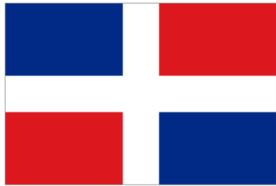


Presentation & Analysis of 2006 Plans of Action: National Strategies & Plans for LF Elimination



DOMINICAN REPUBLIC:

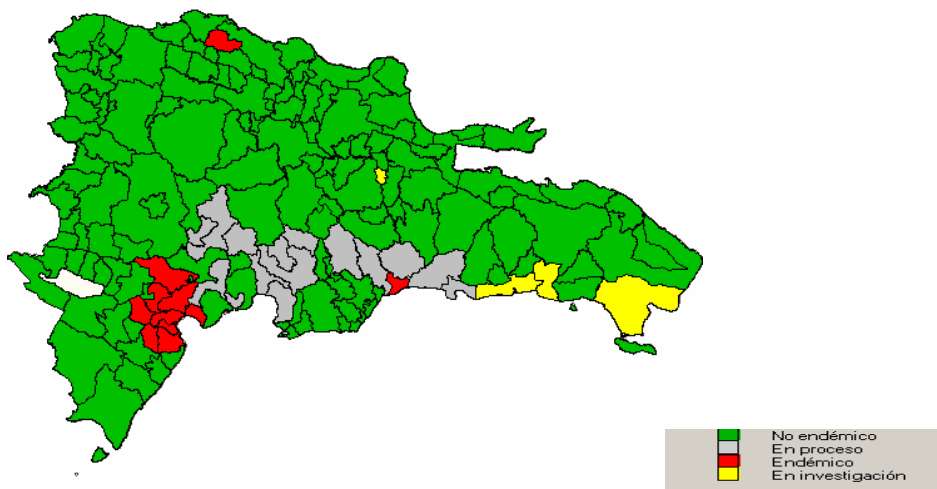
Two-drug Mass Drug Administration Reapplication Planned

Dr. José Manuel Puello,* Manuel González, and Mary Janet Díaz Romero, National Center for Tropical Disease Control (Centro Nacional de Control de Enfermedades Tropicales; CENCET)

Overview

Lymphatic filariasis (LF) mapping is ongoing in the Dominican Republic (DOR) (see Figure 1), with 34 implementation units (IUs) identified thus far. Of the 34 IUs, 30 are being treated in the Southwest focal point: 29 at the municipality level and one at the National District level (La Ciénaga). Expanded coverage is planned pending sufficient financial and material resources. The total target population for next year is about 426,621 inhabitants. Thus far prevalence has only been studied at the sentinel sites. In the newly detected focal points, IUs still need to be identified. It is anticipated that treatment will be initiated in IUs in four different provinces: Puerto Plata, Duhalte, San Pedro de Macorís, and Alta Gracia. In the region of Eriquillo, which comprises the Southwest focal point, 29 IUs are now being treated. Coverage will soon be extended to four additional areas: the National District (the La Ciénaga focal point), which has already begun treatment, and three more municipalities: Cotuí, Ramon Santana, and San Rafael of the Yuma. An effort is being made to conduct in-depth research in these new areas. At least one appears to have either existing transmission or positive cases from non-native transmission.

Figure 1. Status of LF mapping

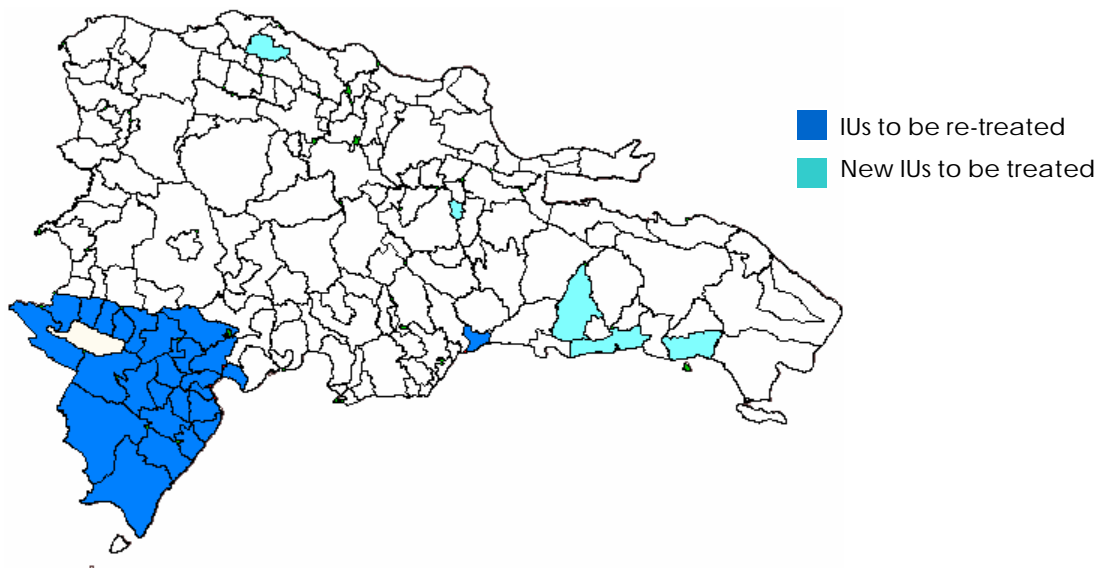


* Unable to attend the meeting due to travel constraints caused by hurricanes in the Caribbean region.

Although the operational system for treatment has not changed—house-to-house mass drug administration (MDA) in both rural and urban areas—the administration system within some focal points has. At the Southwest focal point, for example, the primary health care (PHC) units (*Unidades de Atención Primaria* [UNAPs]) administer the program, but at the La Ciénaga focal point in the National District, where UNAPs do not yet exist, the MDA is administered by community support groups modeled according to the UNAPs. The main difference among the campaigns across the various focal points, therefore, lies in the administrative personnel and the level of participation of the health services system.

