LYMPHATIC FILARIASIS ELIMINATION IN THE AMERICAS

5th Regional Program Manager’s Meeting
4th Regional Program Review Group Meeting

Paramaribo, Suriname
26–29 October 2004
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PART I:

5TH REGIONAL PROGRAM MANAGER’S MEETING
Introduction, Orientation, and Review of Agenda

Dr. Steven Ault, Regional Ecologist, PAHO/WHO Brazil

Since the meeting in Maceió, Brazil in September 2003, the four remaining countries with active LF transmission have continued to make significant progress toward interruption of transmission. Their non-stop efforts, combined with key technical and resource partnerships at the regional and international level bring us closer to the regional goal of interruption of transmission by 2010 and the elimination of LF as a public health problem by 2020. The region continues to work successfully with a mix of interventions including mass drug administration (MDA) using the combination of diethylcarbamazine (DEC) with albendazole (Haiti and Dominican Republic), the application of DEC in table salt (Guyana), and the use of MDA with DEC tablets and environmental interventions (sanitation, environmental education, vector control) in Brazil.

Morbidity surveys and disability prevention and rehabilitation programs continue to develop in the region. Training efforts continue in Brazil, Haiti, Dominican Republic, and Guyana. Home-based care is a promising area to strengthen in the endemic countries, and is ideal for developing local partnerships. One of the challenges for our region is the assessment of morbidity impacts in children and adolescents, the future economic force of the countries.

Operational research is a strength in our region. Health professionals from Trinidad, the Dominican Republic, Brazil, and Haiti continue to share experiences in both treatment and disability prevention and clinical management. Soon we expect to see interchanges of experience in the use of mapping tools where geographic positioning system (GPS) data are input into HealthMapper and other geographic information system (GIS) programs. These “south to south” exchanges are important to continue, and we hope to see them expand as regional experiences in the evaluation of tools for interruption of LF transmission and in patient care protocols are published and shared.

PAHO/WHO’s principle regional partners, the countries and the national program managers, continued to move the national programs forward this past year, even in the face of sometimes severe political constraints as our colleagues from Haiti can attest. PAHO/WHO’s sincere congratulations go to Haiti for carrying on their important work through an extremely difficult period of governmental transition. Brazil, the Dominican Republic, and Guyana have faced other obstacles due to financing and administrative changes. PAHO/WHO’s other regional partners, both institutional and corporate, have also continued in steadfast support. The Lymphatic Filariasis Support Centers at Emory University and the Liverpool School of Tropical Medicine and the PAHO/WHO Collaborating Center in Lymphatic Filariasis at the Centers for Disease Control and Prevention (CDC) continue to support activities in the Americas, from operational research to training and project and program evaluations. GlaxoSmithKline (GSK) Inc. continues as the key partner in supplying albendazole gratis to the requesting countries, while the WHO staff in Geneva continues to coordinate pharmaceutical deliveries, the immunochromatographic test (ICT) cards, and other tools, and to share best practices. Academic and research centers and specialized physicians in hospital clinics continue to make their contributions to the Programme to Eliminate Lymphatic Filariasis (PELF) programs in every country but need support and encouragement.

Communities and nongovernmental organizations (NGOs) continue to support and even undertake control activities in all four countries with active LF foci. Nevertheless, serious challenges remain for the PAHO/WHO and the country programs particularly in tapping new resources for the PELF programs, and the ever-present threat or occurrence of temporary interruption of programmatic activities by natural

1 Now Regional Advisor (Parasitic Diseases), Communicable Diseases Unit, Area of Disease Prevention and Control, PAHO, Washington, DC
Disasters as we have seen in three countries in the last 12 months (Brazil, Dominican Republic, and Haiti). As well the risk of reintroduction of LF to the countries continues, as we have seen in Jamaica this year. PAHO/WHO thank Guyana for a quick response to Jamaica’s request for drug assistance earlier this year.

Every day we come to realize that we all live and work in an ever more globalized economy. This is positive in that the diffusion of knowledge and experience with successful tools for LF elimination is ever more easily shared, and economies of scale may bring down prices of key commodities for public health programs. However the national programs can be buffeted by the negative winds of the global economy too, from rising crude oil prices to the diversion of national budgets to fight terrorists, deal with civil strife and induced famine, or address frequent natural disasters in the era of global warming. In this context, national program managers face continuing and ever-growing challenges to obtain and keep sufficient funding to bring us to our goals for 2010 and 2020.

WHO and the Global Alliance for the Elimination of LF (GAELF) have recognized and taken up this challenge, and GAELF has reorganized its structure in Cairo in March this year to put even more emphasis on tapping and synergizing resources at the local, regional and international level. We as a region also need to explore much more the successful partnering with NGOs as Haiti has done so well, and we must consider opportunities for working more with the private sector at the local level especially for disease control.

Furthermore, with PAHO/WHO’s new initiative on enhanced attention to neglected diseases in neglected populations, we must begin to look more seriously at how we can build synergies, promote articulation, share scarce resources and improve health care access for those populations suffering from co-infections with LF, intestinal worms and/or schistosomiasis, among other diseases.
Meeting Agenda
5th Regional Program Managers Meeting for the
Elimination of LF in the Americas

Paramaribo, Suriname
26-29 October 2004

MEETING DAY 1 (10/26/04). Tuesday. Hotel Krasnapolsky, Paramaribo

08:00-8:30 Registration

08:30-9:15 Opening Ceremony
Chair: The Honourable Dr. Mohamed Rakib Khudabux, Minister of Health, Suriname
Dr. Stephen Simon, PAHO/WHO Representative in Suriname
Dr. John Ehrenberg, Chief, Communicable Diseases, PAHO/WHO, Washington, DC
Dr. Gautam Biswas, Program for the Elimination of LF (PELF), WHO, Geneva
Dr. Guillermo González, Chairman, RPRG-Americas

Dr. Steven Ault, Regional Ecologist, PAHO/WHO, Brazil
Introduction, orientation, and review of agenda

Chair: Dr. Stephen Simon, PAHO/WHO Representative in Suriname
Rapporteur: Dr. Chris Frederickson, PAHO/WHO-CAREC Trinidad

09:15-9:40 SURINAME
Dr. Leslie Resida, Director, Bureau of Public Health/Ministry of Health: “The Filariasis Program in Suriname — Where Do We Stand after More Than Five Decades of LF Control?” – 25 minutes

09:40–10:00 Discussion

10:00–10:30 BRAZIL
Dr. Helen Freitas, National Coordinator for Elimination of LF: “The Filariasis Program in Brazil — Current Status, Challenges, Validation of Tools, and Roads to the Future” – 30 minutes

10:30–10:45 Discussion

10:45–11:00 Coffee break (15 minutes)

11:00–11:30 DOMINICAN REPUBLIC
Dr. Francisco Paulino Mendoza, Program Manager, CENCET, Ministry of Health: “The Filariasis Program in the Dominican Republic — An Overview” – 30 minutes

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2 Now Regional Advisor (Parasitic Diseases), Communicable Diseases Unit, Area of Disease Prevention and Control, PAHO, Washington, DC
11:30–11:45  Discussion

11:45–12:15  GUYANA
Dr. Shamdeo Persaud, Coordinator of LF Elimination Program, Ministry of Health: “The Filariasis Program in Guyana — An Overview” - 30 minutes

12:15–12:30  Discussion

12:30–14:00  Group Photograph and Lunch – Hotel Krasnapolsky (1.5 hours)

14:00–14:30  HAITI
Dr. Marie Denise Milord, Director, LF Elimination Program, Ministry of Health: “National Program of Elimination of LF (NPELF) in Haiti: A Fight Toward Transmission Interruption, A Fight against Political and Natural Events” - 30 minutes

14:30–14:45  Discussion

14:45–15:15  COSTA RICA
Dr. José Luis Garó F., Director, LF Elimination Program, Ministry of Health: “The Filariasis Program in Costa Rica — An Overview” - 30 minutes

15:15–15:20  Discussion

15:20–15:40  TRINIDAD & TOBAGO
Dr. Karmesh L.D. Sharma, Senior Epidemiologist, Ministry of Health: “The Filariasis Program in Trinidad & Tobago: An Overview” - 20 minutes

15:40–15:45  Discussion

15:45–16:35  Special Topics: Program Updates (15 minutes each)
Chair: Dr. Walter Ramalho, SVS, Ministry of Health, Brazil
Rapporteur: Dr. Steven Ault, PAHO/WHO, Brazil


16:00–16:15  Discussion


16:30–16:35  Discussion

16:35–17:30  Special Topics: Operational Research (15 minutes each)
Rapporteur: Dr. Karmesh L.D. Sharma, Senior Epidemiologist, Ministry of Health, Trinidad & Tobago
16:35–16:50 Dr. Eliana Rocha, Professor of Immunology, Federal University of Alagoas, Maceió/AL, Brazil: “Validation of Tools: Preliminary PCR and Xenomonitoring Results from Belém, Pará, Brazil”

16:50–17:05 Dr. David Chadee, Chief Entomologist, Insect Vector Control Division, Ministry of Health, Trinidad & Tobago: “Entomological Successes in Guyana, Suriname, Trinidad & Tobago, and the Dominican Republic”

17:05–17:20 Dr. Walter Ramalho and Dr. João Batista F. Vieira, SVS, Ministry of Health, Brazil: “Application of HealthMapper for LF and Other Neglected Diseases in Brazil”

17:20–17:30 Discussion

17:30–17:45 Coffee Break (15 minutes)

17:45–18:15 Group Guidelines (group facilitators provide 10-minute introduction & outline for the 3 work groups meeting on Day 2)
Chair: Dr. João Batista F. Vieira, SVS/Ministry of Health, Brazil
Rapporteur: Dr. David Chadee, Ministry of Health, Trinidad & Tobago

17:45–17:55 Dr. David Addiss, CDC/Atlanta: “Preparations and Processes for Interruption of LF Transmission” (Group 1: Intended primarily for Costa Rica, Suriname, Trinidad & Tobago, and Brazil [Belém]; participants from other programs are welcome)

17:55–18:05 Dr. Ana Maria Aguiar, Research Centre Aggeu Magalhães, CPqAM/FIOCRUZ/Recife: “Advancing Morbidity Control Efforts in the Americas” (Group 2: Intended primarily for Brazil, Guyana, Dominican Republic, and Haiti; participants from other programs are welcome)

18:05–18:15 Dr. Gautam Biswas, WHO, Geneva: “Monitoring and Evaluation for Impact and Surveillance — Issues before the National Program Managers” (Group 3: Intended primarily for Brazil, Guyana, Dominican Republic, and Haiti; participants from other programs are welcome)

18:15–18:30 Sign-up for 1 of 3 work groups and distribution of work group guidelines

18:30 Adjourn (Day 1)

19:30–22:00 RECEPTION, HONORS, AND FOLK SHOW
Venue: Hotel Krasnapolsky
Dress (clothing): social
(Hosted by Government of Suriname, PAHO/WHO, GSK Inc, Bill & Melinda Gates Foundation)

Welcome
Chair: Dr. Stephen Simon, PAHO/WHO Representative in Suriname

Announcement of Official Recognition of the Governments and Ministries of Health of Suriname, Costa Rica, and Trinidad & Tobago for their Efforts toward Interruption of LF Transmission
MEETING DAY 2 (10/27/04). Wednesday. Hotel Krasnapolsky, Paramaribo

09:00–9:15 Meeting Update
Dr. Steven Ault, Regional Ecologist, PAHO/WHO, Brazil

09:15–12:30 Group discussions (3.5 hrs):
Chairman: Dr. Gautam Biswas, WHO, Geneva
Rapporteur: Dr. Vely Jean-François, PAHO/WHO, Haiti

Group 1: Facilitator: Dr. David Addiss, CDC/Atlanta
Rapporteur: Dr. Gustavo Bretas, PAHO/WHO, Suriname

Group 2: Facilitator: Dr. Ana Maria Aquiar, Research Centre Aggeu Magalhães, CPqAM/FIOCRUZ/Recife
Rapporteur: Dr. João Batista F. Vieira, Ministry of Health, Brazil, and Dr. Francisco Paulino, CENCET, Dominican Republic
Group 3: Facilitator: Dr. Gautam Biswas, WHO, Geneva
Rapporteur: Dr. Marie Denise Milord, Ministry of Health, Haiti

10:30–10:45 Coffee Break (15 minutes)
12:30–14:00 Lunch – Hotel Krasnapolsky (1.5 hours)
14:00–15:30 Group presentations (15 minutes each)
   14:00–14:15 Group 1 presentation
   14:15–14:30 Discussion
   14:30–14:45 Group 2 presentation
   14:45–15:00 Discussion
   15:00–15:15 Group 3 presentation
   15:15–15:30 Discussion
15:30–15:45 Coffee break (15 minutes)
15:45–16:00 Discussion/Selection of Site(s) for Next Regional Meetings (2005)
16:00–16:20 Special Topic: Integration of LF Elimination with Other Disease Control/Elimination Efforts (20 minutes)
16:00–16:20 Neglected Diseases
Dr. David Addiss, Epidemiologist, CDC/Atlanta
Dr. John Ehrenberg, Chief, Communicable Disease, PAHO/WHO, Washington, DC
16:20–16:30 Discussion
16:30–17:00 Wrap-Up, Highlights, and Perspectives (30 minutes)
Dr. David Addiss, CDC/Atlanta — Wrap and Highlights
Dr. Leslie Resida, Bureau of Public Health, MoH, Suriname — Perspectives
17:00–17:30 Closure of Meeting (Part I)
Honourable Dr. Mohamed Rakieb Khudabux, Minister of Health, Suriname
Dr. Leslie Resida, Director, Bureau of Public Health, Ministry of Health, Suriname
Dr. Stephen Simon, PAHO/WHO Representative in Suriname
17:30 Adjourn (Day 2)
**Country Presentations: Progress Reports and 2005 Plan of Action Outlines**

Chair: Dr. Stephen Simon, PAHO/WHO Representative in Suriname
Rapporteur: Dr. Chris Frederickson, PAHO/WHO–CAREC Trinidad

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**SURINAME**

The filariasis program: Where do we stand after more than five decades of LF control?

Dr. Leslie Resida, Director, Bureau of Public Health, Ministry of Health

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**PowerPoint presentation**

**Overview**

The success of the LF program in Suriname was based on a combination of repeated mass treatment, selective treatment, and improved sanitary conditions. By 1990, the Mf bancrofti index was less than 1.0%, suggesting elimination of transmission (which is now pending verification). The country has developed strong inter-regional collaboration to ensure the continued success of communicable disease (CD) prevention, control, and elimination programs.

**Background**

- 1908: P.C. Flu (see Table 1) discovers filaria bancrofti, filaria ozzardi, and Culex pipiens in Suriname
- 1949: Two filaria polyclinics established in Paramaribo; health education campaign starts in schools; initial surveys concentrated around Paramaribo
- 1949-1951: Fros (see Table 2) tests 50,861 persons for microfilaria (Mf) in Paramaribo
- 1950: Bureau of Public Health (BOG) established; LF cases received mosquito nets and treatment (via one centralized consultation)
- 1952: “Mosquito control regulation” in effect (laws enacted)
- 1958: Two filaria polyclinics centralized in BOG
- 1959: BOG produces/distributes brochure (“Er is weer oorlog”)  
- 1959-1961: van der Kuyp tests 39,167 persons for Mf
- 1969-1971: Dr. Baltus Oostburg tests 79,613 persons for Mf (last large-scale survey conducted in Suriname)
- 1970: Mass detection and treatment campaigns with DEC; distribution of nets
- 1980: Periodic spraying of houses; aerial spray for dengue fever until resistance of mosquitoes became evident. Open canals and stagnant water drained
- 2001: ICT card-based survey in 5-15 year age group (tested negative); Culex breeding sites reduced drastically; most recent survey (covered 3000 children from areas throughout the country
Table 1. *Mf bancrofti* index (1910–1948)

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N° tested</th>
<th>Pos. (%)</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>Flu</td>
<td>?</td>
<td>50 - 60</td>
<td>Diff. ethnic groups</td>
</tr>
<tr>
<td>1918</td>
<td>Bonne</td>
<td>195</td>
<td>28.7</td>
<td>Recruits</td>
</tr>
<tr>
<td>1927</td>
<td>Flu</td>
<td>224</td>
<td>25.9</td>
<td>Street in Paramaribo</td>
</tr>
<tr>
<td>1940</td>
<td>Wolff</td>
<td>?</td>
<td>30.0</td>
<td>Healthy recruits</td>
</tr>
<tr>
<td>1947</td>
<td>Wolff</td>
<td>4.851</td>
<td>22.0</td>
<td>People &gt;5yrs</td>
</tr>
<tr>
<td>1948</td>
<td>Lampe</td>
<td>1.214</td>
<td>28.4</td>
<td>Healthy low middle class</td>
</tr>
</tbody>
</table>

Table 2. *Mf bancrofti* index (1951–1971)

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>N° tested</th>
<th>Pos. (%)</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>Fros</td>
<td>50.861</td>
<td>17.4</td>
<td>All persons</td>
</tr>
<tr>
<td>1961</td>
<td>v.d.Kuyp</td>
<td>39.139</td>
<td>9.0</td>
<td>All persons</td>
</tr>
<tr>
<td>1971</td>
<td>Oostburg</td>
<td>79.613</td>
<td>2.1</td>
<td>All persons</td>
</tr>
</tbody>
</table>

**Control activities**
- Establishment of filaria polyclinics
- Increased health education campaigns
- Mass detection and treatment campaigns with hetrazan (DEC)
- Distribution of mosquito nets
- Periodic residual spraying of houses
- Environmental and sanitary improvements

**Factors in LF elimination**
- Good living conditions
- Community-based leadership
- Program leader mobilized country as a whole
- Political will (laws enacted; people trusted the BOG)
- Search for practical ways to promote cross-border (Suriname-Guyana) work and collaboration

**Conclusions**
- LF transmission is under control in Suriname
- LF is generally unknown to young population
- Culex breeding sites have been reduced drastically
- Vigilance activities have been implemented
- Cross-border cooperation are in place
- Financing surveillance
BRAZIL
The filariasis program: Current status, challenges, validation of tools, and roads to the future
Dr. Helen Freitas, National Coordinator for Elimination of LF

Overview
The country’s recently established morbidity program (as of 2004) is in the process of introducing compulsory reporting of LF and is now investigating potential system protocol, including potential parameters and cost regarding surgical intervention. As current morbidity data is not reliable, country statistics are based on the occurrence of positive Mf and/or antigenemia. Key problems include staff turnover and delayed funds transfers at the Federal level, as well as an intense level of migration. The programs in Recife, Maceió, and Belém need technical assistance. LF morbidity in Salvador Bahia and São Luís need to be evaluated. In 2005, program focus will shift from research to programmatic issues, such as how to best move patient care out of the research institutes into the more accessible, local health centers where other pathologies are managed.

Country profile
The estimated population for 2004 was 179,108,134. The country is divided into 27 states (see Figure 1) and 5560 municipalities (82% urban, 18% rural). Health assistance is delivered via universal public services managed by the MoH, plus private sector services that serve 38 million people. Mf control activities are conducted in Recife, Jaboatão, Olinda, and Paulista in Pernambuco state; Belém in Pará state, and Maceió in Alagoas state (see Figure 2).

History
- 1956–65: Surveys in 24 states (811,361 people in 852 municipalities) found positive individuals in 17 states; 11 cities classified as endemic; selective treatment provided in all
- 1960s: Control activities limited to 3 foci (Recife, Salvador Bahia, and Belém); other foci considered under control
- 1970-80: Introduction of chemical control of vectors
• 1983: Bahia considered to have achieved elimination of LF
• 1990s: Maceió focus identified in 2004, 5 ICT-positive cases out of 2214 (Ag [anogenital] prevalence of 0.23%). In Jaboatão (Recife focal point): 143 positive out of 3110 (Ag prevalence of 4.6%); ICT card tests pending, however no positive Mf cases found in the last 4 years.

**Sentinel surveillance**

- Conducted in areas with identified active transmission
- Expanded surveillance plus routine Mf surveys and selective treatment
- New survey areas planned in Bahia and Maranhão
- Activities for evaluation of LF elimination and transmission interruption planned in:
  - Salvador
  - São Luís
- ICT/monitoring to measure epidemic in areas easily demarcated into study areas, e.g.:
  - Metropolitan area of Recife known as the belt (see Figure 3)
- ICT surveys in:
  - Maceió (endemic areas): 2214 examined; 5 (23%) positives (39.1% male; 60.9% female)
  - Jaboatão: 3110 examined; 143 positives (4.6%)
  - Belém (starting 27 October 2004)

**Figure 3. The Recife belt**

  - patients ≥15 years with LF diagnosis
  - clinical procedures LF-compatible
  - distribution by city of residence
- Establishment of an operational plan supported by hierarchical model, including:
  - clinics
  - health agents
- Survey of 60,000 in Maceió (Canal do Reginaldo area) in October 2004
- Parasitology testing for Mf by state and municipality (see Table 1)
- Patient services in Recife belt (similar services planned for Maceió and Belém metro areas)
- Refined/improved disease assessment planned for Salvador and São Luís

**Disease assessment & management**

Activities to help identify and provide services for those with filarial morbidity (see Figure 4) included:

- Data review
  - literature
  - national database

**Table 1. Parasitology testing for Mf (2004)**

<table>
<thead>
<tr>
<th>State</th>
<th>Municip.</th>
<th>Examined</th>
<th>Positives</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>Belém</td>
<td>47,864</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>AL</td>
<td>Maceió</td>
<td>1,546</td>
<td>4</td>
<td>0.26</td>
</tr>
<tr>
<td>PE</td>
<td>Jaboatão</td>
<td>57,960</td>
<td>471</td>
<td>0.81</td>
</tr>
<tr>
<td>PE</td>
<td>Recife</td>
<td>41,620</td>
<td>277</td>
<td>0.66</td>
</tr>
<tr>
<td>PE</td>
<td>Paulista</td>
<td>13,497</td>
<td>11</td>
<td>0.08</td>
</tr>
<tr>
<td>PE</td>
<td>Olinda</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Treatment

- MDA in Recife:
  - Population of 47,302 (37,842 or 80%)
  - 39,262 treatments
  - 83.0% coverage
  - Adverse reactions: 393 individuals (1%)
- MDA pilot projects programmed for Olinda and Jaboatão (2004)

Problem assessment

- Funding
- Staff turnover at Federal health services level
- Municipal elections

2005 Plan of Action

- MDA in areas with active Mf transmission (e.g., Recife belt):
  - Expand treatment area
  - Maintain complementary process
- Verify interruption of transmission in ancient foci in:
  - Bahia
  - Maranhão
- Verify actual extension of endemic areas around Recife via:
  - ICT surveys
  - Xenomonitoring
- Provide filarial disease management for:
  - LF patients in Recife belt
  - LF patients in Maceió and Belém
- Conduct filarial disease assessment in:
  - Salvador
  - São Luís

Challenges

- Improving reliability of morbidity data
- Determining protocol for compulsory reporting (e.g., hydrocele surgery):
  - Requirements
  - Cost implications
  - Funding sources
- Monitoring cross-border migration
- Shifting focus from research to programmatic activities
- Moving outpatient care out of research setting into public health service network
- Investigate potential for self-care

LF elimination in Belém

Validation of tools exercise (2004)

Evaluation of prevalence due to W. bancrofti in selected city sectors:

- Creation of social and environmental multiple risk indicator
- ICT and parasitology testing (Mf in blood) among two groups:
  - Children 6-10
  - Males 20-29
- Serology (using ELISA [enzyme-linked immunosorbent assay])
- Xenomonitoring by PCR to detect W. bancrofti in Culex quinquefasciatus
- Preliminary results (see Table 2):
  - December 2003 (children 6-10): all negative
  - October 2004 (male survey [50% complete]): all negative

Table 2. Summary of parasitology testing

<table>
<thead>
<tr>
<th>Year/State/</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam</td>
<td>pos</td>
<td>Exam</td>
<td>pos</td>
</tr>
<tr>
<td>pos</td>
<td>%</td>
<td>pos</td>
<td>%</td>
</tr>
<tr>
<td>Recife</td>
<td>44,539</td>
<td>415</td>
<td>0.93</td>
</tr>
<tr>
<td>Olinda</td>
<td>33,630</td>
<td>336</td>
<td>1</td>
</tr>
<tr>
<td>Paulo</td>
<td>19,438</td>
<td>34</td>
<td>0.15</td>
</tr>
<tr>
<td>Total PE</td>
<td>123,910</td>
<td>896</td>
<td>0.72</td>
</tr>
<tr>
<td>Maceió/Total AL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13,843</td>
<td>62</td>
<td>0.45</td>
<td>24,169</td>
</tr>
<tr>
<td>Belém/Total PA</td>
<td>99093</td>
<td>1</td>
<td>0</td>
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15
DISCUSSION

Comments. First, it seems that you have made some significant progress. One of the achievements I consider most important is the introduction of mandatory notification for the morbidity component. For me, one of the most important outcomes of this meeting is that we are going beyond repeating what we have heard before, and identifying processes that can help us sustain the programs. What you are doing in Brazil is very important in terms of introducing mandatory notification [of cases of LF]. We are waiting, with much anticipation, to see the results of the preliminary validation exercise for the verification of elimination. What isn’t clear to me is the difference between what is being done in Recife, with the disease component, and what you are going to do in Belém. In Recife, there is a very strong team, which has pioneered the development of disease management, so it seems ironic that there is no program there for comprehensive, global disease management. So I am very interested in knowing your ideas about this plan.

Response. Recife has had a program for assisting LF patients for many years. However, this was always based within the research sector; it is actually linked to a research center (CPqAM; Research Centre Aggeu Magalhães [Centro de Pesquisa Aggeu Magalhães]). We are now expanding the focus, actually changing the logic, and moving away from a system based on research and introducing a system based within our health services. When our services were based in the research center, patients had to move to public hospitals. In Belém and Maceió, the situation is a little different. In Belém, there were traditionally no separate services for LF patients; it was not part of the program structure. That’s why, historically, LF cases were always attended in the health clinics; there was no defined structure to provide health care to LF patients at primary or higher-level care centers.

In Pernambuco, they combine health services with research, and they promote health care at the ambulatory clinic level. Patients must leave their local environment and go to a clinic to receive care. We want to change this, so that patients can receive services at the local level, by combining filariasis programs with other health care services. LF patients would be identified and placed in a regular health care service system. This is the proposal for the endemic cities in Pernambuco and Maceió — identification of new cases in those areas where filariasis had been considered eliminated.

Question. I see three major issues with regard to Brazil. The first concerns what we call “mapping the extent of the problem”: We have heard about three to four sites in Brazil, and you have presented two things: preliminary surveys identifying municipalities that have been undertaken vs. those that were not. The first map showed some of the municipalities that were surveyed. Later, when the morbidity surveys, clinical assessment surveys, and mapping household addresses were conducted, the map showed a much more extensive distribution. So what is the actual extent of the problem in Brazil?

Response. The difference between the two maps has to do with their data sources: The first map is based on surveys with well-established protocols; quality control of results reveals that it is of very high quality. The second map, which refers to morbidity, is based on a dataset that is not very specific; it is just a general administrative dataset. There are several explanations for the discrepancy between the maps on morbidity generated from this dataset vs. the traditional, comprehensive data set. The first is that the one map is based on preliminary data that has yet to be examined and clarified. The second is that we have an intense migratory process in Brazil—that is, morbidity cases found in the South for individuals that probably came from Northeastern areas. So we have a preliminary study that is screening cases in Bahia to identify filariasis cases, which will help clarify the case data found in the generic, administrative database.

We will have some idea of what percentage of cases from this database in Bahia are really caused by filaria. The results of these evaluations will be compared with other studies and will be further explored with brief surveys.

Comment. These morbidity data are not a surprise for us. We believe there are many systematic diagnosis errors in this database. We continue to believe that the extent of the disease in Brazil is that presented in the first map—the one that we have validated. We want to examine the other database and conduct a rigorous validation process. We certainly do not deny the possibility that there may be LF sites that were
previously unknown. Our treatment strategy — mass surveys and selective treatments — is a classic strategy that we have used for many decades. We are going to maintain this strategy. Lately we have started thinking about the possibility of using MDA, however; we hope to expand use of that strategy in the future, possibly using both strategies in tandem. This is an issue of maintaining service structure — avoiding interruption of regular service provision. The criteria for the service are operational, because epidemiological criteria do not yet exist.

Question. Which criteria determine use of MDA and which ones determine use of selective treatment. How do you make the choice?

Response. One important issue is municipal autonomy and municipalities’ capacity to provide selective treatments. Therefore, one criterion is local capacity to do selective treatments, i.e., determining if selective treatment is a viable option. If not, then MDA methods should be used. Municipalities have the autonomy to use their own strategies, and decisions are made at the local level. In areas of high prevalence, they have the option of using MDA.

Question. I believe Brazil uses either selected or mass chemotherapy. What is the rationale for choosing one method over another? Also, from WHO’s perspective, some patient care involves simple measures that patients should be trained to carry out themselves, as they need to be done daily. What was explained today is that Brazil is trying to change the research-based approach to a clinic-based approach, through regular health services. Is there any thinking that this may evolve into a home-based care approach, i.e., self-care?

Response. In response to your third question: When we proposed a health care model for filaria patients, it wasn’t at the hospital level. Our health care system is based on hierarchy. For primary health care, there are health agents, supported by hospital staff. When they create health care services for filaria patients, they train everyone from the primary health care workers up to the clinic surgeons, who provide more sophisticated care. So there are primary health care service providers within easy access of households, trained by primary health care agents from the local community. Our initial challenge is to determine which communities have enough cases to justify investing resources in training for those primary health care agents.

Comment. We should not overlook the long history of the LF program in Brazil. They have eliminated 8 of 11 preliminary sites by doing exactly what they said they would do: selective treatment and mass surveys. They did this very successfully and are about to eliminate two more sites in Belém and Maceió. In Maceió, they are detecting fewer and fewer cases and aim to eliminate LF in that area over the next couple of years, using selective treatment plus the traditional approach. So the issue is really Recife and its four surrounding areas. When we had extensive discussions with them, we said, “You have one of two choices: You can continue to do the same thing you’ve been doing so far, for the next 5-10 years or more (and most likely eventually eliminate LF in Recife), or you can cut down the period that you are going to need to get there.” There was actually an economic and political advantage in doing the latter. So the compromise between WHO and the MoH, as Dr. João Batista F. Vieira said, aimed to decentralize the intervention, because Brazil is a very decentralized country.

They have done an interesting risk factor analysis combining epidemiological, socio-economic, and environmental variables to stratify the different districts in Recife, and they have actually prioritized actions based on this analysis. (Dr. Maria Teresa Maciel, who is working for the municipal secretariat of health, is going to present the results of that combined risk factor analysis in the next Partners for Parasite Control (PPC) meeting in Geneva.) Based on that combined risk factor analysis, they decided to do pilot interventions to see how they could operationalize MDA on a smaller, selective scale (e.g., in health district 2, which contains a specific micro area with a high prevalence rate for LF as well as a number of other communicable diseases). So that was very interesting and noteworthy — that they were willing to compromise and get involved. There is no decision yet as to what the basic criteria are. We picked the areas of highest risk for now, to see how to operationalize MDA. In the meantime, we will continue to do
selective treatment in all areas. My expectation is that eventually, when they get the preliminary results of
the MDA in the selected areas and see how capable they are of operationalizing, they will be able to scale
up and do MDA in some other areas in Recife.

**Question.** You mentioned the issue of mandatory case notification. What is the protocol for probable
cases, suspected cases, and confirmed cases? If we begin training surgeons for this type of notification, has
the surgeon already been selected? We already know Dr. Joaquin Norees; he’s a dedicated surgeon with
ample experience. Because the cost of training new technicians is going to be, I believe, significant for the
38 million people paying for private health care in Brazil.

**Response.** No [this hasn’t been decided]. Right now, the MoH is re-evaluating its list of notifiable diseases.
In a recent meeting about the flow of information for reportable cases, there was some discussion about
[LF] morbidity, and they agreed to add it to the list of compulsory and notifiable diseases or illnesses.
Their bosses have taken the position that this is justified, so the list is being revised now for official
publication.
Introduction

Dr. Paulino thanked PAHO and Emory University for inviting him to the meeting, and wished Dr. Eric Ottensen a speedy recovery. He also expressed his appreciation to the authorities of Suriname for their hospitality in hosting the event. He extended apologies for the absence of Dr. José Manuel Puello, the director of CENCET (National Center for Tropical Disease Control [Centro Nacional de Control de Enfermedades Tropicales], the home of the national LF program), who had to remain in the Dominican Republic due to obligations within the institution's malaria program.

Overview

Key issues for the country include mapping, pending in 12 municipalities and foci in the capital city (La Ciénaga); two upcoming MDAs in La Ciénaga foci and 4 in the Southern foci (Barahona), plus one round of treatment in new foci. Reported coverage in La Ciénaga foci was 73% (observed) in 2004. Disease assessment identified 1,787 suspected bilateral cases of lymphadema and 485 cases of urogenital pathology. Norms for patient care are pending, and there is an alternate plan for hydrocele management. Process indicators have yet to be clarified. Local funding exists from Plan International (an NGO). Program integration is yet to be defined and no indicators are available. Research activities are ongoing in vector characterization, case evolution, and migration and risk.

Country profile

The Dominican Republic is divided geographically into 9 political-administrative regions (see Figure 1) comprised by 31 provinces plus one national district (the capital city), and 160 municipalities (see Figure 2), the selected intervention unit for current program activities and the highest administrative unit level for conducting new activities. The total population is about 9 million.

Figure 1. Nine political-administrative regions
Health demographic indicators
The population is relatively evenly distributed by sex across all age groups (see Figure 3). Life expectancy at birth and infant mortality for 2002 were 70.0 years and 31 per 1000, respectively, 95.7% had institutional health coverage and 79% of the population had access to a potable water source. Health services are provided at three different levels of care (see Figure 4). As of the first half of 2003, 65% of the population was covered by Directly Observed Treatment (TAES; Tratamiento Acentrado estrictamente Supervisado).

Population density is highest around the capital city (see Figure 5), and resource-poor households are concentrated in the western region of the country, along the border with Haiti (see Figure 6).
Sentinel surveillance

Community surveys at urban focal points (see Table 1 and Figures 7-8) via coordination with:

- Montalvo Research Center
- Santo Domingo Autonomous University (UASD; Universidad Autónoma de Santo Domingo)

<table>
<thead>
<tr>
<th>Sentinel Site</th>
<th>Pop.</th>
<th>Microfilaria Samples</th>
<th>% Pos</th>
<th>ICT Samples</th>
<th>% Pos</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Sombra</td>
<td>854</td>
<td>461</td>
<td>3.7</td>
<td>490</td>
<td>9.4</td>
</tr>
<tr>
<td>Pueblo Nuevo</td>
<td>4463</td>
<td>468</td>
<td>4.4</td>
<td>521</td>
<td>21.5</td>
</tr>
<tr>
<td>Batey 7</td>
<td>1016</td>
<td>363</td>
<td>14.3</td>
<td>370</td>
<td>35.8</td>
</tr>
<tr>
<td>La Ciénaga</td>
<td>57,100</td>
<td>561</td>
<td>2.5</td>
<td>562</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Figure 5. Population density
Source: SIGpaS2

Figure 6. Distribution of poor households
Source: ONE, November 2002

Figure 7. Survey status September 2003

Figure 8. Survey status October 2004
Disease assessment

Southwest
- Detected cases: 2,272:
  - urogenital: 485 (21.3%)
  - lymphadema of the extremities 1,787 (78.7%)
  - bilateral lymphadema: 1,123 cases
- Suspected cases:
  - lymphadema of the extremities: 352 (IDCP; Instituto Dermatológico de Cirugía de la Piel [Dermatology Institute])
  - hydrocele: 7 (HJM; Hospital Jaime Moto)

Treatment
- MDA: Southwest focal points (2003; see Table 2 and Figure 9)
- MDA: La Ciénaga focal points (2004; see Table 3 and Figure 10)
- 4th round next year in Southwest
- 2nd round next month in La Ciénaga
- New foci needed in northern region (only a few are medicated)
- Possible new focal point (20,000 to 30,000 inhabitants) needs medication
- Continual process of integration in Southwest (as in La Ciénaga)

Table 2. MDA for Southwest foci (2003)

<table>
<thead>
<tr>
<th>Province</th>
<th>Municipality</th>
<th>Reported coverage %</th>
<th>Survey coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barahona</td>
<td>12</td>
<td>74.98</td>
<td>84.8</td>
</tr>
<tr>
<td>Bahoruco</td>
<td>7</td>
<td>73.32</td>
<td>81.3</td>
</tr>
<tr>
<td>Pedernales</td>
<td>2</td>
<td>90.61</td>
<td>76.0</td>
</tr>
<tr>
<td>Independ</td>
<td>6</td>
<td>72.8</td>
<td>82.1</td>
</tr>
</tbody>
</table>

Table 3. MDA for La Ciénaga foci (2004)

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Number treated</th>
<th>Reported coverage %</th>
<th>Survey coverage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guandules</td>
<td>14,671</td>
<td>11,638</td>
<td>79.33</td>
<td>75</td>
</tr>
<tr>
<td>Guachupita</td>
<td>13,222</td>
<td>9,902</td>
<td>74.89</td>
<td>65</td>
</tr>
<tr>
<td>La Ciénaga</td>
<td>15,053</td>
<td>11,175</td>
<td>74.24</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>42,946</td>
<td>32,715</td>
<td>76.17</td>
<td>73</td>
</tr>
</tbody>
</table>

Source: MDA campaign records (La Ciénaga)

Post-medication coverage
- Health and media divisions of MoH Secretariat incorporated with LF program activities (message design and validation, development of audiocassettes for promoting medication) for two projects
- Expecting additional support
Disease management

- Faced obstacles in 2004 (drug shortages, changes in management, financing problems, etc)
- Plan to train residents in hydrocele surgery
- Plan to expand interaction with academia to:
  - help solve hydrocele problem
  - obtain knowledge (scientific and medical)
  - develop entry point for training in areas of coverage at hospitals that do the interventions
  - gain help in assessing pathology and morbidity
  - obtain access for training service-level staff on disease classification and source

Achievements

- Design of disease assessment criteria
- Alternative hydrocele correction plan:
  - Hospital Francisco Moscoso Puello (HFMP) urology residency
- Diagnostic training for ICT card (HFMP)
- Local financing (fundraising) for UNAP (Unidad de Atencion Primaria [primary health care unit]) staff training (Plan International)
- National Technical Committee:
  - five meetings (most recent: 14 June 2004)
  - integrates various program representatives:
    - Economic evaluation project staff
    - IDCP
    - Southwest Focal Point Coordinator
    - National Program Coordinator
    - Director of CENCET (occasionally)
- Presentation of PELF Integration Plan to regional health authorities
- Discussion of aspects or areas of potential integration
- Application survey for measuring integration process (Margaret Fraser, Liverpool University)
- Signed management agreement

Agreements

- Health systems: Logistical and human resource support for MDA, November 2004
- Formalization of specific aspects of Integration Plan
- PELF: Location of families not integrated with UNAPs

2005 Plan of Action

- Implementation of care criteria
- Training of health personnel to help with disease management
- Training of urology residents and general surgeons in the region
- Attention to suspected/detected cases
- Research at other identified focal points
- 4th round MDA at Southwest focal point
- 2nd round MDA at La Ciénaga focal point
- 1st round MDA at new focal points
- Continuation of integration process
- Publication activities:
  - promotional video
  - PELF program documentation
- Intervention activities
- Monitoring system

Research

- Vector characterization
- Case evolution
- Migration and risk regarding:
  - disease reintroduction
  - creation of new focal points
  - increased need for disease management
- Population density:
  - growing rapidly
  - concentrated in capital city
• Mapping of 18 main municipalities (and other surveyed areas now under investigation):
  — expect to finish by end of 2004
  — will help identify total treatment population (re: treatment plan next January)
• Integrated research with Entomology unit (combined with thesis of Entomology team member):
  — no cost (supported by Entomology unit)
  — great demand by research community
  — helps increase knowledge and action against disease
  — serves as framework for general health education

Monitoring & evaluation
• Evaluation of possible LF elimination in future
• Establishing criteria
• Case examination
• Importance of comparing approaches to ongoing case follow-up
• How to respond before and after case management
• Establish corrections
• Should be ongoing part of research

Social mobilization
• Work with Juan Montalvo Research Center (coordinates local NGOs, community organizations)
• Two main focal points:
  — Southwest
  — La Ciénaga (capital city)
• Documentation of program in cooperation with DIPRES (Dirección General Promoción y Educación en Salud; Office of Health Promotion and Education):
  — video on program development
  — overview of criteria for interventions (MDA, data collection, sentinel surveillance)
• Conducted workshop with health authorities:
  — submitted concerns about routine care of LF cases
• Information-sharing with other institutions

Publications
• Program history recorded on video (10-15 minute documentary) on program development program and diverse treatment interventions
• Elaboration of all of technical files developed by team near each intervention, including documentation of survey instruments:
  — can be recovered at any time
  — provides historic memory for development of program and for sharing lessons learned

Objectives
• Maintain program sustainability
• Integrate program actions horizontally with health services:
  — fundamental to preparing for new era of limited external funding
• Share diverse aspects of integration experience and other interventions (e.g., UNAP development)
• Establish clear objectives for UNAPs in terms of MDA
• Continue to strengthen UNAPs through additional [formal] agreements

DISCUSSION

Question. On your maps for 2003 and 2004, some implementation units (IUs) were indicated for 2003 but omitted in 2004. What were the reasons for removing them, and what is the final number of IUs that you consider endemic, and the total population at risk?

