
- Looking at evaluation tools and determining which tools are the best for conducting evaluation is very important, not just epidemiology, but evaluation of the program as a whole (i.e. program effectiveness, processes, management, and results).

Consulting RPRG Members [Drs. Lloyd and Chadee]

- 1) They have been discussing the use and strengthening of tools for use in planning methodologies such as COMBI and integrated vector management (IVM). We are interested in working on a research project to create and test tools at the programmatic level. We are happy to work with an interested country on creating tools and/or a toolkit.

- 2) We would also like to help the DR and Suriname in creating a surveillance system for migration issues using COMBI and IVM to better understand migrant behavior, tailor messages and reach migrants.