A substantive increase in the country’s drug requirements is not expected this year because, due to operational difficulties, the program has not yet succeeded in expanding coverage to the four new IUs (see Figure 2). Therefore the drug increases calculated for this year should match next year’s requirements. Projections have not yet been updated based on analysis of the remaining drug supply and what has been consumed thus far. In the case of albendazole, for the La Ciénaga campaign, it was necessary to purchase 75,000 tablets to meet demand. There is some reserve of albendazole remaining from this purchase, plus some reserves of 100-mg diethylcarbamazine citrate (DEC) tablets (which are modified to 50-mg when needed). So there is some supply of both drugs, but not enough to meet the total demand. An increase in the amount of drugs needed for next year is anticipated because of the additional IUs, including some that are in densely populated areas such as the National District and Santo Domingo province. In Santo Domingo, it is anticipated that at least two municipalities will present LF positivity (Boca Chica and Santo Domingo Oeste).

Figure 2. Current and future IUs



In those two municipalities, based on previous epidemiological research on cases in other IUs, it is expected that cases will be identified that have both become infected and have transmitted the disease. For the one positive case discovered at one of the focal points (San Juan of Lamaguer) it was determined that the transmission was not native, based on epidemiological research, and therefore San Juan of Lamaguer was removed from the map. The most probable infection site of the afflicted person was in Boca Chica (in the municipality of Santo Domingo). Another case was found in an area with an influx of people evacuated from La Ciénaga (an area called Caoba). This area is now receiving attention in all activity areas, including social mobilization of those who lived previously in

La Ciénaga. The western part of the national capital of Santo Domingo was also a receptor area for evacuees from the area of La Ciénaga (which was re-constructed and then re-populated). LF transmission is highly probable in this zone. It is expected that about 150,000 additional inhabitants will be added to the target population (see Table 1), for a total of about 800,000 people targeted for treatment upon completion of the mapping.

Plan of Action

- Extension of MDA to all focal points at the national level
- Evaluation and classification of all suspected cases detected at the Southwest focal point
- Training of health personnel in disease care at the Southwest focal point
- Reactivation of surgical component
- Extension of detection and evaluation of suspected cases to all foci in the country

Table 1. Details of proposed continuation, extension, or changes in IUs under MDA since last application

Area	No. of IUs	Total population	Remarks
(a) IUs to be re-treated	27	320,314	
(b) new IUs to be treated	4	49,417	Pending epidemiological evaluation
(c) IUs proposed for treatment (a) + (b)	31	369,731	
(d) IUs previously treated that will now be excluded	0		

MDA registration, La Ciénaga, 2004 and 2005

The Chair requested that members analyze the DOR’s program and Plan of Action from the point of view of how it was organized or programmed; its structure, operational performance, and epidemiological evaluation; and possible strategies for resolving problems.

DISCUSSION

Comment. Congratulations for identifying new IUs to be treated in 2006 and for extending coverage to the Santo Domingo metropolitan area. This is important progress.

Question. Are the drug estimates for the next MDA, which will most likely be postponed until January 2006, or are they for the MDA after that—the following cycle? And regarding the purchase of albendazole, what is the structure for the pathway between the program manager and

GlaxoSmithKline (GSK) to procure albendazole? And if there is a problem there, how can it be corrected?

Response. The reapplication was submitted at the end of February. It listed a need for drugs, specifically albendazole, for late May, because the MDA for the La Ciénaga focal point (the second round) was scheduled for June. When May arrived, and then June, and there were still not enough drugs, we decided to buy 70,000 tablets to complete the campaign. The same problem will surely arise in regard to the fourth round of MDA for the Southwest focal points. Both drugs (DEC and albendazole) are needed, and there is no set date for acquiring them. For this reason we expect the fourth MDA campaign will not occur until January 2006. The drug requirements submitted in the current reapplication are for the fourth round.

Comment. This reapplication was received at the Pan American Health Organization (PAHO) in late February or early March and was circulated, approved, and communicated to Geneva, but was not passed on officially to the Regional Program Review Group (RPRG) until several months later. A response about this application has not yet been received from Geneva, and it isn't clear if [the GSK representative] has any information about when the requested albendazole shipment will be sent to the DOR.

Comment. In October of this year, 460,000 tablets were shipped from GSK to the DOR; the shipment should have been received this month (around 14–15 October). It's not clear if that was the shipment sent in response to the March application.

Comment. This problem—reviewing applications for albendazole a month or two before they were needed—has plagued the RPRG–Americas since it began. The meetings and the requests are out of sequence. An effort needs to be made to advance the process. As soon as this meeting is over, for example, planning should begin for the next cycle. And at the next RPRG meeting applications should already be under review not for that cycle, but for the one beyond it. So the RPRG needs to complete two reviews over the next year. Otherwise, there will always be countries waiting for the shipment to arrive in order to get their tablets distributed or, in the worst-case scenario, delaying their MDA because of problems with the order. This is not a communication problem, per se. It's a structural problem that has existed since the beginning of the program. A decision must be made to move forward and start planning instead of reacting.

Question. Regarding another potentially difficult situation in the DOR: Is there a projection of the number of immunochromatographic test (ICT) cards needed? And are there any funds identified to purchase them?

Response. An estimate of the number of cards needed to complete the mapping and evaluate or conduct monitoring of all sentinel sites—about 9,000—has been submitted. There has been some communication with the Emory University representative, and it was agreed that the cards would be financed with Emory's remaining [Melinda & Bill Gates Foundation] funding.

Comment. For the onchocerciasis program, similar advance planning application methods are used. For example, in Brazil, the applications were submitted for coverage for 2006–2007 in mid-2005 (July). The drugs are expected in December, for initial use in January or February. This system has been used for several years. Previously, drugs were ordered for one year at a time, but now a two years' supply is ordered. There haven't been any problems with delayed shipments (other than an initial problem with customs procedures, which are very bureaucratic in Brazil), and there has been a regular supply of drugs; this has not been problem.

In regard to mapping in the DOR: Renewed attention should be given to completing the mapping. The performance in this area needs to be more incisive and aggressive because the work plans and objectives need to be based on concrete facts. So the mapping needs to be completed in the near term. And in regard to the MDA extension to the Santa Domingo focal point, it seems as if the focal point should include the other side of the river, in Santa Diosama.