Response. This is a technical problem. We did not introduce this in the first map (the two municipalities called the Three Rivers, located on the border with Haiti). Two municipalities were indicated because we had detected IUs during the survey. Those were still being investigated when we made this presentation,
but they still should have been included in the network. In the later map, we introduced IUs that we had
detected but hadn’t been validated. Those IU’s were investigated and it was determined that they were not
valid. Those that had migrated were not there anymore.

Regarding the number of IUs, when we began the survey, the county was divided into 160 municipalities;
until now we have not finished surveying them. So for the most part, the final number of IUs cannot be
determined right now. To date, the focus in the Southwest is on the IUs, in a municipality that was
positive. The adjoining area was also defined as an intervention area and the Southwest team is working
there. A municipality tested positive in the national district in a different zone (with 3 million
inhabitants). And there is a neighborhood at the edge of the river, three neighborhoods actually, that are
positive. We know that only part of the municipality needs to be clarified. So we are talking about 10-12
positive municipalities in the Southwest, a few municipalities in the region of the southwest, one
municipality in the capital city, one in the north (Imbe, which tested positive and is inside the endemic
IU), and one in the east (Iguey).

When the second map was done we had the more recent information (from May 2004 research), school
was in full session, schoolchildren were sampled, and there were positive cases. When we went to
investigate there, there was some discussion with the local authorities, resulting from the rapid
administrative segmentation in the country, mainly due to political reasons, as to where (in which
municipality) localities that tested positive actually belonged. We were waiting to see the outcomes of this
before mapping all the adjoining zones.

**Question.** In one of coverage surveys, you showed coverage for three IUs, and then you showed an overall
survey coverage percentage. How do you calculate that overall survey coverage percentage?

**Response.** We counted all household inhabitants, the ones that were reported to have consumed the
medicine, and divided that into all household inhabitants. This resulting figure was used like a numerator
(the population that had consumed the medicine) with the total household population used as the
denominator.

**Question.** During [entomological] re-evaluations for 2003–2004 to identify possible transmission in areas
that showed positive cases in 2003 among Haitians, was any transmission found?

**Response.** Regarding the cases from Haiti listed in 2003 but not in 2004: Some of the presentation maps
were generated weeks after the fieldwork. For example, the municipality of Sanchez is listed, but we did
not include it on the map because it had no case presentations (however it was still included as part of the
routine surveys). Two weeks later, when the community sampling (250) was done, the sister and mother of
the positive case appeared. According to our records, very few people had migrated from Haiti. All samples
from areas where they had been were negative (including the workplace of the father of the presenting
case), so evidently there was no transmission. When another case appeared later on (another migrant from
Haiti), that left a total of one or two cases but still no transmission (at least for case production in that
particular area). For these types of cases, we plan to evaluate the migration pattern as well as the protocol
that we are going to use. But when we do a sampling as extensive as that for the migration study, we must
ensure enough time has lapsed for new case production. Continual monitoring would require
enhancement of our research program, so we have not done that yet in all of our work. But we do comply
with monitoring standards in our traditional sampling (300 to 400 individuals).

**Question.** After 4 years of treatment at Southwest foci, there seems to be a shortage of information about
process indicators for various aspects, such as social mobilization and disease prevalence. We need a clearer
picture of what has been achieved. It’s very important to follow up and evaluate all activities, particularly
training (e.g., Did those who were trained continue to work in the area? Did they gain knowledge, or was
it necessary to repeat training in the same areas?). Indicators for all of these processes (training, social
mobilization, disease management and related training [diagnostic, alternative collection plans, hydrocele])
seem to be lacking.
Response. For health and other staff working in primary health units, we evaluated all former trainees to see if they still qualified. We also evaluated their knowledge level to see if was sufficient for them to continue to administer treatment. If we identified weaknesses, we returned and re-evaluated. We are now restructuring the process, so former and recent trainees have to be re-evaluated. This was done with community and health services.

Comment. After four rounds of treatment, there should some baseline indicators to demonstrate program evolution. These could be presented visually using graphics (similar to those used to describe treatment coverage) to indicate how these program components/processes have modified outcomes.

Response. These are not yet in place, as you have noted.

Comment. For the foci, we should evaluate them in some way when the number of positives is negligible, and proceed to the evaluation stage to see if the case is a product of local transmission. In the case of Potrejerío, a small locality in the southwest, cases were detected using the simple traditional epidemiology. In other places, such as San Juan, we searched for active cases to see if transmission persisted and, evidently, it did not. Therefore, those foci were [treated and] eliminated as transmission areas. In one locality in San Juan, we used both random surveys and surveys of sites specific to cases that had presented (using 500 ICT cards). Based on that data, we eliminated the area as a focal point.

Question. From a population such as La Ciénaga’s, with 57,100 people, only 15,053 were targeted by the treatment program. What happened with the rest of the population? It seems that just one-third or less were treated with MDA.

Response. La Ciénaga is a unique area of the country, with different types of state authorities (for example, in socially problematic parts of La Ciénaga, soldiers and police do not enter the communities, but remain at the periphery). So in that area, we worked not with statistics but with information from a house-to-house census carried out by program personnel. Obviously, the census will be biased for reasons described above. We assume that department data will not necessarily concur with the census data. We do have problems in this area — identifying the proper households or neighborhood.
Introduction

Dr. Persaud thanked the group and conveyed greetings and appreciation from Guyana’s MoH for all of the support from the regional program, including support of Guyana’s decision to implement DEC-salt. He noted that while Guyana faced formidable challenges, it was successfully promoting salt intervention. He went on to say that Guyana looked forward to future cooperation with program members.

Overview

Geography is a key risk factor for LF in Guyana, with interior areas exposed to the harmful effects of intense mining activities plus the influx of miners and loggers from Brazil. The United Nations Children’s Fund (UNICEF) is a key partner for the LF program in Guyana. There is excellent intra-agency cooperation with PAHO. Salt fluoridation is also moving forward. There is some degree of integration taking place with the foot care program for diabetics and other chronic diseases, and in the Health Promoting Schools and Health Community Initiatives (see below), vector control, and environmental programs.

Supply of DEC-salt is proving to be an ongoing challenge in terms of supplier compliance with production commitments. The country is trying to get the national supply back to planned levels through negotiations with producers in Cuba, Trinidad & Tobago, and Jamaica. In terms of disease management, there is a bit of a gap, with only 40% of hydrocele cases receiving treatment (vs. 80% of lymphadema cases). Future objectives include solving the salt discoloration problem, increasing the salt supply, and sustaining the initial momentum of the social mobilization campaign.

Country profile

Guyana has 10 regions (see Figure 1): administrative units that double as health units to deliver services, headed by elected regional councils that provide health care education and support for social services. Economic support is also channeled through the regions, which provide health care with support from the central MoH.

The regions comprise both inland and coastal areas; 90% of the population lives in the latter areas (despite the fact that just 10% of the country faces the [Atlantic] coast). There is some population distribution across the northern shoulder of South America, along a belt of land on the Atlantic Coast of Guyana and Suriname (and to a lesser extent, French Guyana). About one third of the population with Mf positivity is between 8 and 37 years. Regions 5 and 10 (which have coastal and inland areas) have very high Mf positivity rate. The interior regions bordering Venezuela, Brazil, and to some extent Suriname, are the predominant malaria regions. Malaria is a major problem in most of those areas.
**Health infrastructure**

**Facilities**
- Health posts (run by community health workers): 166
- Health centers (run by medexes, nurses practitioners or physician assistants): 112
- District and regional hospitals (with and without doctors): 24
- National hospital (in capital city): 1
- Private facilities and specialized care centers, including pediatric hospitals: 12

**Human resources (public and private)**
- Registered medical doctors: 336
- Nurses: 1,597
- Medex officers: 127
- Other health care personnel (community health workers, pharmacists, dentists, environmental health officers): 264

**Partners**
- Minister of Education
- Guyana Red Cross
- Service Club
- Rotary Club
- PAHO/WHO
- CDC
- UNICEF
- Liverpool LF Support Centre
- Emory LF Support Center
- University of Guyana (UG)
- St. George’s University (SGU)
- Community groups
- Professional organizations
- Support groups for people living with LF

**Initiatives**
- Elimination of IDD (Iodine Deficiency Disorder)
- Salt Fluidization Program
- Foot care program (as part of diabetic and other chronic disease programs)
- Health Promoting Schools Initiative (PAHO); schools have proved to be an important part of transmitting health information, especially to households.
- Healthy Communities Initiatives promotes a broad range of concepts to improve communities’ living standards (research has shown that good sanitation and promotion of healthy communities can influence overall disease outcome)
- Vector control program (dengue fever control)
- Integration with other operational initiatives (malaria, dengue fever)

**Program management**
- National Task Force established in 1990 (1999, 2001, 2004) with multi-sector involvement; part of country coordination mechanism (CCM); met almost daily in late 2004:
  - PAHO/WHO
  - CDC
  - Ministry of Education
  - local NGOs
  - universities
  - service organizations
  - professional organizations
  - community groups
- National Program
  - Program Manager
  - staff support from Liverpool LF Support Centre
  - additional human resources from primary health care (PHC), UG, SGU staff
  - technical support from PAHO/WHO, CDC, Emory
  - budget support from Global Programme, MoH

**Antigenemia assessment**
Results of the antigenemia assessment indicated health units with the highest positivity (see Figure 1) were in Buxton (37.1%); Grove (29.2%); Cambellville (26.5%); Kitty (20.4%); Fort Wellington (36%); Canje (20%); and Linden (20%).
**Social mobilization**

- **Community leaders/decision-makers**
  - meetings with leaders from community groups (9) and Rural Development Councils (RDCs) (5)

- **Health workers**
  - training for health workers on how to provide accurate information on LF and DEC-salt (212 nurses; 180 doctors; 152 other health staff)
  - Health Promotion Workgroups (17 in place and ready to implement work)

- **Mothers at PHC facilities**
  - support for mothers via PHC prenatal care (7 groups formed)
  - 2 cooking demonstrations (meals prepared with DEC-salt to show that it doesn’t change food taste or quality)

- **Schools**
  - training program for school teachers (42 in two regions)
  - LF/DEC-salt added as agenda item at teacher association meetings (26 PTA groups)
  - 4 LF School Quizzes completed (general questions and answers)

- **Salt importers, distributors, and retailers**
  - market promotions with retailers across site regions (11 markets in 5 regions)
  - information and promotional materials to help grocers sell DEC-salt (23 in 7 regions)
  - assistance to program to treat groceries with DEC-salt (62 shops in 8 regions)

- **Media workers**
  - distribution of packages on LF and DEC-salt to all media organizations
  - mini DEC-salt launches at local level (where supply is available)
  - support to publication on LF and DEC-salt
  - on-camera TV discussions on elimination of LF from Guyana

- **General public**
  - public service announcements (PSAs), (MoH “media moments”) for radio, TV, and print media
  - literature review on LF (overview of newspaper, journal, and magazine articles available in Guyana)

**Sentinel surveillance**

- Two sites developed in 2003 (see Figure 2):
  - a community in Georgetown called Lodge (with a positivity rate of 31.9% and 11.4% Mf)
  - site in Tucbur (with a positivity rate of 13.5% and an area with 2.8% Mf)

- Baseline data from community census
- Social mobilization strategies developed and complemented at both sites
- First pre-treatment sentinel site selected in 2003
- Currently in second phase (second lab data collection); preparing communities now

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**Figure 1. Health units with high positivity rate**

**Figure 2. Sentinel sites: Tucber and Lodge**
**Disease assessment**

- Continuing with work begun by research group of Dr. Tess McPherson (2000-2001)
- Started regular collection for morbidity
- Records kept by survey/census officials

**Lymphadema**
- Stage 3 or higher: 42
- Acute attacks: 16
- Early stages (0, 1, and 2): 377

**Hydrocele**
- Cases recorded at public hospitals: 296
- Cases recorded at private hospitals: 47
- Cases reported by private physicians: 26

**Case management**

**Lymphadema**
- About 372 (85%) of registered cases received care:
  - acute attacks managed: 16
  - CARE Centers: 282
  - home visits: 54
  - support group (CARE): 20

**Hydrocele**
- Distributed green guidelines for hydrocele surgery (developed by GPELF)
- Seeking urologists to come to Guyana for 1-day session to discuss new techniques
- Challenges for home-based self-care:
  - supply of clean water
  - availability of soap and other necessary items
- Surgeries performed (40% of normal hydrocele cases):
  - Georgetown Hospital: 62
  - New Amsterdam: 26
  - West Demerara Regional Hospital (WDRH): 11
  - Linden Hospital: 13
  - private hospitals: 38

**Achievements**

- Analysis of salt trade identified producers in Jamaica, Cuba, Trinidad & Tobago (only Jamaica produces/supplies salt to Guyana currently)
- Coca-Cola has 16 people working on demand and supply issues and promoting product
- Memo of Understanding (MoU) signed with importers (via extensive negotiation)
- Quality assurance capacity developed (imported salt monitored by Food and Drug Lab in Guyana) to:
  - help fast-track salt importation and distribution (customs clearance not needed)
- Promotion of DEC-salt demand and use
  - Results of October 2003 brief Gallup-type poll indicated 85% of 690 people surveyed (54% of the study sample) were seeking DEC-salt
  - Results of December 2003 poll (more formal survey) of 1,871 people indicated 88% were seeking DEC-salt and 64% were using DEC-salt
- MDA program introduced in 2003

**Problems**

- DEC-salt supply interrupted by dramatic color change (from clean and white to distinctive blue):
  - everyone anxious about the situation, which took time to resolve (Dr. Trevor Milnor investigated the problem and will have results this April)
- Production capacity resumed until July when (due to plan modification or some other change) capacity diminished again
  - from July to December 2003 imported 480 tons of salt
- For 2004 only able to import fraction of estimated need (1,600 tons)
  - actual imports between April and July 2004: 370 tons
  - expect to be able to import 60 more tons by end of year (at current rate of production) for total of 430, or 26% of estimated need (shortfall of 1,170 tons)
- Main challenge is maintaining production and continuous salt supply in the country
Do not expect to meet full goal for this quarter with current production facilities

**Areas for improvement**

- Salt discoloration (problem has been corrected, although there are still some concerns)
- Monitoring mechanism
- DEC-salt production: No one in Guyana doing actual production (just packaging/shipping)
- DEC-salt supply (only one production facility [Jamaica]; distribution plan with Trinidad on hold):
  - outside salt production plant still not operating; not sure what is happening with Cuban supply
- Support for home-care and self-care strategies that are in place
- Human resources (insufficient to meet demand, especially in politically unstable areas)
- Building political alliances
- Creating and meeting demand for DEC-salt
- “Green guidelines” for hydrocele surgery (surgeons have had many questions that program staff are unable to answer)

**2005 Plan of Action**

- Maintain support for DEC-salt production and importation into Guyana:
  - supply producer on time so they can produce UNICEF’s stock of DEC-salt (which must be packaged in small, individual amounts rather than large quantities)
- Ensure salt gets packaged immediately on production (to minimize settling of DEC to bottom of bag)
- Support imports by UNICEF via provision of new sources to keep prices competitive
- Build demand for DEC-salt through revised and sustained social mobilization and social marketing (revise all messages and try to get ideas from people at Coca Cola and beer or cigarette companies on how to reach target markets effectively)
- Continue to learn about salt issues (a new tradition for health workers, who must learn as they go)
- Continue monitoring re: DEC-salt issues:
  - use and demand at community level
  - salt quality (by national Food and Drug Laboratory)
- Maintain morbidity management program (expand LF CARE program and institute new methods for hydrocele surgery)
- Expand and strengthen existing partnerships and build new alliances with businesses and other stakeholders
- Look into cooperation with malaria program and some other areas (e.g., vector control)
- Continue use of communication materials from GPELF (flip charts and generic material useful for nurses teaching patient self-care; good impact as visual aid)
- Promote use of bednets in targeted areas

**Lesson learned**

- People living with LF are a valuable contribution to program management mechanisms

**Challenges**

- Human and other resources stretched to limit (obtaining funds requires substantial investment, e.g., financing technical courses)
- Political divisions/unrest (2004) restricting program access in some high-risk communities (proliferation of guns; even police cannot go to some parts of some communities)
- Misconceptions about treatment (e.g., mothers in primary care facilities that think one can just put a little medication on the foot) creating need for further education/training
DISCUSSION

**Question.** What was the reason for the color change? And are there competitors with DEC-salt or can [the consumer] go for purchase of a non-DEC-salt, [which] can interfere with the program?

**Response.** In terms of competitors, yes, there are some in the market. It's a free market system. The government does not impose any restrictions on imports of regular [non-DEC] salt. For economic reasons, Guyana exports much of its salt. If it used its own salt it might have difficulties meeting export demand to certain markets, such as Europe and North America.

In terms of the color change: DEC-salt has other components, and one of them is a chemical known as YPS (Yellow Prussiate of Soda), which is also known as FFC or sodium ferrocyanide. This is added to salt in very low quantities (5 to 13 parts per million) to act as an anti-caking agent. Without this agent, pure salt will absorb water from the atmosphere and tends to solidify. DEC (which is actually composed of filtered diethylcarbamazine) is acidic, so when this agent is added to the salt [depending on the amount of moisture the salt absorbs], the acidity of the salt is increased, which causes the color to change (due to the YPS additive) from white to blue. To the homemaker, this can be shocking.

The de-caking compound is composed of sodium and potassium ferrocyanide. It is not a poison. It is European made, and FDA-approved, and it has been used before in Guyana. However, when the name of this additive was added to the labeling for the new packaging for DEC-salt (from large to smaller, individualized packets), there was a negative reaction to the name of the additive on the label (“ferrosana” or ferrocyanide). Guyana is particularly sensitive to any reference to cyanide because of the Jim Jones [mass suicide] incident and another gold mine incident. So this issue caused some backlash in the program.

**Question.** I think that we can expect no more color changes. The thing that we have to worry about is to make sure that we [encourage] the Cubans, for example, to comply with the purification process. They were given the DEC, and the equipment to fortify the salt, but we have yet to see [the product]. I think we must really learn that as interesting as these presentations are, we must also look at the problems, challenges, and difficulties that we have. What I think we need to work out is how to restore DEC-salt distribution in Guyana. The Cubans are still exporting their salt by the same company, which was supposed to be producing the DEC-salt; it is exporting its iodized-45% salt, so we need to re-address that. I would also like to see some process indicators. We've heard a lot about all of the people who were trained and we've managed to detect so many cases of lymphadema, but we need some measurement of that.

**Comment.** Some seem to be concluding that the main problem is the lack of production of DEC-salt. But I have discussed this issue often with producers, and they are saying the problem is with demand; they say the importers are not demanding the salt. So we need to fine-tune, discuss, and deconstruct these issues in order to understand exactly where the problems are.

**Response.** We only have one importer, one producer, which has maximized its production but still only fulfills 23% of the need. There are many people in Guyana looking for salt. So it's not really a matter of creating the demand, but sustaining it. You have to have a sufficient supply of the product before you can start saying, “Buy the salt” and “Use the salt.” Right now, with no other supply but the one company I mentioned, only 23% of the people will ever receive any amount of DEC-salt. If we want to supply 80%, we have to build to that capacity.
Introduction

Dr. Milord introduced her topic and explained that she would present progress on the LF program in Haiti as well as the context in which work had been conducted in Haiti during this last year (including the change in government). She noted that the political instability made it more difficult to maintain a good level of motivation among staff but that the program was “doing what needs be done” within that context and would continue the fight against LF.

Overview

In 2004, Haiti’s target population was 1,782,249 out of 220,690, excluding Gonaive inhabitants due to political conflict and natural disasters. The DEC-salt scheme, which includes salt iodization, is still in the process of being operationalized, but the plan is in place and a close partnership has been formed with UNICEF. A management model of public-private partnership is being tested with the participation of the community and the sellers. Political events and natural disasters have had a very negative effect on the program. The National Task Force has not met. Next year’s plan of action needs to be adjusted to fit the political and economic scenario. The training of trainers (TOT) course on management of lymphadema at the local level is on hold. Financial support is not secured; there is a need for action by GAELF.

Compliance has dropped in some communities (mostly urban areas), which is resulting in an increase of Mf prevalence.

Country profile

Haiti is located in the Caribbean Sea and shares an island with the Dominican Republic. It has a population of about 8 million and is divided into 9 administrative divisions (zones) comprising 135 communities (see Figure 1).
Program overview

The national LF program was first implemented at the end of 2001. National surveys were conducted throughout the country to map the extent of LF transmission. Those surveys revealed 33 communities with a very high level of LF transmission and 84 with a lower level of transmission (see Figure 2). In 2001, during preparation for national program implementation, one community was surveyed by a team from CDC and University of Notre Dame. In this community there was also a demonstration project implemented on MDA.

Target population

The target population in 2001 was 134,000. By 2002, it reached about 500,000 (see Figure 3), with reported coverage of 434,896 and survey coverage of 85% (425,000). In 2003 (see Figure 4), two communities were excluded (Bonaire and Lessere) because of social and political unrest that prohibited program access. The original target population was around 1 million, but with the exclusion of the two communities, the new target population was 900,000 people requiring treatment. About 715,000 or 76% were treated. In 2004 (see Figure 5), 11 communities were treated (those most in need). Access was not available to all of them because of the abovementioned political problems. In Leogane, treatment was available to those living in plains and mountain areas. Treatment in the plains areas covered 121,700 people, and in Camp Perrin, 42,702 were treated. The original target population for 2004 was 1.7 million, but some of the population was again excluded in Bonaire, because of political problems and the effects of hurricane damage, and in Chanseau, because of the influx of disaster victims.
Sentinel surveillance

In Leogane, four communities were treated and data was collected on antigenemia and Mf. After five years of treatment, ICT results for Leogane indicate prevalence is still high in some areas. In 2004, 4 new sites were added in Leogane to confirm previous results (Bire, Bonyotte, Guinebeau, and Rue de la Liberté). For Mf testing, results at four sentinel sites in Leogane indicated a downward trend in participation; people were not as willing to participate as they were the first year. At another sentinel site, in the community of Camp Perrin (added in 2004), 250 people were tested with ICT and Mf. A surprisingly high level of antigenemia was found, compared to the original mapping results, which had indicated a very low level. Further investigation of this outcome revealed all positive ICT cards (65) with no antibodies.

Social mobilization

The program followed its plan for social mobilization in 2004, and every interaction with the health department included some type of training for the people responsible for the disease program. Six training sessions were conducted this year at both the local and department level, including four training sessions for 78 local leaders who reached different parts of the population within the locality (health centers, schools, and the police force). For educators (337), the program conducted 13 training sessions, plus a class on LF (at the INHSAC; Institut Haïtien de Santé Communautaire [Haitian Institute of Community Health]. Some of the educators that were trained subsequently organized community meetings to inform the local population about the program. There were 23 training sessions for distributors (2,691). The program produced and distributed communication materials, including posters and leaflets. It also conducted classes on filariasis at INHSAC, so that when workers went to the field they already had contact with and were aware of program activities.

Disease management

For disease management (see Figures 6–8), two new clinics were planned in addition to those in Leogane and Milot. However, due to problems with access, as in Bonaire, the program could not work in the community. In Forite, there was a major problem with procuring resources, so a clinic was established in the community of Ogaye instead. This clinic had existing public health institutions and its disease management is based on a partnership between patient support groups and the lymphedema clinic.

Two approaches are being used: The clinic approach (within the health institute) and the community approach (via support groups). Three support groups have been organized that meet regularly and are sometimes the first point of contact with the patient population. They also serve as the link to refer patients that need medical attention to those that can provide the appropriate care.

In the Leogane clinic, 1,728 people were seen from September 2003 to September 2004 (299 new patients and 658 old patients), and several support groups were put in place in (15).

Figures 6-8. Case treatment

From 2001 to 2004, 350 hydrocele surgeries were conducted and several cases of chyluria were controlled. From September 2003 to September 2004, 99 surgeries were done and there were no complications.
Work continued at the Milot clinic, in the northern part of the country, where 200 patients were seen last year (51 new patients; 449 old patients). There were 537 home visits and 4 Hope Clubs were established in 4 communities (attended by 789 people).

**Treatment**

**DEC-salt**

DEC-salt is an important treatment strategy because it offers a shorter-term alternative to pill-based treatment and can be integrated with other health programs for dual public health benefit (e.g., salt iodization programs). After much effort, a national manufacturer has been contracted for production of the fortified salt. A fortified salt machine was received from UNICEF through the MoH. The technical part of the project will be conducted in two stages: the pilot phase (relatively short) and the extended phase. In the pilot phase, the fortified salt will be distributed among the target population to see if they wash the salt properly. In the extended phase, the strategy will be extended to the maximum number of [high-risk] communities, and perhaps the entire country, depending on the results of the test period.

Project management is based on a public-private partnership, with the private sector in charge of salt production and distribution and the public sector in charge of quality control, protection, and evaluation. Local participation in the DEC-salt program is encouraged because sometimes, through a local cooperative, a new salt supplier is identified. Participation of the sellers is also encouraged to keep them well informed and thus better able to convince people to buy the product. There is a good production contract for supply, and the project has strong cost feasibility. With good marketing the project is expected to generate the interest and participation of the physicians required for assistance. Current obstacles include reduced [national] salt supply, as a result of Hurricane Jeanne (see Figures 12-13, which has affected the entire national economy as well as the person contracted to produce the salt [who incurred substantial losses]). Therefore, the possibility of importing raw salt for fortification is now being explored in order to meet plans for distribution.

**Figures 12-13: Satellite photos illustrating damage from Hurricane Jeanne**
The National Task Force could not meet as regularly as it used to this year because of the above-mentioned domestic problems. The change of government resulted in subsequent changes in task force membership. New people have not yet been appointed to participate. The last meeting was held in January 2004 when the Plan of Action was presented. Characteristics of the planned disease clinic were defined as well as the community to be treated by the program’s public health partners. There are plans to reconstitute the National Task Force in 2005.

Social mobilization

Several communities are targeted for social mobilization activities in 2005, particularly metropolitan areas. Because so many urban areas will be treated, another social mobilization element was added in those areas: a mini TV documentary was produced to sensitize the population and a TV public service announcement is being prepared now. A new strategy is planned to train people at the peripheral level so that whenever the patient presents at a local health center, service providers at that level will be able to give preliminary treatment.

Conclusion

The program is efficient and has the capacity to reach country goals, but it is important to seek out new sources of support because current funding (the Gates Foundation) is ending.

DISCUSSION

Question. You mentioned that you distribute salt in two phases: a pilot project followed by extended distribution. How was the first stage targeted in terms of population and salt production? How long will you conduct the pilot project before you extend the distribution? Will you extend stage by stage, or do you hope to go directly from the pilot stage to national distribution?

Response. We plan to carry out the pilot study in three communities (about 300,000 people). After one year of distributing salt in the pilot communities, we plan to conduct an evaluation to see how well the salt treatment worked in the three communities. I don’t think we can extend the distribution to other types of communities because the local conditions may vary. We plan to continue what we have started with the pills; we also plan to introduce salt.

Question. As you scale up and increase coverage, how do you know (in terms of geographic coverage) that you will be treating the same communities, year after year? In other words, can you disaggregate the information that you have? If you could show us some histograms on how your coverage has increased over the years and we could have more access to the health impact or whatever parameters you are using, we could see how you can confirm that you are treating the same population, if that’s the case. Given the political situation and the natural disasters in your country, this might become an issue, because while you may be able to go back to some of the areas repeatedly, you may not be able to go back to all of the areas during some years because of the political conflicts. I was also concerned about the follow up. How have you followed up these cases? Is it through patient management and surgeries? Do you have a system in place that allows you to monitor and follow up lymphadema and hydrocele surgery cases?

Response. For disease monitoring, we conducted an evaluation of those that underwent surgery or that had gone to the clinic for lymphadema. Our results indicated those patients are being seen regularly, and we continue to follow the improvement of their conditions. That’s how we know that we have had six cases of hydrocele repair.

About the geographic coverage: We don’t have a specific system in place to confirm this, but we know that all communities have been treated each year until now. The political unrest has limited our access in only a few communities.

Question. Have you chosen to use 5% as the cut-off for identifying an area as endemic? Because on your map, only areas with prevalence of 5% and above seem to be considered transmission areas.
Response. No. The communities with low transmission are not considered transmission-free.

Question. But those low-transmission areas won’t be covered by MDA, right?

Response. Yes, they will.

Comment. Then I suggest that, if possible, you show all areas that you will actually cover in one category. Within that one category, if possible, you should classify areas that you want to cover by different methods separately.

Question. Regarding the increase in Mf in Leogane, you mentioned side effects. As I recall the side effects occurred during the first year, implying coverage would drop during the second year. But an increase occurs after the third MDA. So it would be helpful to see how this compared with the coverage for each year. Because this is a situation in which you have an increase, and one would like to understand why that increase occurred. It may be because of your coverage, but you would have to explain that by including the coverage levels.

Response. If I can remember correctly, part of the issue there was that in the city of Leogane, the sentinel site population grew tired of the annual testing. So in 2003 there were a lot of people included who had not actually participated in previous years. So there isn’t really a cohort in this case.

Question. So there are two different cohorts?

Response. They aren’t true cohorts in the sense that we don’t know for sure if the data represents the same population; we have the data, but they are aggregated at each different points, so may or may not represent people that have been represented in previous years.

Question. Are there any other services or activities in the areas where you had limited access (due to social and political problems)? If so, are any health workers working there, and is it possible to tap into these activities?

Response. Even though they have a network of community health workers, I think almost everything stopped. There was no way to go there; people were getting killed in this area.

Question. In view of the fact that people in Leogane are getting tired of being tested, resulting in different study cohorts, I was wondering about the general acceptance of the LF program. Have you had a chance to use any indicators to measure the acceptance level of the program as a whole?

Response. In general, it is accepted. We are able to go into these communities and implement preventative and disease management activities. However, the general view among the population is that these types of diseases are caused by spiritual causes. Despite that, when we go into a place to start an activity it is well received.
COSTA RICA
The filariasis program: An overview
Dr. José Luis Garcés, Director, LF Elimination Program

PowerPoint presentation

Overview
The problem of filariasis is limited to the city of Puerto Limón. The main vector has been identified as Culex quinquefasciatus; 70% of carriers presented 6 Mf per 20 mls of blood. The routine of W. bancrofti has been determined to be strictly nocturnal. Specialists of the Dominican Republic and the CDC/Atlanta reference lab validated the ICT cards used in this study. Samples from 344 schools from all districts were negative for antigenemia. Residual morbidity is restricted to older adults. The State is in charge of social security for all patient care. Health care is considered a basic human right in Costa Rica (according to the constitution) and is covered 90% by social security. Social security is obligatory, paid by everyone and covering everyone, including indigents.

Background
Costa Rica (see Figure 1) is the only country in Central America that has experienced filariasis transmission. Historically, the area of Puerto Limón (see Figure 2) has been the center of transmission. Studies from the 1940s (Bolsk 1946) examined different regions on the Atlantic and Pacific coasts and found most cases were concentrated in the areas of Cieneguita and the Roosevelt District (15% and 7.9% positive for Mf, respectively). Later studies of clinical cases in the Roosevelt District (Paez, and Lietzky) indicated 15.3% prevalence of Mf. Another study (Brenett 1962) of 119 samples in the Roosevelt District showed Mf prevalence of 17.6%. Presence of filariasis was also detected in Limón, but prevalence and the degree of its distribution were not known. In 1974, a plan was made to determine prevalence and vectors to determine the regularity of Mf and to identify and locate clinical cases. Several clinical presentations of filariasis occurred among school populations.

Social mobilization
When the study was first implemented, the population knew very little about LF, and the distribution was minimal. People held a variety of different conceptions about the disease, and most of the early education campaigns emphasized disease spread as the source of the problem. Only radio was used at that time, as television was not yet developed. Campaigns were also disseminated in the form of slide-shows displayed at movie theatres to raise awareness of filariasis and to request support from the population.
**Sentinel surveillance**

Sampling was first conducted at night, but this created problems concerning the receptivity of the population, so a population survey was added. A sketch of the city was then developed, and a random sample was selected. The survey sample that was made included all household members. Several different diagnosis methods were used, including direct sampling. Mf prevalence was highest in two districts: Roosevelt (known in that era as Yumectown, because of its large population of Jamaican origin), and Cristobal Colon (previously known as Cieneguita), with levels of 3.4% and 3.5%, respectively. The other areas (e.g., Santa Eduviges) had relatively low levels of Mf (2.6%). The most-affected age group was 10 to 19 years (with an average of 3.7% positivity). In terms of ethnic groups, a small statistical sample showed 4% positivity among Afro-Americans. More men than women were positive (2.5%). In terms of Mf frequency, 77 patients were positive for 2–5 Mf per 25 mls of blood (average of 3.5).

**Figure 3. Culex quinquefasciatus**

A study was made to measure the time period from 10pm to 2am with 17 vectors (see Figure 3) in a 24-hour control study to determine prevalence of Mf. Entomological studies were also done, which detected nearly 3,000 cases in adults (6% in the first and second stage, and 0.1% with infection). In rural work in other localities outside Limón, out of 13 localities studied, only 3 were positive for Mf. Studying those three cases required going to their origin in Limón. The urban work was done from 1974 until 1980, and the rural work was done during 1975–76.

In terms of case treatment, all positive cases (100%), plus 6 control cases, were treated for 12 days, and some were followed up. Cases that were again positive were treated again and followed up for 7 years. In 1987, monitoring of 727 samples by scientists produced some negative samples. In 1986, there was interest on the part of the health authorities to re-address the issue. Most infections were occurring among poor sanitary conditions, so an integral study with a project on mosquito control was conducted, based on survey data, to determine the amount of mosquitoes in the community.

**Environmental sanitation**

According to the local community, the mosquito was not the problem. They considered the real problem to be a lack of household sanitation and clean water supply — generally poor sanitary conditions exacerbated by frequent flooding as well as sewage problems. In response, a committee was formed (including the MoH, and Dr. Francisco Paniagua) to manage these environmental problems. A project on mosquito control in Cristobal Colon District was organized and qualifications were conducted within the community, with participation by the development company of the Atlantica slope, the University of Costa Rica, the MoH, PAHO, and the Municipality of the City of Puerto Limón. Part of the study included educational activities within the survey community, as well as neighboring communities. Blood samples were also taken to examine the condition of the larvae (see Figure 4).

