



Lymphatic Filariasis Elimination - RPRG Newsletter of the Americas

Pan American Health
Organization/World
Health Organization

Volume 1, Issue 2

August 2003

Welcome to the 4th Regional LF Elimination Meeting, Maceió, Brazil

Bem-Vindos to the second issue of our regional newsletter, communicating important information and advances in the national efforts to eliminate lymphatic filariasis in the Americas. This newsletter is being issued to coincide with the 4th annual meeting of the national LF program managers and members of the Global Alliance for the Elimination of Lymphatic Filariasis, and the 3rd annual RPRG meeting, both being held in beautiful Maceió, Alagoas, Brazil. For this year's meetings in Maceió we are expecting nearly 100 participants from at least 12 different countries and the WHO Regional Office for the Western Pacific and Oceania. Some highlights of the 4th Regional Meeting will include reports from seven countries in the region, including our first discussions with colleagues from French Guiana and Cuba; a special topic on monitoring and verification of elimination of LF transmission; a report on the global program for LF elimination; 3 workgroups on special themes; and a presentation on experiences and lessons learned in LF elimination programs in the Western Pacific and Oceania region.

We expect to see the newsletter complemented by a webpage during 2003-2004, combining the best of both worlds. We thank our various contributors to this edition. As always, contributions and suggestions for the next newsletter are welcome, and very critical for its success. Please pass them to Steven Ault, PAHO/WHO Brazil (see e-mail address on back page).



Dr. Gilberto Fontes, Professor of the Federal University of Alagoas, Dra. Audinei Loureiro Cavalcante, Chief Epidemiologist, and Ms. Maria Teresa Villela de Almeida, Interinstitutional and International Coordinator of the Municipal Secretariat of Health of Maceió, Dr. João Batista F. Vieira, National Coordinator for LF Elimination in Brazil/SVS-MinHealth, and Dr. John Ehrenberg, PAHO/WHO Regional Advisor on Helminths, planning the 4th regional LF Elimination meeting in early 2003. We thank you and your colleagues for all your hard work.

Eliminating Filariasis in Belém, State of Pará, Brazil

In the mid-20th century, bancroftian filariasis represented one of the most serious public health problems in Belém. The first inquiry to determine the prevalence in Belém (by Causey and co-workers in 1945), revealed a MF index of 10.8%. A series of annual blood exams by the National Malaria Service began in 1951, that in 1952 revealed 19.94% of the individuals examined were carriers of MF—practically one in every five. Besides that, people already deformed by elephantiasis were frequently found. Direct vector control measures of both mosquito larvae and adults were initiated in this year; they were then abandoned in 1956, due to their unsustainability. The disease control measures thereafter concentrated on the identification of MF and patient treatment with DEC over five decades to reduce the indexes of prevalence of the disease and mosquito landing rates to zero today. Environmental sanitation works covering extensive areas started in the 1990s, and helped to consolidate the results obtained. A LF elimination plan currently is under way in Belém, in which blood smears are complemented by more sensitive methods such as the ICT card, blood filtration surveys, control of morbidity and entomological surveys. From the plan's beginning in January 2002 until February 2003, some 105,167 blood examinations showed zero MF, and 13,427 mosquitoes were dissected without finding *Wuchereria bancrofti*. Only 43 symptomatic people were found in the morbidity survey of which 28 had been previously identified. Reinaldo Braun, SMS/Belém.