Response. The other side of the river probably does have similar conditions, except for the migration factor. From three years of experience working in La Ciénaga, we estimate that all migration from the South, where the La Ciénaga focal point is located, came to La Ciénaga, the most probable origin of the focal point. The other side of the river does not seem to have this condition of intense migration. But it is still necessary to evaluate it and other potential sites such as Gualey (which forms a contiguous community in the same margin of the river and thus would likely continue the focal point). And we have been too complacent regarding completion of the mapping. We need to improve in this area, as it's been seven years since mapping was initiated and it's still incomplete. So this is a main goal. Because of this and in view of the shortage of alternative funding sources, we've agreed with Emory to use the remaining funds from the Gates Foundation—almost 35%—to buy ICT cards, which are essential for completing the mapping. The cards may not arrive until the end of November, so we'll begin preparation for selection of schools and children to be surveyed so that by January or February mapping can be completed.

Comment. For requests for medicine, the onchocerciasis program orders every two years. This method was chosen when the supplier (Merck) explained that staggering the production of the relatively small amount of drugs consumed by the Americas region (as opposed to the larger quantities consumed by Africa) would not cause any logistical problems in its production. This system works well, as one of the main barriers faced previously were frequent changes in drug import regulations for the countries, which varied. We have up to six countries ordering drugs, each with different requirements. So being able to order drugs every two years has helped a lot. It is necessary to plan rather than just react. A lack of planning is bad for the programs, which are based on treatment and thus require a reliable drug supply. Without treatment, there really isn't much of a program. Because the DOR is still in the mapping phase, identifying additional communities, projecting required drug supplies in advance is a challenge. In onchocerciasis, planning isn't difficult because the demand doesn't vary that much. It seems the DOR needs some mechanism to measure the increase for new IUs to be treated in upcoming rounds of MDA. This could be done by percentage for some, if the conditions are similar.

Comment [GSK]. Forecasting demand a year or two in advance is preferable. These discussions have clarified some of the issues faced in the DOR (e.g., the incomplete mapping, as the projections are based on the mapping). There should to be some system (even just a percentage-based system) to track mapping efforts so we can prepare to supply the required tablets on time. If the mapping ultimately did not occur, this could be communicated through the same system so we could pull back from the projection. This would help our production planning, as GSK supplies a number of other regions. Is the forecast of 480,000 tablets for the next round an incremental request, beyond what has been just delivered, or has the recent shipment met that need?

Response. The DOR hasn't received that shipment (the one GSK expected to be received in October) or any information about it. So the forecast includes demand for the upcoming round. It doesn't include one province, however, that may be added as a focal point (Cotui) and would add about 38,000 people. So it's possible that the forthcoming shipment will not meet total demand. But we might be able to complete the campaign with leftovers from the drug purchase.

Comment. The amount of albendazole used in the Americas is so much smaller than that used elsewhere that the challenge is really in coordinating the shipments rather than upscaling factory

production. So that is one advantage. But there are two things that are frustrating everybody worldwide: the acquisition of ICT cards and the acquisition of drugs (DEC, albendazole, and ivermectin). A listing of all categories that one needs to know about (shipping, production, and ordering, by country) could be posted on a website or file transfer protocol (FTP) site so that countries could see, for example, that no one is paying attention to their last application, or no one is acting on something, or the drugs are in the process of being shipped. There should be more openness to the ICT-card and drug acquisition process so that people could keep informed about the status of their order. The RPRG should strongly recommend putting the information on a website. There isn't anything proprietary or confidential, and it would be helpful to the entire program, including the program managers, who would know, for example, that if they had an MDA program in July, and it was already June, and nothing had happened on an application that was sent in February, something would have to be done quickly. If the RPRG passed this idea to Geneva, it would be valuable.

Comment. The status of the order and the monitoring of the whole process should be made more transparent to enable intervention before radical solutions are needed, such as having to buy the drugs at the last minute.

Question. Is there any information on albendazole's shelf-life?

Response [GSK]. The shelf-life is five years. In terms of the suggested scenarios—determining what is needed and what could be supplied in advance—five years is quite a bit of time. But any help with forecasting and projections is appreciated, as it gives the supplier the opportunity to get what is needed to the countries on time. For the Americas, the issue is not quantity; it's getting through customs and completing the shipment. Delivery problems have also occurred in Haiti, where shipments were supposed to arrive at a certain time but were delayed due to issues with flights and ship schedules. It's a matter of logistics.

Question. PAHO is changing to a new type of communication vehicle, so at least in the short term it's not in a position to develop the information or post it on the website. As an interim measure, could this information be posted in a table on the Emory University or Centers for Disease Control and Prevention (CDC) websites?

Response 1. CDC would be as problematic as PAHO. But maybe the World Health Organization (WHO) website in Geneva would, at least for the original design, provide this type of opportunity for small networks.

Response 2. Geneva is sympathetic to this type of need, but it might take them some time to get it on a website. But this could be done on the website at Emory University (www.filariasis.us). Approval would be needed from GSK, Merck, Binax, and WHO/Geneva, and everyone should be informed of this beforehand, to avoid stepping on any toes. This could be done just for the Americas, initially, and WHO/Geneva could take it over as soon as they were ready.

Comment. By the next meeting applications should be under review two years ahead of time. So the review process needs to move ahead by one year over the next 12 months.



HAITI:

Two-drug Mass Drug Administration (MDA) Reapplication Planned; MDA Strategy May Add DEC-salt

Patrick Lammie, Centers for Disease Control and Prevention (CDC)/Atlanta¹

Overview

Haiti's strategy for the past several years has been based on the use of both diethylcarbamazine citrate (DEC) and albendazole. The country intends to add the DEC-salt component sometime this year. Section 4 of the [drug] reapplication defines the new implementation units (IUs), and Section 4.3 lists them and provides a list of the mapping data collected in 2001, which documents the prevalence of infection. Surveys were done among schoolchildren, and in view of the level of prevalence, there seems to be an underestimate of the burden of infection on these communities.