**Figure 4. Mf prevalence in blood sample**

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A sanitation program was done in the areas surrounding the surveyed households, with active community participation. All areas that were flooded were cleaned to avoid the collection of stagnant water, and other measures were taken to produce clean conditions around peri-urban households. Marshy areas were paved, and designated recreational areas were installed. The lack of paved foundation was considered a big risk factor, so environmental conditions were further improved by building a coastal boulevard near the local population. In this way, the communities at risk of Mf and their surrounding areas were greatly improved over the past 10 years in terms of environmental sanitation.

**Antigenemia mapping**

The final stage of the project involved mapping for antigenemia (2002–2003). For this phase of the work (completed last year), districts were identified in Limón that had history of filaria transmission (see Figure 5). This was verified by technical consultation with the company SESEP from the Dominican Republic. Capacity transfer activities were also implemented for carrying out ICT. During that time, there was some uncertainty about the validity of the ICT cards. These included serum from the Dominican Republic through trials with Dr. Guillermo González, who collaborated in the trials as well in the validity testing. Other tests were also made, including verification of the reliability of the ICT cards. In addition, cross-sectional control studies sent ICT cards to the CDC/Atlanta reference laboratory for verification.

**Figure 5. Sample distribution by area**

Distribution of samples by residential area  
City of Puerto Limón, 2002-2003

**Survey among schoolchildren**

This study began with sampling among the school-age population, selecting mainly schools in districts that experienced filaria transmission. The sample size was selected (about 3,000) and work programs were determined. Nine schools were selected for the study. The results were all negative (out of 3,044 samples) for schools in the Cieneguita District. One school from the Limón metropolitan area (which included all Districts except Roosevelt) had a high Mf positivity rate, so it was moved to the downtown sample. There were some other localities included from the area of Limón, but all samples were negative. Interventions were carried out in the schools and [with the permission of the parents] the children participated in the study. All basic data were collected. Altogether, a distribution of 90 schools was used and [except for those in the city of Limón] all of the children’s households were reached (47 districts). Almost 400 samples were
taken in Cieneguita (a district that has tapeworm prevalence) and Roosevelt Districts. Most children from the selected schools came from those districts. In terms of sex, 47% were male and 52% were female. Everything that was previously negative was followed up in the affected groups.

**Morbidity survey**
The morbidity survey covered the EBAIS (Equipos Básicos Atención Integral de Salud), primary health care units within the MoH, which has been undergoing health reforms for the past six years. Its main activities are management, implementation, monitoring, and development of health activities, along with research and technical development. Health services are provided by the social security system in Costa Rica, which shares a common regime financed by the employer, the state, and the worker. The health network supported by social security (see Figure 6) includes three levels of health care (high-level; specialized [6], and regional [8]). Within this state system is a regional one, in the heart of the city of Limón, with 126 clinics distributed and assigned to them throughout the country. Cases that appear chronic are diverted to the services guaranteed by the state, within Costa Rica’s social security system. The 7 health regions cover 93 areas. These local areas are charged with providing basic health care services. In the city of Limón there is one regional hospital, one health area, and 14 primary care units.

Within this system, a brief survey was conducted using the primary health care units—those that actually surround the health centers in the different districts (14 in the city of Limón), plus interviews at Regional Hospital, which is based in the city of Limón. That morbidity survey was based on interviews with 20 key informants (9 suspected cases) who were selected because they lacked classic symptoms of filariasis. Information was also obtained via interviews at Tonifacio Hospital’s Dermatology Unit (which has two control cases of the disease) and Urology Unit (which does not have compatible cases of hydrocele with Mf, but whose cases respond to treatment nonetheless because they are the result of prostate or some other cause).
These studies found low prevalence in 1974 and 1983, low prevalence of Mf in patients, and a low amount of infected mosquito larvae, and more recent results indicated a low probability of sources of infection sufficient to maintain active transmission. Therefore, it is concluded that LF in the city of Limón is eliminated, due to the reasons described, and the country is beginning the process of certification of elimination of the disease. National health officials are interested in examining what other sensitive tests (e.g., xenomonitoring) might be necessary to complement these results.

Dr. García ended his presentation by expressing his appreciation to the Limón community, local institutions that participated in the study, health authorities of the Dominican Republic, the regional LF program, and the PAHO representatives in Costa Rica, for support of the project.

**DISCUSSION**

**Question.** It is easier to confirm the presence of infection or transmission than it is to confirm absence of transmission. So, please consider my questions within that context. I would like to challenge you on your assertion that there was no transmission in the entire country, because although what you presented was convincing in terms of the Limón area, evidence of a lack of transmission seems to be lacking regarding the rest of the country.

The second point is regarding the ICT survey that you did in all of Puerto Limón. I see that the sample was from schoolchildren and you had a lesser proportion among the blacks, while in the earlier study you had found that most of the infections were actually among blacks, so were there any considerations put into that aspect? You don’t want to miss any infections, so would like to look in places or age groups in communities where the chances of infections are higher.

**Response.** We are certain there is a lack of transmission in the country. This conclusion is based on:

- Very low prevalence of positive Mf for about 20 years
- Very low number of mosquitoes with infected larvae
- Great improvements in the health infrastructure in the capital city
- Healthier environmental conditions developed through public service campaigns
- The extension of health coverage to the entire population, and
- The results of a very sensitive antigenemia test.

In addition, the demand for LF clinical services at public hospitals is so low as to be nonexistent. Therefore we assert that it is evident that there is no filariasis transmission. Nevertheless, this subject has been discussed in previous meetings, and sensitive tests such as xenomonitoring have been proposed. We are open to the recommendations of experts who can help us carry this out.

**Comment.** The pattern of filariasis, onchocercosis, and other diseases in the Americas is very well defined, as opposed to what you find in India or in Africa, for example. The historic sites are well known and well characterized, so the issue is really to concentrate on those known sites. The implications of [not doing this] are exemplified in the 20 or more countries that eliminated LF two to three decades ago, where we now have to go back and re-do the whole process of verifying absence of transmission.
The filariasis program: An overview

Dr. Karmesh L.D. Sharma, Senior Epidemiologist, MoH

Overview

Small-scale studies of populations in selected areas conducted over the past two years have showed no positive LF cases. Other surveys done in north, central, and south Trinidad again reported no positive cases, and in 2000 there was again zero prevalence in selected areas in Trinidad. The last study, a large-scale nationwide survey (LF antigenemia card test) conducted in 2002-2003 among 2,597 school children 8-12 years also indicated no positive cases. In the most recent surveys, health institutions indicated they did not see any classic disease presentations. Nonetheless, follow-up of residual cases — people who present at public institutions with some sort of indication — is still a part of the program.

Surveillance

For survey purposes there are 8 administrative areas in Trinidad; 7 of them participated in the island-wide study, representing 95 health centers. Five ICT cards were given to each center (a total of 475) in mid-February 2004, which covered close to 40% of the target population (187), and they all came back negative. (Cards that were not completed correctly were discarded.) In Tobago, the study included 10 health centers, which received 5 cards each, and all 50 (100%) came back negative.

Morbidity

There was one positive case, detected in south Trinidad. The patient was sensitized to the program in the early stages of the disease and again at the institutional level, where residual cases were identified. The patient was referred for testing, subsequently tested positive, and was treated. He indicated that he was a Guyanese national and had lived in Trinidad for several months. He did not give much more information. Follow-up efforts to contact the patient later proved futile. Other than this one patient, research does not indicate the presence of LF in the country. This has been confirmed via conversations with nurses and doctors who have worked at public institutions in Trinidad & Tobago for more than 30 years and have not seen a classic presentation of LF.

Assessment of the problem

Migration

There are some concerns about the high level of international travelers to Trinidad from endemic countries such as Guyana and other areas in South America. This influx poses a continuing threat of infection, as illustrated in the case described above. Therefore, a comprehensive national policy for ongoing port surveillance is needed. There is concern about the fact that some countries are not participating in this type of surveillance (e.g., Jamaica and Barbados) because of the many travelers from those countries flying to or through Trinidad who might import infection.
**2005 Plan of Action**

Integration
An integrated approach to vector management and environmental sanitation, as well as LF transmission interruption and elimination, must be put in place.

Verification of LF elimination
Although the current national surveillance system did not detect the above-mentioned case, this does not indicate the need for urgent action or implementation of a continuous surveillance program. In terms of LF-positive sensitivity, the current system, and consequently Trinidad & Tobago, is considered to be ready for official verification of the elimination of filariasis.

**DISCUSSION**

**Question.** Can you expand on your thoughts regarding post-surveillance? If we as a region are going to take that seriously, what sort of surveillance should we implement to ensure filariasis is not introduced to places like Trinidad & Tobago?

**Response.** We would certainly want to increase post-surveillance. How we do that and how the politics of the moment may affect that process is another story, however, considering the position of LF in the national health agenda. Therefore, we wish to receive continued support from PAHO to conduct residual surveys in a few public institutions, and, of course, to continue the sentinel work across the general health sector in order to monitor any sort of indications.
Summary

By 2005, all countries should have completed mapping, including Brazil. A strong link has been determined between LF and poverty. The disability prevention component is lagging worldwide. Only 7% of the 1.2 billion at risk individuals have been reached by MDA (see Figure 1). Ensuring good-quality DEC, and the procurement of albendazole and ICT cards (at US$2.20 per card), are ongoing issues. Coverage of >65% of the eligible population at risk is required to interrupt transmission. Togo has had a successful experience in articulating malaria, anemia, and hookworm for piggybacking on the Global Fund to Fight HIV/AIDS, TB, and Malaria (GFATM). Criteria for stopping MDA must be established once a country has completed five treatment rounds (children under 5 years of age should be ICT-negative).

Figure 1. Endemic countries and MDA implementation
There are 83 endemic countries and 1.2 billion people at risk for LF (1 in every fifth person). This at-risk population around the world has been divided across regional program review groups. The largest group comprises the five countries of South Asia (India, Sri Lanka, Nepal, Bangladesh, and Mekong), with 41% of the global population at risk, followed by Africa. This doesn’t diminish the problem in the Americas, however; every region has its own problems that need to be addressed. If just one person has LF, global elimination has not been achieved. Within that context, every region is equally important.

Filariasis has an impact on poverty, and both poverty and development are linked to it. This affects the same distribution of population at risk, shown previously, by different regions (e.g., 41% of the global population is at risk for LF in Southeast Asia and 43% of the population living under $1 is also located in South Asia). So there is a definite link between LF and poverty.

The Global Programme has two basic components: primary prevention and secondary intervention. Primary intervention aims to interrupt transmission, so essentially primary prevention eliminates LF. Secondary intervention addresses the public health problems resulting from transmission (disability, etc). Because the public health problems stem from the same cause, future transmission and new infections must be prevented along with ensuring the provision of care for the disabled.

Mapping distribution

Mapping the distribution of LF among the different countries is the first step in the process, to identify where the problem is and where to implement the LF programs. Presently, out of all endemic countries, 50 completed mapping for LF distribution and the rest are in the process of completing it. About 18 countries, mostly in Africa, have yet to complete or even start their mapping process. The deadline for completion of mapping, according to the strategic plan, is the end of 2005. By the end of 2003, 36 countries were implementing MDA, either DEC-salt or ivermectin, and core administration strategies. Very few of these 36 countries are covering their entire population at risk, however. Most of them are covering only a proportion of it, as explained in many of the meeting presentations. Not everyone is eligible for MDA (those under 2 years, older people, and pregnant women must be excluded), and everyone cannot use MDA, so a smaller number are actually covered.

Treatment

In 2000, there was a plan for covering 15 million people. Out of this initial population, 2.2 million were targeted and 3 million actually received treatment. By 2001, the treatment objective of the strategy plan was reached. By 2003, there was a slight decrease, and the target was not achieved. In 2004, the target is 200 million. There are no numbers yet on how many have been treated in 2004. The South Asian region, which, as mentioned above, has the highest population at risk, also covers the most population at risk. The Americas, which have 1% of the global population at risk, covered 2% of 2003 total global coverage.

With the completion of the 2004 MDA, a drop in the presence of Mf is expected. The baseline survey must be done before the first round of the MDA. After the second or third round, a repeat of the Mf surveys at the same sentinel sites is recommended. Since the initial MDA, most countries have 51 to 99% less Mf. Some even had 100% elimination at their sentinel sites. A few, however, actually saw an increase in the Mf level (one in Africa, two in South Asia, and one in Mekong). Some countries are completing their fifth round of MDA and have survey results that suggest interruption of transmission. One country in the South Pacific is the first to complete five MDAs and post-MDA surveillance, and has found data that show a lack of infection.
To support the MDA, drugs were procured and made available by GPELF for distribution to the different national programs. More than 25 million albendazole tablets (see Figure 5) were supplied in 2003. This year there was a slight decrease because not all of the tablets were used.

Albendazole is donated from GSK, Inc. and the Malkan Company. The Programme is also trying to procure DEC for most countries, and now has access to some funding to support that. WHO is trying to pre-qualify a group of manufacturers with good practices as a source of procurement. Funding, however, is still an issue. Other sources must be sought. Some countries are procuring their own DEC, and some bilateral arrangements are making DEC available at the country level. Another challenge is the procurement of the ICT cards (see Figure 6), which cost US$2.20 per card.
**Self-care**

Many research studies have proven that the use of very simple measures can prevent the occurrence of acute lymphatic attacks (see Figure 7). In Madagascar, at the start of the project, 46% of the lymphadema patients of a study sample of 76 had at least one acute aerial attack in the previous month, but at the end of six months, it was reduced to 6%, with just a primary level intervention of self-care. Similar studies are going on in four or five countries, where the idea is to generate adequate evidence of how this intervention can be done at the community level, with very simple actions that can be sustained.

**Figure 7. Reduction in acute lymphadema attacks**

<table>
<thead>
<tr>
<th>Month</th>
<th>Acute Attacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mars</td>
<td>44.62%</td>
</tr>
<tr>
<td>Avril</td>
<td>33.85%</td>
</tr>
<tr>
<td>Mai</td>
<td>18.46%</td>
</tr>
<tr>
<td>Juin</td>
<td>6.35%</td>
</tr>
<tr>
<td>Juillet</td>
<td>6.45%</td>
</tr>
</tbody>
</table>

**Challenges**

While treating 100 million people annually is not an easy task, in terms of the goals of the Global Programme, it is only 7% of the total target population. And only 36 of the 83 endemic countries have begun MDA. Although considerable progress was made with the MDA, disability prevention was not very successful. Although the strategy is quite simple (training the patient to wash their legs or feet daily), it has proven difficult to get implemented.

There is variation among the different regions in terms of extent of the challenge and different types of approaches. Pacific Island countries, 30 of them endemic, are covering a total population at risk of 3 million. Sri Lanka is covering its entire population at risk (10 million) with MDA, but others within the South Asia region are covering much lower proportions. In the Mekong Area, Thailand is covering the entire population at risk.

Ensuring high coverage is an important issue; it’s not just a question of making the drug available. Achieving interruption of transmission, either through DEC-salt or DEC tablets, requires very high coverage. Studies reveal that with less than 65% coverage, interruption of transmission either won’t occur, or will require 12-13 grams of MDA, so the aim should be to achieve as high a coverage as possible. Another challenge is how to make safe hydrocele surgery available to all patients who need surgical interventions for hydrocele.
At the global level, there are many competing and important health issues (see Figure 8). Funding of LF program is not easily forthcoming. This has led to the idea of grouping LF with other diseases (the neglected disease concept) in order to advocate for a group of diseases more effectively than for a single disease elimination or control program.

WHO is trying to group together certain diseases that affect the same vulnerable populations, and increase poverty. It is also important to align programs with globally important issues, such as those declared in the Millennium Development Goals (MDG).

**DISCUSSION**

**Question.** Maybe you can expand a little more about the experience in China, which was done on a massive scale.

**Response.** When I said interruption of transmission by MDA, this meant two strategies: one was the use of single-dose annual administration of DEC and albendazole and the other option is the use of DEC-fortified salt. Studies that have proven the efficacy of DEC-fortified salt in interrupting transmission. The Chinese originally used selective chemotherapy (actually, mass screening and chemotherapy) but moved later on to MDA. And they did it two times, one treatment was given to every individual in the community as well as in some situations the DEC-fortified salt. Their criteria for using DEC-fortified salt were a community Mf rate above 5% and the existence of a mechanism to distribute DEC-salt in that area in a coordinated way.

**Question.** Can you explain a little more about how you would link to filariasis control under programs that have more funding? How would you see the linkages? Has it been done anywhere?

**Response.** One good example that I can give is Togo, where they have been able to link filariasis control into the Global Fund application. Global Fund gives funding for three diseases, but never to filariasis control. But the group in Togo said, “Look, if we did MDA, and everyone was reached, it would be a good opportunity to distribute bednets at the same time.” They also pointed out that the use of albendazole in the MDA would prevent anemia, which would fit into the malaria program. This is how it was presented in that application, which was successful in getting funding — combining part of the malaria campaign with the MDA campaign of filariasis. This opens some doors for countries that are applying for support from the Global Fund, but it’s a complicated procedure. Some use the country coordination mechanism (CCM). There’s also the integration and synergy between filarial MDA and health programs to prevent soil-transmitted germs. They might be funded from two different sources, but it can be done in a coordinated manner. So, for example, if you need two rounds of MDA for a deworming campaign for soil-transmitted pathogens, one of the rounds is covered by the LF campaign, and six months later you do another campaign for school children. So you reduce the cost of the whole package. This has been experimented with and actually implemented in some places. This is what we want to see more of, though these things are obviously a bit difficult to do.

**Question.** Regarding the calculation of risk, you speak of 1.2 billion. Is that the current estimated figure, and is that based on the historical data?

**Response.** No. That is the sum of individual countries' population at risk.

**Question.** Looking at the results that you are getting in for mid-term evaluation, it’s a little bit concerning. Based on the early data that you are receiving, what is the WHO view — will five rounds going to be enough for eliminating transmission?
Response. We don't have a view on five rounds, we have the guidelines stating there are certain criteria on stopping MDA and those criteria actually start after the five rounds. In other words, you can start applying the criteria before the five rounds, but the minimum number of rounds is five. The guidelines don't say that you must stop at five rounds. There are certain criteria to be met before deciding to stop MDA (e.g., less than 1% Mf, and evidence that no children born after the MDA have any infection, after applying at least five effective rounds with 65% or more coverage). But if you have low coverage, you are likely to end up needing more rounds to achieve the same interruption.
Introduction
Ms. Fahy explained that her usual role was representing the Liverpool School of Tropical Medicine — her primary aim in Suriname, but that since March, she was also representing the Secretariat of the Executive Group (EG) of the Global Alliance for the Elimination of Lymphatic Filariasis (GAELF). She noted that her presentation would include a brief overview of the Alliance and an update on the new structure put in place at the group’s most recent meeting in Cairo.

What is the Global Alliance?
The Global Alliance is a non-restricted partnership forum for the exchange of ideas and information, and for coordinating activities. Alliance membership includes Ministries of Health from endemic countries and members of public and private organizations, academia, and governmental bodies. Another priority of the Alliance is to compose a profile of the disease of lymphatic filariasis and gather support for the Global Programme to Eliminate LF (PELF), constituted by national programs in endemic countries, with WHO as Secretary. The goal is to eliminate LF by 2020.

Changes in structure: post-Cairo
Along with normal business, the Cairo meeting focused on the ICT report, which should be out by the end of 2004. There was also a business session, and meetings among the different member groups (NGOs and public- and private-sector organizations). Representatives were elected for the new Representative Contact Group (RCG) and the Executive Group (EG).

Executive Group
The EG is a management mechanism that strives to be as transparent as possible to inform all stakeholders of its activities and to maintain links across different groups. Its mission is to work in support of the Global Programme, to raise global funding for national and regional advocacy, and to conduct communications planning for the program.

Terms of Reference
The main terms of reference of the EG are to:
- Communicate (one of our highest priorities, to get the message out to everyone, including partners and outside stakeholders)
- Advocate for the Global Alliance
- Develop partnerships to support the program
- Engage and maintain communications with major donors and partners
- Prepare for GAELF’s next meeting (Fiji 2006)
- Create ad hoc task forces to do special tasks (e.g., a current ad hoc group is seeking HIPC [Heavily Indebted Poor Countries Initiative] funding).
Membership
EG and RCG
There are 6 members of the EG, and the Representative Contact Group (RCG) has 30 representatives. The latter group appoints the EG members at each Global Alliance meeting, designates the Chair, selects the President for the next Global Alliance meeting, and is responsible for communications and fundraising advocacy (mostly done electronically). RCG members include:

- Representatives for each region (2, except for Africa, which has 3)
- RPRG chairs
- NGOs (2)
- Representatives from academia (2)
- Country representatives

EG activities (post-Cairo)

- Four face-to-face meetings (Cairo, Atlanta [2], and Geneva)
- Five teleconferences
- Finalization of Action Plan developed by GAELF 3 (Cairo) Working Groups
- Communication plan to facilitate easy access to information on LF
  - Global Alliance newsletter to be published quarterly
  - GAELF website (www.filariasis.org) updated (e.g., donor database)
  - Quarterly information email to partners
- Fundraising and advocacy
  - Identification of funding gaps
  - Task force to access HIPC, Poverty Reduction Strategy Paper (PRSP), and debt-swap funds
  - Seed funding for in-country fund-raising with completion of in-country training global
  - Fundraising teams established (one in North America and one in Europe)
  - Global Fund application workshop planned to assist countries with submission of Global Fund applications.

North America
The North America fundraising team, led by Pam Wuichet (Carter Center, Atlanta), is carrying out a variety of activities, including:

- Organizing a committee of high-profile personalities to advocate for the program in the region
- Developing fundraising and advocacy materials (also available from Emory University LF website: www.filariasis.us)
- Overseeing consultancy on training for in-country fundraising
- Establishing/updating the donor database.

Europe
The new two-person European team (Tasha Boerner and Andrea Fischer, the former German Minister of Health) are working on:

- Building a donor database
- Approaching potential donors
Achievements

Achievements thus far in the area of fund-raising include:

- Plans by Ghana and Tanzania to fully fund their national LF budgets from HIPC/PRSP funds starting in 2005
- Global Fund to support the Togo MDA over the next five years, following successful proposal through CCMs
- Burkina Faso has raised US$100,000 in cash and in kind from local companies via in-country fundraising
- Standard Chartered Bank has agreed that approaches for support can be made by national LF programs to its African branches.

Discussion

Question. I think the real issue at this point is to know whether GAELF has been successful other than in Togo and Ghana; that is, have there been any significant fundraising activities, for example, to follow up on the Gates funding? We have seen funds dry up at the end of this year. So the countries are looking to us and saying, “This was a task force on resource mobilization, which was then dissolved, and you now have the Global Alliance, and the whole structure built around it.” We really need to know what the possibilities are for significant funding as of next year. How does it look?

Response. At present there are no significant funds available that we are aware of. The Gates Foundation is not interested in supporting a second round for LF because they want to change their focus and move to research funding, etc. So there is no firm commitment by the Gates Foundation. This is unfortunate.
Overview

This presentation describes the validation of tools, preliminary PCR (polymerase chain reaction), and monitoring results from Belém, Pará, Brazil. PCR is being conducted at Federal University in Alagoas (Universidad Federal do Alagoas). The manager of the program in Belém is Reinaldo Braun, whose team is collecting the samples. Those preliminary results are the current focus of the project, which involves studies such as ICT, along with xenomonitoring to support the elimination programs (monitoring antigen levels in the human population as well as the presence of infected vectors). The aim is to demonstrate interruption of transmission of \( W. \) bancrofti parasites as part of the two-pronged approach for elimination of LF. PCR is being evaluated with a protocol for detecting parasite DNA in mosquitoes using xenomonitoring in tandem for testing for Mf antigen prevalence. This work is being conducted in Belém, Pará (see Figure 1), in northern Brazil (an historical focal point of \( W. \) bancrofti filariasis) and was designed to monitor mosquito infection using the PCR technique.

Epidemiological surveys

Since 1951, epidemiological surveys (traditionally based on the identification of Mf on thick black films) were carried out in Belém (see Figure 2). Mf prevalence was 8% in the 1950s, but dropped to less than 1% by the 1990s. The Mf vector was diagnosed in 2001.
Blood surveys conducted from 2002 to 2004 found no Mf in the examination of more than 200,000 thick smears. In addition, 3000 ICT cards were negative for antigenemia in students (6 to 10 years). Entomological surveys were conducted during the same period, among 73 city sectors (12,556 households); 29,470 mosquitoes were dissected out of 89,939 collected, and all were negative.

**Xenomonitoring**

Fresh mosquito samples were collected in the morning at randomly chosen sites in urban sectors for xenomonitoring. LF has traditionally appeared in population areas with high social and environmental risks.

Mosquitoes identified in schools as *W. bancrofti* were collected and divided into two groups: one group was dissected by the Belém team and examined for the presence of *W. bancrofti* parasites; the second group was stored at ambient temperature and processed by PCR (see Figure 4). None of the dissected mosquitoes were infected with buarela larvae. Almost 50,000 mosquitoes need to be examined, collected over the past year up to September 2004. Before processing the mosquitoes by PCR (see Figure 4), the assay was standardized.

**PCR**

DNA was extracted from mosquitoes according to the Fazuki method (Fazuki et al, 2003). The mosquitoes were then quickly dried and boiled, and DNA was concentrated using centrifugation. The material was used for the PCR assay. The DNA extracted by this method was found suitable for PCR detection of buarela bancrofti infection in 10–50 mosquitoes. The PCR assay was performed using the previously described MB1 and MB2, primarily to detect specific DNA sequencing designated SSP1 (Song, 1996). So far, 10,950 mosquitoes from different Belém city sectors have been processed by PCR, and none were infected. LF is not sustained as an endemic disease, so Belém is close to being considered free of buarela transmissions.

Apparently, interruption of filariasis in Brazil resulted from intensive search and treatment of each individual found to be infected, plus improved environmental sanitation (see Figure 5–6) such as channel drainage, recovery of degraded areas, and resettlement of populations away from marshy areas.

**Figures 5–6. Environmental sanitation**
To complete the work, mosquitoes already collected and processed in Brazil will be compared to those obtained in ICT currently being carried out among the human population in the same areas. This type of work is also being conducted in Maceió, Alagoas, where, so far, about 2,000 mosquitoes were examined and none were positive. The same protocol will be used to study and verify interruption of transmission in two other historical LF sites in Brazil (Salvador and Maraño).

Dr. Rocha thanked FUNASA (the National Health Foundation [Fundação Nacional de Saúde]), the Belém research team, and the Secretary General of Belém for their collaboration, and PAHO and WHO for their financial support.

DISCUSSION

Comment. The intention in this case is to substitute the [parasitological] detection by the PCR; the Belém team will do the detection. We have not done this before because the reaction is being standardized (until now a standardization of the reaction did not exist). As each laboratory works in a different way, our respective methods had to be standardized. We do not actually intend to request certification yet; people are studying the case now, using these tools, in order to recommend if we should seek certification or not. So, we are not seeking certification of interruption. We are comparing data. The work is not yet concluded. This study is part of a larger study in Belém that is being conducted simultaneously at the same sites using ICT cards and antigenemia tests. These data have yet to be compared; nothing has been defined, and it has not been determined if one is better than the other. People do not know yet if the PCR really works best. Regarding potential vectors: we did a study in Maceió to eliminate the possibility of other vectors. In this application, the PCR would not work because the other mosquito is Aedes aegypti.
Entomological Successes
Dr. David Chadee, Chief Entomologist, MoH, Trinidad & Tobago

PowerPoint presentation

Trinidad & Tobago

Overview
The 2003 Program Manager's meeting in Brazil included a report on the completion of the ICT and xenomonitoring PCR work in Trinidad & Tobago (see Figure 1). At that time, no residual LF foci were found by xenomonitoring or by ICT methodology.

Figure 1. Trinidad & Tobago

GIS Mapping
The next method used was surveillance GIS mapping. This type of mapping essentially produces a temporal and spatial distribution pattern. Each red cross on the map (see Figure 2) represents more than 90 houses (indicating that over 1,000 houses were xenomonitored per county). The map was developed to demonstrate how effectively the spatial distribution of mosquito collection sites could be plotted. Another advantage of using GIS with the xenomonitoring PCR methodology is that city levels can be obtained, and positive sites can therefore be colored with the front codes, producing color coding for positives or negatives in the front areas.

Figure 2. GIS mapping

Before xenomonitoring is done, certain items must be put in place. For example, a set of strict criteria must be established to make the survey systematic. As explained in last year's meeting, an algorithm was developed to select households for xenomonitoring, which was accepted by almost 95% (see Table 1).

Univariate analysis (see Table 2) produced some positive correlations. Mf seem to prefer unpainted houses at ground level (the only place where positive cases were found) rather than elevated, with a medium number of household members (about 5 to 6), that have latrines or toilets as opposed to flushed systems, and that are made of cement (as opposed to other types of materials).

Table 1. Acceptability of xenomonitoring

<table>
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<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
<th>Total</th>
</tr>
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<tr>
<td>Opted out of study</td>
<td>31</td>
<td>4.41</td>
<td>5.54</td>
</tr>
<tr>
<td>Agreed to but not visited</td>
<td>12</td>
<td>1.71</td>
<td>2.14</td>
</tr>
<tr>
<td>Visited</td>
<td>517</td>
<td>73.51</td>
<td>92.32</td>
</tr>
<tr>
<td>Uninhabited/no home</td>
<td>143</td>
<td>20.34</td>
<td>-</td>
</tr>
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</table>
Table 2. Univariate analysis: Trinidad & Tobago

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>chi square</th>
<th>p value</th>
<th>significant</th>
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<td>0.0383</td>
<td>***</td>
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<td>.2134-15.0375</td>
<td>0.5095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior painted</td>
<td>0.4205</td>
<td>.1641-1.0385</td>
<td>2.8675</td>
<td>0.0904</td>
<td></td>
</tr>
<tr>
<td>Interior painted</td>
<td>0.3447</td>
<td>.1270-.8817</td>
<td>4.1812</td>
<td>0.0408</td>
<td>***</td>
</tr>
<tr>
<td>People in home</td>
<td>3.2412</td>
<td>1.4574-7.3861</td>
<td>7.5413</td>
<td>0.006</td>
<td>***</td>
</tr>
<tr>
<td>Toilet type</td>
<td>1.1751</td>
<td>.5390-2.5711</td>
<td>0.0467</td>
<td>0.0289</td>
<td>***</td>
</tr>
<tr>
<td>Cement home</td>
<td>2.5769</td>
<td>1.1533-5.8713</td>
<td>4.6495</td>
<td>0.031</td>
<td>***</td>
</tr>
<tr>
<td>Wood home</td>
<td>0.5902</td>
<td>.2570-1.3339</td>
<td>1.1738</td>
<td>0.2786</td>
<td></td>
</tr>
<tr>
<td>Poorer home</td>
<td>0.546</td>
<td>.2061-1.3928</td>
<td>1.1161</td>
<td>0.2908</td>
<td></td>
</tr>
<tr>
<td>Bednet used</td>
<td>0.603</td>
<td>.1129-2.7614</td>
<td>0.3803</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stilted homes were safer than ground level homes.

Having a door curtain as protective measure.

Having a window curtain as protective measure.

Exterior painted vs. unpainted.

Interior painted vs. unpainted.

Less than the median # people in home vs. more.

Improved vs. latrine toilet.

Cement homes vs. all other types.

Wood homes vs. all other types.

Poorer homes vs. all other types.

Using a bednet vs. not.
Dominican Republic

Pre and post-MDA in La Ciénaga

Pre-MDA was completed in 2002 (see Table 1), and post-MDA was completed in June-July 2004. Pre- and post-MDA mosquito infection levels can now be compared to demonstrate critical threshold levels, etc.

Site selection algorithm

The site selection algorithm developed in Trinidad & Tobago was utilized in the Dominican Republic with financial support from the CDC and the Emory University LF Support Centre. The analyzed data are presented in Table 2.

Table 1. Pre-MDA Results in La Ciénaga, Santo Domingo (2002)

<table>
<thead>
<tr>
<th>Methods</th>
<th>N°. exam.</th>
<th>N°. +</th>
<th>% +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood smear</td>
<td>560</td>
<td>32</td>
<td>5.7</td>
</tr>
<tr>
<td>Dissection of mosquitoes</td>
<td>1,650</td>
<td>10</td>
<td>0.6</td>
</tr>
<tr>
<td>ICT card</td>
<td>550</td>
<td>54</td>
<td>9.7</td>
</tr>
<tr>
<td>Xeno/PCR</td>
<td>80*</td>
<td>8</td>
<td>10.0</td>
</tr>
</tbody>
</table>

*pools of mosquitoes

Table 2. Univariate analysis: Dominican Republic

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds ratio</th>
<th>95% CI</th>
<th>chi square</th>
<th>p value</th>
<th>significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation of home</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door Curtains</td>
<td>2.3299</td>
<td>0.9353-6.0684</td>
<td>2.6467</td>
<td>0.0653</td>
<td></td>
</tr>
<tr>
<td>Window Curtains</td>
<td>0.9558</td>
<td>0.4337-2.1040</td>
<td>0.0072</td>
<td>0.9324</td>
<td></td>
</tr>
<tr>
<td>Exterior painted</td>
<td>0.5101</td>
<td>0.2321-1.1028</td>
<td>2.3867</td>
<td>0.1224</td>
<td></td>
</tr>
<tr>
<td>Interior painted</td>
<td>0.3232</td>
<td>0.1427-0.7121</td>
<td>7.1411</td>
<td>0.0076</td>
<td>***</td>
</tr>
<tr>
<td>People in home</td>
<td>0.9125</td>
<td>0.4433-1.8758</td>
<td>0.005</td>
<td>0.9435</td>
<td></td>
</tr>
<tr>
<td>Toilet type</td>
<td>0.5503</td>
<td>0.2315-1.2760</td>
<td>1.4503</td>
<td>0.0285</td>
<td>***</td>
</tr>
<tr>
<td>Cement home</td>
<td>0.9252</td>
<td>0.4476-1.9089</td>
<td>0.0009</td>
<td>0.9756</td>
<td></td>
</tr>
<tr>
<td>Wood home</td>
<td>3.2258</td>
<td>1.2414-9.0458</td>
<td>5.0076</td>
<td>0.0252</td>
<td>***</td>
</tr>
<tr>
<td>Poorer home</td>
<td>0.486</td>
<td>0.2196-1.0529</td>
<td>2.7645</td>
<td>0.0964</td>
<td></td>
</tr>
<tr>
<td>Bednet used</td>
<td>0.2901</td>
<td>0.1216-0.6632</td>
<td>7.8185</td>
<td>0.0052</td>
<td>***</td>
</tr>
</tbody>
</table>

Methods: Blood smear, Dissection of mosquitoes, ICT card, Xeno/PCR

No homes on stilts encountered during study
Having a door curtain as protective measure
Having a window curtain as protective measure
Exterior painted vs. unpainted
Interior painted vs. unpainted
Less than the median # people in home vs. more
Improved vs. latrine toilet
Cement homes vs. all other types
Wood homes vs. all other types
Poorer homes vs. all other types
Using a bednet vs. not
Guyana and Suriname

Table 1: LF vectors and their characteristics

<table>
<thead>
<tr>
<th>Family - Culicidae</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mosquito Species</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td><strong>GUYANA</strong></td>
</tr>
<tr>
<td>Culex quinquefasciatus (Say)</td>
</tr>
<tr>
<td>Anopheles aquasalis</td>
</tr>
<tr>
<td>Anopheles darlingi</td>
</tr>
<tr>
<td>Anopheles punctimacula Mansonia titillans</td>
</tr>
<tr>
<td><strong>SURINAME</strong></td>
</tr>
<tr>
<td>Culex quinquefasciatus</td>
</tr>
<tr>
<td>Anopheles aquasalis</td>
</tr>
<tr>
<td>Anopheles darlingi</td>
</tr>
</tbody>
</table>

Plan for 2005

- Completion of post-MDA xenomonitoring/PCR in the Dominican Republic
- Verification of elimination of LF in Trinidad & Tobago (to be granted)
- Maintenance and efficacy of LF surveillance programs in Trinidad & Tobago and other countries (e.g., Trinidad)
- Verification of elimination of LF in Suriname
- Initiation of effort to address entomological issues in Guyana
- Evaluation of xenomonitoring/PCR approach in other LF regions of the world
- Evaluation of Costa Rica using the xenomonitoring/PCR approach
- Search for continued funding for research and development
- Address threshold levels and sensitivity of evaluation tools
- Consider special needs of LF endemic countries (in terms of human resource, funding, logistics, collaboration, etc.)
HealthMapper in Brazil

Dr. Walter Ramalho, SVS, MoH, Brazil

PowerPoint presentation

Introduction

Chairman Vieira introduced Dr. Walter Ramalho’s presentation on HealthMapper software by explaining that the research group in Brazil had been experimenting with the use of HealthMapper in the LF program to adapt it for use in Brazil, working specifically with the datasets from Maceió and Belém. He then turned the meeting over to Dr. Ramalho.

Overview

HealthMapper (see Figure 1) is a surveillance and mapping application developed by WHO that aims to address critical surveillance information needs across infectious disease programs at national and global levels. As a user-friendly data management and mapping system customized specifically for public health users, HealthMapper technology is allowing programs for disease control to circumvent some long-standing impediments to sustainable and cost effective disease control.

The system facilitates data standardization, collection, and updating of data on epidemiology and on interventions and provides immediate visualization of data in the form of maps, tables and charts. HealthMapper also includes a database of core baseline geographic, demographic and health information, including the location of communities, health care and education facilities, accessibility by road, access to safe water and demography. The system is currently in operation to support a range of infectious diseases in over 60 countries in all regions of WHO. Key infectious disease programs currently using the system include the Malaria Program (“Roll Back Malaria”) Lymphatic Filariasis Elimination, Buruli Ulcer, Guinea worm Eradication, the Onchocerciasis Control Programme, and Polio Eradication.

One of the program main interfaces, Data Manager (see Figure 2), relates maps with databases and includes various health indicators.