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Belém, Pará, Brazil seems to have eliminated LF transmission, during a 50-year effort using traditional methods. Today we know that LF transmission can be eliminated in as little as one to two years using mass treatment with DEC-salt or in 5 to 6 years with use of annual mass drug administration. Photo courtesy: it.geocities.com/musibrasilfoto/fotogiko/belem.jpg



Educational Poster used before the MDA treatment round began, to encourage community participation in treatment., Dominican Republic, December 2002. Photo courtesy of Barney Cline

Successful MDA Round in the Dominican Republic

With a high level of official and public support, the first round of mass drug administration (MDA) in the Dominican Republic took place in the southwest focus of endemic lymphatic filariasis (LF) during 13-15 December, 2002. "Mop-up" drug distribution continued in a few communities for up to 10 more days, as required. The total estimated 2002 population targeted in the LF-endemic municipalities in the provinces of Barahona, Bahoruco and Independencia was about 120,000 inhabitants. Working with lists of enumerated household residents, MDA was carried out on a house-to-house basis by 1,100 carefully selected, trained and supervised volunteer

"medicators" who had previously conducted a careful census (and morbidity assessment) in their respective communities. Albendazole and DEC tablet dosages were determined on a basis of age and sex, and were swallowed under direct observation. The MDA campaign was preceded by intensive social mobilization through direct discussions with community members, posters, radio and sound trucks, and the active support of community leaders and respected local organizations, including churches and schools. Detailed information was provided about potential side effects and the availability of treatment if needed. Reported coverage was 88.0%

over-all, and surveyed coverage (from a cluster survey of 15 localities randomly selected from 142 localities visited one week after MDA) was 83.6%. The range of surveyed coverage, by locality, was 64.1 to 92.2%. The entire team of 1,400 workers (including supervisors and coordinators) merits profound respect for the exceptional organization, rigorous supervision and evaluation, and highly professional character of its work. The MDA activities were led by Dr. Manuel González de Peña, LF program chief in the Southwest region. The national program director is Dr. Guillermo González, Director of CENCET. Submitted by Dr. Barney Cline.



Abandoned and/or unimproved pit latrines are ideal breeding sites for *Culex quinquefasciatus*, and should be filled up with dirt and replaced with VIP latrines or sanitary sewerage. Photo by Steven Ault, 2003.

The main strategy for eliminating LF transmission is based on the mass drug administration (MDA) approach which kills the microfilariae in humans, but no control strategies have been developed specifically for the mosquito vector. For example, it is recommended that "integrated vector control wherever feasible" should be conducted. Here is outlined some of the available strategies or approaches which can be employed to control *Culex quinquefasciatus* mosquitoes and which can

Integrated Vector Management

possibly prevent the re-infection of treated communities in the Americas. The control of *Cx. quinquefasciatus* mosquitoes can be effective and sustainable if properly planned and coordinated. To control mosquito breeding sites and adult populations it is recommended that numerous strategies be adopted by the community and vector control departments.

A. Pit latrines: Using a physical barrier which would reduce or eliminate the breeding of immature

stages of the mosquitoes (in pit latrines): (1) Using a layer of oil which will block the siphons and trumpets of the larvae and pupae respectively thus making it impossible for these immatures to breathe atmospheric oxygen; (2) Using expanded polystyrene which acts in the same way as the layer of oil but is effective when pits become dry and then wet again, the beads will re-float, even if buried under feces in the dry period (in pit latrines).



Open drainage box for household wastewater is "open house" for *Culex quinquefasciatus* mosquito breeding. However this box can be sealed against mosquitoes. Photo by Steven Ault, 2003.

Integrated Vector Management, continued

B. Drains, cisterns, septic tanks - Using environmental management and source reduction strategies against immature stages: (1) Clearing stagnant drains & use of inverts with a suitable gradient to allow free flow of waste water into the rivers and streams; (2) De-weeding and de-silting drains to allow free flow of waste water; (3) Sealing cisterns & storage tanks, replacing broken manhole covers, covering air vents with mosquito netting and sealing septic tank covers.