The original strategy for Haiti's program was to focus on the initial implementation of MDA in high-prevalence areas. Prior to this year, only two of high-prevalence communities were not being treated by MDA—Gonaives, in the northern region, and in the western region, the urban focal point of Port-Au-Prince, which includes the four separate IUs of Port-Au-Prince, Belnoir, Calfu, and Anzagalle. In terms of the Plan of Action for this year, the aim is to add these new IUs so that all high-prevalence IUs will be under MDA. In addition, there has been an extension of MDA in the North, the Northwest, and the Northeast to include all communities or IUs of high- and moderate prevalence. The new IUs are those with an initial antigen prevalence of less than 10%. Implementation of the strategy is proceeding as planned, with upscaling as of next year encompassing all moderate- and high-prevalence IUs. Given all of the problems Haiti has suffered this year, the program manager should be commended for efforts to keep this on track.

Drug forecast

The plan for Haiti is to continue treatment expansion. The critical issues, as discussed previously, are related to finances. At this point, there is no budget within the Ministry of Health (MoH) for these activities to continue. A substantial portion of the program manager's time over the past year has been devoted to soliciting support from various donors. To date it is not clear if these efforts have been successful, so the program is at a critical stage in terms of its need for finances. There is concern about the sustainability of program activities through 2006.

DISCUSSION

Question. In the reapplication data, the projection of a great increase in upscaling the MDA was surprising, because of the current obstacles in Haiti—economic, social, and political—that hamper intervention, including problems with security. Despite all of this, according to the data, there was a substantial upscaling of the program, including drug intervention. This is extraordinary. The Regional Program Review Group (RPRG) and Pan American Health Organization (PAHO)/World Health Organization (WHO) must make a concerted effort to support the program in Haiti in implementing this ambitious program of expanded treatment. The entire team of health workers and institutions deserve credit, and all the support that PAHO or RPRG can supply.

¹ Presenting for Dr. Marie Denise Milord, Program Manager for Haiti, who could not attend the meetings due to travel constraints caused by hurricanes in the Caribbean region

Question. From the estimates, it seems that about 17 million DEC tablets are needed. How is Haiti going to procure this? Because there seems to be no indication as to any funding sources or whether the country has the capacity to buy 17 million DEC pills.

Response. This relates back to program costs. For the past five years, Haiti has benefited from Gates Foundation funding that was awarded to a partner at the University of Notre Dame. That funding ended in June of this year, so any opportunity for Haiti to acquire DEC is going to be contingent either on the renewal of that funding or on the identification of a new donor. And it's not clear whether the funds are going to be identified in the next two or three months. By the end of this calendar year there should be some indication of the availability of these funds.

Comment. An RPRG Action Point should be added regarding communication of the anticipated funding gap for the purchase of DEC to WHO/Geneva, and another Action Point should be added recommending the RPRG assist Haiti with fundraising as soon as possible. With respect to the apparent decrease in the population to be treated in 2006 (as per the presentation materials), the program manager will be asked to clarify this and will communicate the response to the RPRG.

Question. What specific actions could be taken by those outside Haiti to help translate partners' desire to help into some tangible benefit to the country?

Comment. Haiti and the Dominican Republic (DOR) should be considered in terms of the entire island of Hispaniola. Some type of note should be obtained from the MoHs of both countries to be forwarded to the PAHO Representative indicating the anticipated budget shortfall for the purchase of DEC tablets, immunochromatographic test (ICT) cards, and other critical needs. The national authorities could prepare the note and direct it to the country's PAHO Representative. Upon its receipt by PAHO in Washington, the note could be forwarded to WHO/Geneva as an official concern of the Americas region. This might be a sufficient wake-up call for Geneva colleagues to help resolve the impending crises in at least these two countries with respect to funding. Geneva is responsible for coordinating global efforts, but the needs of the Americas sometimes get lost in the work that WHO does for other regions. Action could also be taken within PAHO to try to seek funding to assist these two national programs.

Response. WHO would be sympathetic, but it doesn't have resources to share. So getting the message to PAHO and then to CIDA (the Canadian International Development Agency) or other sources of funding that may be interested in Hispaniola might be more fruitful.

Comment. There is a moral component to sending a statement of strong support for Haiti's program and committing to providing whatever assistance is possible, but there may also be some value in contacting donors directly. One problem Haiti has now is that most donors who traditionally invested in health in the country are afraid to now because of the civil strife. So they've been holding back, perhaps waiting for a political resolution or because of the fears of insecurity that have affected their own staff. The ultimate effect is that public health programs can't get the funds they need and thus can't carry out their agendas. An indication from the RPRG of its support of the program and the critical public health value it provides might help persuade donors. Because the world is watching right now, and Haiti feels as if it has been abandoned.

Comment. It's important to clarify to donors that despite the problems the program is experiencing it continues to persevere and is even expanding. This should be used as an argument for continued support. Donors want to give support, but they also want to see correct applications of their resources. So it should be shown that even in adverse situations it's possible to have a correct application of resources.

Comment. The RPRG Chair and Secretariat should prepare a letter from the RPRG Chair to be circulated among members (including the program managers for Haiti and DOR) for critique.



BRAZIL:

No Drug Application Yet; Mixed Strategies (Selective and Mass Drug Administration [MDA])

Helen Freitas, Secretariat for Health Surveillance (Secretaria de Vigilância em Saúde; SVS), Ministry of Health (MoH)

Introduction

The program in Brazil is unique in that it has no application for diethylcarbamazine citrate (DEC) or albendazole. In addition, it has used mixed strategies against lymphatic filariasis (LF) with excellent results at some focal points.

Background

Initial strategies to combat the disease (1955 to 1966) involved the use of the drug Hetrazan for humans. Drugs were also used to combat the vector (e.g., benzene hexa chloride [BHC]), but the vector was eventually treated as part of other programs.

Treatment

Selective

Selective treatment was conducted in the municipalities of Belém, Recife, Salvador and Castro Alves, and the State of Santa Catarina (in the municipalities of Florianópolis and Ponta Grossa). The initial program objective was to treat all identified carriers of microfilaria (mf). This was followed by community surveys and treatment. This was the national philosophy, and it was strongly supported as the best way to achieve control and eventual elimination. There was little information about treatment of other focal points during the initial treatment period.

In relation to selected treatment, there was some evidence of a problem with noncompliance in the use of the drugs (Hetrazan and filariosan) in the State of Bahia (no evidence of this problem in Recife or Belém). Another issue throughout Brazil's MDA campaigns has been the difficulty in obtaining the proper amount of medicine and the proper treatment information due to administrative ("clerical") problems.