![Figure 1. HealthMapper interface](image1)

![Figure 2. HealthMapper Data Manager](image2)
In Brazil, HealthMapper was initially installed according to the hierarchical levels used by the Ministry of Health at various local levels (see Figure 3). Current activities related to the use of HealthMapper in Brazil include:

- Definition of the hierarchical levels for each project site (MoH, Federal Government; Municipal Secretariat of Health, Local level [Maceió, Jaboatão, Belém])
- Revision of available cartographic databases and proposal of new possibilities of mapping for filariasis program
- Adaptation of available databases for Data Manager, allowing for automation of indicators
- Training of technicians for the operation of the software
- Promotion of the creation of a multidisciplinary group bringing together several areas of the municipal government and Federal University, coordinated by the Maceió geoprocessing nucleus.

**DISCUSSION**

**Comment.** There should be a function in version 4.1 that allows the LF-related database to be integrated with HealthMapper, so it follows the program’s initial assessment and mapping, identification of the IU, MDA, planning, etc.

**Response.** We are using 4.0 at present; the update for 4.1 has not been installed yet.

**Question.** When do you estimate it will be up and running in Maceió? Second, what are the chances of operationalizing it in the area of Yanomami, for oncosercois and malaria, for example, and some of the other diseases present in the area? Also, in the Amazon, how do you operationalize it for the populations moving back and forth (which don’t have clear-cut settlements)? It would be interesting to do this in the oncosercois program in the Amazon. How do you get to that level, for example, in Africa, with these communities? For oncosercois?

**Response.** I’m not sure whether this has been done; I haven’t seen it. But it is possible to do. GIS will map out any geographical area, so the whole course can be tracked, if desired. But you need a way to record where the populations have passed. You could use a small GPS machine to map out the areas that don’t follow the common patterns already in the GIS system.

**Question.** But they haven’t done it yet in Africa?

**Response.** I’m not aware of that.

**Question.** So we would have to develop it for the Yanomami area, which takes me to the question: Could we use satellite pictures to operationalize it in the Yanomami area?

**Response.** The satellite images are just to help visualize the data in HealthMapper, for cartographic databases.
Comment. I think HealthMapper has a lot of potential applications, especially for the local health units. Indicators can be created very quickly (with just two clicks), databases can be built automatically, and mapping can be done easily. Another advantage of HealthMapper is the ability to export the data into other more analytical software.

People are very enthusiastic about the HealthMapper program, especially in Maceió. They believe it will be useful for the essential health information systems in Brazil, such as mortality information systems, as the database is already compatible with the city blocks. The malaria group is also very enthusiastic about the program, especially the mapping and stratification features.
Dr. Ault opened the group discussion by reminding participants to reconfirm return flights to their home countries, noting that a bilingual PAHO secretary and other support staff were available for travel assistance.

Dr. Ault went on to discuss preparations for and the organization of the Group Presentations for the plenary session that afternoon (after the lunch break). He provided instructions to the three group Facilitators (Dr. Addis, Dr. Aguiar, and Dr. Biswas) as to where the three groups would meet, and explained that in addition to having a Facilitator, each group would assign a Chairman and a Rapporteur. The Facilitator would guide the discussion while the Chairman would function as timekeeper to ensure everyone got a fair chance to participate. The Rapporteur would be in charge of taking notes and would need to work with the Facilitator and perhaps the Chairman to prepare a brief summary of the important points and conclusions from the discussions for presentation at the afternoon session. He suggested the Group Presentations be prepared on a laptop (in PowerPoint) so that they could be shown to the group using a projector. He suggested each group have one person bring a laptop to facilitate note taking (by the Rapporteur) and to help prepare the presentations. He said his laptop was available for one group and Dr. Biswas’ for another, and that they needed one more. He explained the two interpreters (Herminia and Carol) would do one-on-one interpretation between Spanish, Portuguese, and English to ensure everyone’s full comprehension of the materials and urged those who were bilingual to volunteer their services as well.

He asked the program managers to allot time during the following coffee break and throughout the course of the day for individual discussions with him to prepare for the next day’s meeting, and urged them to submit their presentation documents as soon as possible that afternoon so that they could be photocopied for distribution at the meeting. He said it was essential that each program manager have the presentation documents in his/her hands by the end of the day in order to review and prepare them for presentation the next morning. He noted that adequate preparation time was particularly crucial for the group exercise because of what he referred to as the “cross-fertilization process” (in which one program manager might present materials for another program). He said he would distribute the draft RPRG agenda (the same one sent electronically by email prior to the meeting) at lunchtime and that although he planned to edit it slightly later that day that the sequence and basic format would not change. He also said he would make some announcements about other meeting topics at that time over the microphone.

He explained that three tables were set up for the three Group Discussions and that each table was numbered accordingly (1, 2, and 3). He noted that participants were welcome to switch to another group if they wished but that the Chairman and Rapporteur should follow their original group assignments and repertoires. He explained the lunchtime event would run from 12:30 to 2:00 pm, leaving 3 hours for group discussions. He said participants could leave if they finished early but noted that he expected the group work would require the entire three-hour time allotment.

Dr. Ault then announced that he had invited Dr. José Luis Garcés of Costa Rica as Chairman and Dr. Shamdeo Persaud of Guyana as Rapporteur for the afternoon sessions (Group Guidelines and Group Presentations). He added that Chairman Garcés would be the timekeeper for both sessions and urged participants to follow his instructions so that everyone could keep on schedule. Dr. Ault then listed the group session Facilitators (Dr. Addis, Dr. Aguiar, and Dr. Biswas) and turned the meeting over to Dr. Garcés, Chairman of the Group Guidelines discussion session.
Dr. Garcés reiterated that meeting interpreters were available and said the session would be prepared as a group activity. He explained the topics for group discussion would first be presented in outline form (see below) followed by the full presentations. He listed each topic and the corresponding Facilitator who would present it (Dr. Aquiar, “Advances in disease control efforts in the Americas”; Dr. Biswas, “Monitoring and evaluation for impact and surveillance: Issues before the national program managers”; and Dr. Addis, “Preparations and processes for the interruption of transmission”). He noted the importance of group discussion of the three topics, which he described as fundamental elements of the program. He then turned the meeting over to the Facilitators to deliver the outline of their group presentations.

Group 1: Preparations and Processes for the Interruption of LF Transmission

Facilitator: Dr. David Addiss, CDC/Atlanta

Dr. Addiss thanked the group and explained that he worked with many groups who primarily had met certain criteria for elimination of LF transmission and had expressed the need for clear guidelines for submitting their case to WHO for certification. He noted the issue of certifying or documenting the absence of transmission was relevant in at least three countries in the Americas and was thus an important one for the region. Dr. Addiss stressed the current information gap regarding clear procedures and criteria for countries to follow and noted the gap was blocking regional progress by failing to meet the needs of the countries. He added that the presentation would include recommendations on “next steps” in addition to describing the potential nature and format of guidelines for requesting certification of LF elimination. Some of the topics to be covered in Group 1 include:

- Integration of LF programs with other [principally] neglected disease programs (e.g., schistosomiasis, geohelminthiasis (GH), trachoma), Vitamin A distribution, etc.
- Surveillance of transmission: re-introduction of LF (issue of Suriname-Guyana border; Trinidad & Tobago) and general post-MDA
- Reintroduction/resurgence risks of LF, linked to the need for discussion of possibly establishing internal, regional [Americas] criteria for elimination of transmission (as being discussed in The Pacific Programme to Eliminate Lymphatic Filariasis [PacELF], and for China)
- Future funding sources (in light of the end of Gates funding to Haiti, Dominican Republic, and Guyana at the end of 2005)
- Operational research: review of current projects; possibility of mounting regional [Southern] LF support centers (e.g., at CPqAM/FIO CRUZ [Fundação Oswaldo Cruz] in Recife, Brazil); identification of 2-3 major research questions relevant to region
**Group 2: Advances in Disease Control Efforts in the Americas**

**Facilitator: Dr. Ana Maria Aguiar, Research Centre Aggeu Magalhães, FIOCRUZ /Recife**

During the work period tomorrow, questions and discussions will be raised about filarial morbidity and key points about work objectives for next year. One of them in relation to disease is that any country that poses this issue must have some idea of the dimension of its filarial morbidity: e.g., the size of the problem, if there is any existing program to identify patients and preferred treatment, and some criteria for evaluation. Another issue is whether or not the disease program is integrated with any other health programs, what the difficulties are, and if there is any centralized system to record morbidity data in each center, in each country. Some of the topics to be covered include the:

- Importance of baseline data in the implementation of LF programs (mass treatment, morbidity programs, etc.)
- Joint implementation of LF programs with other programs
- Implementation of social mobilization (health education) as a strategy to increase coverage of LF programs through mass treatment
- Definition of sentinel sites and protocols for data collection to ensure data quality in program evaluations
- Protocols for evaluation of both treatment effectiveness (mass and individual) and follow-up, with a view to preventing morbidity in the medium and long term
- Establishment of validation protocols for antigen tests in different regions as a supplement to LF programs

**Group 3: Monitoring and Evaluation for Impact and Surveillance: Issues before the National Program Managers**

**Facilitator: Dr. Gautam Biswas, WHO, Geneva**

Some of the topics to be covered in Group 3 include:

- Success of the entomology strategies used in Guyana, Suriname, and the Dominican Republic
- Verification of elimination certificates for Suriname, Trinidad & Tobago, Costa Rica, etc.
- Financing and viability of LF programs in operation
- Global funding situation globally and report from GAELF
- Validation of tools
Overview

This was a long and productive discussion focused on the fact that there is no clear procedure in place for verification of the elimination of LF transmission within a country. Possible criteria for verifying transmission interruption were discussed, as well as the possibility that some countries might request specific verification processes for particular foci. Some participants noted the need to define criteria that would allow programs to stop treatment. The group agreed current tools to indicate when elimination has occurred are adequate but that more sensitive tools may be developed in future that would enable countries to reassess LF interruption status.

Lessons learned

- Current WHO documents on the certification of LF elimination may be helpful, including:
  - Guidelines for Certifying LF elimination (result of WHO informal consultation on epidemiological approaches to LF elimination, initial assessment, and monitoring and certification; used as guidelines for other disease elimination programs)
  - Verification of Absence of Transmission for LF Elimination Programs Criteria, Strategies, and Procedures for Different Country Situations Draft 04/08/2004 (more useful than first document; may be closer to a final document)
- The need for certification of LF elimination has been strongly promoted by China, which has a long-standing program that has had considerable success.
- WHO would most likely not entertain country requests for certification procedures for specific LF foci.
- Rigorous evaluation of LF elimination certification criteria would have considerable operational costs.

Recommendations

- The WHO guidelines listed above should be accepted within the Americas as dossier criteria for presenting a case for interruption of LF transmission, along with minimum requirements ensuring an acceptable quality of information (e.g., sample size, distribution, frequency).
- Countries that wish to be classified as having interrupted LF transmission should submit this dossier to the RPRG for evaluation.
- Current criteria should remain flexible, at least until they have been fully defined.
- Countries should rely on current tools until better ones become available.
- Countries could continue to rely on the TAG guidelines (in the absence of more official criteria), but should prepare a dossier of information to support their claim of LF elimination, including:
  - detailed history of LF occurrence in the country
  - complete description of elimination activities that have been conducted
— all transmission and distribution studies conducted on LF in the country
— description of any past or current surveillance
— any other relevant information (e.g., if LF is a notifiable disease within the national health system, if cases are followed up to ensure that a cure occurred and that there are no associated cases, and if there is a register of chronic cases).

- The RPRG should further define the components of the process for validating interruption of LF transmission.
- The RPRG should review and evaluate the TAG guidelines and expand or elaborate them as needed.
- A statement should be issued declaring the importance of elimination verification and the research that is needed to validate the process.
- Brazil, which has apparently eliminated LF from certain regions, should request a consultation from RPRG to conduct a Situation Analysis and pass along any resulting recommendations (site visits, additional studies, etc.) to other countries.
- Support should be requested from the RPRG for approaching the Global Alliance for resource mobilization.

**Group 2: Advances in Disease Control Efforts in the Americas**

Facilitator: Ana Maria Aguiar
Participants: João Batista F. Vieira, Margaret Fraser, Francisco Paulino, Luis Valdes, Denise Milord, and Vely Jean-Francois

**Overview**

The final objective of the process of case detection and disease management is to prevent and minimize the suffering of the patients — physical as well as social and psychological. The group first focused on how to characterize the problem — determine its scope and magnitude (e.g., how many cases there are, where they occur or where they came from [e.g., the effect of migration], and the attributes of the individuals affected by the illness). Some basic questions arose, such as the traditional problem of how to determine the correct denominator. The consensus was more or less that it must be the population at risk, which presents another difficulty, that of determining the true dimensions of that population.

The group agreed that despite efforts to characterize and define the magnitude and distribution of cases, the true dimensions are often not known. However, determining the dimensions of the problem correctly is crucial for implementing an effective management and control program. A correct measurement is also necessary to adjust the existing service to meet the actual health care needs. Adding to this challenge is a problem common to all venues, in all countries of the region, which is that most cases are not reported at all, or are reported incorrectly or inadequately. In addition, to correctly define the extent of morbidity, all cases must be classified as suspected or confirmed. Therefore, the parameters for successfully defining the disease dimensions in a country must include physicians, epidemiologists, and laboratory staff. In some countries, infected and symptomatic cases are classified based on the Mf and on the antigenemia. Properly reporting of clinical cases (acute or chronic) is done based on symptoms as well as suggestive data or clearly positive epidemiology. The diagnosis is very difficult because, among others factors, only 10–15% of patients with lymphadema are positive for the Mf in the endemic areas. In areas that are not endemic, this ratio drops much more, so in the majority of cases it is difficult to diagnose the disease through laboratory testing. This makes it particularly difficult to detect non-classic cases with no classic symptoms. Therefore, for all cases, the group concluded the target must be physicians and epidemiologists.

For case detection, certain strategies are followed in some countries. In the Dominican Republic, for example, health agents use an algorithm. That test is sensitive enough to detect the majority of suspected cases and is specific enough to enable them to deflect some cases to more primary clinics. Another method
involves household surveys, which can be sensitized for the local situation. For example, in Maceió, a household survey has been sensitized to include all of the population in the focal point. It is also important in helping to develop visual aids with figures that show the various aspects of the illness. Another strategy is the use of key informants, as in Haiti. This method is also used in high-risk places such as clinics specialized in dermatology, urology, nephrology, or vascular health. The group noted that these initiatives must be made by the controlling health entity for public health programs.

**Recommendations**

- Assess community characteristics, such as knowledge about the illness
- Survey key informants on the knowledge and practices of the population
- Identify harmful practices so that they can be targeted by behavior change campaigns
- Ensure proper disease classification and management by clinics using protocols established by Dr. Gerusa Dreyer (Hospital das Clínicas, Recife, Brazil).
- Increase access to and distribution of adequate guidelines for proper disease management at each health service level (e.g., produce Portuguese and Spanish versions of the English manual)
- Give adequate consideration to local practices (e.g., alternative health care provided by local healers)
- Demystify the disease so that patients are less likely to experience rejection and alienation due to social stigma and more likely to receive good clinical care
- Disseminate simplified methods to serve a greater number of people
- Emphasize the need for early detection and treatment at the basic care level to the most complex, ensuring proper care is delivered at each stage of disease development
- Install demonstration units on proper hygiene and washing practices at clinics for less advantaged lymphadema patients
- Set up support groups and clubs for those living with the disease
- Decentralize to the maximum number of autonomous service units (except for cases requiring special assistance, such as those in advanced disease phases 6 and 7)
- Expand and fortify health care activities for patients, decentralizing and integrating with other programs as much as possible (e.g., foot care programs for those with diabetes could be applied to filariasis programs)
- Initiate coordinated actions to promote decentralization and integration
- Train health care workers providing assistance at all periods of the illness, particularly hydrocele surgery
- Increase and improve communication between countries to exchange information on experiences
- Emphasize technical aspects of disease detection and management
- Use technical meetings as an opportunity to discuss technical topics of disease management
- Assign one day of the annual meeting to discuss technical aspects of disease management
- Conduct teleconferences on disease management
- Establish a website as a permanent venue to discuss case definitions and proper assistance for each level of the illness
- Because patients are often intimidated by the disease pathology and are thus reluctant to report it (which limits the ability to identify those who suffer from it), increase access to consultation with nephrologists, urologists, and gynecologists (e.g., for ovarian cancer)
- Be aware of methods of self-medication within the population to better identify with and relate to the patient
- Design patient profiles at the grassroots level (e.g., for urogenital pathology), including their basic data and laboratory results (e.g., for chyluria)
- Spread knowledge about the effects of diet on chyluria
• Provide resources for a staff nutritionist to adapt the diet for chyluria patients in the region using local produce
• Produce a manual for patients on proper diets
• Provide documentation for the medication
• Enforce case notification, especially for lymphadema, so that the health system can help carry the patient load
• Provide an actual consultation to patients, preferably from within the network, rather than just referrals
• Produce more practical manuals
• Organize more training for those who actually attend the patients (especially for hydrocele surgery)
• Increase direct communication between staff about the care provided (e.g., if there was direct support from an official consultant)
• Decentralize distribution of health professionals who are able to provide surgery to patients

DISCUSSION

Question. Was your group able to decide deadlines and timelines as to when you want to do what? Because we seem to come out of these meetings with long wish lists of what we think we want to have (guidelines, training, etc.), and I think we have to look five years down the line and be more specific as to who, where, and when we will accomplish these tasks.

Response. No, we didn't set clear deadlines. Aspects related to cost were discussed because the disease program has a lot of potential to interact with general health services, but cost is obviously an issue. Studies are being done at Emory University by Dr. Annis, who has a group of friends and collaborators with extensive experience in evaluating program costs in specific countries. This topic was also discussed at a meeting in Liverpool about two years ago. There are other studies in this area (e.g., one on the quality of life of women with LF conducted by Dr. Polly Pearson of CDC/Atlanta in certain countries, including the Dominican Republic). A review of the economic studies at Emory University and those on the quality of life of patients who live with this problem would be useful.

Question. What further steps need to be taken? What is the ultimate objective for disability prevention, in terms of lymphadema management or hydrocele? I mention this because the approach seems a little too centralized, with patients having to come to the facility to get treatment. It was mentioned that special situations could warrant home assistance. I would have thought it would be the other way around; that most of the time one could do the disease management, the self-care, at peoples' homes, and only special circumstances would require referrals to the upper level for services. So it seems like a very different approach.

At the level of simple gauging measures, how important is it to do the classification or grading at the field level? It may be important at higher-level centers, where different courses of intervention may be required. But what if it is graded 1 to 4 (e.g., if you stay within the WHO criteria)?

Response. We discussed this exact question. On one hand, we don't know which patients will be unable to access program services. There are also services that have spontaneous demand and require a response. So you must have a base structure to respond to these cases. The reality of each country is different, some have specialized services for research and assistance, whereas others are unable to provide an independent response to identified case and require training disseminated by professionals.

Response. That's true. The issue is deciding the proportions of care that should be provided (i.e., local community support vs. referral to more sophisticated care) and ensuring that one service does not exclude the other. The patient has to have assistance in his/her own community, and for special cases of lymphadema, there has to be a clearly defined bridge, in a specified place, to more specialized care.
**Question.** In the majority of cases that we see for lymphedema, the attending technical assistants do not have a high level of technical experience. Therefore we would like to increase patient access — direct access—to services so that the patient seek treatment themselves, providing a referral center for cases that were too complex to manage.

**Response.** We must educate patients about proper hygiene. The main question about basic treatment for most patients is hygiene. Some patients have the information but do not have the proper conditions to carry it out (access to clean water and soap, etc.). Sometimes their home environments limit proper hygiene. These patients require help from the community, their extended family, or the health care infrastructure in order to practice effective self-care.

**Comment.** To summarize, there were two basic questions: whether to centralize or stay local in disseminating treatment for hydrocele surgery, and if a base structure should be created in the local community to assist patients with lymphedema.

**Group 3: Monitoring and Evaluation for Impact and Surveillance: Issues before the National Program Managers**

**Facilitator:** Gautam Biswas  
**Participants:** Guillermo González, Mary Janet Díaz Romero, John Ehrenberg, David Chadee, Shamdeo Persaud, Walter Ramalho

Dr. Persaud acknowledged and thanked group members and explained the task, which was to look at monitoring and epidemiological assessment. He said the discussion evoked many issues for program managers, because although a lot of work had been done, many problems were encountered, and there was thus a real need to communicate with each other to discuss issues and share experiences.

**Recommendations**
- Define method to adequately and accurately monitor drug coverage.
- Disseminate methodology (reference to forthcoming WHO monitoring guidelines).
- IU validation is an expensive process so is not always possible.
- When surveys and validation processes are not possible (due to cost or other limitations), use other reporting methods.
- Use the same IU as a validation unit.
- Determine methods for synthesizing information [e.g., WHO guidelines].
- Follow correct methodology in longitudinal assessments at sentinel sites.
- Select best sentinel sites and population in order to follow a cohort.
- Ensure quality of surveys.
- Conduct studies and develop tools for more sensitive, cost-effective methods (e.g., for detection of 1% Mf).
- Maintain ongoing background vigilance (e.g., for areas free of incidence).
- Provide guidance on when to stop MDA (allow 1–2 years for countries to learn the WHO guidelines, including applications for DEC-salt).
- Include disability prevention as part of monitoring component.
- Provide guidelines for the implementation level so countries can report on basic indicators (e.g., estimates of clinical cases, lymphedema, number of hydrocele surgeries conducted).
Operations

- Set up mechanisms for annual external evaluations, conducted periodically, of each country's program (some attempt is made to do that in the RPRG, but this needs to be done in more depth).
- Provide more information on other indicators (e.g., quality of life).
- Quantify intervention results using various indicators (e.g., "ensured less disability," "controlled viable disease," etc.) to convince policymakers of value of program at public level.
- Make better use of electronic tools such as database applications and presentation software (e.g., provide all countries with training in HealthMapper for use in their data analysis and presentations).
- Ensure there is some feedback mechanism for the countries (e.g., some kind of response to their reports as to what they doing right, or what was not completed properly).
- Share information and communicate regularly across country programs (i.e., meeting and discussing LF issues once a year is insufficient).
- Consider the need for sufficient resources during the planning process.

Discussion

Question. The topic of external evaluation has created some degree of sensitivity. Do you feel it's important to have requests for external evaluation come from the country, as opposed to being imposed by outside organizations?

Response. That issue wasn't raised; it was simply felt that in order to ensure the country is on the right track it would be good to have this kind of exercise. The type of mechanism and process required wasn't discussed in detail, or how to demonstrate achievements. The main point was that an evaluation or "consultancy" from an independent entity would be beneficial for the countries. Of course, this must be done in collaboration with the country.

Comments: If we establish such a system, countries would have more responsibility. At present, when one of the programs isn't running well, it has been difficult to see, from the inside, where the problems lie, with any objectivity. The proposed system would provide an opportunity to get outside opinions on whether or not guidelines have been followed and if systems have met their goals for the year. Countries would have a mechanism to request help and cooperation and to receive constructive criticism. M&E could be included in the technical cooperation, with experts visiting the country as part of the national monitoring process, while countries could provide their input on monitoring at the local level, producing a sort of technical exchange that would result in recommendations to help advance the country programs, based on the indicator output.

Response. We may not have the mechanisms to ensure the incorporation of these suggestions into the body of the meeting agenda, although it is a valid point.

Comment. We need a process that would guarantee some type of quality control.

Comment. We shouldn't consider all countries as endemic, because there are cases that are very localized. In Brazil, for example, the maps show entire areas marked as endemic, when they really should indicate three focal points. This has politically strategic implications. I think that in the certification of elimination phase, if this phase ever arrives, we will view it within the total national context. Until it gets to this phase, it will remain a formal process of certification of elimination, so we should consider it more within the context of local focal points and not so much in a national context. As Dr. Frietas said, Brazil could consider itself endemic, because the potential for transmission throughout the country does exist (in terms of ambient conditions, vectors, etc.).

But that doesn't mean LF will spread throughout the country. To justify an exercise at the national level, such as a national-level evaluation, with all of the operational requirements that implies, we must have very good evidence. A national evaluation carries costs in terms of human resources that for the moment
should be used for primary health programs. So the program should be very careful in emitting this type of recommendation. Of course, the argument is still valid that presenting a dossier of documents ensures getting the highest incidence level possible and the most complete documentation, which in turn supports the argument that program should direct the bulk of their resources to traditional focal points.
Integration of LF Elimination with other Disease Control/Elimination Efforts

Overview

After the first MDA in Leogane, prevalence of asperus tricurus in hookworm had significantly decreased, so the original target population was not specifically targeted in the second round of MDA (see Figure 1). In fact, although there is an interest in looking at current resistance to albendazole in hookworm, the team is having a hard time finding enough people who are still infected to do the study. The LF program had an impact on this drop in prevalence. The LF program also had community benefits: health care benefits and increased awareness and mobilization for other health activities (although these effects have yet to be measured per se). Vector control, another benefit of the LF program, is certainly of great interest to communities, so that is another community benefit from the LF program.

Figure 1. Post-MDA intestinal helminth prevalence: Leogane, Haiti

Recent activities have begun to analyze different disease programs that might be combined in some way (e.g., mutually targeted IUs, populations, procedures). Matrices have been developed to provide a view of how to integrate things in geographical areas. Figure 2 shows different geographic areas, populations, and procedures (by disease). Figure 3 provides a matrix for analyzing the geographical distribution of different at-risk populations. There are different action triggers (e.g., in LF, MDA begins at 1%, whereas for oncosercosis it requires 40% activity). Many of these programs have donated drugs (although not all can), and the strategies are different. Some are school-based and some are community-based. Coverage targets and operational programs also differ in terms of the number of countries engaged in this.
Figure 2. Geographic areas, populations, and procedures (by disease)

### Geographic Areas, Populations in Need of Intervention, and Procedures Used to Identify Them, By Disease

<table>
<thead>
<tr>
<th>Disease</th>
<th>Implement. Unit</th>
<th>Population</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphatic filariasis</td>
<td>District</td>
<td>School children</td>
<td>Blood test (ICT)</td>
</tr>
<tr>
<td>Onchocerciasis</td>
<td>Village</td>
<td>Adults</td>
<td>Exam for nodules</td>
</tr>
<tr>
<td>Trachoma</td>
<td>District/Community</td>
<td>Children 1-9 y</td>
<td>Eye exam</td>
</tr>
<tr>
<td>Vit. A deficiency</td>
<td>District</td>
<td>Pre-school children</td>
<td>Surveillance data</td>
</tr>
<tr>
<td>Schistosoma haematobium</td>
<td>District or Community</td>
<td>School children</td>
<td>Urine exam</td>
</tr>
<tr>
<td>Soil-transmitted helminth infections, S. mansoni</td>
<td>District or Community</td>
<td>School children</td>
<td>Stool exam</td>
</tr>
<tr>
<td>Malaria</td>
<td>District</td>
<td>Children (&lt;5)</td>
<td>Surveillance data</td>
</tr>
</tbody>
</table>

Figure 3. Geographic distribution of at-risk populations

<table>
<thead>
<tr>
<th>Program</th>
<th>Geographic Distribution of Infection</th>
<th>At Risk Population</th>
<th>Trigger for Action (Geog. Unit)</th>
<th>Donated Drug?</th>
<th>Distribution Strategy</th>
<th>Coverage Target</th>
<th>Operational Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphatic Filariasis</td>
<td>80 countries</td>
<td>1 billion</td>
<td>1% antigen prevalence (district)</td>
<td>Albenzaolate and Mectizan</td>
<td>Community-based mass treatment</td>
<td>80%</td>
<td>38 countries 130 million treated (2003)</td>
</tr>
<tr>
<td>African Program for Oncho Control (APOC)</td>
<td>18 countries</td>
<td>115 million</td>
<td>40% prevalence (village)</td>
<td>Mectizan</td>
<td>Community-based mass treatment</td>
<td>65%</td>
<td>16 countries 40 million treated (2003)</td>
</tr>
<tr>
<td>Schisto Control Initiative</td>
<td>76 countries</td>
<td>650 million</td>
<td>20-50% prevalence (district) / &gt;50% prev.</td>
<td>No</td>
<td>School-based / Community-treatment</td>
<td>75% school children at risk</td>
<td>6 countries 1.8 million treated (2004)</td>
</tr>
<tr>
<td>International Trachoma Initiative</td>
<td>&gt; 46 countries</td>
<td>600 million</td>
<td>&lt;10% TF (district) / &gt;10% TF 1-9 year old children</td>
<td>Zithromax</td>
<td>Targeted / Community-based mass treatment</td>
<td>80%</td>
<td>11 countries 5.1 million treated (2003)</td>
</tr>
<tr>
<td>Partnership for Parasite Control</td>
<td>&gt;80 countries</td>
<td>2 billion</td>
<td>&gt;50% prevalence</td>
<td>No</td>
<td>School-based treatment</td>
<td>75% at risk sch. children</td>
<td>Many countries</td>
</tr>
<tr>
<td>Malaria (Global Fund)</td>
<td>&gt;80 countries</td>
<td>1 billion</td>
<td>N/A</td>
<td>No</td>
<td>Center or community-based</td>
<td>Inc. by 60% children women</td>
<td>Many countries</td>
</tr>
<tr>
<td>Vitamin A Global Initiative</td>
<td>118 countries</td>
<td>140 million</td>
<td>Under 5 mortality &gt; 70</td>
<td>UNICEF-supplied</td>
<td>Community or center-based</td>
<td>80% coverage</td>
<td>Many countries</td>
</tr>
</tbody>
</table>

76
Surprisingly, LF programs have parallels with trachoma (see Figure 4) and other diseases. Although trachoma is an eye disease and LF is generally a disease of the legs or genitals, treatment for both diseases includes surgery (eye surgery and hydrocele surgery, respectively). There is drug administration for both programs at the community level. Treatment programs include washing the feet, whereas people with trachoma must wash their faces. In diarrhea programs, patients must learn to wash their hands. The programs also share an environmental component of improved sanitation (recommended for trachoma elimination) and vector control. And several of the programs use sanitation and environmental changes to try to eliminate transmission.

![Figure 4. LF–trachoma parallels](image)

**Points of Possible Integration: LF and Trachoma Elimination Programs**

<table>
<thead>
<tr>
<th>Component</th>
<th>Trachoma</th>
<th>Lymphatic Filariasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>Eyelids</td>
<td>Hydrocele</td>
</tr>
<tr>
<td>Drugs - MDA</td>
<td>Azithromycin</td>
<td>DEC, albendazole</td>
</tr>
<tr>
<td>Hygiene</td>
<td>Face</td>
<td>Feets, legs</td>
</tr>
<tr>
<td>Environmental</td>
<td>Sanitation</td>
<td>Vector control</td>
</tr>
</tbody>
</table>

**Why integrate?**

A main reason for integration is the recent shift in funding practices and the resulting drop in LF program support. During the late 1990s to about 2002, funding from Gates Foundation, for example, was targeted to support specific programs. This type of funding led to a “re-verticalization” of public health, with an increase in disease-specific control and elimination programs. Due to the current shift away from the funding of specific programs, however, there is a need for recognition of common ground among disease programs, especially for the so-called “neglected diseases.” Integration can help increase efficiency and reduce costs. It can also help to strengthen national health systems.

**Summary**

Integration is an issue that must be addressed. It’s a hot funding issue (e.g., Togo’s use of global funds to help support their filariasis program). Creative thinking is required to determine what the opportunities are. There are many examples of integration with other programs already, including some described today. Documenting those examples would help move the program forward toward integration with other programs in a more formal way.
Neglected Diseases: New Approaches to Reshaping the Determinants of Health and Sustainable Development

Dr. John Ehrenberg, PAHO/WHO, Washington, DC

PowerPoint presentation

Overview

The purpose of this paper is to identify new opportunities to address neglected diseases, improve community health, and promote sustainable development in neglected populations by highlighting examples of key risk and protective factors (multi-factoral determinants) of neglected diseases that can be managed through multi-disease-based, integrated, inter-programmatic (IP) approaches.

Socio-economic development is a long-term solution to problems that demand immediate actions. The challenge lies in finding short- to medium-term solutions to neglected diseases that will ultimately contribute to the socio-economic development of neglected population groups and countries. Neglected disease treatments among neglected populations should be used as a possible entry point, because neglected diseases are causing more poverty. Investing in their prevention, control, and elimination would be considered an investment in MDG by ultimately contributing to sustainable development among neglected populations. This will require re-conceptualizing the vertical public health mentality within international organizations and regions as a more horizontal one in order to increase cross-pollination of ideas and integrated responses, increased communication across different sectors, and promotion from within —“selling” the integration concept internally in order to promote it externally.

Figure 1. Neglected disease prevalence worldwide (2000)

Global magnitude

While the individual burden of neglected diseases may be negligible, their combined burden is great (see Figure 1). Despite political commitment by many governments in the region (e.g., resolutions on LF and leishmaniasis), neglected diseases remain “neglected” because:
There is limited knowledge about them (mainly because they are not notifiable)
They are not perceived as a public health problem (even though they are on the MoH agendas) because they do not lead to epidemiological emergencies
Developing drugs and tools to fight them is difficult because they are not associated with lucrative markets (primarily by the private sector).

**High-risk groups**
Groups at high risk of contracting neglected diseases include:

- Low-income populations
- Schoolchildren
- Indigenous populations
- Afro-Americans and other minorities
- Women of child-bearing age
- Occupational groups (e.g., coffee pickers in Guatemala)

**Risk factors**
Risk factors are both intrinsic (biological) and extrinsic. The former include genetics (epidemiological makeup of the individual), which can only be addressed by advances in medical research and technological development (e.g., tools that tend to target lucrative markets in order to create drug development incentives). The latter include socioeconomic and environmental factors, vector ecology, and behavioral and various human activities. Frameworks for proposals to combat these diseases must combine all of these elements.

**Potential entry points**
Country focal points deal with a wide range of public health issues (communicable and non-communicable diseases, veterinary disease, public health diseases, Expanded Program on Immunization [EPI], etc.), which provide a variety of possible entry points for IP work. PWRs (PAHO/WHO Representatives) regularly participate in at least one if not more interagency and donor forums at the country level. In addition, almost all of the poorest countries have CCMs to mobilize resources locally. These focal points should be used as possible entry points for integrating LF programming with neglected diseases.

**Disease programs for integration**
Neglected disease programs with a potential for integration with LF programs include:

- Xonosis
- Leishmaniasis
- Other disease for which countries have expressed need for help
- Leprosy
- Various fevers, including those classified as “re-emerging diseases”

**PAHO assets for integration**
PAHO’s key assets for helping program integration include:

- Wide presence in the region securing (in principle) a continuous supply of technical cooperation and advocacy potential
- Country focal points deal with a wide range of public health issues (CD, neglected CD, Veterinary Public Health, EPI) that could provide IP opportunities
• PWRs regularly participate in inter-agency and donors forum
• TCA mechanisms in place that are conducive to inter-country cooperation
• Access to CCSs as mechanism to identify IP opportunities focusing on key public health and development issues.
• Inter-ministerial Meeting on Agriculture and Health (RIMSA; Reunion InterMinisterial de Salud y Agricultura) with MoHs and Ministries of Agriculture (MoAs)

Current actions

• Requesting formal [external] consultations/brainstorming sessions with external entities to get feedback on how this could best be articulated and promoted
• Articulating de-worming with LF approach (Maceió) in terms of infrastructure and community association
• Conducting community mobilizations efforts (e.g., control program developed in leishmaniasis and a number of other diseases)
• Taking advantage of RIMSA (biennial meetings on common agendas, usually focused on food safety and export-import related issues) as opportunity to get full attention of all MoHs and MoAs, one of the wealthiest sectors in region (e.g., neglected diseases main topic for May 2005 meeting)
• Working toward multi-disease-based approach in Maceió that could link to neglected disease agenda
• Collecting information on cost-benefit
• Articulating synergies combining burden of diseases

Achievements

• Proposal (in progress)
• Informal consultation with other sectors and stakeholders
• Mobilization of resources
• Pilot interventions (in progress): multi-disease-based interventions in Brazil, Haiti, Belize, Honduras; proposals ready for Nicaragua, Bolivia, Dominican Republic, Suriname):
  — Haiti (raised US$400,000 to support public health interventions
  — Belize (got funding)
  — Honduras (initiative combined with chagas and World Food Program)
  — 4+ proposals prepared and submitted for the four endemic countries to look for entry point in multi-disease-based approach
• Literature review on operational approach to IP collaboration (how to synergize and articulate the issues)
• Extensive situation analysis (18+ pages of 100+ references)
• Working paper to try to sell the concept internally
  — addresses neglected diseases to improve community health and promote integrated development approaches
  — provides examples of high risk and protected factors (multifaceted nature of the diseases) and how these factors can be managed via a multi-disease, integrated or inter programmatic approach
• Development of physician’s paper on internal [WHO/PAHO] strategies to develop joint position strategy
• “Productive municipalities” initiative by the food safety and xenosis groups (PAHO)
• Integrated community-based development by health promotion group (PAHO)
• Integrated vector management initiative (WHO)
Challenges

- Accommodating increasing requests for technical cooperation from other countries for other disease programs (e.g., leishmaniasis)
- Lack of financial resources
- Tremendous shift by international donors to a few diseases that are considered serious public health problems (e.g., TB and malaria).

Recommendations

- Think outside the box to determine flagship strategy or program to synergize programs on neglected disease.
- Define clear role of partners to maximize synergies
- Develop plan for involving external resources based on pilot interventions.
- Engage in effective resource mobilization strategy.
- Assess assets of each partner to better synergize efforts.
- Make better use of technical cooperation agreements (TCAs) that promote inter-country cooperation (e.g., Brazil and Bolivia; Panama and Guatemala).
- Build strong agenda to try to strengthen research and general capabilities (transfer of technology from better developed countries to poor countries).
- Take better advantage of the established mechanism of technical cooperation.
- Participate in CCS (country cooperation strategy), a broad sector analysis stated in the poorest countries of the region (Haiti, Honduras, Guyana and Bolivia).
- Use MDGs and poverty reduction programs (integrated analysis of principal health and other problems in these countries) to identify entry points for an inter-programmatic approach.