C. Drains, ponds, disused wells, flooded cellars - Using registered chemicals (biocides) & biological control agents to control the vectors: (1) *Bacillus sphaericus*, a biological control agent which is specific & has a fairly prolonged killing effect on immature stages; (2) Temephos, an organophosphate insecticide will kill the immature stages & is generally considered to be the least toxic chemical larvicide currently available; (3) *Poecilia reticulata*, the guppy fish

which tolerates highly polluted water & can successfully control *Cx. quinquefasciatus* breeding in drains in both urban & rural areas. Areas within the Americas which experience temperatures below 10 degrees C. may use *Gambusia affinis* for the control of mosquito breeding sites associated with ponds, blocked drains and flooded cellars. (Editor's note—First determine if these fish species compete with native fishes). David Chadee, Ministry of Health, Trinidad & Tobago. (to be continued)

Links and References about Lymphatic Filariasis

Filariasis Net www.filariasis.net
WHO LF Program and Global Alliance to Eliminate LF

www.filariasis.org

Liverpool School of Tropical Medicine LF Support Centre

www.filariasis.org.uk

WHO/TDR on LF

www.who.int/tdr

WHO Health Topics on LF

www.who.int/health-topics/lymphfil.htm

Centers for Disease Control & Prevention (CDC)

www.cdc.gov/ncidod/dpdx/parasites/lymphaticfilariasis

ICMR Pondicherry India

www.pon.nic.in/fil-free/welcome.html

WHO Southeast Asia on LF

<http://w3.whoasia.org/lymphatic/pdf/lf.pdf>

James Cook University (Australia) LF Support Centre

www.jcu.edu.au/school/sphtm/phtm/centers/lf/index.htm

Carter Center on LF

www.cartercenter.org/healthprograms/healthpgm.asp?submenu=healthprograms

GlaxoSmithKline (GSK)

www.gsk.com/filariasis/index.htm

National Institute for Allergy and Infectious Diseases

www.niaid.nih.gov/newsroom/focuson/bugborne01/filar.htm

FIOCRUZ, Recife Brazil

www.cpqam.fiocruz.br/doencas/filariosepsq.htm

InterChurch Medical Assistance Inc. on LF www.interchurch.org/Ability (an NGO)

www.ability.org.uk/

Elephantiasis.html

BINAX <http://www.binax.com/>

Emory University LF Support Center (pending)



Volunteer "medicator" delivering drug treatment to community member in her home in the Dominican Republic, December 2002. Photo courtesy of Barney Cline.

Social Mobilization and IEC: COMBI

Since 2001, WHO has been applying a concept called "COMBI: Communication for Behavioral Impact" in the design and implementation of behaviorally-focused social mobilization and communication programs for the elimination of leprosy in India and Mozambique, the prevention of lymphatic filariasis in India and Tanzania, and dengue prevention and control in Malaysia. It is an approach which may be well-suited for achieving behavioral impact in confronting HIV/AIDS, TB and

malaria. COMBI interprets social mobilization as the process which judiciously and strategically blends a variety of communication interventions intended to "mobilize" the societal and personal influences which prompt an individual to adopt and maintain a particular behavior.

COMBI, drawing on consumer communication experience, begins with the "people" (clients, patients, beneficiaries, consumers) and their health needs, wants, desires, and a

sharp focus on the behavioral result expected in relation to these needs, wants, desires. It is rooted in people's knowledge, understanding and perception of the recommended behavior. The "market/community" is intimately involved from the outset through practical, participatory community research and situation analysis relating desired behavior to expressed or perceived needs/wants/desires. This situational analysis also involves listening to people and learning about



Children of Sanitary District II, Recife, Brazil, presenting their artwork for communicating to other children about the breeding sites of *Culex* mosquitos in their community. Other projects include their art about the symptoms, signs and successful treatments for LF available in their community. Photo by Steven Ault, 2003

COMBI, continued

perceptions and grasp of the offered behavior, the factors which would constrain or facilitate adoption of the behavior, their sense of the costs (time, effort, money) in relation to the perceived value of the behavior to their lives. People are then engaged in a review and analysis of the suggested healthy behavior through a judicious blend of integrated communication actions in a variety of settings, appropriate to the "market" circumstances and based on the commu-

nity research, recognizing that there is no single magic intervention. The blend of communication actions include advocacy and public relations, administrative/managerial mobilization, community mobilization, sustained appropriate advertising, interpersonal communication/counseling/personal selling, and point-of-service promotion.