MDA

Mass treatment campaigns were conducted on the island of Santa Catarina, the highest endemic area in Brazil during the 1950s. Focal points included three localities: the City of Florianópolis, Ponta Grossa, and Barra (in the municipality of Laguna), which had about 1,200 inhabitants. It was concluded that after seven years of mass treatment all foci on Santa Catarina had achieved elimination. Brazil later conducted significant mass treatment campaigns for the treatment of schistosomiasis, during the late 1970s and early 1980s, an era oriented toward MDA. Millions were treated simultaneously in various municipalities using oximinique, which was an extremely expensive medicine. National banks financed this strategy. Mass treatment was also conducted for LF in the City of Recife, which is now the only focal point of LF transmission in Brazil.

In applying the dual methods of selective and mass treatment, it has become clear that neither method is in itself a true strategy. That is, the combination of mass treatment and selective treatment is not the proposed strategy; it is simply an intermediary phase between a situation of selective

treatment and a situation of exclusive mass treatment—an interim solution until reaching the stage where the exclusive use of mass treatment is preferred.

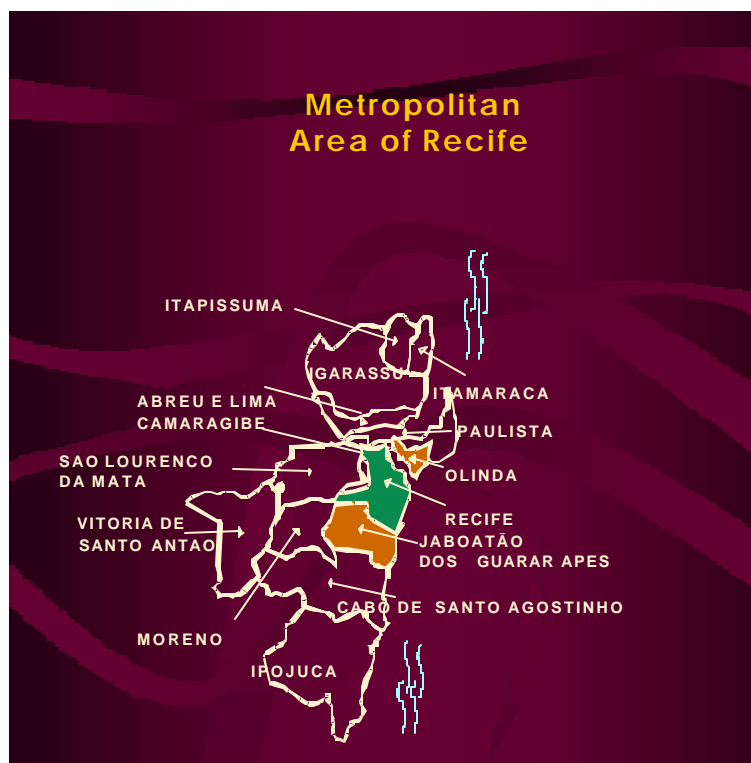
Focus on Recife

Because of the morbidity and the carriers, program attention was focused on the metropolitan area of Recife (see Figure 1), beginning with a small area in the City of Recife. Within the Recife focal point, four municipalities were covered: Paulista, Olinda, Recife, and Jaboatão. With the exception of Paulista, which has lower prevalence, these municipalities have similar prevalence levels. This is a critical area, where transmission still exists. As requested by World Health Organization (WHO), implementation units (IUs) have been defined and interventions have been planned based on these IUs. Recife is the only municipality in Brazil that is adopting this strategy.

Coverage

MDA campaigns were begun in 2003 in the metropolitan area of Recife. The initial campaign covered 19,000, and the second campaign (in 2004) covered 39,000. About 75,000 people are expected to be treated in the MDA in 2005 (planned for November). The population at risk in metropolitan Recife is estimated at about 1,500,000. This risk is not equal across all 1,500,000 people, however, with some localities experiencing a much higher risk than others.

Figure 1. Metropolitan Recife



Cost

The cost of the first campaign, which covered 19,000 people, was less than R\$300,000 (Brazilian reals). An extremely rigorous system was organized for this treatment. The initial survey covered the total population, house-by-house, name-by-name. To expand coverage with this type of treatment to a population of 800,000 or 1,000,000, the cost of resources would have to be multiplied by about 10.

Impact

There has not been any epidemiological evaluation of the impact of the first intervention, but because of the small portion of the population treated, it is expected to be low.

Resources

Sufficient resources were not achieved last year, and it is possible that they won't be this year either. Municipal elections precluded having the required teams in place to organize the strategy. This year,

there were changes in all technical entities of the municipalities, adding more disruption to program implementation.

DEC

DEC-salt is packaged and distributed by a national company, Farmanguinhos. The company has had operational problems over the last two years, however, so DEC-salt is now imported from India by the MoH, which has procured the international license and buys it directly, without intervention by WHO. The DEC tablets cost about \$0.25 per tablet. It is not clear if Brazil could afford these resources if mass treatment were expanded, which would create a need for 10–15 times more tablets.

Strategies

Criteria for treatment campaigns should be defined by a group of technical specialists—a Technical Advisory Group (TAG). These don't exist in Brazil, so they must be created. In one projects, a memo was disseminated requesting the creation of technical committees that could hold these types of discussions. Within these groups, questions could be posed and conditions could be evaluated to choose the best path for treatment, and justify it, in terms of cost-benefit analysis of resources. This wouldn't require a lot of epidemiological analysis. And treating 19,000 would not have much of an impact within the total at-risk population (1,500,000). But it could be an intermediate step. So the first proposal is to establish national TAGs in Brazil to pose the appropriate questions and conduct the required analyses to determine how to proceed.

Questions

1. Why were the results different in Belém vs. Metropolitan Recife?
2. What are the criteria for expanding an area of MDA?
3. How many additional MDA campaigns would be needed to achieve epidemiological impact?
4. Can the DEC supply accommodate a larger MDA?
5. Is the treatment program cost-efficient?

DISCUSSION

Comment. The central issues faced in Brazil are strategic, political, and institutional. These obstacles must be surpassed to be able to fully accomplish the proposed activities for the elimination of onchocerciasis and LF. An elimination program is not simply a program of control. It requires special activities, resources, and strategies.