Future directions

Sub-packages for integrated disease management need to be tailored according to situations in the various sub-regions. In the Andean countries, for example, fisoliasis, ostiocarsis, and perdidiamiasis are key problems. Chagas is a problem in some of the other regions. Osteorcasis is also very focalized. Jehelmes are much more ubiquitous, along with some of the other diseases. At the same time, the use of novel technical cooperation strategies, under a sub-regional-type model, is being explored. Finally, a flagship strategy must be sought, specific to LF program and the Americas region, in accordance and collaboration with WHO in the effective diseases agenda.
**Wrap Up, Highlights, and Perspectives**

Dr. David Addiss, Epidemiologist, CDC/Atlanta  
Dr. Leslie Resida, Director, Bureau of Public Health/MoH, Suriname

<table>
<thead>
<tr>
<th>Growth and development of Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 1st meeting – 2000</td>
</tr>
<tr>
<td>• Target for elimination – 2020</td>
</tr>
<tr>
<td>• <strong>Program is ~16 years old in LF years</strong></td>
</tr>
<tr>
<td>• Testing our limits</td>
</tr>
<tr>
<td>• Still require nurturing (and discipline)</td>
</tr>
<tr>
<td>• Still interested and committed</td>
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<table>
<thead>
<tr>
<th>Emerging features</th>
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</thead>
<tbody>
<tr>
<td>• Mutual understanding</td>
</tr>
<tr>
<td>• Increased collaboration</td>
</tr>
<tr>
<td>• Respect for differences</td>
</tr>
<tr>
<td>• Increased sophistication</td>
</tr>
<tr>
<td>o health systems</td>
</tr>
<tr>
<td>o monitoring systems</td>
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<table>
<thead>
<tr>
<th>Characteristics of region</th>
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</thead>
<tbody>
<tr>
<td><strong>Diversity</strong></td>
</tr>
<tr>
<td>• History and approaches of LF investigation and control</td>
</tr>
<tr>
<td>• Scientific strength</td>
</tr>
<tr>
<td>o epidemiological definition</td>
</tr>
<tr>
<td>• Political instability</td>
</tr>
<tr>
<td>• Health infrastructures</td>
</tr>
</tbody>
</table>
**ICT card surveys completed**

**Xenomonitoring**
- Also an issue for several foci in Brazil
- Role of RPRG
- Intention to submit dossiers to WHO
- What surveillance is needed?

**Request for urgent guidance from TAG**
- Improve disability prevention / disease control services
- Magnitude of the problem unclear

**Diagnostic algorithm (Dominican Republic)**
- Expand case detection and treatment
- Integration with other health services

**BRAZIL\nPriorities**
- Expand MDA (“scale up” / increase geographic coverage)
- Verify absence of *W. bancrofti* transmission in some areas
- Improve disability prevention and disease control services within health system

**Major themes**
- All four endemic countries
- Resources needed
- M&E important
- Verification of the absence of *W. bancrofti* transmission (three countries “eligible”)
Applying interventions within existing (decentralizing) systems
Training and awareness of health workers
Opportunity for technical exchanges

How does LF elimination fit into (and strengthen) the health system?
- Decentralization in the Dominican Republic
- Morbidity care/disability prevention

Operational research
- Entomologic evaluation of *W. bancrofti* transmission

Updates
- WHO (Global Programme)
- GAELF
- PAHO (Neglected Disease Initiative)
- HealthMapper

Challenges and new directions
Increased communication
- Program managers and staff, RPRG, PAHO, Collaborating Center, university-based investigators
- Technical meetings on morbidity
- Web-based discussion groups
- Technical consultation

Improved monitoring
- Process and impact measures
- Surveillance and epidemiological follow-up
- New indicators

New sources of funding
- To replace Gates Foundation (three out of four endemic countries)

Action items
- Who, what, where, when?
Figure 1. Participants in the 5th Regional Program Manager’s Meeting

- Maintain momentum and “youthful enthusiasm”
- “Socialize” within health system
- Accept new challenges
- Face uncertainty
- Communicate
PART II:

4TH REGIONAL PROGRAM REVIEW GROUP MEETING
Meeting Agenda
4th Regional Program Review Group Meeting
for LF Elimination in the Americas

Paramaribo, Suriname
28–29 October 2004

MEETING DAY 1 (10/28/04). Thursday. Hotel Krasnapolsky, Paramaribo

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30-08:40</td>
<td>Welcome, Introductions and Expected Meeting Outcomes</td>
<td>Guillermo González and Secretariat</td>
</tr>
</tbody>
</table>
| 08:40-09:00 | Designation of New Chairman³  
[Welcome to Ana Maria Aguiar and David Chadee; RPRG Member Rotations] | Guillermo González and Secretariat                                               |
| 09:00-09:10 | Adoption of Agenda                                                        | New Chairman*                                                                    |
| 09:10-11:45 | 2005 National Plans Review  
(Currently, only two national programs in the Region have a two-drug-based MDA strategy) |                                                                                 |
| 09:10-09:20 | Dominican Republic (10 minutes)  
(Application presented recently) | David Chadee                                                                    |
| 09:20-09:35 | Discussion                                                                |                                                                                |
| 09:35-09:45 | Haiti (10 minutes)  
(Application presented recently) | David Addiss                                                                    |
| 09:45-10:00 | Discussion and Presentation of Tables of Drug Forecasts                   | Steven Ault                                                                     |
| 10:00-10:10 | Brazil (10 minutes)  
(No application) | Shamdeo Persaud                                                                |
| 10:10-10:25 | Discussion                                                                |                                                                                |
| 10:25-10:45 | Coffee break (20 minutes)                                                 |                                                                                |
| 10:45-10:55 | Guyana (10 minutes)  
(No application) | Helen Freitas                                                                  |
| 10:55-11:05 | Discussion                                                                |                                                                                |

³ Used as gender-neutral term
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<td>Costa Rica, Suriname, and Trinidad &amp; Tobago</td>
<td>David Addiss</td>
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<td>11:25–11:45</td>
<td>Discussion</td>
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<td>11:45–14:10</td>
<td><strong>Monitoring &amp; Evaluation</strong></td>
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<td>Trevor Milner</td>
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<td>Mapping using HealthMapper: Issues and Future Directions</td>
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<td>Report on Visit to China for Evaluating Certification for LF Elimination</td>
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<td>15:45–16:00</td>
<td>Impact of Natural Disasters on LF Elimination Programs Hurricanes Ivan and Jeanne Marie Denise Milord, Vely Jean-Francois</td>
<td>Guillermo González, Celia Riera; Marie Denise Milord, Vely Jean-Francois</td>
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<td>Support for Haiti in Light of “Complex Emergency” Situation</td>
<td>Vely Jean-Francois, Marie Denise Milord</td>
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<td>Minne Iwamoto, GSK Inc.</td>
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<td>Reorganization of Program Manager and RPRG Meetings: Issues of Expected Resource Shortages and Integration</td>
<td>David Addiss and Chairman</td>
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<td>Communications Strategies to Meet the Needs of RPRG and Question of Selection of Regional Representation in the GAELF Representative Contact Group (RCG)</td>
<td>Steven Ault and Chairman</td>
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<td>Other Issues:</td>
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<td>• financing RPRG and Chair necessary travel</td>
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<td>Single treatment (DEC alone) in Brazil</td>
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<td>Coffee Break and Caucus for Action Points (15 minutes)</td>
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<td>LF in the Context of the Neglected Diseases Initiative of WHO (60 minutes)</td>
<td>John Ehrenberg and Gautam Biswas</td>
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<td>Action points (30 minutes)</td>
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<td>Closing Remarks and Adjournment</td>
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<td>12:30-end of day</td>
<td>Individual tourism</td>
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<td>14:00-17:00</td>
<td>[PAHO CD staff only]: Afternoon work session with Dr. Ehrenberg, PAHO/WHO Offices</td>
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Designation of New Chairman, Review of Designations for Members of RPRG, and Adoption of Agenda

Dr. Guillermo González, RPRG Chairman

Agenda

- Assignment of new chairman
- Changes in Agenda (none)
- Changes in membership
- Steve Ault as Secretariat
- John Ehrenberg as Observer
- Guillermo as outgoing Chairman
- João Batista F. Vieira as new Chairman-elect
- Barnie Cline’s resignation from group
- Trevor Milner as new member (replacing Barnie Cline)
- Trevor Milner as salt expert

Chairman González noted the RPRG was seeking additional participants in the region and that it hoped to propose a new candidate, Dr. Linda Lloyd. He went on to describe Dr. Lloyd’s expertise in the area of social communication and her work in different countries in the region on prevention of vector-borne diseases (malaria and dengue). He noted that Dr. Lloyd had been working on and was familiar with the situation in some of the countries and suggested that her CV be emailed to each member so that her official entry could be sanctioned at the RPRG meeting the following year. He said he would extend the invitation to Dr. Lloyd to participate, which could be fine-tuned at the next RPRG meeting in Costa Rica, when members could sanction her official entry. He then passed the meeting over to Dr. Ault.

Dr. Ault described the qualifications of Dr. Lloyd, which included a doctoral degree in health sciences from Johns Hopkins University with a specialization in social communication and health education, plus extensive training in anthropology. He noted that she had worked as a short-term consultant for various PAHO programs (including the dengue program) and, in the same capacity, as a consultant for the United States Agency for International Development (USAID). He also mentioned her work with malaria and HIV/AIDS, and that she was fluent in Spanish and had a working knowledge of Portuguese. He listed countries and regions where she had work experience, including Brazil, Central America, and the Caribbean, and concluded his remarks by recommending her as an excellent colleague for the RPRG. He then turned the meeting back to Chairman González.

Chairman González asked if there were any questions about the proposal and declared that Dr. Linda Lloyd would be invited as a member of the RPRG as a social communication expert. He went on to present a formal welcome to new members Dr. Dave Chadee and Dr. Ana Maria Aguiar, who would contribute their expertise in the areas of entomology and morbidity, respectively.

He noted that it was time to designate the new RPRG chair, who would conduct or help conduct the agreements of the RPRG and of the program managers for a period of one year, renewable for an additional year, as his successor. He opened the meeting for proposals of candidates and presented a profile of Dr. João Batista Furtado Vieira of Brazil, the primary candidate. Chairman González described the experience of Dr. Vieira, who had participated as a member of the group for the past five years. He noted that Dr. Vieira had fulfilled various responsibilities with all of the management teams in the region and had particular experience in oncocercosis programs, and he lauded his great vocation for public service.
Chairman González then asked the group for any proposals, motions, or additional candidate nominations. Receiving none, he went on to request Dr. Vieira’s formal acceptance, which was received, and declared him the new RPRG Chairman for the upcoming year.

Having formally elected Dr. Vieira as the new Chairman, Dr. González invited him to assist with the upcoming meeting agenda. He urged RPRG members to support and follow his leadership through next year’s meeting in Costa Rica and went on to read excerpts from the 18-page discourse on the process of assuming possession of the RPRG chair. The new chairman thanked the RPRG members for their confidence in his leadership and accepted his new post as Chairman of the RPRG–Americas.

Dr. González applauded the election of Dr. Vieira as the new chairman and introduced the next meeting topics: the outline of the agenda, followed by the review of the 2005 National Plans of Action, and the presentation by Dr. Dave Chadee on the strategy of combining DEC and albendazole in the Dominican Republic.
Mapping ICT-positive cases

Mapping for ICT-positive cases indicated changes did occur from September 2003 to October 2004 (see Figure 1). The newly identified areas are under investigation and the endemic are being treated.

Figure 1. ICT-positive mapping

Sentinel-site baseline data

Sentinel site surveillance indicated the following baseline data for Mf and ICT, respectively: 3.7% and 9.4% (ICT), 4.4 and 21.5 in Pueblo Nuevo; 7 and 14.3 and 35 in Batias (one of the high-prevalence areas that needs investigation), and 2.5 and 10.7 in La Ciénaga.
MDA

For the MDA in the Southwest, by the end of December 2003, coverage was reported as 84.8% in Barahona, 81.3% in Buruco, 76.0% in Podonales, and 82.1% in Independencia. For the MDA in La Ciénaga and all three areas within that region, survey coverage varied from 64 to 82%, with the highest percentage in La Ciénaga. The problem, which has been raised at previous RPRG meetings, is that only 15,053 of the population (out of 51,000) are actually surveyed. Given all the current difficulties in the country, however, this is an achievement in itself.

Morbidity

In the Southwest (e.g., Barahona), the survey of cases with suspected lymphadema or hydrocele was carried out in the first half of 2004. The methodology was house-to-house in selected areas by the SW LF team. Results indicated 2,272 cases (485 with suspected hydrocele and 1,787 with suspected lymphadema). In terms of case treatment in 2004, 352 lymphadema cases were seen by the IDCP (Dermatology Institute) and 7 hydrocele cases were operated on at HJM (Hospital Jaime Mota).

Partnerships

- Formal agreement between Southwest Regional Health Services (SW-MDA) and CES (Centro de Estudios Sociales Padre Juan Montalvo), which helps with urban MDA
- Department of Health and Promotion helps with social mobilization and survey coverage
- UASD provided human resources (mainly students) to help with surveys
- HFMP (Hospital Francisco Moscoso Puello) conducted hydrocele surgeries
- Plan International (an international NGO) funded training on disease management
- Liverpool Filariasis Support Centre provided human resources (e.g., Dr. Margaret Fraser)

2005 Plan of Action

- Implement morbidity protocol
- Train health workers in disease control
- Train urology resident and general surgeons in hydrocele surgery
- Confirm and treat suspected cases that have been identified
- Study other identified preliminary sites
- Conduct 4th MDA in the Southwest and 2nd MDA in La Ciénaga
- Conduct 1st MDA at new preliminary site (to be identified)
- Continue to develop integration plan
- Develop information, education and communication (IEC) and advocacy materials
- Continue ongoing research activities
- Integrate LF program with national health systems through UNAPs
- Conduct horizontal MDA and disease control activities
- Share PELF team skills in training, management, MDA strategies, planning, and control activities with UNAPs
- Establish more formal agreements and develop specific cooperation plans

Other achievements

- First draft on the morbidity protocol completed
- Plan for sentinel site evaluation to be completed November 2004
- Progress made on plan for integration with the primary health care system
- Cost study for the first two MDAs in the Southwest completed and data sent to Emory University
- Training for the next MDA for community and primary health care staff ongoing
**Integration Plan**

The plan for integrating the LF program into national health systems through the UNAP program is a more lateral program for activities for MDA and disease control in order to share the scales developed by the PELF team with UNAP in training, management, mass distribution strategies, planning, and control activities.

In 2002, the MDA program was carried out within the community. In 2003, it moved forward to involve communities as well as the UNAPs and UNAP staff. In 2004, the MDA will be carried out with UNAPs. The concept of further integration has been agreed upon and will become a reality in 2005, when the primary health care centers in the UNAP program will plan the MDA and support the program for LF elimination.

Dr. Chadee thanked the audience for their attention and thanked Dr. José Manuel Puello, Director of CENCET, Dr. Guillermo González, former Director of CENCET and RPRG-Americas Chairman, and Margaret Fraser of the Liverpool LF Support Centre for their help and assistance in the report.

**DISCUSSION**

**Question.** Can you explain the difference between reported coverage vs. service coverage? Usually service coverage is less than reported coverage, but in this case of the Dominican Republic, this seems to be reversed (e.g., 73 vs. 81% in Barauco). Also, M&E activities are not evident in the 2005 Plan of Action. Can you address this gap? (Incorporation of M&E activities into the country plans of action has been deemed “urgent” by the group.) And can you elaborate on the ongoing research activities listed in the report? Are there any differences between the Dominican Republic’s actual need for drugs and the estimated need reported at the last RPRG meeting? Do you expect the demand for drugs to remain the same (i.e., have predictions for next year changed, or are they expected to change, given the political situation)?

**Response.** I think I agree with the report on service coverage (that’s the problem!). About the request about M&E: I agree with the comment. I also believe the current country request for drugs is accurate. Since the formal request is still pending, I thought it wouldn’t be prudent to include that now, but that it would be better to report it in the future. But I understand your point, because there have been a number of different requests, some of which may have not yet been received by the RPRG.

**Comment.** I would like to clarify that the Dominican Republic remits the request for drugs. As Dr. Ault said, Dominican Republic authorities sent their request a few weeks ago (two to three at the most), and their formal request for drugs was approved by the Secretariat. Dr. Ault insisted on this, because prior to the political instability in the Dominican Republic, the RPRG revised the drug request form. And everyone responded. I resent my report so that it would be approved officially.

**Question.** Regarding next year’s predictions: Normally we keep up to date on predicted drug needs. You may recall the tables presented at past RPRG meetings predicting what we are going to use over a five-year period. I think the drug companies need this information with a fair amount of lead-time, because they need to know how much they have to supply. So the question for Dominican Republic is (and for Haiti as well): Do they anticipate the numbers presented here last year will remain the same, or have those numbers changed? If we don’t know (because, in the case of the Dominican Republic, the current program manager is not here), maybe Dr. Riera could do us a favor and update the table (or let us know if it’s confirmed that it should stay as is) as soon as she returns.

**Comment.** [Secretariat] I have a table with projections that were made last year and reported in last year's meeting report. I have added some information to the table obtained directly from the re-applications.
question. From the report, I understand that by 2005 the Dominican Republic will be covering the entire population at risk. Is that true?

Response. Yes, in the focal point areas.

Comment. So whatever areas are considered endemic will be under MDA by 2005. Also: the calculation for albendazole is the same as the total population at risk. In the case of the Dominican Republic, it was multiplied by a factor of 1.1, but that may no longer be required.

Response. Correct!

Comment. I want you all to be aware of the fact that the Dominican Republic program manager is not here because there was a change in government. Right now we are assuming that what we discussed in previous meetings will still hold. But I think Dr. Riera would like to get back to us and make sure that we get an update and that there is full agreement in terms of drug projections for the coming years. I displayed the research activities because this is something that we expect to bring to the attention of TAG at some point, so I think it will be interesting. Again, if we don’t have any idea, I would ask Dr. Riera to try to make sure that we understand exactly what sort of research activities will take place so that we can decide which ones should be brought to the attention of TAG. As Dr. Persaud is representing TAG on behalf of the region, I think he should receive the information and perhaps copy it to everyone else.

Question. I would like the presenter try to help us understand some of the reported vs. survey coverage. Have you seen any of this? I remember seeing this from other regions in exactly the opposite way. Are you aware of this happening in other regions? I would also like to suggest that we incorporate M&E into the plans of action. I brought up the issue of process indicators during the prior meeting, but I think we really need to do now, five years after the inception of the program. Despite all of the difficulties that we’ve had, and the progress that we have seen, I think it’s important that we strengthen the [M&E] aspect and that this gets proper attention in the Plans of Action. Maybe some of the experiences from other regions can be shared, and maybe RPRG members or observers can help us elaborate on this. Lastly, a question about suspected hydrocele cases: 7 of 485 total suspected cases with hydrocele seems like a very small number. My question goes back to the issue of what happened with the training. Have we had more training beyond that of Dr. Juan Lopez? I know Dr. Lopez was trained by Dr. Noroés, but that was about two years ago. So I’m wondering what happened in terms of any additional training. I know there were problems with Dr. Lopez. Apparently he has not fulfilled his commitment to train more surgeons. As the RPRG, we should address this. What happened there? Why haven’t they trained more people, and what are they planning on doing about that? Do they have a contingency plan?

Comment. I think there are two or three points that should be understood by the group regarding the public health situation in Dominican Republic, specifically the LF program we are analyzing now: one is the changes in authorities at CENCET, the base of the LF program. During 2004, there have been three changes in management at this center, with gaps in between when there was no one in these positions, while they were selecting a new director. These are situations that countries must confront at any given moment that have direct influence on the achievements (or lack thereof) of the public health systems, especially those that depend on this Center. In addition to these challenges, there were uncertainties regarding the management and leadership of the LF program; four emergency [natural disaster] situations during the year; presidential elections, with a transition period of more than three months; and a financial situation with a significant devaluation. These situations undoubtedly influenced the LF program that we are analyzing. Of course we should still address the critical points highlighted here for resolution in the next program period so that the program can advance and function as hoped and expected.
using the 2005 Plan of Action and country work plan would allow us to monitor execution of the
proposed activities (for 2005 and beyond). I believe this working group should visit the Dominican
Republic and convene with program colleagues and the new director of CENCET, who unfortunately
could not make this meeting. This would allow us an adequate amount of time to document things so
that we can reorient the 2005 Plan of Action to achieve more precise results and to build in the indicators
that would allow us to monitor activity progress.

**Question.** [In response to the previous question:] In most situations, reported coverage evaluated by an
independent group comes out lower (5%, 10%, sometimes 20–25% lower). In the case of the Dominican
Republic, I wouldn’t say it is more or less statistically significant; it would be within the same limits. If the
evaluation were done properly then one would tend to agree with the results of the coverage (except the
one in Pedernal, which is actually less than the survey coverage). Apart from that, a difference of about
10% would be within statistical limits. But the explanation of why coverage is higher should come from
the program. Maybe the denominator they recorded on was not officially correct, or maybe something has
been neutralized by the surveyed coverage.

Regarding disability prevention: Let’s say there are 485 hydrocele cases. What are the barriers that prevent
access to surgery for those patients? Is it that existing health facilities do not provide sufficient surgical
facilities? Because [if that’s the case] training people may not really help. In my view, you don’t need to
train the surgeons to perform hydrocele surgeries, but you may need to motivate them by some means.
Surgeons know how to operate on hydrocele. But they may not have the time, or the facility may not be
available. In that case, training at another level would be required, perhaps of physicians, who could
operate under the guidance of a senior surgeon. I don’t know what the exact situation is, or what would be
best, but my concern revolves around the fact that out of 1,800 cases of lymphadema, for example, only
352 are seen by the Dermatology Institute. Perhaps this institute should function more as a referral site,
and more patients should do self-care at home.

**Response.** [In response to the question about the low productivity of hydrocele surgeries in the Dominican
Republic:] In the survey sites of the Southwest, the problem is attributed to personnel — professional
irresponsibility, and human resources that unfortunately weren’t eligible for training [in Brazil]. The
regional hospital (Jaime Mota) completely remodeled its surgery unit and built a room dedicated to
patient interventions for hydrocele lesions, which was then staffed and equipped with a medical consultant
to examine patients. Unfortunately, the surgeon, after receiving all of this, proceeded to charge fees for
each intervention, which the program could not pay. Changes in the Dominican Republic, as described by
Dr. Riera, along with the new general health law enacted in 2000 and sanctioned by Congress, gave
autonomy to health establishments in terms of cost recovery. Evidently, the program received support and
had financing through the MDA, but had no resources to develop much in the area of disease
management. Despite this, the original cost estimate was only for institutional overhead and the targeting,
development, and education of the installations at endemic survey sites for disease management. So we
could not use institutional funds to pay a salary for a State employee. And although we signed three
management agreements between the program and hospital management, the surgeon did not fulfill the
terms of the agreement. As explained by Dr. Paulino, the day before yesterday there was an agreement with
a resident urology surgeon to give training similar to that provided by the surgeon from Haiti (which was
very useful). There are also plans to conduct a number of surgeries in hospitals in the region and at
endemic survey sites and a reference center in the capital city (which is 350 km away, however, requiring
almost 4 hours of travel).

**Comment.** Our Haitian colleagues formalized the visit to Dominican Republic of an urologist from Haiti
who was included in the training that took place in the Dominican Republic for the hospital in the south
and another alternative hospital. Training was completed on surgery for the most critical cases (the
priority cases among all those detected). And surgery was then included in the basic health care package
for patients served by the public health care system, to allow access for almost all hydrocele patients.
I would also like to clarify something in relation to the preceding question about the difference between reported coverage and survey coverage: We have discussed this with the group, and their response was that the discrepancy is due to methodological problems in the selection of sites for verification reported coverage.

**Comment.** Then we recommend that program authorities of the Dominican Republic be more precise in the methodology used for the upcoming post-treatment survey coverage, which should be done during the last week of November, according to the country report to PELF authorities. We also suggest they revise the methodology for evaluation of the sentinel sites, something which is vital for illustrating the progress of the program. Support for this can be provided by PAHO/WHO focal points in the country, which can put them in contact with experts in other affected countries such as Brazil, Haiti, and Guyana. The Dominican Republic should also complete its mapping exercise. I understand from discussions with the group that only 5,000 ICT cards were available, which would only cover the distant municipalities. In the capital city of Santo Domingo, for example, there are close to 2 million people. If you divide this population into IUs for evaluation, it’s clear that 5,000 ICT cards will not be sufficient. So the Dominican Republic needs more ICT cards as well the resources to complete its mapping. The cards used for surveys in schools indicated negative results, but if you examine the risk factors of the municipalities in these areas, the indicators imply that this is a zone of potentially high transmission. So antigenemia surveys should also be done among those outside the school system.

**Question.** I think there are five sentinel sites (the actual numbers tested are those that are required, according to the program manager). Is this the second round of the sentinel site review? Or were you unable to follow up all 500 cohorts? I seem to remember that we had different figures for the previous round. Did you lose some of the cohorts in the second round? Why is it only 490 (e.g., with three or at least two that didn’t have the 500 test)?

**Response.** We didn’t have 500 people, but we did reach more than 50% of the population of the sentinel sites. This is the first round of sentinel site evaluation. If you figure in the area of La Sombra, the total population was 854, and 461 people were examined, which is 50% of the population (according to the guidelines, at least 500, or 30 people for each IU, should be followed up). Your observation is valid regarding La Ciénaga and parts of Pueblo Nuevo.

**Comment.** It seems we need to make some more concrete actions regarding the surgery component, training, and things like that. If we say we are going to train people, for example, we need to make a list of deadlines and tentative actions to be achieved. This is important regarding hydrocele as well as lymphadema. And I’m not clear on how these activities will be completed. Research activities are very important for TAG, and for the other countries, because they can incorporate collaborative work and help strengthen the capacity of other endemic countries in the region. But we need to define them carefully with the coordinator of the program. Will the activities that were cut short resume? If not, and the proposed research activities are new, it is important to define them.

**Question.** Where is Moscoso Puello Hospital?

**Response.** In the city of Santo Domingo. It’s a national human resource training hospital; La Ciénaga’s population is referred to it.

**Question.** Hydrocele surgeries are going to be carried out there?

**Response.** No. Just the training will be in this hospital. Surgeries will be performed in an endemic area in a hospital called San Bartolomé de Neiva, and in Enriquillo Hospital for patients from La Ciénaga.

**Question.** Why doesn’t the hydrocele surgery have a surgeon? I would like to propose that we consider if this is acceptable ethically. We are talking about a relatively complex procedure, not a minor operation, and we can’t count on having real surgeons doing the surgery? I know from other commentary that sometimes it is not necessary to have surgeons perform the operation. I wonder if Dr. Aguiar can elaborate a little on this. Because this could be an issue in Haiti, and Guyana; we know Guyana has a lack of
specialized personnel, so it would be good to look for a solution for the problem. For some countries, for example, legislation on salt fortification is a complicated topic; in Brazil, and other countries, such as Guyana, it isn’t. I wonder if this is the same case with the surgery.

**Response.** The experience in Brazil is that hydrocele surgery is carried out by a urologist. The technique introduced by Dr. Norões must be carried out in endemic areas, but it is complex. I find that this differs from country to country [whether or not a surgeon does the surgery]. In Brazil, in smaller cities that are not endemic for filariasis, hydrocele surgery for non-filarial etiology is carried out by a general surgeon. I find that what is lacking on this is the exchange of basic information; what I observe is that the information exists but is very centralized. It doesn’t include training of other surgeons but is directed to staff who give direct assistance to patients.

**Comment.** The Dominican Republic has four urology schools. We have an opportunity to engage an excellent urologist. I suggest the Dominican Republic program use the questions from this meeting to stimulate the colleagues of PELF in the Dominican Republic to surmount these obstacles and difficulties for the benefit of the affected population.

**Comment.** We should be very careful in making the morbidity component of our program too specialized, because that could send a message to our PHC services that this is a specialized procedure that requires many extra resources (even for lymphadema care). So we have to be very careful with that. The impression I have is that we want to integrate this as much as possible within our primary care setting. Right now, for lymphadema, we use regular basins or whatever small containers are available; we don’t use any special structures with flowing water, and faucets, and so on.

For hydrocele surgery, the surgeons are special people—highly motivated, and they have done hundreds of surgeries. I think surgeons from Guyana were going to other Caribbean countries in the mid-1980s doing hydrocele surgeries. So, they have this feeling that they are specialists in this field. Of course, there may be room for improvement, but I think the surgeons are pretty much the people who should be doing this. The challenge for the program is to gather information on the work that they are doing. We have distributed the green guidelines, and most of the surgeons have read it. They have questions about it and feel that their method is as good as any. They do their surgeries at the four hospitals that have surgical operating theaters, the national hospitals. They have a waiting list of people for surgery, traditional surgery. They do not feel there is a problem with recurrence. All of the surgeries done at the centers are followed up at surgical outpatient clinics. Four government clinics and three private hospitals have given us reports. We will probably need to look at this a bit more. The information is there; it’s just a matter of finding the right tools to gather the data for some analysis.
Overview

As Dr. Milord explained, Haiti has the same situation with regard to hydrocele surgery. Haiti has one urologist who is responsible for the urogenital manifestation, and he has been trained in the new technique. For the most part, general surgeons do the hydrocele session using their own techniques. But Dr. Norões is now training all residents from urology and general surgery in the new technique. We would be delighted to make Dr. Norões available to help train surgeons in the Dominican Republic. He is very busy, however, with lots of training going on, so it would require very careful planning.

I would like to reiterate a comment that was made in the Program Managers meeting about the tremendous difficulties Haiti has had over the last year, and I would like to express my admiration for Dr. Milord and her entire team for their dedication and perseverance during this incredibly difficult time. The fact that the program has not only maintained its momentum but has also expanded is a real testament to their dedication.

Treatment

As Dr. Milord presented the first day of our meeting, during 2003 more than 700,000 people were treated in 14 communities, with reported coverage of 76%. Survey coverage was done at several different sites, and the numbers were essentially the same (any variation was basically within the margin of statistical error).

The program in Haiti is proceeding in a very logical way. Five years ago, an MDA program was begun in one of the most heavily endemic districts, Leogane. That program just finished its fifth year of distribution. As Dr. Milord indicated the other day, Mf levels have dropped dramatically in that community, at the sentinel sites, but they are not yet at zero. There are 16 other communities that in national mapping had a prevalence of more than 10%, based on quality assurance sampling; 14 of those will be completing their first year of MDA this year. Two of the 16 communities (in the area near Gonaive) will not be completing their third year due to political unrest and flooding.

There are other communities with estimated prevalence of 5-9% (antigenemia), and these are scheduled for treatment with MDA this coming year, using a two-drug combination. There are about 500,000 people in this new area. This brings total planned intervention for this year, with a treatment cycle that is just starting now, to 1.7 million, with 1.2 million in the initial area with more than 10% prevalence and 500,000 in the new area.

A considerable amount of operational-type research has been conducted in the original focus community (Leogane). One of the studies looked at the effectiveness of albendazole and DEC on intestinal helminths (there has been a dramatic decrease in prevalence and intensity of intestinal helminths in the sentinel sites in Leogane).

There has also been four, or actually, by now, five years of mass treatment. During the past year, work has begun to assess the issue of non-compliance. Preliminary results from an anthropologist at CDC, who is working with the team in Leogane, suggest that non-compliance is systematic. As I said earlier, reported coverage is about 76% overall, similar to what has been measured previously in Leogane. Initial assessment suggests about 20% of the people have never taken the medicine, so non-compliance appears to be systematic. This is a very alarming in a sense, because we probably still have a reservoir of people who have not taken the medicine and therefore are Mf-positive. But these are just preliminary impressions; we don’t know yet who these people are. They seem to be isolated to one economic or social group, so more work is
being done to define why they never took the medicine, how they might be reached, and how to address this. I think as more countries get into their fourth and fifth year and still see pockets of Mf, this sort of work may be useful elsewhere.

**Survey of schoolchildren**

Another study done in the past year examined schoolchildren for antigens in the blood and also examined their feet. It found fungi infections or lesions between the toes were strongly correlated with the presence of antigen in the blood. So the interpretation of that is that lesions between the toes — especially those involving more than one toe and those that are wet or macerated — may be an early expression of filarial disease in children who do not yet have lymphadema. They are therefore at risk of bacteria entering the blood or entering through the skin and creating the first bacterial infection or lymphadema.

**Program in Leogane**

The Haiti program in Leogane continues to be a site for operational research, but this is not exclusive to Leogane. In 2004, the total target population in early 2005 will be 1.7 million in all communities with a 5% or more estimated prevalence of infection. Dr. Milord and her team also want to address the issue of urban filariasis, which is major problem. This year the MoH team will be working in collaboration with other partners on the challenge of reaching patients in urban areas in the north and learning from that experience what seemed to work and what didn’t. The challenge for this year is to start orienting Port-au-Prince. As Dr. Milord mentioned, the program is developing a video to start sensitizing the population in Port-au-Prince for MDA in 2005. Additional plans are to establish pilot areas in three or four communities with DEC-salt. The salt situation in Haiti is different than in countries where DEC-salt is not yet fortified with iodine, where DEC projects can piggyback onto fortification efforts already in place, such as Guyana. In Haiti, the DEC project is helping to move forward iodine fortification.

**DEC-salt**

As Dr. Milord indicated, the hurricane damaged the saltpans, so it will be a challenge to get the DEC project launched. But there is strong, high-level political commitment — all the way up to the Minister — to get the pilot project launched during this next year.

**Disease control**

On disease control, as you have heard, Dr. Norões continues to do surgery and has operated on 99 cases this year. He is also continuing a rigorous follow-up to look at the rate of recurrence of hydrocele complications in those patients. The strategy for lymphadema management has been based on lymphadema clinics; as presented yesterday, there are two main clinical areas. These are now being expanded to provide one lymphadema referral clinic in all major regions of Haiti where filariasis is endemic.

Support groups have also been used in these areas to maintain patient motivation, and a pilot project has been done in a new area called Arkai, which is north of Port-au-Prince but south of Capetian (where support groups were community-based and actually preceded the establishment of a clinic there). So there is a two-pronged strategy: one to set up referral care and ensure competency for referral of different cases; and one to use community-based support groups to do basic training and education. Initially, we (CDC/Atlanta and a group in Haiti) were wondering how these would fit together. We tended to see the potential for incompetence. But what we found in this new area is that there are in fact various synergies across the two components. Dr. Milord plans to expand the morbidity project during the upcoming year.

There is also a very small pilot program in Leogane with a schoolteacher, who is actually a lymphadema patient, working with other schoolteachers in the Leogane area to teach children about lesions between their toes and about skin care that can help them improve their situation. This has just begun.
There has been much focus on efficiency of drug distribution. Various NGOs and hospitals are working with Dr. Milord and her team. The cost during the first year of MDA in Leogane was estimated at about US$1.20 per dose. The private partners (NGOs) have not been as efficient as the MoH teams in delivering the drug. So, a lot of attention has been focused on efficiency in delivery of the product and delivery of the services at low cost while maintaining high coverage. This has actually spurred the NGO partners to increase their efficiency.

For 2005, there are plans to start MDA in Port-au-Prince. This will add about 2 million to the total coverage, with a population of 3.7 (as opposed to 1.7 million) people targeted. Several research projects are planned or under way, and there is follow-up for surgery patients to obtain estimates on the rate of recurrence. There is also follow-up evaluation of patients who have been in the lymphadema clinic for 7 or 8 years, to assess improvement in their quality of life. Other studies are planned to identify systematic non-compliance and its impact.

On morbidity, discussions are under way on the possibility of expanding training of health workers at all levels of basic lymphadema management, in addition to lymphadema clinics and support groups. This may help integrate lymphadema management into the basic health services throughout the country.

Funding

A key issue for Haiti is funding. The Gates funds have been very essential for support of the program. But those funds are scheduled to stop by early or mid-2005. So there has been a lot of discussion about renewal applications and the development of other sources of funding, which are obviously critical for expanding the program in Haiti. I believe the drug application received by the RPRG has been approved and that the drugs have been released. I am not sure if this was a decision of this group, but it was my understanding that the current application had been approved in terms of the release of the drugs.

DISCUSSION

Question. I think Haiti has always shown how a program can be conducted in a very systematic way. I can't stop wondering about and admiring how Haiti managed to sustain its program throughout this difficult period. We acknowledge the tremendous effort of the program and its staff as well as its partners. Tom Streit and University of Notre Dame have been involved in the process pretty much since its inception; they were instrumental in raising the first US$9 million grant from the Bill & Melinda Gates Foundation, which kept the Leogane project going for some time. The CDC colleagues were also instrumental in trying to make the switch from a project type of intervention to a program approach. After the 5th round of MDA in Leogane, you said that Mf counts were down (and we have seen them dropping). But at this point, if Mf counts are still positive (despite five years of treatment, which is very near the preferred limit of four to six years) we may be up against the issue of compliance — of true coverage. Can you elaborate on this?

Regarding the correlation between antigenemia and fungi infection, you seem to see a correlation of higher fungi infections and antigenemia level. I was wondering if you could actually come up with a control group. In the Dominican Republic, for example, there are some non-endemic areas with a high prevalence of fungi infections. I wonder if you could try to incorporate a control group into the study design, and if it would be difficult to find a control group in Haiti (for obvious reasons). Perhaps you could find a control group in the Dominican Republic.

Also, I think a general recommendation for the programs now would be to begin presenting graphics, using histograms, to show, for example, how you have basically your whole population at risk, how the risk may change over the first, second, third, fourth, and fifth year of MDA, and if you could split this by department, if desired. We would want a graphic demonstration of how your actual treatment coverage has been increasing gradually over the years so that we can better understand what the problems are. We have, on one hand, the annual treatment objective — where you think you want to be by the end of the year —
and actual coverage. We know there were many problems (e.g., political, natural disasters) and we want to understand somehow, through graphics, for example, how you achieved your results. You know your total at risk population, by department or by community. And the more you disaggregate that information the more information you are going to get. Again, I urge you to rely on Dr. Vely Jean-Francois (or the new epidemiologist) to help you put this sort of analysis together, which will provide some nice visual images of project achievements.