Source: Dr. Everold N. Hosein, <http://www.comminit.com/majordomo/roundtable/msg00044.html>.

Further information: The Communication Initiative http://www.comminit.com/events_cal/2003/1658-event.html.

COMBI and LF control in Zanzibar, Africa. <http://www.filariasis.org/docroot/docs/Zanzibar.pdf>



Community health workers of the Family Health Program, Sanitary District II, Recife, Brazil, making house calls for morbidity treatment. Photo by Steven Ault, 2003



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The **Pan American Health Organization (PAHO)** is an international public health agency with 100 years of experience working to improve health and living standards of the people of the Americas. It enjoys international recognition as part of the United Nations system, serving as the **Regional Office for the Americas of the World Health Organization (AMRO/WHO)**, and acts as the health organization of the **Inter-American System (OAS)**.

PAHO is based in Washington, D.C., and has scientific and technical experts at its headquarters, in its 27 country offices, and its nine scientific centers, all working with the countries of Latin America and the Caribbean to deal with priority health issues. The Organization's essential mission is to strengthen national and local health systems and improve the health of the peoples of the Americas, in collaboration with Ministries of Health, other government and international agencies, nongovernmental organizations, universities, social security agencies, community groups, and many others. Website: www.paho.org

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Announcements and Deadlines

03-05 September 2003. 4th
Annual LF Program Managers
Meeting Maceió, Brazil.

Research Grant deadlines, see
[http://www.who.int/tdr/grants/
deadlines/default.htm](http://www.who.int/tdr/grants/deadlines/default.htm).

06 September 2003. 3rd Annual
RPRG Meeting, Maceió, Brazil

PAHO Research Grants Pro-
gram, <http://www.paho.org/>
English/HDP/HDR/RPG/ or
[http://www.paho.org/Spanish/
HDP/HDR/RPG/](http://www.paho.org/Spanish/
HDP/HDR/RPG/)

Third Meeting of the Global
Alliance to Eliminate Lymphatic
Filariasis (GAELF), 23-25 March
2004, Mena House Oberoi Ho-
tel, Cairo, Egypt.

NIH-Fogarty International Cen-
ter research and training grants,
at [http://www.nih.gov/fic/
programs.html](http://www.nih.gov/fic/
programs.html).

WHO/TDR. Call for research
grant applications for lymphatic
filariasis, see [http://www.who.int/
tdr/diseases/lymphfil/
workplans.htm](http://www.who.int/
tdr/diseases/lymphfil/
workplans.htm).

NIH-Fogarty Global Infectious
Disease Research Training Pro-
gram, at [http://www.nih.gov/fic/
programs/infectiousdisease.html](http://www.nih.gov/fic/
programs/infectiousdisease.html)

WHO TDR Tropical Disease

NIH-Fogarty International Train-
ing and Research Program in

Emerging Infectious Diseases
(ITREID), which includes filaria-
sis, at [http://www.nih.gov/fic/
programs/erid.html](http://www.nih.gov/fic/
programs/erid.html)

WHO Training Materials on
Drug Distribution for LF
(learner's guide and tutor's
guide), available free, see
www.filariasis.org

WHO Annual Reports on Lym-
phatic Filariasis, available free at
[http://www.filariasis.org/docs/
AnnualReport_2001.pdf](http://www.filariasis.org/docs/
AnnualReport_2001.pdf)

WHO RPRG for LF - American
Program Review Group, at
[http://www.filariasis.org/index.pl?
iid=2663](http://www.filariasis.org/index.pl?
iid=2663)



Volunteer "medicator" delivering
LF drug treatment during Round
1 of MDA in the Dominican
Republic, December 2002.
Photo courtesy of Barney Cline.