Comment. This presentation illustrates problems shared by other countries with relation to the immediate availability of medication or ICT cards, and the logistics of the work. As mentioned previously, resources are scarce. In relation to the medication problem of Recife: Recife has had three rounds of treatment and DEC is still not available.

Comment. Brazil has some characteristics that are perhaps a little different from other countries in the Americas, in that high prevalence is very focal, but some areas have lower prevalence, so mass treatment is not justified. And some municipalities don't adhere to mass treatment because of the cost and lack of necessary infrastructure. This provides more rationale to continue with individual treatments, because the higher prevalence found in the areas of Recife, where it was decided to make mass treatment, was between 7–10% in some micro-areas, whereas in other areas prevalence was as low as zero, in some micro-areas. And in metropolitan areas of Recife, individual treatments continue to be done along with mass treatment, in individually cases identified in contiguous areas. So the use of mixed treatment seems justified.

Comment. In relation to the areas surrounding focal points (neighboring areas), the number of cases sometimes justifies mass treatment. But monitoring is conducted in those areas, as well as thick blood smear examinations, and vector control.

Comment. The idea of establishing a national TAG is a good idea. Regarding the issue of treatment and MDA, MDAs using DEC are not MDAs using an ideal treatment regimen. There is no question that albendazole plus DEC is more effective against LF than DEC alone (and effective against other things as well). But it's more effective as a drug as a combination of two drugs for MDA; there's not much question about that. But Brazil is a complex place, so having a commission or a TAG that could analyze this would be wise. The point about impact is extremely important. There is a lot going on globally regarding the question of impact. In fact, a major part of the research proposed in the next [Bill & Melinda Gates Foundation] grant focuses on impact. We will make sure the Brazilian teams are involved in these impact assessments. The output will be valuable for many countries. The third issue is the concept of a "high enough prevalence to justify MDA." We don't know what level of prevalence justifies an MDA. As someone mentioned the other day, it's likely that multiple rounds of treatment are not needed in low-prevalence areas; a great reduction can be achieved even after one or two rounds of well-distributed MDA. So there is value in treating low-prevalence areas, because they don't require as much treatment. And they can do a good job of getting rid of the infection. But they must be able to follow the mf or the antigenemia, which is why there is a problem with the concept of "we are treating those affected individuals and we are treating the vectors." That is exactly the same strategy that has been used in India for many years, and it doesn't seem to work. Because all infected individuals can't be identified unless it is done as it is in Belém, which uses ICT cards on an enormous percentage of the population. That is the only way to ensure recognition of infected individuals. So the choice is either mass diagnosis and selective treatment, or selective diagnosis, identifying areas of prevalence, and mass treatment. Those are the two methods, and both of them work. Identification of infected individuals is just not accurate using tools less sensitive than ICT cards. So while we haven't answered the question of "what level of prevalence justifies an MDA," it is a concept we need to be thinking about. Because it's not clear whether prevalence of 5% does or doesn't justify MDA.

Comment. In relation to the different uses of DEC, the albendazole is showing good promise in Jabotão and Olinda, where mass treatment has begun. It's not yet clear if they are going to use DEC + albendazole. Olinda is well advanced in planning its MDA, and there's a strong possibility of making use of DEC + albendazole.

Comment. Recife may expand mass treatment, possibly in a staggered format, depending on its priorities. It has the capacity—the health system infrastructure (e.g., the Family Health Care Programs [FHCs], Community Health Agents, etc.).

Comment. This should be mapped.

Comment. Mass treatment is justified in areas with high prevalence contiguous with others with medium prevalence. However, mobilizing the community is extremely difficult; in some of the more violent areas health technicians do not have access. This difficulty also exists within the FHCs, which do not cover all areas. There is coverage in some parts of Jabotão. But in other areas there is none. The areas with lower prevalence are not covered. Because LF is disease that doesn't kill, it doesn't get much attention from the community. It's different from advocating for the polio vaccine, for example. Nonetheless Recife is making excellent progress in mobilizing the community. But there are obstacles, such as social problems.

Comment. With respect to the definition of the IUs, an important element would be the establishment of the TAGs. In most municipalities, the IU is effective, and accurate. And it is the responsibility of the government system to identify the IU communities. It's the decision of the municipalities, due to the decentralization of the government in Brazil, but the general criteria will probably be defined externally. The question on evaluation and cost-effectiveness of the LF program should be deferred to the Emory representative, who has the most experience in that area. In respect

to sentinel sites, they have already been established in Recife. Each municipality has identified the sentinel sites, which are of maximum importance in measuring impact. Regarding the question of DEC, in upcoming years, starting with 2006, the opinions of the TAGs will affect the forecasts on quantities of DEC needed for municipal programs. We plan to help the government of Brazil in seeking a negotiated price outside of WHO, an external purchase with a much lower price. We will try to help the government in an external purchases rather than make a direct purchase from a company, which would probably be very expensive. About the MDA: in the municipalities of Jaboatão and Olinda, which are experimenting with the aggregation of albendazole, the drug is free, donated by GlaxoSmithKline (GSK). The drug application has to be submitted to PAHO, however, which passes it on to WHO.

Comment. In relation to why the area of Recife is not considered suitable for mass treatment: It's an area with low environmental risk, and there is an absence of cases of infection in the survey. So it's still a priority, but it's one of the last priorities. Cynthia Braga, a research colleague, is assessing Olinda and Jaboatão. In the area of Minoeira, which is bordered by Olinda (an area with high mf prevalence) they have prevalence less than 0.1%, and the last survey detected eight cases. In response to the other question: the same model will be adopted for Recife; the use of polymerase chain reaction (PCR) on mosquitoes has also been proposed.

Comment. In relation to xenomonitoring, using mosquitoes, there were a number of discussions, mainly on technique.