Regarding the DEC-salt plan, you mentioned that there was a commitment by the MoH — by the previous Minister, who is probably not in the country anymore. We know that, given the current situation in Haiti, it is difficult to predict what is going to happen. But rather than counting on any previous political commitment, we should focus on gaining the support of the next permanent government’s MoH. I think the previous commitment was made by Dr. Voltaire, and obviously he is not there anymore.

Another issue that I think has been key: During the last meeting that we had in Philadelphia, the tropical medicine meeting, I noted that no one seemed to be emphasizing synergies with leprosy, except the Dominican Republic. This is something I tried to encourage when I first started going to the Dominican Republic, with the dermatology institute that has been dealing with leprosy for the past 50 years. They do corrective surgeries and they have very effective physiotherapy, and psychological care has been part of the leprosy program for the last 30 years. As you know, leprosy is almost eliminated in the Americas except for Brazil, where we still have a serious problem. In most of the region, however, we don’t know what is happening with leprosy. In Haiti, for example, I know two centers that work on leprosy. I think this is the time (or as soon as the immediate crisis is over in Haiti) to start getting them involved in a dialog to see what they’ve been doing and what they plan to do. Are there any partnerships envisioned for leprosy in Haiti? Would the Damian and Dudd Foundation, or any of the other well-known foundations that work with leprosy (the Sasakawa Foundation, for example, which has supported leprosy significantly throughout all these years) be going back into Haiti, and if so, can we spur them to get back into leprosy?

It seems to me that it’s less of an important problem in Haiti, where you have done such a good job in setting up the morbidity component. But in other places, such as the Dominican Republic, it would make all the sense in the world to get back to that and synergize the LF program with the leprosy program. In Africa, they have some extremely well conducted programs. In Ethiopia, they have the alert system and a leprosy rehabilitation center. Researchers have been working for the last 40 years with significant support from CIDA, the Swiss, and the Norwegians. So it would make a lot of sense to tap the experiences of the leprosy program in Africa, especially Ethiopia, rather than create a completely separate infrastructure for filariasis. You have the same situation in India. I haven’t heard too much on this from our colleagues in Geneva, but India has conducted a very successful program in leprosy over the past 50 years. So I think we should start to discuss leprosy, because there is a lot of potential overlap. Does anyone want to address some of these questions?

Comment. The issues that were just mentioned are very pertinent ones. We have discussed this, mostly in Southeast Asia, where a leprosy eradication program has been in place. The origin of the discussion was that leprosy was dropping, and there were specialized leprosy institutions providing care for leprosy patients, so the question was if these agencies could take up filariasis disability prevention.

It seemed logical, but when it came to be implemented in the field, the first issue we encountered was stigma: if you link filariasis with leprosy, you will add the stigma that leprosy has to filariasis. So that was one of the constraints that people put forth. The second issue was that their whole aim was to integrate leprosy disability prevention programs into the general primary health care setup. Nonetheless, there probably are some opportunities to benefit from some parts of these programs, such as IEC components. Leprosy programs have implemented a very strong social mobilization component, which could benefit our programs. I think there is a lot of merit in trying to determine, by polling many organizations, the potential scope of the benefit that one could derive from this.
Response. Hydrocele surgery in Leogane is being done in the leprosy hospital. There has been a lot of discussion about integration, and there were plans to locate the lymphadema management referral clinic there. For many reasons, that hasn’t worked out. But the issue of stigma was interesting. During initial discussions with the nuns who run the leprosy hospital about lymphadema patients, we discovered that they were afraid. They did not want to take care of lymphadema patients because they thought LF was more stigmatizing than leprosy. So that was quite interesting. Of course, once the lymphadema patients were there, they took great care of them, but the initial stigma was essentially in reverse. We also heard concerns that lymphadema patients would not want to be in the leprosy hospital.

There has been some very good work in Haiti in assessing coverage. The 30 clustered surveys and others are done regularly to assess drug coverage, so regarding your question about “true coverage”; I think it’s as true as it is going to get anywhere. But what happens after 4 or 5 years? I like the way this issue was expressed the other day, about what 4 to 6 years really signifies. It’s just one step in the elimination process; reaching that mark doesn’t mean you must have stopped LF everywhere or be expected to have interrupted transmission.

The epidemiological and mathematical models suggest prevalence is growing, and infection intensity is a strong factor in the duration of treatment that is required. In Leogane, antigen prevalence was 50% in many communities, with Mf prevalence at more than 30–35%. So prevalence is starting to climb toward a very high level. Even with excellent coverage every year, I don’t think we could expect to reach zero. And I think the issue of systematic non-compliance is not limited to Haiti; it’s an issue everywhere. I think the coverage figure that we are all using does, in essence, reflect true coverage, but that one figure has inflamed the issue of whether compliance is systemic or non-systematic. I think we may want to look more closely at this in other areas after we have had 3 or more rounds of treatment.

Response. But we still have Mf in areas that have been treated with five rounds. I don’t know about the data; have those people who still have Mf really been treated for 5 years? I think there is some work going on now to look at that, perhaps in some small areas. But I can’t say based on the data that are available now whether that is the case.

Comment. I agree that coverage and evaluation evolution should be expressed graphically, with the help of the epidemiologists. For our oncocercosis program in Brazil, for example, we have a graphical illustration of where we are and where we want to be. The final goal is treatment. Each semester we review our partial and full treatment goals, and how much was reached in each semester. We record how much we have achieved in relation to the necessary total, the final treatment goal, which means coverage of the entire endemic population at risk. Initially, we had very low covering (5%); we have obtained our final treatment goal gradually. We only have three years left to meet the necessary minimum threshold, so we are constantly trying to maintain a good level of coverage. I find it is very important to illustrate this evolution graphically because it gives a clear view of the situation to the team. I have another question: Has the noncompliant population been well identified? And is there an alternative plan in place?

Comment. Regarding the salt, I know [WHO] gave us full support on this aspect of the program. But I have to inform you that with the current transitional government, filariasis may not be on the agenda. It’s just not a priority. However, we have received support [from the Regional Director] for the salt program, because salt therapy for filariasis will also be used to address iodine deficiency. I just wanted to inform you that we do have the support of the MoH for the salt aspect of the program. Regarding the comments on the graph: this is something we need to do in the future, but we don’t do it that way at the moment. We don’t have visual representations of our data; this is something we have to work on.

The last question was if we have an alternate plan regarding the noncompliant population. We are attributing most of the problems in Leogane to the fact that it is an urban population. Urban populations are more difficult to convince to adhere to the activities. But we think that through our new mini-documentary we will be able to diffuse the information throughout the country. We will have also support
for the intervention from the MoH Director General, and the Minister herself. So we are hoping to reach people in the metropolitan areas and convince those that did not comply previously to do so now.

**Comment.** The country has had a very successful LF program, which began with a basic research project in Leogane. This success has mainly to do with the fact that the research team is conducting careful monitoring. So the monitoring system for surgery follow-up seems to be a research issue. I think, at this point, monitoring should not be a research issue but rather part of the program plan. Touching back on the same issue, I think the success of Haiti is not a coincidence, or an accident, but the direct result of a number of factors, including good leadership, a pragmatic manager pushing the initiative, good advocacy, etc. But the monitoring system is an important issue, and at this point down the line, we have to have that installed in each of the four remaining countries.

The example that we always tend to rely on is the oncocercosis program, which has had very good successes, but incredible difficulties and failures as well. That program did not implement any communication strategy, focusing mainly on the treatment coverage issue. Initially, it didn't even set up a good information system (that was developed over the subsequent years). That program, which was established in 1993, has just achieved (as of 2003) the over-85% treatment coverage level in all six endemic countries. You might wonder how cost-effective such a program might have been [with monitoring systems in place from the start]. Over the years, of course, they have developed and installed a careful monitoring system for treatment coverage. That is practically the only indicator they use; they do not have any process indicators (other than indirectly, through the very thorough epidemiological assessments conducted in sentinel sites). I think these thorough epidemiological assessments conducted in those sentinel sites are a good example of what could work in the LF sentinel sites. So, one should be able to take advantage of the fact that João Batista Vieira is sitting here, as the chairman of the program, because I am sure we can learn a lot from what is now a very successful elimination program in Brazil.

Brazil has had to deal with logistical difficulties with the Yanomami population, with 8,000-12,000 people spread out across the entire Amazon basin. So that's been a logistical nightmare—an expensive US$2,000/hour for helicopter time, etc. And yet they have managed to maintain over 85% treatment coverage. I think you are now into your third year of that same treatment coverage. So you still have another 9 years to go in maintaining those treatment levels. I just wanted to draw your attention to the fact that M&E should not any more be a research issue but should be part of the program and the plan. That's the only way we can really correct things. Haiti has done it successfully in the research, which probably explains how it's done such a good job, despite all of the political problems, natural disasters, etc. Leogane is a great example of how a program should move forward. I think the big challenge for Haiti now is to move forward from the dimension of Leogane and be able to maintain the M&E in the rest of the country.

**Comment.** I think we all are very proud of Haiti and all of its achievements. I would like to add that we all should continue to support Dr. Milord. But do you have any thoughts today of how you might scale up? It seems as if it is a small community surrounded by highly prevalent areas. I don't know if that may have some impact, in terms of migration and movement between those communities. It may have some effect on what has been reported as continuing prevalence of Mf in some of the areas that have gone through several rounds of treatment. So, I don't know if you have considered how you would scale up, if you are going to scale up, or if you are going to just focus on the hot spots of research. The communities that are nearby seem to have high prevalence, but in some of your scaling up you targeted the east and some of the central areas with MDA. What was the decision and how did you come to it?

**Response.** The strategy was to treat the areas where the transmission was higher first, to find people infected from the [communities marked in red or blue].

**Response.** I think another reason why Dr. Milord and her team did not limit the program to just one area of the country was because she wanted to get activities started in the high-prevalence areas throughout the country and to build local expertise from those points outward. Your point is well taken that in these
initial years there are certainly people coming in from immediately outside that area that are bringing Mf, but the strategy was really to build the national program, which meant putting resources in different areas rather than concentrating them in just one.

And, in fact, there has been a lot of M&E; it has become a routine part of the program. And all the areas outside Leogane represent actual surveys rather than just reported coverage. In addition to the survey coverage, there is full program assessment in these areas by independent epidemiologists who assess all levels of the program, from satisfaction of distribution to patients to drug distributors, to try to collect independent information that is then fed back to Dr. Milord for her analysis, discussion, and modification.

I agree completely that monitoring disease should not be a research issue. One of the key points about the need for Dr. Norões hydrocele procedure is that he has observed a high recurrence rate in areas where his procedures are not followed. This is not just physical recurrence but damage to the testicles, and infertility (i.e., it’s not just simple hydrocele but also very inflammatory carbuncle).

A 20–30% rate of recurrence was found in an unpublished study done in Brazil in which patients get called back for re-examination. I have looked for 5–6 years now to find a study in an endemic area on the effectiveness of hydrocele surgery over a six-month to one-year period. What is the recurrence rate? I haven’t found any studies, so it may be that it is 20–30% everywhere, in which case we’ve got a huge problem. Surgeons don’t generally follow up the patients, either because of health system restrictions or because of patients’ reluctance to go back to the surgeon. But I haven’t found anything published on this. So I agree it should part of monitoring, but unfortunately it’s part of research too, because we don’t know these answers yet. I would encourage more follow-up, which is crucial for finding these answers.
Discussion and Presentation of Table of Drug Forecasts

Dr. Steve Ault, PAHO/WHO

The following tables of drug forecasts (see Tables 1–3) include data from the report of the 2003 RPRG meeting in Maceió, country drug re-applications (and in the case of Brazil, Dr. Steve Ault’s personal knowledge of country drug forecasts). The numbers from the Maceió meeting are in black. The numbers in red are the proposed additions and changes for 2004, which need to be confirmed with the program managers. All three tables need to be updated, via the cooperation of all program managers.

Table 1

In the case of Brazil, the estimate for DEC treatment alone in Recife for 2004 (based on Dr. Ault’s personal knowledge of the program) was 38,000. This number needs to be confirmed, and estimates are required for projected use of DEC in Brazil for the next four years. The figures for 2003 are also needed. For Haiti, the numbers for population at risk, numbers treated in 2003, etc. were provided during the 2003 meeting in Maceió. It was estimated then that 1.6 million people would be treated. The number in red is taken from the country’s re-application for 2004. The latter number is much less, so needs to be confirmed, along with the estimates (in red) for 2005 and 2006 (taken from the same re-application document).

Table 2

For Dominican Republic, the numbers in red for 2004 come from the country drug re-application submitted to the RPRG in October 2004. The number in blue is a re-estimate by Dr. Gautam Biswas (WHO) based on his reduction of the multiplier (from 1.1 to 1.0). For Haiti, the numbers in black were taken from the country estimates distributed at the 2003 meeting in Maceió, whereas the number in red is taken from the country’s drug re-application for albendazole tablets for 2004.

Table 3

Table 3 data is the projected numbers of DEC tablets required by the countries, taken from the 2003 report. For the Dominican Republic, the estimates for 2004 (taken from the 2003 meeting report) were 1.2 million 100-mg tablets and 36,000 50-mg tablets; the numbers in red were taken from the country’s drug re-application for 2004 (1.1 million 100-mg tablets and 30,000 50-mg tablets). For Haiti, the estimate for 2004 was 8.9 million 50-mg tablets (taken from the 2003 meeting report) whereas the revised figure for the same dosage (taken from the country drug re-application) was 9.6 million.
Treatment Data from 2003 Report of RPRG Meeting in Maceió and 2004 Country Drug Applications

Table 1. Five-year annual treatment objectives

<table>
<thead>
<tr>
<th>Country</th>
<th>Pop. at Risk</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<td>Brazil*</td>
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<td>36,000</td>
<td>ND</td>
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<td>ND</td>
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<td>358,841</td>
<td>358,841</td>
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<tr>
<td>Haiti**</td>
<td>6,000,000</td>
<td>1,189,463</td>
<td>1,633,655</td>
<td>5,133,655</td>
<td>6,133,000</td>
<td>8,133,000</td>
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<tr>
<td>Guyana</td>
<td>638,556</td>
<td>250,000</td>
<td>445,000</td>
<td>640,000</td>
<td>640,000</td>
<td>ND</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>8,825,722</strong></td>
<td><strong>1,838,455</strong></td>
<td><strong>2,494,604</strong></td>
<td><strong>6,132,496</strong></td>
<td><strong>7,131,841</strong></td>
<td><strong>8,491,841</strong></td>
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</table>

Note: Data in red are taken from 2004 HAI and DOR Albendazole-DEC applications to RPRG in late 2004, and from S. Ault’s personal knowledge about Brazil. *Population to be treated with DEC alone in Recife and Maceió in 2004 (data for 2004 temporarily lacking for Maceió, Jaboatão, Olinda, and Paulista). **Percentage of population will be treated with DEC-salt. ND = no data.

Table 2. Projected number of albendazole tablets required

<table>
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<tr>
<th>Country</th>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,825,722</strong></td>
<td><strong>1,743,573</strong></td>
<td><strong>2,214,964</strong></td>
<td><strong>6,041,745</strong></td>
<td><strong>7,141,025</strong></td>
<td><strong>9,341,025</strong></td>
</tr>
</tbody>
</table>

Note: Data in red are taken from 2004 HAI and DOR Albendazole-DEC applications to RPRG in late 2004. Data in blue are taken from WHO re-estimate.

Table 3. Projected number of DEC tablets required

<table>
<thead>
<tr>
<th>Country</th>
<th>Pop. at Risk</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>1,765,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>422,166</td>
<td>1,305,490</td>
<td>1,242,435</td>
<td>1,173,410</td>
<td>1,173,410</td>
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</tr>
<tr>
<td>Haiti</td>
<td>6,000,000</td>
<td>6,542,046</td>
<td>8,985,102</td>
<td>28,235,102</td>
<td>33,731,500</td>
<td>49,204,650</td>
</tr>
<tr>
<td>Guyana</td>
<td>638,556</td>
<td>10,340kg</td>
<td>7,500kg</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100mg</strong></td>
<td><strong>6,579,997</strong></td>
<td><strong>9,021,197</strong></td>
<td><strong>28,269,192</strong></td>
<td><strong>33,765,590</strong></td>
<td><strong>49,238,74</strong></td>
</tr>
</tbody>
</table>

Note: Data in red are taken from 2004 HAI and DOR Albendazole-DEC applications to RPRG in late 2004.
DISCUSSION

Question. A question on Brazil: in some moment during the discussions that I had with the health authorities in Brazil, they said they would eventually consider the possibility of incorporating into some areas where they had done MDA (the 17,000 of the pilot project in Recife, for example), which also included albendazole. I asked if they had continued with this discussion or reconsidered the possibility, because, in general, we were considering this in the control program for GH. I had the impression that they had stopped thinking about how to incorporate these components, and we’d like to reinforce the information about the future purchase of DEC, considering how effective and economic this is. I imagine the Ministries are going to stop incorporating it in their basic list of medicines.

This is something that could be assumed as a cost in the case of Brazil, but may not be feasible in other countries (particularly the Dominican Republic and Haiti). So we wanted them to tell us what is incorporated in their basic medicine lists and, on the part of Geneva, what possibilities exist for supporting them in the cost of the drugs, and when they are going to support them in the purchase of DEC.

Response. Our position at this point is that we do not have any funding available presently to procure any DEC. We had some discussions previously, because whatever funding is coming from the Gates Foundation has already been received. The understanding was that some of the projects supported by Gates funds for operational diseases may try to find funds for buying the DEC within that operational money, especially for the Dominican Republic and Haiti, and possibly Guyana (for the DEC-salt). That is where we stand at present. Of course, we are trying to secure funding for DEC. If we are successful, we might be able to do [what you are requesting]. But this is the situation right now.

The second point is, I don’t know if your question was addressed in the Guyana and Brazil presentations or the strategy for Guyana. What I understood from the country presentation is that a lot of the raw DEC was not used to produce DEC salt, so it was provided to the company and should still be available.

Response. So far, we have heard from staff that we have only received 10,300 kg from WHO, I think. We have only used about 550 kg, so we have quite a large stock of DEC left. Those projections were made last year; we thought they were based on the target population. I think that what we have produced so far can only cover about 250,000 people, for part of the year, so we need to revise those figures.
BRAZIL

Dr. Shamdeo Persaud, MoH, Guyana

PowerPoint presentation

Background

Several mass surveys were done between 1956 and 1965 in Brazil; 17 sites were identified [for treatment], and filactic treatment was begun. Foci in Recife and Salvador were identified in the 1960s and the Bahia focal point was considered eliminated by the country some time around 1983. The Alagoas focal point, though it was identified among the first 17 sites, had some recurrence (some positive results). Apparently mapping was completed in all three states where there was a question of possible prevalence. In the state of Pará, they concluded that there were no more positive cases; in Pernambuco, between 0.81 and 8% positives were detected, and in Alagoas 0.2% were positive. The total population at risk still stands at 1.765, mainly in these two areas (the two states). The successful strategy of mass screening and selective treatment continued in separate areas of Brazil where there is a fairly well-developed disease control program, centered mainly in Pernambuco, specifically in the Recife area.

Overview

The organization of the program is pretty much the same as described in the previous review. It has a strong focus on coordinating LF program activities and establishing guidelines for disease assessment and screening surveillance, etc. Multisectoral cooperation seems to be growing in Brazil, in terms of coordination and promotion of research and for program monitoring and evaluation. This is a point that comes up frequently. Brazil has been working on some of those initiatives, focusing on M&E as the main part of the program. The Secretariats of Health (or SPSs, as they are called in Brazil) are responsible for supervising surveillance activity for all disease control programs, including filaria. They serve as a technical advisory group for the Federal states and municipalities that actually implement the program.

Partnerships

In terms of partnerships and collaboration in Brazil, there seems to be a wide cross-section of both research-type institutions and health agencies as well as other institutions involved in LF control activities. The state SPSs seem to be a big force behind lots of the program. Last year we had the opportunity to visit Maceió, where we spoke with very energetic SPS personnel who seem to be very motivated to put in place an effective program for filaria control in that area. Municipal SPSs, universities, and research institutes are also involved.

Resources

Regarding financial support, the Brazilian Government, through its very complex information management system, funds the MoH, which channels the funds to the states and municipalities. Brazil is a very large country, with almost 190 million people over a very large area of South America. Regular sources of funding include the National Health Foundation (FUNASA); this has been almost guaranteed for a couple of years. I don't know how long the funding will last for the health research, but universities have been securing independent funding for a lot of the research activity. PAHO has also supported some of the research activity, with some collaboration with Trinidad and the Dominican Republic.
**Treatment**

MDA

MDA with DEC has begun in Recife. So far, two rounds of treatment have been completed. In the last round, the at-risk population was estimated at 47,320, with reported coverage of 39,252, or about 83%. It is not clear from the report if any survey coverage was done. There are plans for DEC-MDA in two other areas in Pernambuco.

Selective treatment

Selective treatment was continued in Maceió and in parts of Recife and the Recife metropolitan area (known as the Recife belt). In Belém, which is the other focal point and was discussed in the previous meeting, they are looking for verification of absence of transmission.

**Disability**

In terms of reduction of disability, I think one of the very strong points of the Brazil program is the maintenance and expansion of the assistance programs for LF in the Recife area. They are also starting disease assessment and plan to survey LF patients in Maceió and Belém, where research indicates there still may be some morbidity. There is a plan to conduct Rapid Morbidity Assessment in Salvador and San Luis, and the methods for hydrocele surgery that were previously piloted in Brazil are now implemented in several areas, including the private sector, government facilities, and university hospitals.

**Monitoring & evaluation**

There is a good network of monitoring and evaluation, and the surveillance structure is strong. Most of the information on historical prevalence of LF in Brazil is provided by this system. This is expected to be very important in verification of interruption of transmission, because it would be humanly impossible to conduct mass surveys across the entire country. So they are focusing on the historic sites that were known to have LF transmission.

The challenge of monitoring really entails a strategy choice, because of the selective treatment in some areas. It’s not clear how this type of approach would be monitored (how one would calculate the target population, if it is being reached, etc.) The national program is mostly responsible for monitoring, which appears to be a well-organized effort within the national program plan.

**Challenges**

One of the main issues in the country’s LF program is verification of the absence of transmission in the state of Belém. This was discussed in the technical group that explored the testing of new tools for verification in Brazil, along with the Dominican Republic and Trinidad, in regard to xenomonitoring.

Regarding the use of DEC as a single drug (though albendazole is advocated by the program, from the global point of view), it might be well-advised to continue this in about 3 IUs. Many of these areas have prevalence well below 1%, so they may not need 5 rounds. Both selective treatment and the time frame seem to be in question.

Regarding the effectiveness of interruption of transmission and the need for high level of public participation: We had an opportunity to look at how this is done, and found that it requires a tremendous amount of effort by Dr. Gerisa Dryer, her teams, and some of the other collaborators in the areas.

In summary, the program in Brazil has a variety of areas at different stages of elimination. So the use of just one strategy, as outlined for Guyana, or Haiti, or anywhere else, might not be appropriate for the Brazilian program. The program managers seem well aware of that, as reflected in their selection of different options for mass treatment vs. elimination.
DISCUSSION

Question. Regarding the question about reported coverage vs. actual coverage [and please correct me if I'm wrong]: In the case of Recife, it seems there has been no verification of reported coverage.

Response. The mass treatment coverage in Recife will be done in October/September.

Comment. In the Dominican Republic, treatment is done case by case and is under the same treatment strategy as for Maceió; it’s similar to that for TB (DOT). When we did our coverage evaluations, we saw that coverage in some areas was lower than reported coverage. This is done to ensure that the distribution intervention for MDA has been effective. We evaluate our coverage through an external group.

Comment. Dr. Freitas stressed the importance of maintaining selective treatment as an ongoing health program, even though mass treatment was starting in some areas. I was wondering if there was any confusion or discussion about that between physicians and those who would be treated with a full two-week course of DEC and the single dose that is being given in mass treatment areas. Does that seem to be a problem?

Response. There are some problems in that the doctors do not approve of the single-dose treatment because the dosage is so much lower [than that for the combined treatment]; there is also some resistance by medical academia to this type of treatment.

Comment. The City Department of Recife, the group that initiated and implemented the mass treatment, is very independent, so they will conduct this in the way that they had planned.

Comment. The issue is having, on the one hand, a system of selective treatment that has been done for years and years, and suddenly entering the area with a massive drug treatment. The problem is not with what the doctors say, because this treatment is done in accordance with the traditional system. But the discrepancy in the two treatments causes confusion among the national scientific community; some attribute the results to the new form of treatment; others attribute them to the traditional [mass screening] treatment. This creates the message that one treatment is as effective as the other.

Response. Dr. Dreyer made some commentary about this, but it was absolutely informal and from a practical point of view, and it will not have any repercussions, because this group is completely independent from the group that manages the program in the city of Recife now.

Response. One factor is the characteristics of the area where the treatment is being made. There is a lot of control data for that area, which is well-delimited and larger than the areas where they did not opt for this treatment. Also, environmental sanitation work was conducted there, which was certainly a factor.

Comment. I have a couple of questions. One is, do the figures come from different sources? Somewhere we saw that there are presently an estimated 1.76 million at risk in Brazil. But in the presentation yesterday, the total population under some intervention (mass screening, selected chemotherapy, or MDA) is about 1.2 million. I just wanted to know the reasons for this gap.

Response. I want to first comment on how we estimated the at-risk population: We arrived at the 1.7 million estimate about two years ago, based on surveys carried out mainly in the metropolitan area of Recife. These numbers were discussed with the local technician, and are then given an accepted rationale. We currently have a problem in estimating how much we need for Belém, because we must continue to consider the population of Belém at risk of LF; it is a difficult question. Also, in Maceió, the focal point is diminishing. So I think we must revise and reduce the population at risk. We must carry out new surveys in the Recife metropolitan area because the population at risk there may be increasing. The MoH decided to implement massive treatment in areas where we knew we had prevalence.

Response. All these topics are linked with their administrative and political context. The National Health Advisor supports control and elimination of filariasis in Brazil and is recommending mass treatment and actions in vector control and sanitation activities. However, with the decentralization, the state and
municipal secretariats have acquired more autonomy. And this independence is very strong. Decentralization has the great advantage of distributing resources, and integrating programs and sectors, as we observe in the city of Recife. On the other hand, sometimes it creates great resistance to pressures or vertical recommendations from the central level. This decision to use DEC alone is closely related with this positioning of the municipality.

Our performance at the central level has been to try to promote, argue, and demonstrate possible techniques to increase use of the DEC–albendazole option. We saw clear manifestation of interest in this, as well as in defining the “application” protocol, and we waited for this to materialize. We later found that we need more effort from administrators and politicians to move this toward the front of the agenda. We have argued about the use of this type of treatment with the technician in Recife. Helen is dealing with this subject firsthand, whereas I am a bit removed, working in the background. But if the strategy continues to be selective treatment, Recife will continue to have increased transmission. We have argued against this, because [under that scenario] transmission could last another 40-50 years.

We know that combining DEC and albendazole improves the effectiveness of treatment and reduces transmission, so we have recommended this and hope that some will adopt it. Scaling up mass treatment can create a much larger coverage, which we believe is necessary. We’ve already seen interest on the part of the team of Recife. But I find that we continue to focus on institutional politics (mainly with the Recife team) rather than progressing as we would like.

Comment. I just wanted to suggest the possibility of establishing research links between Trinidad & Tobago, the Dominican Republic, and Brazil.
GUYANA

Dr. Helen Freitas, MoH, Brazil

PowerPoint presentation

Overview

- 749,00 inhabitants
- Health regions: 10
- ICT card survey (2001)
- Prevalence: 0.8-20%

Partners

- PAHO/WHO
- CDC
- UNICEF
- University of Guyana
- Liverpool LF Support Centre

MDA

- Strategy: DEC fortified salt
- Distribution: salt distribution network
- PELF provides: quality control and assurance monitoring and evaluation (sentinel sites and surveys)
- 80% coverage of target region

Morbidity

- PELF/Primary health care (UNAPs): some integration

Future directions

- Expansion of MDA (to 450,000/695,000 inhabitants)
- Restructuring of National Surveillance System
- Expansion of CARE Program (to 40% of UNAP facilities)

Logistics

- Review National Task Force
- Maintain support for importation of DEC-salt
- Implement revised social mobilization strategy
- Train health workers and others
- Provide materials, equipment, drugs, and supplies to morbidity program
Costa Rica, Suriname, and Trinidad & Tobago: Verification of absence of transmission

Dr. David Addiss, CDC/Atlanta

Overview

It is recommended that RPRG convey some recommendations to the TAG regarding to Costa Rica, Suriname, and Trinidad & Tobago. These three countries believe they have interrupted LF transmission and would like to announce their intent to prepare a dossier for verification of the absence of transmission. Two documents should be used as reference in preparing the dossier. The program managers of these three countries have requested that the RPRG provide them with an outline and a description of the materials that should be included in the dossier. They also requested that this be provided as soon as possible, preferably within the next 2 to 3 weeks.

The program managers for the three countries indicated they may request technical consultation from the RPRG regarding preparation of this dossier, and that they would like assistance to be given relatively quickly, as they would like to prepare the dossier before the next TAG meeting. Brazil also indicated its intent to request technical consultation from RPRG on the adequacy of documentation for interruption of transmission in the preliminary site that they believed had interrupted transmission. It is recommended that the RPRG ask WHO and the Global Alliance to seek funds to allow these technical consultations to take place.

It is also recommended that RPRG recognize the importance of continued research and refinement of tools to assess whether transmission has been interrupted, and that the RPRG request that the TAG give urgent attention to providing guidance on the surveillance that will be required leading up to and following verification.

DISCUSSION

Question. There was an additional request by the Dominican Republic to have the RPRG look into the possibility of stopping treatment. What happened after you stopped treatment?

Comment. Another area in which a technical consultation may be requested from the RPRG would be the issue of when to stop MDA.

Question. Is there any sense of how we do this? Do we present the three countries seeking verification as a group, or do they have to conduct individual lobbying efforts? Because there are groups of countries that seem to be on equal footing. What is the procedure for this?

Response. My understanding is that the TAG at WHO would consider them only as individual countries. But certainly the RPRG can communicate with WHO or the TAG to let them know that these three countries have intent to submit verification, probably before the next TAG meeting. Although all three would be ready, they would be considered individually.

Response. The issue of shared borders might create challenges for Suriname, and maybe Trinidad. Costa Rica might have a good case.

Comment. I believe that regardless of border issues, the dossier is going to be evaluated country by country. So, for example, Suriname would present its case, and the RPRG and the TAG would look at it. If they need to address this in the dossier, then they will. But it’s not something that should inhibit preparation of the dossiers.

Comment. Your point is well taken. That’s why there was such an urgent request for attention at the global level to be focused on this issue of surveillance. Countries (especially Suriname) are asking what sort of
surveillance is needed. Because there are clear guidelines as to what is required for ongoing surveillance, but there is recognition that because of these cross-border issues some sort of surveillance would be useful and is needed.

**Comment.** To try to summarize, it is clear to me that the RPRG Secretariat is going to move its recommendations forward at the MoHs of the three countries, through the PAHO focal points in the region, that the MoHs of Trinidad, Costa Rica, and Suriname direct their request to exhaust these steps. But this has to go through PAHO via the Secretariat in Washington.

**Question.** Are there any special instruments in this dossier, already defined? Is the guide sufficient? Or should there be two guides?

**Response.** I don’t think it has been completed yet.

**Response.** If you are completing the application for the first time, the application has many guidelines that I think are quite helpful. Once you have done that, there is the re-application process, which is based on the initial application. There really is no protocol for submitting a request for verification. I think if you follow those principles on the verification process, it would be a good document. But I would say that the countries probably need some kind of format to follow.

**Response.** I would volunteer to make a first draft based on our discussions yesterday, the documents that we have already, and some work with Dr. Biswas. Hopefully, Geneva will be able to review that and provide some corrections and guidance as soon as possible so we can get back to the countries. The draft would be based on the principles that were in the other documents.

**Comment.** In any event, we are going to send a communication to the Secretariat at the PAHO focal points in the relevant countries for the peace of mind of the Ministers.

**Comment.** I think we should add an official letter of acknowledgement with a note saying something like “PAHO or the Global Alliance officially acknowledges” that this is something that should be signed by Dr. Mirta Roses, the Director. This could be an official attachment to the letter.

**Comment.** [re: application document] This does not really address the problems of distribution and assistance. I think we would like to get a better sense from the program managers about the application regarding what they want to do in view of those problems. In point number 3.1 [of the application], the calendar of planned activities, I wasn’t clear on the figures. For example, are the sentinel sites that are identified the ones that are going to be in the new areas? Then there is [the part about] drug shipments to the MDA IUs, which is quarterly. Just for clarification, does this refer to DEC-salt or raw DEC?

**Response.** I think we are trying to use an application form as a reporting form. It’s not really an application. For parts I and II, there’s an incomplete part that does not apply to drugs. We are essentially putting DEC-salt information into an application that is pretty much developed for a pill [drug] program, so there are a lot of difficulties as to where to put things. I think the form should be revised or maybe just reviewed to find places to create some more space to add provisions that would allow us to report more accurately on DEC-salt. Perhaps there are fields or areas where we can include some of the information relating to the technical aspects of DEC-salt production. These are not issues relating to pills, because pills are produced and are available. DEC-salt is a process that makes the drugs available to the community. The process is probably the same.

In terms of the shipment of DEC, this really refers to the shipment of DEC powder, which is in Guyana, to the production site. The production plants are in Jamaica, Cuba, and Trinidad. So far, only Jamaica is producing salt. The little marks that we see [in the application] are the scheduled shipments for those sites, based on consumption, production, etc. We didn’t want to send a whole lot, to avoid what happened with Cuba. We’ve sent a reasonable amount of DEC (55 kg), but we haven’t gotten any back. There’s a plan to ship [more DEC] as salt comes in.
Comment. Thanks for the clarification. I agree that there are some issues regarding specific reporting of the funds, but this is again a general question and should be addressed to the chair. The comment was made that the drug application was being used for reporting. But there is an annual report form, which I presume everyone would have submitted. Since the RPRG meets once a year, I don’t know when you propose to review these reports. But I think the report and the application go together, because the report is reviewed in the application process.

Comment. We are going to note the suggestion to forward this to the country program managers, and to complete the report format and the format of the medicine request. I have one question. From the treatment presentation yesterday, I recall mention that just 23% of the total salt required was being supplied. Here, you mention 80% of the population is being covered. You also mentioned who was producing the salt (Jamaica and Cuba). Considering the hurricane season every year from June to November, and the high level of hurricane activity in the east Caribbean this past year, when all of our islands were struck directly or indirectly by hurricanes or strong rains, how is Guyana preparing to face future salt needs if there is a lack of supply, or if the supply is damaged during hurricane season?

Comment. When we were developing the program, we looked at the sources of salt. We noted there were three countries involved in the production of the salt: Trinidad, Cuba and Jamaica (assuming there was no natural disaster to limit production). So we thought at least one source would be available at all times. We didn’t discuss hurricanes specifically, but now that the situation has become bad, particularly this year, it is more apparent that we should have multiple sources of DEC-salt rather than just one source.

Comment. The issue is really the DEC-salt. Not so much the salt alone, but the possibility that Brazil might eventually (not to Guyana but some place else) want to provide DEC-salt. It would have to pass a quality control mechanism that WHO has set up for DEC produced outside the country. Brazil is consuming its own DEC, locally produced at the FIOCRUZ Vaccine Manufacturing Centre (Manguiños, Brazil), but if it were to try to request it through WHO, it would get DEC-salt that has been approved by the quality control mechanism at WHO. So, any other country, as far as the DEC-salt is concerned, would need to go through this same mechanism.

The other question I think is important is: What are the possibilities of resuming the DEC-salt production in Cuba? What happened with that? Whether or not Trinidad eventually takes it up again, the fact is that Cuba is still exporting salt to Guyana (not fortified salt, but still salt). But it has not taken a primary responsibility to do the fortified salt. I think Trevor Milner is going to address this issue, but I think it is a key issue. I think that if we do consider it, we should be aware that there is a quality control mechanism for that.

Comment. I would like to take the opportunity of having so many experts in one room and bring up a point that occasionally is raised in Guyana. Many people are accessing the information available through WHO on LF elimination globally, and I think that the feedback sometimes is that we have chosen the second-best option. What’s promoted is that the PELF programs are the standard, and that we have chosen a second-best option. Some people, especially the medical community in Guyana, and some consumer organizations, are asking why we made these decisions. We try to explain it, but there is a concern about if there is any possibility to use pills for a mass treatment program. This has come up a couple of times. We haven’t decided to change the strategy or to adopt the idea. But we might. There are some situations where some communities, due to politics or something else, are convinced that this is not a good thing. Many things in Guyana go through a resistance stage once the Government promotes something. Some communities wouldn’t want to use [DEC-salt] just because of the resistance and opposition. Maybe those communities could be considered for MDA, I don’t know. I’m just raising this as a question.
Monitoring & Evaluation

Country with the DEC-Salt Strategy: Guyana
Dr. Trevor Milner, PAHO/WHO

PowerPoint presentation

Overview
- Distribution of 3.2 million packs of salt after about 6 to 9 months (i.e., 1500 tons)
- Actual distribution 740,000 packs, or 370 ton (i.e., only 3% of target)
- Change of packing and its acceptance.
- Improved appearance and quality
- Price stability
- Overly competitive salt importers/distributors and variability of salt supply in Guyana
- MOU
- Technical cooperation provided to 3 producers
- Building of relationship with salt suppliers

Timeline
- July 2003: DEC-salt arrives
- August 2003: Launch, Social Mobilization & Marketing
- September–December 2003: Build-up of steady demand
- January 2004: Blue discoloration of salt
- January–present: Program hiatus; lackluster demand

Cause and effect
- No single cause, but rather a dynamic series of different problems caused at different times by different factors resulting in the cumulative effect of:
  - reduced demand
  - reduced confidence by the consumer
  - reduced commitment by importer
  - low salt inventory

Challenges
- Following the discoloration of the salt, program was not able to quantify:
  - the extent of the problem (5%? 50%?)
  - where it was occurring (localized, or dispersed?)
  - what the public's reaction was
- Efforts to maintain strong relationship with the importers diminished, resulting in a reduction in their commitment.
  - suppliers had no legal obligation to continue participating in the program, so the moral authority of the state — the Ministry and its representatives — was used to pressure them into honoring their commitment over the life of the program
- Dynamic and variable commercial environment of sale and distribution of salt in Guyana is:
— fast-paced
— continuously changing
— filled with unknowns

- Management of program conducted via relatively static [public health] structure

**Strategies**

Some problems were anticipated, such as the change in packaging, and its acceptance. Formerly, tablet salt in Guyana was distributed in large, 25-kilogram sacks. The local shopkeeper would measure out a pound of the salt into a paper or plastic bag, and sell it to homemakers. The program took advantage of the opportunity to change the distribution of DEC by modifying that arrangement, for a number of reasons, by packaging DEC-salt for the household in convenient one-pound or 500-gram packs (some producers chose one-kilo packs).