Comment. About two years ago, because of concern over low-prevalence areas, Dr. Marie Denise Milord, program manager for Haiti, initiated a series of surveys in areas with 1% antigen prevalence and low environmental risk, and in all of the settings it was possible to demonstrate autochthonous cases in transmission. Again, recognizing the resource needs for Haiti, as already described, there is an ongoing effort now to determine whether one or two cycles of MDA would be sufficient to interrupt transmission in these settings. The question that is important to keep in mind is: Is it cheaper to do MDA, or surveillance? It seems it would be cheaper to do MDA. In regard to the ethical arguments that surround the issue of MDA, particularly in situations where prevalence is low, this requires a great deal of discussion. From the Haitian side—and this may be similar in areas of Brazil as well—the factor that tips the balance is albendazole. The provision of albendazole with DEC provides the greatest public health benefit as well as the greatest access to health equity for the people in these communities. These two issues should be linked, because there are ethical issues associated with mass treatment. But these discussions should address the use of not one drug but two.

Comment. Discussions regarding potential impact, in terms of the duration of the control and/or elimination efforts, should be taken to the municipality level. It's very important to discuss these points. But the population to be treated with MDA must also be defined—the proportion of the population, how many thousands of people. And the municipalities must be enlightened regarding the risk of various treatment choices (i.e., that elimination may take 40 or 50 years, in some cases, which is what happened with Belém). Even with intense diagnostic activity (much more intense than the one Pernambuco is carrying out now), successful elimination via the use of selective treatment may take 50 years.

Question. Can the Regional Program Review Group (RPRG) make these discussions available to Brazil when these issues are being considered? We would like to share expertise and experiences regarding these tough questions (e.g., yesterday when it became clear that the urban experience in Recife–Pernambuco is similar to that in Santo Domingo). Sharing technical advice on how to make decisions and move forward would be useful, as would information exchange on the issues of albendazole (its usefulness, impact, etc). The RPRG should be a conduit for the exchange of information and experiences among Regional Program to Eliminate Lymphatic Filariasis (RPELF) members.

Response. The document will be available for distribution to interested states and municipalities.

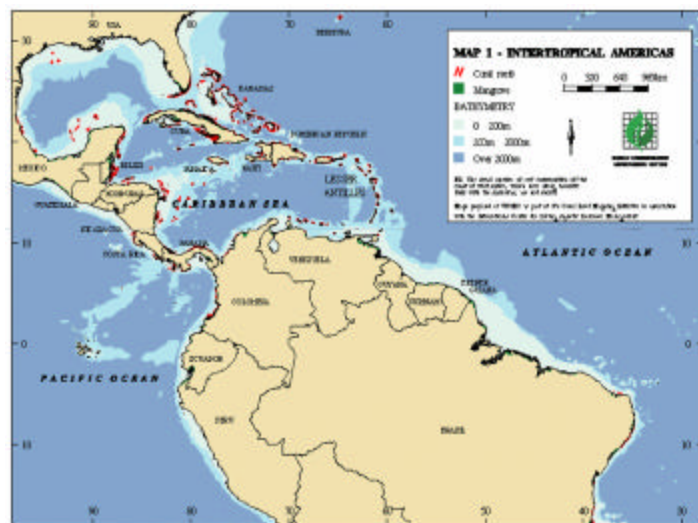
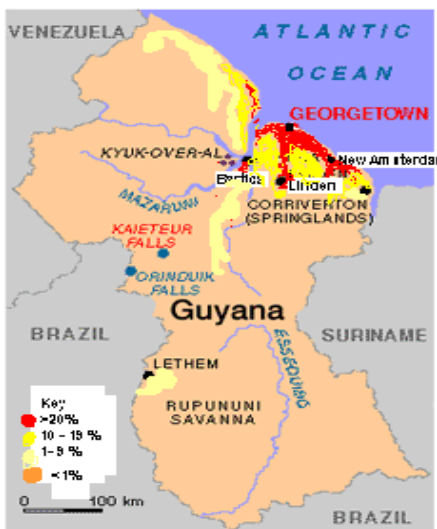


GUYANA:
The Filariasis Elimination Program
Shamdeo Persaud, Program Manager, Ministry of Health (MoH)

Country profile

Guyana borders Brazil, Venezuela, and Suriname (see Figures 1–2). In one part of the country, there is a flat, low-lying belt of land, predominantly sugar plantations and rice fields, which is mostly below sea level and frequently flooded. A network of canals has been constructed to help drain the area to facilitate the cultivation of sugar and rice.

Figures 1–2. Country/regional maps



Health care system

- Public
 - Five levels
 - Health Posts (Community Health Care Workers): 117
 - Health Centers (*Medex* / Health Visitors): 123
 - District Hospitals (doctor / nurse / mid-wife): 23
 - Regional Hospitals (doctor/nurse/pharmacist/lab technician): 4
 - National Referral Hospital (clinical specialist / doctors / nurses / pharmacist / laboratory technician): 1
- Private
 - hospitals: 5
 - physicians: 136
 - corporate health services (Guyana Sugar Corporation -GUYSUCO): 7

There are five levels of care, starting from the entry point, which is called a Health Post. Health Posts are manned by Community Health Care Workers, who receive three to four months of training. There are about 117 Health Posts, followed by 123 Health Centers, which have *Medex* (known as physician assistants or nurse practitioners outside Guyana) and Health Visitors. The next level is the District Hospitals, which may have a doctor and/or a mid-wife, and a couple of nurses. Then there are four Regional Hospitals. These would have basic departments of general medicine and maternal care. There is also the National Referral Hospital, which has specialties in surgery, pediatrics, etc. There is a growing private health sector in Guyana of which there are five private hospitals providing specialized care including advanced medical diagnostics and treatment, several private physicians that perform operations, and one company that provides corporate health services, GUYSUCO, which employs about 25,000 people and has about seven primary health care (PHC) centers.

Background

In 1999 the program's National Task Force (NTF) was established. Following this, a Plan of Action was developed. A focal point was then established within the MoH to carry out the Plan of Action, and a partnership was developed. Between 2000 and 2001, mapping exercises (using immunochromatographic testing [ICT]) were completed and morbidity assessments began. By 2002, the morbidity program was established with the assistance of Dr. T. MacPherson a PAHO Consultant facilitated through an arrangement with the UK Department for International Development (DFID) and a Melinda & Bill Gates Foundation-funded program. Specific centers integrating the nonprofit KEO program were also established (this is an adaptation of the program that was originally done in Brazil, using the same principles of hygiene, alleviation, applying antibiotics, etc).