Although the new packaging was anticipated as a potential problem, a strategy was devised to overcome it by improving the quality of the salt, bolstered by guaranteed price stability via the use of government subsidies. These adjustments eliminated any increased cost to the homemaker for purchasing the smaller packages as opposed to the larger ones.

The next problem was an overly competitive situation among salt importers and distributors, along with the variability in salt supply in Guyana. Sometimes all of the salt has run out, or almost run out. This is mainly due to geography and demographics: Guyana is a small population, it imports its salt, and (in most cases) it is at the end of the shipping line. So things run out from time to time, and salt is no different. This happens now and will continue to happen in the future for some of the commodities that Guyana imports. That’s just how the market works.

Certain strategies were designed to minimize these problems, such as a Memorandum of Understanding (MOU) with the Ministry of Health and the salt producers, stating that they were committed to providing the DEC-salt to the population. In essence, the risk was put on the Ministry; if there were any liability problems, suppliers would not be responsible. There was also some technical cooperation provided to the producers (in Jamaica, Cuba, and Trinidad) to teach them how to go through the process of making DEC-salt.

**Problem assessment**

- Need to build and constantly maintain a relationship with the salt producers and importers: In July of 2003, program staff attended a meeting on DEC-salt and had a luncheon with the suppliers. Much of the DEC-salt project’s success in August was attributed to the relationship fostered with the suppliers via the meeting and the luncheon.
- Reduced demand for DEC-salt
- Reduced confidence by the consumer
- Reduced commitment by the salt importers to the program
- Low salt inventory (at present there is no DEC-salt to speak of in the system)

**Why continue to use DEC-salt?**

- Program should run smoothly once in place
- Less expensive, more cost-effective than tablet program but just as effective (in the long term)

**Future objectives**

- Must be ready in all aspects for re-launch (January 2005?)
— solve quality problem
— solve supply problem
— re-establish commitment of salt importers
— ensure timing of promotion, and distribution issues are correct

**Recommendations**

- Solve management team issues
  - full-time manager?
  - full-time assistant?
- Put in place more nimble, flexible resources to allow for a quick reaction to problems as they occur
- Assign a government health office to be in charge of the program (with control shared with the private sector)
- Try to change mindset about how to operate a public health program (in light of competition from non-DEC-salt, e.g., which different importers at different times might want to promote).
- Solve quality problem (cannot have any blue salt)
- Solve supply problem: re-establish the commitment of the importers (in the case of Cuba, e.g., the importer is not fully committed to the program)
- Ensure timing of promotion and distribution is correct in terms of supply (e.g., shouldn’t promote product without ensuring supply).

**DISCUSSION**

**Question.** Considering the fact that UNICEF donated a machine in Haiti to assist in the fortification of salt with DEC and with vitamins, and that Brazil produces the raw material DEC, was the possibility ever discussed to bring this type of production plan to UNICEF, import the raw material from Brazil or another place, and produce it in country, after developing strict standards for that production?

**Response.** At various points in the planning, the question was raised about doing the DEC fortification in Guyana. But that was ruled out because we wanted the private sector to do it, and it’s not that easy; it takes money, organization, and so on. One or two people said they were willing to do it, and I think what we had said at the time was, “Well, if you are set up to do it, then fine, do it.”

We never looked specifically at Brazil, because the concept was to leave it to the private sector, because they have been distributing DEC-salt for years and they have not found it worthwhile to bring DEC-salt from Brazil, for whatever reasons. So obviously there is something that makes this prohibitive — transportation costs, the fact that they are not used to dealing with Brazil, or whatever. So working with Brazil might create new problems. The concept was, “Look, we have a system that works, let’s tap into it.” But the system needs be managed in a more balanced and sophisticated way.

**Question.** I was just thinking historically. It seems to me that in the past Guyana had an experience of mixing chloroquine with salt and that there was some problem with that. I think there was a quality control problem with the chloroquine, which was separating from the salt. Is that also creating a problem?

**Response.** I think the problem with the chloroquine and salt was beta tested. Even in very small doses, the chloroquine still tested through.

**Question.** So there wasn’t any separation?

**Response.** Right!

**Question.** Ok. But because of that, I think, they had resistance problems, right? Drug resistance?

**Response.** That I don’t know.
Comment. I think the Government didn’t want, from the start of the program, to create competition for any of the importers, so it was a deliberate attempt to work with the DEC sector and give them whatever support they needed to provide an intervention. The other issue related to importing from other places is the difficulties with the tariff that is levied against the product. I think, for products coming from within the region, like Trinidad, the countries of CARICOM have zero tariffs for salt. Maybe for imports from Colombia or Brazil or other countries there are some duties applied to the salt. That’s probably why there is no real effort to import from those countries. But the real bottom line was that we didn’t want to have the Ministry of Health distributing salt. I think that from the start of the program that was very clear.

Response. They have a salt factory in Haiti run by UNICEF, and the Spanish islands have excellent salt mines. There are also good mines in the northern part of the island, between Dajabon and Haitian Cabo, to the north of the island, and in the southern part, next to Barahona and Salinas Baniés. In future, maybe we could deal with an endemic country like Haiti, which has a factory that makes fortified salt, handled by people who suffer from the disease. It produces in a cooperative way and could export and replace salt in the Guyana market, using the salt of Haiti. We could try to look for financing from CARICOM (Caribbean Community and Common Market), to support an installation like that, which creates opportunity for people who suffer from the disease and at the same time produces salt for endemic populations.

Response. Well, this is exactly what Haiti is about to do. They have arranged for a production facility. This was a long process because there was a factory, but it stopped producing. We were at the stage where the factory was ready and then it stopped producing. So we had to go through a long process to arrange for another one. Then when they were ready to produce, the raw material that was there was washed away by the hurricane. So now they have to look for a new source of raw material, which will be from the Dominican Republic. So, they are about to do exactly what you are suggesting.

Comment. I think there is an obligation on the side of the partners to try to come up with a clear-cut set of answers, and actual action points as to where we go from here. I would like to make very specific recommendations to the regional RPRG. We should rely on our current expertise (those have been the most actively involved in the process) to come up with a series of clear-cut answers as to (1) when they think they can solve the quality control issue (I thought this was resolved, but it hasn’t been, so we need clear answers as to when that’s going to happen), and (2) how are we going to compensate for the lack of salt supply coming from Trinidad & Tobago (and the fact that we lost the DEC supply in Cuba). There is only so much PAHO can do on this.

For example, we can try to use our local Office in Havana and try to get our new Representative there to get back to the salt producer. But I think we need a clear-cut action point on that too. Given some of the unexpected issues we are seeing now, this might extend for 3 or 4 years. If you have good evidence to believe that this would be resolved in January, we can restart the program as of January. But we would have to answer some of the previous questions.

I can understand the predicament of the Minister. Some people are going to say we should go back to tablets and pills. We don’t want to face that situation, so we have to come up with some clear responses as what we are actually offering here. Also, what do we do about the physicians that are actually inquiring about the possibility of going back to DEC tablets? What happens while we wait for the DEC-salt issue to be resolved? Maybe we can discuss a little bit more about that.

The social mobilization and marketing campaign for the DEC-salt were incredibly successful, there is no doubt about that, but when you raise such a high level of expectation, you go from one extreme to the other. I accompanied the mission when we were recording the problem with the blue salt. I saw it being taken away from the shelves in some of the big supermarkets, but it was still in the marketplace. I’m surprised we didn’t get a much more intense reaction. And there are people out there just waiting to come up with a newspaper ad, so we really need to be very more action-oriented.
**Question.** On another topic: how can we resolve the problem of treating patients with arterial hypertension?

**Response.** Well, just a quick response: People are eating salt in Guyana, we know that, and they have been and will continue to. DEC-salt doesn’t promote salt usage, just like salt doesn’t promote DEC usage, right? The concentration of DEC in the salt has been designed for normal usage of salt, which people will keep taking whether there is DEC or not. It will still have the required therapeutic effect, right? This question comes up repeatedly regarding the fortification of salt with other components. Nevertheless, it is obviously a concern, especially for physicians, so the discussion needs to take place.

Regarding the previous points that were made, there is a whole list of things that need to be done. It’s important for us to understand that we are not just subject to fate, there are things we can do to maintain and regain control. One of these things, for example, is to develop packaging regulations for salt, meaning that any salt sold to consumers directly, for table salt, should be packaged in a certain way. That would create a hurdle for the importer who just wants to import and sell in bulk. So, there are things that, if the imported doesn’t want to cooperate, you can twist his arm a little, even though the Government doesn’t want to move toward a legal framework, and start passing laws on DEC-salt. But there are things that can be done.

**Comment.** First, I think the decision of Guyana to mount a program of this format, with this strategy, to have chosen the option of collaboration with the national companies, was correct. We did the same thing in Brazil with the iodized salt program, using contributions from private companies, which helped us use existing local infrastructure. The reduction of coverage occurred because of a temporary problem with quality. Luckily, this is a problem that we are perfectly capable of correcting. I think the program is fabulous and deserves to be taken to the next level. For me, to return pills would be an involution (a step back).

**Comment.** I totally agree with the DEC comment. I think that we have to see how to try to make this operational and successful. I think that one of the roles that the RPRG can play is making strong recommendations to either WHO or to the countries regarding the best next steps. So, whatever you have highlighted as a broad issue, can we try to make them into specific actions or steps that we could start doing for Guyana? That could be helpful to the national program.

About the quality of the DEC-salt: I remember when this was being set up in Guyana. We were very excited because this was the first country that had chosen the DEC-salt option. Many countries do not even want to go through the process due to the complicated legal issues, etc. Then it was a question of the quality of salt production. We know that the dry mixing has a settling effect, because the DEC is heavier than the salt. So there was an issue on this dry mixing. Of course, you could use the spring method, which is more complicated, but once you have one problem with quality, you don’t want another one. I don’t think there was a response to the previous question on whether microscopic doses in DEC would clear Mf; the answer is “Yes.” It seems that people still don’t realize that a single dose of DEC can also clear Mf.

**Comment.** It’s important that we remember that China used DEC-salt and was successful. I believe the first trial of DEC-salt was in Brazil, where it was again successful. About the separation issue: This is one of the reasons that in discussions producers about DEC-salt and the program, we insisted it be distributed in small packets. Because if you have settling in a small quantity, the household will still get all of the DEC that was in the packet. At the plant, the manufacturer packages it in the small containers immediately, so settlement is not a big problem. But if it goes in the big 25-kg packages, from the plant to overseas to the shop in Guyana, then you have a much greater chance that people would get variant concentrations.

**Question.** I think it’s important to realize that the problem with the salt is more of a commercial issue than a distribution issue. The distribution doesn’t really involve the MoH (MoH-related problems would tend to be technical). I’m not sure if Guyana has a salt commissioner or someone from the Government who oversees the salt distribution process (e.g., a salt commissioner or department, because it would probably fall under a Food Department). Is there such a person to oversee this whole process?
Response. Well, there isn’t any official salt commissioner, but we did try to set up a committee, at first (a task force). This type of issue is exactly what we need to straighten out to make the system function better, but there are obstacles. For example, some of the salt importers are competitors, so they don’t want to attend the same meetings. But we have to find ways to get them around the same table and to commit themselves to the program.

Response. I think from the Government’s point of view, there is a need for someone like this — someone outside the association that we were trying to set up (a group for importers and distributors, etc., under the auspices of UNICEF, as a kind of salt board or something). It’s important to have someone who is officially tasked with this whole issue of salt. The Food and Drug Department in Guyana is the entity responsible for that sort of thing, but like everything else, it is very short of staff. We had been working with the Food and Drug Department, and have built the capacity of that Department in order for it to monitor not only the DEC but also iodine, fluoride, and everything else involving salt to ensure the commodity coming in for consumption meets at least the minimum standards. They continue to work with us, but there isn’t any one person in the Food and Drug Department with that responsibility.
Other Key Themes

The Morbidity Element of the LF Elimination Strategy in the Americas: Activities and Future Directions

Dr. Ana Maria Aguilar, FIOCRUZ, Brazil

PowerPoint presentation

Disease management

Lymphadema

- Basic principles well established:
  - hygiene
  - skin care
  - adjunct measures
- Treatment and follow-up (adapted to local reality)
  - self-care
  - community agents
  - existing health care services
  - specialized clinics for referral of special cases (referral system in place)

Urogenital (hydrocele)

- Surgical intervention (Norões Technique)
- Indication (when is surgery indicated?; e.g., size, symptoms, etc.)
- Universal use? (are all programs using it or do surgical approaches vary?)
- Referral system (requires a more specialized service)
  - training of professionals
  - multiplication of teams (decentralization information)
  - hospital admission and care (costs)
  - post-surgery

Chyluria

- “Tools” established (i.e., literature) but not standardized

BRAZIL

- Training community health workers and physicians
- Morbidity survey (Maceió)
  - house-to-house/census/panel
- Morbidity survey (Belém)
  - sample includes ICT in same households
- Case detection and treatment: current service
- Data bank survey (national survey) on hydrocele

GUYANA

- Self-skin care
Surgical experience.

HAITI
- Self-care, Hope clubs, support groups
- Surgical experience (need improvement)

DOMINICAN REPUBLIC
- Case detection and treatment
- Referral system (Dermatology Institute)
- Surgical experience (monitoring; needs improvement)

Challenges
- Lack of data on number of cases identified (follow-up) due to
  - lack of notification
- Need to centralize data at State level to help determine true prevalence and incidence
- Need to define mechanisms for detecting cases (e.g., monitoring and evaluation)
- Need to improve access to treatment for:
  - hydrocele (surgery)
    - insufficient amount of trained surgeons
    - insufficient public hospital (requires payment)
  - lymphadema
    - need clean water, soap, supplies
    - need support from family, support groups
    - need referral networks
- Need to promote more information exchange among professionals
- Need to integrate other programs
- Need more inter-country communication
  - establishment of protocols
  - identification of patients for follow-up and monitoring

Future directions
- More inter-country communication
  - share experiences
  - create a regional protocol for treating patients
  - establish morbidity indicators
  - update information regarding program development each country
- Stimulate integration with other programs
- Increase case notification
- Expand self-care
- Expand hydrocele surgery
- Demystify morbidity

Recommendations
- Use well documented disease assessment to increase understanding of disease etiology. (From a practical point of view, this may not make difference, but in terms of cost it’s important, because those who are uninformed can waste the resources of the LF program.)
• For guidelines on lymphadema, follow basic principles, which are well established (although some of the principles are still debated, such as the importance of personal hygiene and proper skin care).
• Make treatment more accessible, and adapt it to country and locale.
• Establish highest possible level of care, and link existing patients with community health agents and existing local health services.
• Make treatment at the community level, in a decentralized form.
• Provide referrals for special cases. (In Brazil, referrals are available through family doctors, whereas in other places the referral system might be far away, requiring the patient to leave his/her local area.)
• Treat hydrocele surgery at onset of case presentation (depending on size of hydrocele and symptoms and complaints of patient).

Issues in various countries

In Brazil, patients have access to community health agents trained in disease care, along with doctors. A study of disease was recently initiated Maceió via household surveys, using a flip chart of photographs to assist key informants' identification of disease symptoms. The focus was mainly on the initial stages of lymphadema, which can often pass undetected. In Belém, the same system is being used in the ICT card inquiry (applying the same inquiry with the same flip chart). Along with case detection, treatment in public health services already exists, sometimes at the municipal or federal level.

Recently, a database survey has been conducted at the national level on patients with hydrocele or some intervention that can be attributed the filarial etiology. The main intention is to identify areas where filarial was previously considered extinct, such as São Luís, in the Maranhão, and Bahia. If the number of surgeries carried out in that state is far above another where filariasis is known to exist, there is a need for higher-level care and experience with hydrocele surgery. In Haiti, this inspired higher-level care, Hope Clubs, and support groups to help conduct disease management for lymphadema, beyond the surgical treatment that is viewed as a necessity in an increasing number of cases where patients have that to pay for access to this surgery.

One issue is the absence of data on the number of identified cases and on how many are being followed. This is one of the reasons for lack of notification, along with decentralized data. An example of this is the case of Brazil. Because of the decentralization of the government, information is not centralized at the municipal level. In these cases, the true prevalence or incidence, and the mechanisms people are using to identify the patient, may not be known. This is why M&E and patient follow-up are so important.

Another point is access to treatment: Even when a program exists, access of the patient to treatment can still be an issue. This is particularly important in relation to hydrocele surgery, for which the number of trained surgeons is insufficient. Each country should evaluate whether or not this surgery should be carried out by a urologist or a general surgeon. Some public systems are insufficient in terms of providing access to this surgery, which sometimes requires payment. Even if lymphadema patients have easy access to surgery, many lack the proper social conditions to carry out basic self-care (clean water, towels, and clothing; soap; and footwear, etc.) This requires special assistance via the family and support groups, to create an adequate reference system for cases.

Then there is the question of integrating these programs with others. One example of a program that could potentially be integrated with LF are the pre-diabetic programs that exist in some countries, because disease care in relation to lymphadema is very similar to that for the pre-diabetic patient. One another crucial point is adequate communication between countries and programs to establish regional common protocols for patient training and case follow-up and monitoring.

There is also a need for common regional protocols (e.g., covering treatment, case detection and monitoring, and the creation of disease assessment criteria), and a system for updating country progress.
This could include development of program interventions and their integration with other programs, criteria for case notification, expansion of higher-level care and hydrocele surgery, and ways to demystify the procedures of lymphedema, which is a main factor in the access to hydrocele surgery and which must be done from the moment a professional is trained.

DISCUSSION

Question. I would like more details about the protocol. Should there be more details about the treatment or more about the program?

Response. This question of correct protocols is always debated in group discussions about patient treatment regarding the need to adapt the protocols to the local practices of the community. In research and in health services, people intuitively feel when you have the information but have not adapted it to the specific conditions of the patient (the condition where he/she lives). This adaptation to the local reality should really decide these protocols.

Question. Regarding hydrocele surgery: For those of us who are not surgeons, it is difficult to say which strategy is best. But I think the main objective for hydrocele surgery is to increase access to it. I think the bottom line is that we want more surgeries done in an appropriate, safe way.

There was an informal consultation done a couple of years ago, I think 2003, where a group of surgeons discussed hydrocele strategies and techniques to try to increase access. Some of the points you’ve mentioned related to the training of surgeons. From what we understood from the meeting, the group of general surgeons, urologists, and others who had worked with Dr. Norões [unfortunately not Dr. Norões himself] recommended excision.

Of course, any surgeon can do this, once it has been decided that was the best option. So surgeons probably don’t need a training exercise to learn the surgical procedure. It may be more a question of justifying the best option among the two or three different choices they had as the best approach to solve the problem, based on certain evidence. Because when you speak of training in technique, it implies a new, specialized mechanism — something different from what has been done or advocated previously. It probably needs be clarified that the whole objective is to make more surgeries available to those who need them. The group mentioned above actually suggested that it was possible to do hydrocele surgery on a short-term or outpatient basis, where the patient doesn’t have to stay in the hospital for very long, maybe no more than one day.

Response. What was shown from the experiences of Dr. Gerusa and Dr. Norões was that the comparable routine surgical technique, done at the community institution would be better to eliminate the extratesticular layer and thus prevent infection. The need for a longer hospital stay but would not require the newer surgical technique. The need for a longer or shorter hospital stay would not be proper with the surgical technique in itself, but also for the social conditions of the patient in the post-op stage regarding the risk of infection.

Response. This is related to the point about demystification of the disease. I am not urologist, I am clinician, but in all my conversations with urologists indicate they subscribe to the idea a sophisticated technique is not necessary, just the information that must be passed on about the different techniques in endemic areas. Before this information was available, as in Recife, this technique was confined to use by a surgeon; it was not used as a routine procedure.

Comment. The bottom line is: Are we really using a technique that requires a lot of training? We have to get back to the concept of simplifying, demystifying this. To correct my earlier assertion: In fact, there isn’t any scientific evidence to suggest that the Norões technique is better than any other technique. Until we have published evidence that his technique is better, we need to get back to the bottom line message of: Can we make this simple? Can we demystify it so that we can actually get others involved and not just
highly specialized individuals? The concept of taking this back to the community, out of the specialized services, is what the group was looking at. I think also that the group does not have a good recipe for this yet. As for the protocol, I think that part of the reason for trying to get together as an inter-country group is to come up with a regional protocol that can be adapted to the local conditions.

**Comment.** About disease management: I noted from yesterday's group discussion that the protocols of classification and handling of diseased patients are established; in particular the studied protocols developed for Dr. Gerona’s group. But I find that our colleagues from Brazil feel there is a lack of adaptation to local situations.

**Comment.** Our brief experience with Dr. Norões in Dominican Republic was marvelous. I remember visiting the surgery rooms for patients in the pre-surgery stage. The first thing Dr. Norões did was to examine the patients’ hands. Just by seeing their hands, he would say, about some patients, “He/she cannot enter the surgery.” Joaquin was right. A patient who has not been instructed in proper hand washing (the nails, etc.) is a patient who is going to become contaminated later on. So he spends the whole afternoon with his patients, talking and washing the hands. So I’m in agreement with what the presenter indicated: that the beauty of the Norões technique is not the technique itself but what happens from the time a patient enters the hospitable.

Under this technique, the focus is on the everyday conditions of the patient, with each one considered unique. Any risk factors must be identified at the first level of care, and patients must be taught how to wash their hands long before the actual surgery. I also remember that we had to buy underclothes for our male patients because many of them had only one or two pairs. We bought extra underclothes for them so they could have clean pairs available when they returned to their homes. That type of protocol must be worked out at the first level of care, with the field worker at the primary care level prior to surgery to reduce the possibility of complications. I recall that yesterday it was indicated that the green guidelines we are distributing for surgery interventions have created many questions among doctors in Guyana that could not easily be responded to. So we need to create a forum of focal points in the countries so that experts such as urologists can create clear documentation in response to questions received by the network.
Mapping Using HealthMapper: Issues and Future Directions

Dr. João Batista F. Vieira, MoH, Brazil

Introduction
Dr. Vieira noted that because the group had already heard a great presentation on HealthMapper, his presentation would be rather concise, focusing on brief points about various features of the product and its potential applications.

Overview
One obvious advantage is that HealthMapper is a free product that is user-friendly, flexible, and adaptable to specific local conditions (e.g., municipalities). It also contains a series of ready-to-use indicators. In Brazil, there was some interest in using other software (such as “Tab-in,” or “Land view” and “Spring,” which were genuine Brazilian products, cost-free, and in Portuguese). If an established culture of people began using that software then HealthMapper will have that to find its niche. Other useful features of HealthMapper are in the field of public health, and the program has been well received by those who have applied it in that area. In Maceió, the program proved to function well.

Potential problems
One problem with the program is that in order to produce special adaptations (for certain municipalities, for example) a very good professional knowledge of area conditions is needed.

Features
As determined during the initial use of HealthMapper in Maceió, the program can be used as a tool for integrating the work of different institutions and sectors that previously had little overlap. The group intends to diffuse “future conditions” in Maceió by using the software to complete the grid cartography — block by block — of each area and eventually the entire city. He said admitted the process was tedious and difficult one, but noted that would be true regardless of the software that was used.

Another useful application of the software can be seen in the group’s current efforts to extract old filariasis data and link it with the block-by-block data. This is labor-intensive. The Brazil program plans to expand the use of HealthMapper to training efforts, and in other municipalities, as well as for themes unrelated to filaria. In Maceió, it plans to use the software for demonstrations on disease mortality and management, and for other programs, based on the work in Maceió and other cities.

DISCUSSION

Question. I’m just wondering how versatile HealthMapper is. Suppose I wanted to monitor and present in a red code, say the salt usage in Guyana. Could I have the shops in the various blocks and maybe monitor every two months a record of the salt sales or the salt inventory and put them in HealthMapper to have a continuous record of salt monitoring?

Response. This would require two special designs. It’s possible to localize special points, and it’s very easy to take geographic points to build the database. Very much more difficult is the process, as for Maceió, of designing the small blocks.

Comment. Our mapping in Brazil has been completed down to the fifth level, but it doesn’t quite reach the municipality level, and it certainly doesn’t reach city blocks and households. So they had to use satellite images, and they are actually adapting to that system. It all depends on what you’ve got in Guyana. If you have access to these types of maps, depending on their level, [applying HealthMapper] is
easy. But if you don’t have the maps, you’d have to do what they did in Maceió, which is basically rely on satellite mapping, with sketches of the maps done by the program managers in different areas, to get the information from the field. That’s why it was such a cumbersome procedure in Maceió. In principle, once you get the maps, it’s very easy.

Comment. Anything that can be presented as a data row can be put into the map provided you have the geographic coordinates of that point. The complexity of it depends on how many geographic grid points you want. [For eight points], that would be easy. You would use GPS to take the reading of the eight shops as part of the database, which are in the maps. To get thousands of points, for example, you’d have to go to those thousands of points to do the recording.

Response. For the Trinidad GIS mapping, wherever we didn’t have HealthMapper, that’s what we did. We just did the coordinates and distributed them across the country, with each X point representing 90 houses. Researching the M&E will continue in 2005, so there’s a need to develop maps that are sophisticated to the fifth level, where the houses would be. Where we would actually be looking to use this is at the IU level. If that’s not possible, the IUs can be plotted on the maps, and we determine from those results if they are true clusters or not.

The mapping was done essentially to show areas that would and would not be done — areas that were positive, those that were negative, and areas that still need work. We now have to start fine-tuning the GIS so that it can become an operational map, in terms of positives or negatives, to show which areas under intervention have a reduction in Mf (for both density and prevalence). I think this is one potential application for the tool. When I first learned GIS, the first thing they told us was that one doesn’t just decide to “go GIS,” but that you must determine what purpose it will serve — what it will be used for. In our case, this would be temporal and spatial distribution maps. But in order for us to really use the tool as a temporal and spatial mapping device, we have to get to a certain level of sophistication so that the data can be useful and the maps can benefit everyone.

Comment. Three years ago, we ran a HealthMapper workshop in the Dominican Republic with support from WHO. There was a lot of interest by PAHO to encourage the use of HealthMapper in the region, because it was a very user-friendly tool. We were targeted for the workshop for that reason, and because we were program managers. We planned to do two workshops: one in Spanish and one in English. We did the Spanish one in the Dominican Republic, and Haiti, Brazil, the Dominican Republic, and Costa Rica participated. Then we planned another one a couple of months later for Suriname, Trinidad, and Guyana.

Several program managers attended — including two from our group today — but none were ever able to get HealthMapper working upon their return to their programs. The whole notion of HealthMapper being “user-friendly” turned out to be not quite what we’d expected. But I gave it the benefit of the doubt and agreed to invest more in it. None of us were information systems experts, so I figured we might just need more training. Still, not one of us was able to get this program going, except for one person from the Dominican Republic. So we went back and forth with the HealthMapper unit in Geneva and explained that we were having problems. Since then, we’ve had three versions of the software.

We sent two engineers, with PAHO resources (two engineers) for additional training in Ecuador. They came back, and neither one was able to get HealthMapper going. Having experienced this we put the training for Suriname, Guyana, and Trinidad on hold. I invested in the package again and had Walter Ramalho try to operationalize it in Brazil. What you saw in this meeting was the product of two months or more of his time. He is a top-level systems engineer at the MoH in Brazil. I am still hoping we will be able to operationalize it, but I am having serious doubts that it is any easier than what we’ve been using in the region in the past. I want to believe that it is a better tool, and I’m still willing to give it another try. But we’ve spent four years and I don’t know how many thousands of dollars on this. So I think we need to get back to our colleagues in Geneva and tell them, “This is not working, at least in our region.”
Report on Visit to China for Evaluating Certification for LF Elimination

Dr. David Addiss, CDC/Atlanta

PowerPoint presentation

Background
At the WHO TAG meeting in February 2004, Dr. Kevin Palmer, Regional Adviser for WHO’s Western Pacific Regional Office (WPRO) indicated that the government of China was planning to request that WHO establish a process that would lead toward official verification of the elimination of LF in China. This request led to a WHO mission to China 10–18 June 2004. The mission included a team of four (Dr. Gautam Biswas, Dr. David Addiss, Dr. Ichimori from the South Pacific, and C.P. Ramachandran from Malaysia). The mission objective was to work with the MoH to prepare the necessary documentation for the formal verification procedure. The terms of reference (TOR) for the mission were to:

- Survey existing surveillance data and determine what, if any, additional information will be required, and
- Advise the Chinese authorities on the preparation of the dossier, including how the data should be presented and what statistical analysis would be needed.

Figure 1. Examination of program records

Overview
The Chinese program is complex but extremely systematic. Chairman Mao Zedong drafted the initial instructions for strengthening sanitation, epidemic prevention, and medical work. The program was divided into three phases:

- Phase 1: Preparatory phase (1950–1956). The preparatory phase lasted five or six years and included information collection and synthesis, training, and gearing up to start the program. It was during this period that the National Programme of Agricultural Development first called for the elimination of filariasis and eight other diseases of public health importance.

- Phase 2: Control phase (1956–1984). The control phase was begun in 1956 and lasted for about 28 years. This phase, which included extensive screening for Mf in China during the late 1950s and early 1970s, led to the identification of 864 villages that were endemic for LF. These villages were located in 15 of China’s 31 provinces/autonomous regions/municipalities, with a total population at risk of 330 million.
• Phase 3: Surveillance phase (1984-present). This phase began in 1984, when Shandong Province was the first to reach the criteria for basic elimination of LF (less than 1% of persons tested in all previously endemic villages were Mf-positive, as confirmed by external reviewers). Since then, all 15 provinces and municipal areas previously considered endemic have achieved basic elimination of LF.

In addition, 12 of these provinces have achieved the more stringent designation of elimination, and two more should achieve this designation within the next few months. Elimination is considered achieved if, 10 years after achieving basic elimination, two conditions are met: 1) no Mf-positive persons were found in surveillance involving 3% of the total population living in 30% of endemic towns or townships, followed by independent assessments by provincial and national level evaluators; and 2) no human filarial larvae were detected in mosquitoes.

Seventeen counties in three formerly endemic provinces have not yet been evaluated by the MoH to determine whether they meet the criteria of elimination of LF, and these are on track for evaluation in 2005 (10 years after having met the criteria for basic elimination).

**Morbidity and treatment**

During the screening activity, 864 villages (townships) were found to have one or more people infected with ongoing transmission. This occurred throughout China, in 15 of the 30-some Provinces, with an estimated 330 million people at risk. During the control phase, selective treatment was done in areas where Mf prevalence was less than 3% and where the geographical distribution of cases was [apparently] sporadic rather than clustered. In areas where Mf prevalence was 3 to 5% and where cases were clustered, mass treatment with DEC was given and 2-week treatments were often used. In areas with prevalence higher than 5%, DEC-salt was used in addition to the other treatments. This was also done in areas where the use of salt was deemed feasible according to a variety of criteria.

**Sentinel surveillance**

The Chinese program has been in operation for almost 50 years. The program included longitudinal surveillance (corresponding to sentinel site surveillance in the Americas) of the entire community; cross-sectional surveillance to determine Mf prevalence in certain areas, and very detailed surveillance systems for special populations, such as migrants.
**LF elimination**

The Chinese program has a very stringent definition for elimination. There were two criteria for elimination: basic elimination, which required that all endemic counties in the area, district, or province have less than 1% of Mf, based on sampling of at least three endemic villages or townships in each county (primarily in areas with the highest estimated levels of Mf). Full elimination was determined 10 years after basic elimination had been achieved and was only possible if no Mf positives were detected. At least 3% of the total population from at least 30% of the endemic villages had to be included in the sample. Mosquito sampling, with evidence that there were no positive larvae, was also required. Throughout the endemic areas, there was also extensive verification by external teams. When a county thinks it is ready for verification of elimination, it submits its request to the district health authorities. They select the villages they want to be tested. The same process occurs for elimination verification for districts, which submit their requests to provincial authorities that come in and conduct the same process. This system also occurs at the national level. So there is a very rigorous system of independent crosschecks.

Three basic strategies (alone or in combination) were used to control and eliminate LF transmission:

1. Selective treatment of persons known to be microfilaric
2. Mass treatment with diethylcarbamazine (DEC) tablets
3. Mass use of DEC-fortified salt

The criteria for selective treatment, mass treatment, and DEC-salt, which was instituted at the township level, were as follows:

- Selective treatment alone was given if Mf-positive cases were sporadically distributed and the overall Mf prevalence was < 3%.
- DEC was given in an MDA (2 weeks of treatment) if cases tended to be clustered and the prevalence in those areas was 3-5%.
- DEC-salt was given if the prevalence of infection was > 5% and if:
  - no non-fortified crude salt was readily available that would compete with the fortified product (such as occurred along the coast)
  - funds were available, since this tended to be more expensive than tablets
  - a salt distribution system already existed that could be adapted for DEC fortification.

**Recommendations**

Several recommendations were made by the group, some of which seemed potentially useful for countries in the region that are interested in preparing a verification dossier:

1. Definitions. Definitions should be provided for technical terms (e.g., “imported case,” “floating population,” “endemic county”) and information provided on the administrative structure of governmental and health agencies in China (e.g., village, town, township, “nature village,” “administrative village,” district, county, province, municipality).

2. Evidence for non-endemicity. Additional information should be provided on how non-endemic areas were initially defined, and what surveillance was done in each of these areas to provide assurance that transmission had not been missed initially or introduced subsequently. Supportive data, such as vector density and vector control measures should be provided, where available.

3. Data presentation. Spatial presentation of data is encouraged. At a minimum, provincial level maps showing endemic and non-endemic counties should be included in the dossier. If post-control data are available by age group, age-specific data — particularly for children — should be reported.
4. Cross-border issues and floating populations. Additional details on surveys done in cross-border areas (e.g., date of surveys, number of persons tested, test results, follow-up of any Mf-positives) and in "floating populations" should be included in the dossier, as should additional information that would support the absence of filariasis transmission (e.g., infrequent immigration from bordering countries).

5. Methods and sampling. Information should be provided on the sampling procedures used to select villages and individuals during post-control surveillance and for special surveys.

6. Post-elimination surveillance. The dossier should include a description of what surveillance, if any, will be maintained following verification of elimination of filariasis transmission.

**DISCUSSION**

**Question.** How did the Chinese determine the cutout point (the 3% and 30% in the villages)? What were the elimination criteria? How did they determine them?

**Response.** The 3 and the 30% were the proportion of the village and of the people needing to be tested. Basic elimination was defined as 1% prevalence. Complete elimination was defined as no infected people and no infected mosquitoes.
Impact of Natural Disasters on the LF Elimination Programs: Hurricanes Ivan and Jeanne

Chair: Dr. Guillermo González
Rapporteur: Dr. Steven Ault, PAHO/WHO

PowerPoint presentation

Introduction

Dr. Ault introduced the next agenda items, noting they were actually a cluster of three inter-related items, in step with the design of the RPRG meeting as a whole, in which there were a number of inter-linked topics that could be discussed one by one or all together. He went on to explain the upcoming topics: the first concerned the impact of two natural disasters, Hurricanes Ivan and Jeanne, on the LF elimination programs in Haiti and the Dominican Republic. The second addressed Haiti’s situation in light of the hurricanes as well as the political changes that occurred this year, something PAHO and WHO refer to as “a complex emergency” — that is, two or more different national emergencies occurring at the same time, in this case, rough political change, turmoil, and at the same time a natural disaster. He described the last topic as a very specific one focused on the issue of a small group of Haitian refugees who made their way to Jamaica, where health surveys found them positive for LF. He explained that due to time constraints they would discuss the topics one by one, but not necessarily for the one and a half hours that were initially planned. He then turned the meeting back to the Chairman.

The Chairman encouraged colleagues from Haiti, the Dominican Republic, and Guyana to use their time efficiently and to present very precise points about their topics. He suggested they begin with the topic of natural disasters, followed by aspects of the “complex emergency” in Haiti and the related issue concerning Haitian refugees in Jamaica.

Figure 1. Caribbean region
Haiti

Dr. Denise Milord, MoH, Haiti
Dr. Vely Jean-Francois, PAHO/WHO, Haiti

Overview

Haiti is susceptible to hurricanes every year from June to November. This year the country was severely affected by Hurricane Jeanne—a health and environmental disaster—with more than 2,000 dead and 1,000 reported missing in the area of Gonaives. The effects of Hurricane Jeanne included:

- Flooding: water level reached 3 meters in some areas in Gonaives and its rural surroundings
- Increased breeding sites for mosquitoes (Culex quinquefasciatus and Anopheles albimanus, which transmit LF and Malaria, respectively) in urban areas
- Treatment activities postponed (e.g., MDA in Gonaives, Port de Paix, and Chansolme for around 350,000 people)
- Community activities stopped
- Production of salt for DEC-salt suspended because all the wells were flooded
- Patient services suspended in the only hospital in the city
- Field-hospital (managed by International Red Cross) operating only for emergencies
  — insufficient for population needs in terms of public health activities (health education and prevention activities)

Figure 1. Regions of Haiti
Figures 2–3. Flooding caused by Hurricane Jeanne

The disaster quickly became sanitation-related as well as ecological. The principal objective now is to prevent contact between humans and mosquitoes and to provide water and sanitation facilities to avoid transmission of communicable diseases.
**Dominican Republic**

Dr. Celia Riera, PAHO/WHO, Dominican Republic

**Introduction**

Dr. Riera apologized for having incomplete materials for the presentation on the experiences of the Dominican Republic during recent natural disasters, originally scheduled for presentation by Dr. José Manuel Puello, Director of CENCET, who was unable to attend. She introduced her topic by explaining that during 2004 natural disasters (mainly heavy rains) had a great effect on the Dominican Republic.

**Overview**

Heavy rains throughout the island (not related to a hurricane), especially in south of country (May 2004) led to 300–400 dead in the Dominican Republic. Other effects of the disaster included:

- Suspension of medication (which had a very bad effect on program)
- Flooding in Belí, in the south of the country near the border with Haiti (main endemic area for LF)
- Bad effect on program (human resources, financing)
- Vector transmission

Heavy flooding in eight provinces in the north of the country (December 2003) led to various climatic effects, and Hurricane Ivan (September 2004) and Hurricane Jeanne (September 2004) affected almost the entire country (with heavy rains causing flooding in some provinces, including those in the south). Thirteen provinces across the country were affected (rains/floods destroyed houses). There was also a negative effect on sanitation and public health systems and other aspects of the public health infrastructure. For example, health services at the recently constructed hospital in the province of Independence were totally incapacitated, forcing health care personnel to divert patients to the hospital in Barahona, which houses the LF program in the south. Other services affected by the natural disasters include:

- Primary health care services
- Sanitation services (local water systems)
- Solid waste / sewage systems
- Transport (roads, highways, bridges; some routes still blocked in eastern region)
- Supply of medicine, food, and fuel

The natural disasters also caused:

- Atmospheric/climate changes (creating new deposits of different diseases from vector transmission)
- Increase in malaria and dengue, filariasis
- Environmental changes such as greater humidity and changes in temperature (which affected vectors)
- Population losses
- Negative psychosocial effect
- Lack of LF program resources (human, financial)
- General feeling of uncertainty, instability
- Deficit of essential human resources
- Financial limitations
- Breach of emergency program
- Increased migration (internal and external) to endemic and nonendemic areas (and increase in exposed population).
- Increase in acute diseases relative to two weeks prior to disaster (although this is difficult to measure)
Island of Hispaniola

Dr. Guillermo González, RPRG Chairman

Overview

On 22 September 1998, the Island of Hispaniola was struck by Hurricane George. The path of this tropical storm, which crossed the island diagonally, resulted the following year (1999) in a 400% increase in malaria cases in the Dominican Republic (climbing from 920 cases in 1998 to 3,700 cases in 1999). There was also another dimension in the effect of this disaster: the effect on tourism. Malaria near tourist areas is a potentially significant risk to the healthy image of tourism and for the most part to the entry points the principal activity of the country. Reports indicate that close to 30 tourists were affected by malaria and a great number of services were suspended in tourist areas. In this way, natural disasters become economic disasters that also impede resources for health interventions, education, and, as indicated by Dr. Riera, vital infrastructure such as sanitation and other services.
Report on Situation of LF in Haitian Refugees in Jamaica

Dr. Shamdeo Persaud, MoH, Guyana

Overview
We were informed of a positive LF case detected in Jamaica. I presume we didn’t have any reliable information other than ICT cards (which tested positive in Mf). The request came through the PAHO Office in Georgetown, Guyana, for assistance in the form of treatment. We supported the request through the PAHO Office in Guyana, supplying 6,000 tablets that were sent on to Jamaica. I requested more details on the situation, through the local PWR office, and some efforts were made to provide me with a report (maybe through PAHO). We have not since received any of those reports. I don’t know anything more about the situation right now.

DISCUSSION

Comment. For some parts of the world, the subject of refugees is may not be an issue. But in the Americas and the Caribbean, especially Haiti, this has serious connotations. I want to mention some aspects that I think we must take into account to prepare us for future situations. With the problem of migration and refugees, there are often clearly established routes and points of impact due to well-known entry points followed habitually. I believe the affected countries must identify zones at risk of the arrival of immigrants or refugees and evaluate that risk from the environmental and entomological point of view. Because people coming from Haiti, for example, do not have the same risk or disease prevalence as those we are treating in other countries in the region. So we should not be approaching all populations as if they have equal risk.

Another factor is that in these areas people are often taken to special facilities where medical aid offers them food, etc. We should find out what basic infrastructure could be created there in terms of water supply, etc., because that also helps create a certain protection mechanism to prevent possible diffusion into other problems. We should prepare health workers at the local level with at least minimum training in proper handling of these situations to avoid improvisation and to increase knowledge on how to handle these types of situations properly. This could include proper lab protocol, equipment, and sample-taking; how to make fast epidemiological determinations; and information exchange with the home countries of migrants to determine the epidemiological situation in the country, the level of risk of disease introduction, and (in countries that require technical assistance) the minimum information required to guarantee the aid request is made to the MoH.

Dr. Denise Milord, MoH, Haiti
I have a reaction to comments on the Haitian refugee situation. First, I was surprised to hear what happened in Jamaica, and what has been done — all without Haiti’s participation or appraisal. I sincerely think that demonstrates a lack of respect for Haiti as a country, and a lack of consideration for our program. Because we have a national filariasis program, and we are talking about Haitians — refugees or not, they are still Haitians. So I think our program should have been made aware of or at least informed of [the positive case in Jamaica] and been part of the team that went to Jamaica to provide drugs, because we have drugs in Haiti. I don’t understand what happened, and I don’t understand the procedures in this kind of situation. But I think if the procedures were followed correctly, they need to be revised. Because we are here, we know the problem, we have a good program, and we should at least be informed of this type of intervention. This was not the case.

And I don’t understand the purpose of the test, what it was looking for. I would think the concern would be to avoid reintroduction of LF transmission in Jamaica. In that case, I think they should have tested for
Mf, and then antigenemia. I don’t actually know what was done. I want to add that before [the requested advisory group] went to Jamaica, we in Haiti had the opportunity to examine the [presenting case]. We cannot say for sure that she had filariasis, but she did have the clinical manifestation of filariasis. She was treated at [Haiti’s] Hospital St. Claire, way before any [international discussions of this incident].

**DISCUSSION**

**Comment.** We understand the concerns of Dr Milord. We are going to try to review the mechanisms of communication between the different endemic countries to report properly, because it is the responsibility of a government to help its citizens, wherever they are, especially if they are in difficult situations. Haiti and the Dominican Republic are some the most highly populated islands in the Caribbean, with nearly 17 million. They both have a high rate of external migration. Many Dominican nationals, possibly with Mf, are arriving on the islands of the Caribbean and Puerto Rico every week — hundreds of them — due to situations of extreme poverty in their country, to try and find better living conditions to provide their children with a better future. So the issue of migrants is not exclusive to Haiti, it is an issue across the entire island. I believe we have touched on this in other meetings and that it may be necessary to make a census in CARICOM to see how many Dominican and Haitian nationals are scattered across the Caribbean. Here in Suriname, most sex workers are Dominican. The main source of the reintroduction of Plasmodium vivax to Santo Domingo, for example, is by sex workers returning from Suriname or Guyana. So what is occurring is essentially a cross-border exchange of etiologic agents. This is going to continue to occur as long as our states lack a level of economic and political stability that can offer better living conditions or the hope of development to our citizens. I believe we have touched on this in other meetings and that it may be necessary to make a census in CARICOM to see how many Dominican and Haitian nationals are scattered across the Caribbean. Here in Suriname, most sex workers are Dominican. The main source of the reintroduction of Plasmodium vivax to Santo Domingo, for example, is by sex workers returning from Suriname or Guyana. So what is occurring is essentially a cross-border exchange of etiologic agents. This is going to continue to occur as long as our states lack a level of economic and political stability that can offer better living conditions or the hope of development to our citizens. I share Dr Milord's concern and believe this is something that must be discussed among all of us.

**Comment.** Let say this, with all the [political] sensitivity that it requires: There was an indirect communication in Jamaica requesting assistance for treatment of Haitian patients. The local office in Jamaica did a basic analysis with what they had, and channeled the request to the Office in Guyana, and to myself. I spoke with Pat Lammie about this and asked him to provide us with some technical assistance, and he agreed. So there must have been some breakdown in communication, because we did take action; we did try to do something about it. The background for all of this, however, was that there was tremendous political sensitivity on the side of the Jamaican Government. They did not want to make a big issue out of this. So we tried to be as discrete as possible in taking care of the problem.

We are terribly sorry that this came about this way, but I am afraid that the communication on this had to go above all of us, because this is really an issue of migration between Governments. So it had to be dealt with by others. It seems to be a serious problem. I think that what we should try to take from this is to ensure in future that we communicate and try to discuss issues that go beyond filariasis, because this issue isn’t limited to filariasis. The same issue could arise with TB, sexually transmitted disease, and other health issues. So it needs to be discussed at the highest possible level. But when a member country such as Jamaica requests discretion regarding an issue, because of the serious political implications, we must honor their request. There was an attempt to try to connect this with our collaborating center (CDC), on the part of Pat Lammie. There was also an attempt to channel the information between the Office in Guyana and the Office in Jamaica to try to send the treatment drugs. I commit myself to looking into the situation to see what was actually done, how they actually determined the magnitude of the problem, and what was the follow-up. I sympathize with your reaction, and I think you should try to draw attention to this issue by your MoH. We will also try to pursue and follow it up and see how to avoid this type of situation in the future, and how we could encourage more inter-country cooperation between, in this case, Jamaica and Haiti.

**Comment.** As far as the intervention goes, I talked about internal migration as an external factor for a disaster like the one we had in the country. We could see migration from areas endemic for filariasis and other diseases toward nonendemic areas of the country. People who lived in nonendemic areas but worked in the disaster areas also exposed themselves to disease. This type of internal migration has an impact on
the later epidemiology of the diseases. I also talked about cross-border migration between Haiti and the Dominican Republic. This type of migration can occur in any border of any country. In our case, we had multiple disasters, something that is not rare in the Dominican Republic and Haiti. The natural disaster occurred in the middle of an already serious situation, the effects of which were seen later in Jimani, caused by Hurricane Jean. So there was a strong connection between the MoH of Haiti and the MoH of Dominican Republic in terms of approach and exchange of information, including epidemiological information. So I believe that to a certain extent the hurricane helped the two countries formulate joint plans in the area of Jimani, which helped to minimize the potential effect of these complex situations. Communication between countries facilitates a faster response, leading to better control by epidemiologists.

Logically, our organization can play an important role, as demonstrated in the case of Haiti and the Dominican Republic throughout this period. Although the subject of migration, both internal and external, is an issue in itself, national health services must prepare themselves for the increased socioeconomic problems it can cause. In the case of the Dominican Republic, it helped exacerbate a serious macroeconomic situation in a country with a financial crisis. Natural disasters have more impact in this situation and logically have a direct influence on both migration and the epidemiological behavior of disease. In summary, I believe national health services need to be more prepared than ever to face natural disasters, as well as the inevitable migration caused by various factors (disasters, political conflicts) to minimize the impact on the health situation of the country.

**Comment.** Whether there are natural disasters or not, legal and illegal immigration or migration will take place. Therefore, each country should develop an early warning system for natural disasters and infectious disease. It is now more important than ever that countries take responsibility to look for effective epidemiological tools. If each country develops its own early warning systems they will be in a better position to predict and detect very early in order to implement preventive measures and avoid epidemics and major outbreaks. Although natural disasters do not follow a logical sequence, alerts from early warning systems can at least provide some time to prepare. Even those countries that are very poor and don’t have the money or the infrastructure would be well advised to take the first step to conceptualize the development of an early warning system.
Chair: Dr. Steven Ault, PAHO/WHO

Chairman González acknowledged time limitations and suggested the remaining points be summarized for review the following day, and reminded participants that the next day’s session would be held at the local PAHO Office (as opposed to the hotel venue thus far). He then passed the meeting over to Dr. Ault to provide some administrative updates.

Dr. Ault thanked Dr. González for chairing the session, and expressed his appreciation to Dr. David Chadee and Dr. John Ehrenberg for recommending the previous discussion themes.

He reminded participants that the next day’s meeting session would end mid-day. He then reiterated Dr. González’ reminder about the new meeting venue (the PAHO Office) and explained how to get there. He asked the group to convene before 8:00am the next morning for about 20 minutes at the front entrance of the hotel so that they could walk to PAHO as a group. Acknowledging that some might not make that meeting, he noted that support staff had made up maps with directions from the hotel to PAHO, and urged at least one member of each country group to take a copy. He also referred attendees to the contact information on the first page of the meeting agenda and reminded them that the first session would begin at 8:00 am.
Other Issues and Topics of Interest

Report from Global Partner GSK
Ms. Minne Iwamoto, GSK Inc.

Forecasting, Planning, and Shipping
- GSK planning horizons
  - Production plans 2 years ahead
  - Financial plans 3 years ahead (end 2007)
  - New factories/capacity building 3 to 5 years ahead (Capetown manufacturing facility)
- Forecasting process with GSK/MDP/WHO looks 3 years ahead
- Regular teleconferences look at forthcoming shipments

Albendazole Shipments to date by Region

Albendazole shipments to Americas Region

To 39 Countries

293 million albendazole tablets shipped to date

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Americas</td>
<td>2%</td>
</tr>
<tr>
<td>Africa Mectizan</td>
<td>22%</td>
</tr>
<tr>
<td>Africa DEC</td>
<td>2%</td>
</tr>
<tr>
<td>Med'n</td>
<td>4%</td>
</tr>
<tr>
<td>Pacific</td>
<td>3%</td>
</tr>
<tr>
<td>India SC</td>
<td>42%</td>
</tr>
<tr>
<td>Mekong +</td>
<td>25%</td>
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</tbody>
</table>

143 million albendazole tablets shipped to Haiti

13 million albendazole tablets shipped to DR

229 million albendazole tablets shipped to Mekong +
Entomological Successes: Part II
Dr. David Chadee, Trinidad & Tobago

PowerPoint presentation

Figure 1. Map of the Caribbean

Rationale
- Work in the region involves development of partnerships with various countries at different stages in their LF campaigns (see Figure 1)
- Need for transfer of technology/or methodology (i.e., xenomonitoring and PCR)
- Research conducted in areas where gaps in knowledge exist

Haitian approach vs. xenomonitoring approach

Haitian approach
- Rapid assessment of local landscape; index house selected

Xenomonitoring approach
- 1 Reiter gravid trap set at 5 index houses per community; 10 houses surrounding the Reiter traps; adult mosquitoes collected for 5 minutes from 6-8am
- Assessment of landscape using Site Selection Criteria Questionnaire (houses selected based on positive LF cases or breeding sites)
- Representative sample collected based on Lehr’s formula for calculating sample size for a power of 80% and a two-sided significance level of 0.05
- Systematic collections of all mosquitoes in all rooms conducted in selected houses
Changes in methodology: pre- and post-MDA specific (sentinel sites)

- Select survey areas using xenomonitoring algorithm (based on LF cases or presence of mosquitoes and breeding sites)
- Select 30 sub-units randomly from all sub-units (similar to IU selection)
- From each of these, sample cluster of 10 houses for mosquitoes
- Total of 300 houses
- Estimate man-vector contact

Changes in methodology (II)

- Mapping by GIS to demonstrate temporal and spatial change (ArcView or HealthMapper)
- Develop higher resolution maps that show topography, rivers (i.e., risk maps)
- Use similar number of houses in each unit/subunit
- Test all mosquitoes by household, cluster, or subunits (to determine sensitivity, etc.)

Changes in methodology (III)

- Use standardized mosquito collection methodology and standardized PCR protocol.
- Each country should use same PCR method at sentinel sites, etc.

Sentinel-site objectives

- Evaluation of sub-units similar to those used for monitoring and evaluation of MDA program
- Ability to compare ICT or Mf levels with xenomonitoring/PCR
- Sensitivity and specificity of all approaches achieved independently and by comparison
- Determination of threshold levels or sensitivity of particular approaches so that refinements can be made and collaborations established

Proposal for new approach

- Two sites: Brazil and Dominican Republic
- Annual evaluations similar to those used in monitoring and evaluation of IUs (sentinel sites)

Future directions

- Complete post MDA xenomonitoring/PCR in the Dominican Republic
- Verify elimination of LF in Suriname
- Initiate effort to address entomological issues in Guyana and Brazil
- Evaluate xenomonitoring/PCR approach in other LF regions of the world
- Adopt modified xenomonitoring/PCR approach as monitoring and evaluation tool
- Conduct evaluation of Costa Rica using xenomonitoring/PCR (general approach)

Challenges

- Need for continued funding for research and development
- Need to address threshold levels and sensitivity of evaluation tools (new protocol)
- Need to consider special needs of LF endemic countries (human resource, funding, logistics, collaboration, etc.)
- Need standardized methods and systematic approach in respective endemic countries

Role of xenomonitoring

- Xenomonitoring may not solve all issues but should be viewed with open mind
- Continue to look for new applications in addressing need for monitoring and evaluation
- RPRG should continue supporting new and novel approaches
BRAZIL

History
- Several mass surveys done: 1956–1965
  - 17 states found with W. bancrofti
- Selective treatment started
  - 1960s: focus on Recife, Salvador
  - 1983: Bahia foci considered eliminated
  - 1990s: Alagoas focus detected

Overview
- Mapping completed in all 3 states
  - Pará: 0
  - Pernambuco: 0.81 – 0.08
  - Alagoas: 0.26
- Population at risk: 1,765,000
- Successful strategy of mass screening and selective treatment
- Well-developed morbidity control program mainly in Pernambuco

Organization
The National Management structure focuses on:
- Coordinating LF Program activities
- Establishment/promotion of guidelines
- Prompt intersectoral cooperation
- Coordinating and promoting research

Partners
- Wide cross-section of research institutions, health agencies, and institutes involved in LF control activities
- State Secretariats for Health
- Municipal Secretariats of Health
- Universities and research institute
- PAHO/WHO

Financial support
- Mainly the Brazilian Government, through
  - Federal funding to the MoH
  - State funding
  - Municipal funding
- Regular source of funding via TFECD (National Health Foundation)
- Universities fund independent projects
- PAHO/WHO fund research

Treatment
- MDR (DEC only)
- Recife (two rounds)
- Population at risk: 47,320
- Reported coverage: 39,262 (83%)
- Olinda (planned for 2004)
- Jaboatão (planned for 2004)
- Selective treatment for Maceió, Recife, and Metropolitan Recife
- Belém: Verification of absence of transmission

Disability reduction
- Maintain and expand assistance to persons suffering from LF in Recife
- Commence morbidity assistance and survey of LF patients in Maceió and Belém
- Plan to conduct Rapid Morbidity Assessment in Salvador and São Luís
- Methods for hydrocele surgery developed in Recife and are now implemented

Monitoring
- Good existing laboratories and surveillance structures in place
- Challenges for chosen strategy (selective treatment)
- National LF Program responsible for monitoring process

Issues
- Verification of absence of transmission in Belém
- Testing new tools for verification process
- Single-drug (DEC only) strategy in three IUs with low prevalence
- Selective treatment
- Time frame
- Effectiveness in interrupting transmission
- Need for high level of public participation and the willingness of population to be tested/treated
- Programs are in different areas at different stages of elimination (so one sole strategy is not appropriate)
Action Points

Chair: Dr. Guillermo González

Draft Recommendations

General

1. The RPRG requires the participation of two experts in their committee, one in social mobilization, and the other in salt fortification with DEC.

2. Trevor Milner should be invited to join RPRG (to be discussed and re-confirmed by Secretariat).

3. RPRG members should send recommendations of names of social communications experts to the Chair, for consideration, no later than the end of November.

4. The new chair, Dr. João Batista F. Vieira, should send a letter to Dr. Barnie Cline thanking him for his years of participation in the RPRG.

5. The programs should utilize more process indicators to monitor progress during the year, and members should send recommendations of indicators to the chair by the end of November so that Dr. Persaud can relay the recommendations to the TAG meeting in March 2005 for timely and urgent feedback. (This was perceived as an urgent matter.)

6. RPRG members should increase their use of graphics to better illustrate monitoring and evaluation of activities and as a visual aid in establishing treatment goals.

7. RPRG recommends regular follow-up monitoring of hydrocele operations.

8. National programs should (a) work with foci and specialists in country to strengthen their morbidity components and (b) consider options for their integration into primary health care systems.

9. RPRG supports the proposal that Dr. Ana Maria Aguiar and Dr. Marie Denise Milord develop the morbidity component in the region as focal points in morbidity.

10. RPRG members should review national program Annual Reports together with country Re-Applications to ensure all Report inventory numbers (tablets received, tablets used, and remaining stock) concur with those in the Re-Applications.

11. Endemic countries should be aware of the following deadlines: 28 February (due date for WHO Regional Office receipt of Annual Reports) and 28 February and 31 August (semi-annual due dates for WHO Regional Office receipt of country Re-applications).

12. RPRG requests that countries confirm the amount of drugs (albendazole and DEC) needed for 2004–2008. This should be completed by the second week of November and sent to Dr. Steven Ault (PAHO, Washington, DC).

13. RPRG recommends that PAHO (a) send a letter of acknowledgement of the efforts and progress made by Trinidad & Tobago, Costa Rica, and Suriname toward elimination of LF, and (b) encourage these countries to prepare their dossier for verification of the elimination of transmission for submission to the RPRG for its consideration and forwarding to TAG.

14. RPRG recommends that WHO provide an outline and description of the materials that should be included in the above-mentioned dossier to Program Managers as soon as possible, preferably within two weeks. (Dr. David Addiss and Dr. Gautam Biswas will prepare and submit draft by mid-November 2004.)

15. RPRG should request that WHO and GAELF seek funds for technical consultations, DEC, and research activities.

16. RPRG recognizes the importance of continued research and the refinement of tools to assess whether transmission has been interrupted, and encourages further work in this area.

17. RPRG recommends that countries apply the current WHO M&E guidelines handed out during the current RPRG meeting.
18. RPRG must prepare a budget for 2005 for submission to WHO by the end of November for activities of the RPRG or its representatives and consultants. This may include, for example, site visits and support for tool validation exercises, the morbidity component, and transmission threshold assessments.

19. RPRG received information that there are no funds available for the purchase of DEC for Haiti and the Dominican Republic. It is suggested that these countries begin mobilizing funds to guarantee treatment via MDA. RPRG recommends that the RPRG Chair send a letter to GAELF to request its assistance in purchasing DEC for the national programs.

20. RPRG recommends to the group of investigators working with the xenomonitoring that the PCR technique and primers be standardized.

21. RPRG recommends that countries provide timely information on problems and needs to the Secretariat, and that the Secretariat develop mechanisms to communicate this to members.

22. Sustained technical support for the DEC-salt initiative must be guaranteed.

23. RPRG accepts the motions by Costa Rica to hold the 6th Program Manager’s and 5th RPRG meetings in Costa Rica in 2005.

BRAZIL

1. RPRG recognizes Brazil for the special efforts and progress it has made in Belém and other historical focal points, and for its continuing monitor of these focal points (for which it may request technical consultation from WHO on what is needed to document interruption of transmission).

2. RPRG recommends that Brazil update the data on population at risk and reconsider the adaptation of MDA with the two-drug regime in Pernambuco focal points.

DOMINICAN REPUBLIC

1. The Dominican Republic should review and provide further information regarding the large differences between reported coverage and survey coverage in the table presented at the meeting.

2. The Dominican Republic should correct its sampling methodology, review its sentinel surveillance and MDA coverage, and send a report to the RPRG.

3. The Dominican Republic should complete its mapping process and define Implementation Units for its MDA area.

4. The Dominican Republic should seek assistance from the RPRG to determine when to stop its MDA program at different foci.

5. RPRG requests that the Dominican Republic clarify and reconcile the large discrepancies between the number of albendazole tablets remaining in stock (as reported at the September 2003 Maceió RPRG meeting), the number of persons treated since then, and the number of albendazole tablets reported in stock in their 2004 Re-Application.

6. RPRG recommends, in the best interest of the region, the completion of the evaluation of xenomonitoring at the study site of La Ciénaga in Santo Domingo City.

SURINAME, TRINIDAD & TOBAGO, AND COSTA RICA

1. These three countries intend to prepare a dossier for submission to the RPRG for its consideration and forwarding to TAG, requesting verification of the absence of W. bancrofti transmission.

2. Two draft documents (Verification of Absence of Transmission for LF Elimination Programs and Outline for Verification of Absence of Transmission) will be used as reference in preparing the dossier.

3. The Program Managers of these three countries request that the RPRG, using these documents, provide an outline and description of materials that should be included in the dossier. This should be provided to the Program Managers as soon as possible, preferably within two weeks.
4. The Program Managers may request technical consultation from the RPRG regarding preparation of the dossier (which should be provided expeditiously, given the short time-frame prior to the next TAG meeting).

5. Brazil may request technical consultation from the RPRG on the adequacy of its documentation for interruption of transmission assistance, which should be provided within two months.

6. RPRG should request that WHO and the Global Alliance seek funds for such technical consultations.

7. RPRG recognizes the importance of continued research and refinement of tools to assess whether transmission has been interrupted and encourages further work in this area.

8. RPRG requests that TAG give urgent attention to providing guidance on required and/or recommended surveillance for *W. bancrofti* infection leading up to and following verification of interruption of transmission.
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### Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>Ag</td>
<td>anogenital</td>
</tr>
<tr>
<td>BOG</td>
<td>Bureau of Public Health (Suriname)</td>
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<tr>
<td>CARE</td>
<td>Cooperative for Assistance and Relief Everywhere</td>
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<tr>
<td>CAREC</td>
<td>Caribbean Epidemiology Centre</td>
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<tr>
<td>CARICOM</td>
<td>Caribbean Community and Common Market</td>
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<tr>
<td>CCM</td>
<td>Country Coordination Mechanism</td>
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<td>CCS</td>
<td>country cooperation strategy</td>
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<tr>
<td>CD</td>
<td>communicable disease</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>CENCET</td>
<td>National Center for Tropical Disease Control (Centro Nacional de Control de Enfermedades Tropicales) (Dominican Republic)</td>
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<tr>
<td>CES</td>
<td>Centro Estudios Sociales Padre Juan Montalvo (Dominican Republic)</td>
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<tr>
<td>CPqAM</td>
<td>Research Centre Aggeu Magalhães (Centro de Pesquisa Aggeu Magalhães) (Brazil)</td>
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<tr>
<td>DEC</td>
<td>diethylcarbamazine</td>
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<tr>
<td>DIGPRES</td>
<td>Office of Health Promotion and Education (Dirección General Promoción y Educación en Salud) (Dominican Republic)</td>
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<tr>
<td>DOT</td>
<td>Directly Observed Treatment</td>
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<tr>
<td>DPC</td>
<td>Disease Prevention and Control (PAHO/WHO)</td>
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<tr>
<td>EBAIS</td>
<td>Primary Health Care Units (Equpos Basics Atencion Integral de Salud) (Costa Rica)</td>
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<tr>
<td>EG</td>
<td>Executive Group (GAELF)</td>
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<tr>
<td>ELISA</td>
<td>enzymelinked immunosorbent assay</td>
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<tr>
<td>ENDESA</td>
<td>Demographic and Health Survey (Encuesta demograpfica y de salud) (Dominican Republic)</td>
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<tr>
<td>EPI</td>
<td>Expanded Program on Immunization</td>
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<tr>
<td>FIOCRUZ</td>
<td>Oswaldo Cruz Foundation (Fundação Oswaldo Cruz) (Brazil)</td>
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<td>FUNASA</td>
<td>National Health Foundation (Fundação Nacional de Saúde) (Brazil)</td>
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<tr>
<td>GAELF</td>
<td>Global Alliance for the Elimination of Lymphatic Filariasis</td>
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<tr>
<td>GFATM</td>
<td>Global Fund to Fight HIV/AIDS, TB, and Malaria (Global Fund)</td>
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<tr>
<td>GH</td>
<td>geohelminthiasis</td>
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<tr>
<td>GIS</td>
<td>geographic information system</td>
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<td>GPS</td>
<td>geographic positioning system</td>
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<td>GSK</td>
<td>GlaxoSmithKline</td>
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<td>HICP</td>
<td>Highly Indebted Poor Countries Initiative</td>
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<tr>
<td>HJM</td>
<td>Regional Hospital Jaime Moto (Dominican Republic)</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>HFMP</td>
<td>Hospital Francisco Moscoso Puello (Dominican Republic)</td>
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<tr>
<td>IDD</td>
<td>Iodine Deficiency Disorder</td>
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<tr>
<td>IEC</td>
<td>information, education, and communication</td>
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<td>ICT</td>
<td>immunochromatographic test</td>
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<td>IDCP</td>
<td>Dermatology Institute (Instituto Dermatológico de Cirugía de la Piel) (Dominican Republic)</td>
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<tr>
<td>INHSAC</td>
<td>National Institute of Community Health (Institut Haitien de Santé Communautaire) (Haiti)</td>
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<tr>
<td>IP</td>
<td>inter-programatic</td>
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<tr>
<td>IU</td>
<td>implementation unit</td>
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<td>LF</td>
<td>lymphatic filariasis</td>
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<tr>
<td>MDA</td>
<td>mass drug administration</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<tr>
<td>Mf</td>
<td>microfilaria</td>
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<tr>
<td>MoA</td>
<td>Ministry of Agriculture</td>
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<td>MoH</td>
<td>Ministry of Health</td>
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<td>MoU</td>
<td>Memo of Understanding</td>
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<tr>
<td>NGO</td>
<td>nongovernmental organization</td>
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<tr>
<td>PacELF</td>
<td>Pacific Programme to Eliminate Lymphatic Filariasis</td>
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<tr>
<td>PAHO</td>
<td>Pan American Health Organization</td>
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<tr>
<td>PCR</td>
<td>polymerase chain reaction</td>
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<tr>
<td>PELF</td>
<td>Programme to Eliminate Lymphatic Filariasis</td>
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<tr>
<td>PHC</td>
<td>primary health care</td>
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<td>PPC</td>
<td>Partners for Parasite Control (WHO)</td>
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<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<tr>
<td>PSA</td>
<td>public service announcement</td>
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<tr>
<td>PWR</td>
<td>PAHO/WHO Representatives</td>
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<tr>
<td>RCG</td>
<td>Representative Contact Group (GAELF)</td>
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<tr>
<td>RDC</td>
<td>Rural Development Council</td>
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<tr>
<td>RIMSA</td>
<td>Inter-ministerial Meeting on Agriculture and Health (Reunion Interministerial de Salud y Agricultura)</td>
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<tr>
<td>RPRG</td>
<td>Regional Program Review Group</td>
</tr>
<tr>
<td>SESAP</td>
<td>Secretariat of Public Health (Secretaria de Estado da Saúde Pública) (Dominican Republic)</td>
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<tr>
<td>SGU</td>
<td>St George’s University (Guyana)</td>
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<td>SPHA</td>
<td>Suriname Public Health Association</td>
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<tr>
<td>SPS</td>
<td>Secretariat of Health (Brazil)</td>
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<td>SVS</td>
<td>Secretariat for Health Surveillance (Brazil)</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>TAES</td>
<td>Directly Observed Treatment (Tratamiento Acortado Estrictamente Supervisado)</td>
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<tr>
<td>TAG</td>
<td>Technical Advisory Group</td>
</tr>
<tr>
<td>TCA</td>
<td>technical cooperation agreement</td>
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<tr>
<td>TDR</td>
<td>Tropical Diseases Research (WHO)</td>
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<tr>
<td>TFECD</td>
<td>National Health Foundation (Tetos Finançeiros de Epidemiologia e Controle de Doenças) (Brazil)</td>
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<tr>
<td>TOR</td>
<td>Terms of Reference</td>
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<tr>
<td>TOT</td>
<td>Training of Trainers</td>
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<tr>
<td>UG</td>
<td>University of Guyana</td>
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<tr>
<td>UNAP</td>
<td>Primary Health Care Unit (Unidad de Atención Primaria) (Dominican Republic)</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<tr>
<td>USAD</td>
<td>Santo Domingo Autonomous University (Universidad Autónoma de Santo Domingo)</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WDRH</td>
<td>West Demerara Regional Hospital (Guyana)</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WPRO</td>
<td>Western Pacific Regional Office (WHO)</td>
</tr>
<tr>
<td>YPS</td>
<td>Yellow Prussiate of Soda (also known as FFC or sodium ferrocyanide)</td>
</tr>
</tbody>
</table>
**RPRG Membership and Terms of Reference**

**Membership**

Members of the Regional Programme Review Group (RPRG) will be appointed by the Regional Director and will serve a two-year term (renewable for one additional term).

The ideal size/composition of the RPRG is 5 to 11 people drawn from the following entities:

- One member of the Global Programme Review Group who is also from the Region
- Two LF program managers from countries of the Region (including one TAG representative from the Region)
- One or two recognized experts in LF and tropical public health from institutes of excellence within the Region
- One member from a technical body of another program with actual or potential links with LF Elimination Programs in the Region
- One member of the RPRG will be elected as Chairperson for a term of one year (renewable on re-election)
- A representative of the WHO-HQ will be an ex-officio member of the RPRG
- Representatives from GlaxoSmithKline, Merck and Co. Inc, NGOs, and donor agencies can be invited as observers
- The Regional Office of WHO will function as the secretariat for the RPRG, with the WHO Regional focal point acting as Secretary
- Members should not have any conflict of interest with other related bodies

**Terms of Reference**

The primary objectives of the RPRG should be to:

- Review applications and re-applications for drug donations of albendazole, where this drug forms part of national plans to eliminate LF. The plans should be consistent with guidelines for safe and rational use of the drug and with approved prescribing information in all areas where LF is endemic.
- Provide guidance to countries in the development of their annual national plans for the elimination of LF in a manner that is consistent with national public health policies and global and regional strategies for the elimination of the disease, and which takes into consideration the specific issues of the Region. The RPRG should guide the countries to help build on their existing capacities rather than building vertical structures.
- Review the implementation and progress of national programs and ensure they are consistent with regional and global strategies and targets and make recommendations to WHO regional focal points on subsequent requests for albendazole and upscaling of programs in subsequent years.
- Provide technical guidance on implementation of the recommendations of the TAG Group as relevant in the member countries of the region.
- Identify operational research issues arising during implementation of programs in the Region and refer to relevant research institutions in the region, the Global TAG, the WHO Regional Office, and the Dominican Republic Task Force on Filaria Intervention Research.
- Advise PAHO/WHO on matters related to certification of elimination of LF in countries of the region.
- Advocate and support member countries in seeking political commitments from Governments and Ministries of Health for the elimination of LF.
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- Dr. Nevio Zagaria, CPE/CEE, WHO/HQ, Geneva; ex-officio member
- Dr. John P. Ehrenberg, Chief of Communicable Diseases, PAHO/WHO, Washington, DC; RPRG Secretariat
# Outline for Verification of Absence of Transmission

(For countries that previously reported lymphatic filariasis transmission or imported infections)

**Principles of verification of interruption of transmission:**

1. Evidence that ecological changes (either natural or man-made) are no longer conducive to LF transmission
2. Evidence that an adequate surveillance mechanism is in place that would have detected any ongoing transmission or recrudescence
3. If required, a survey in the previous endemic areas to assess any evidence of recrudescence

**Verification Methodology:**

<table>
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<tr>
<th>Verification principle</th>
<th>Methods that would provide the evidence</th>
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| 1. Evidence that ecological changes either natural or man-made is no longer conducive to LF transmission | 1. Mapping the country by ecological zones conducive to LF transmission  
2. Evidence of source reduction measures, such as large-scale development, improvement in sanitary conditions, absence of mosquito breeding sites, or vector control campaigns  
3. Evidence of presence or absence of vectors responsible for LF transmission  
4. Historical data on bringing down community microfilaraemia in the past; this must include treatment strategy and regimens, frequency of treatment, population targeted, drug coverage.  
5. Microfilaraemia evolution in the area is a good indicator. When it is between 0–1%, you can say that the disease is under control. |
| 2. Evidence that an adequate surveillance mechanism is in place that would have detected any ongoing transmission or recrudescence | 1. Filariasis as a reportable disease  
2. Number of new hydrocele and Lymphoedema patients reported or age-specific prevalence of hydrocele and Lymphoedema  
3. Reports of Microfilaraemia, clinical manifestation of LF in populations subject to routine medical treatment-recruiting of uniformed services  
4. Evidence of absence of infection (either through dissection or PCR) in vector population if year-long collection of mosquitoes or at least through out the transmission season is collected in quantities in excess of 30,000 (this figure is not validated) |
| 3. If required, a survey in the previous endemic areas to assess any evidence of recrudescence | 1. LQAS survey in blood banks or stored diagnostic serum banks  
2. Antigenaemia or Microfilaraemia of less than 1% in all population groups, especially those in high risk and less than 0.1% antigenaemia in children born after stopping antifilarial measures or at least in the 0–5years age group.  
3. Absence of filarial antibody IgG4 in populations (presently, no standardisation on the implication of presence of antibodies) |
**Proposed Verification Process:**

1. The country would request the WHO for verification
   a. A detailed dossier with evidence of interruption of transmission (the historical background of all activities for MDA or vector control) (see table)
   b. Could also seek WHO assistance previous to filing a dossier
2. WHO, after initial screening and if required, would seek supplemental information from the requesting country.
3. WHO presents the case to the Regional PRG for their comments
   a. Regional PRG reviews the proposal
   b. If required, requests an assessment mission
   c. Makes its recommendations on the basis of the verification guidelines to the Global Technical Advisory Group
4. The Technical Advisory Group reviews the recommendations of the Regional PRG and gives its recommendations to WHO to either
   a. Accept the claim of the country regarding interruption of transmission and taking it off the list of endemic countries, or
   b. Recommend further measures to be taken by the country to complete verification of interruption of transmission.