- 1999: Program development
 - NTF
 - Plan of Action
 - focal point (management group established)
 - development of partnership
- 2000 to 2001: Initial assessment
 - mapping (ICT)
 - morbidity assessment
- 2002: Establishment of morbidity program
 - training
 - establishment of centers
 - integration of CARE program
- 2001: Interruption of transmission
 - decision to use diethylcarbamazine citrate (DEC)-salt
- 2002: Developed capacity to produce DEC-salt
 - partnership with importers (Memo of Understanding [MoU])
 - quality control system
 - securing DEC
- 2002 to 2003: Developed social marketing and social mobilization strategy
- 2003: Established sentinel site and collect baseline data
- 2003: Introduced DEC-salt

Morbidity

After 2003, there was a consistent increase in the number of cases identified, and thus far about 937 persons have received some type of care (see Table 1). There were an overwhelmingly large number of cases in the early stages of the campaign, which dropped as time progressed. It may be possible to eventually draw a connection between the DEC-salt interventions and the drop in the occurrence of acute attacks (and/or vice versa, i.e., the morbidity program may be helping with the health promotion aspect of DEC-salt). Levels of tropical pulmonary eosinophilia syndrome (TPE) remain relatively constant, as per information gathered from the clinics and medical outpatient departments.

Table 1. Rapid morbidity assessment

Disease	2003	2004	2005	Total
Lymphedema (registered)				
Stage 3 or higher	42	38	21	101
Acute attacks	16	39	12	67
Early (stages 0, 1, and 2)	377	132	118	627
Total	435	251	151	937
Other				
Tropical Eosinophilia (Chest Clinics and MoH)	38	26	21	85

Hydrocele

There is, more or less, a registry of the number of hydrocele cases and the number that have surgery (see Table 2). Data from public hospitals (four hospitals that had been doing surgeries for the last five years or so) show that the rate of hydrocele surgeries has fluctuated. This is partly attributed to changes in the availability of trained professionals, such as surgeons. Some hospitals are sometimes without surgeons for various periods of time. These surgeons don't have formal training in any of the improved methods used at Recife. The manual produced by World Health Organization (WHO) is available to them, however, and some have reviewed and implemented the guidelines. So there is some acceptance of the modified hydrocele operation techniques. One surgeon is keen on building this surgery capacity and training others, so the program is looking into the possibility of having a training program in early 2006.

Table 2. Number of hydrocele surgeries (public hospitals)

Hydrocele	2000	2001	2002	2003	2004	2005 (Jan-Aug)	Total
Registered (new)	316	286	216	196	231	187	1432
Surgeries	245	110	95	94	179	84	807

The number of sites has increased to 22 (from about 14, in 2004) where at least one person from the health center (e.g., a nurse) understands the disease and is able to provide support and/or services based on morbidity training. These same persons are critical in the promotion of the DEC-salt program. (The government has embarked on a program in which samples of salt from the principal importer have been distributed to the community. Although there are some questions about how this should be done, it was considered necessary to provide some program support.)

Lymphedema

Cases of lymphedema are registered by the health system, and the lymphedema CARE Center program has expanded (see Table 3), including the number of surgeons and the amount of training provided, particularly in terms of post-surgery care (as opposed to the post-surgery hydrocele care, which is almost nonexistent).

Table 3. Lymphedema CARE Centers (2005)

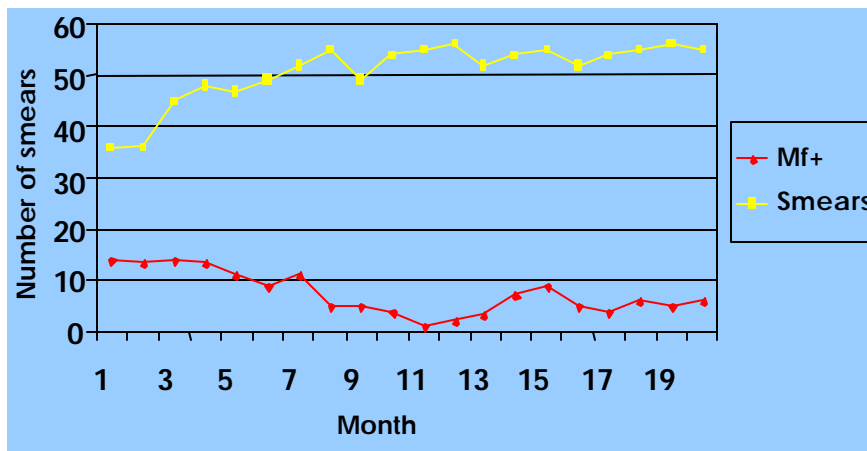
Sites	No. of sites	Nº. of health workers trained
Georgetown	8	36
Linden	1	23
New Amsterdam	4	38
East Coast	6	24
East Bank	1	2
West Demerara	1	3
Essequibo Coast	1	4
TOTAL	22	130

Sentinel surveillance

A pre-treatment sentinel site survey has been completed at three traditionally endemic sites, and initial microfilaria (mf) prevalence was determined using thick blood smears and ICT. The results demonstrate that mf are still present (see Figure 3). Assessments of lymphedema and reports of hydrocele were also done. The first follow-up sentinel survey should be done within a couple of months. No entomologic monitoring is being conducted at this point.

There are two fixed sentinel sites. It is hoped that between January and February [of 2006], if enough ICT cards are secured, some post-treatment sentinel site work will be done. Two more sites need to be identified. A DEC-salt coverage survey is also planned for implementation once a steady supply is ensured (it was decided in 2004 that it was not appropriate to have a coverage survey until a reliable supply of DEC-salt had been secured for the market). The protocol has already been developed, including the questionnaires.

Figure 3. Surveillance data mf



Mass treatment

In 2001, the decision was made to establish a mass treatment program. In 2002, a commitment was made to introduce DEC-salt within one year. In 2002, the process of developing the capacity for the production of DEC-salt was begun. The first step was an assessment of the salt industry, which included identification of salt importers. The MoH and the program signed an MoU with the salt importers (at that time there were four). With the assistance of the Centers for Disease Control and Prevention (CDC) and the Pan American Health Organization (PAHO), a quality-control system was established, and WHO and PAHO helped secure the raw material and the DEC active ingredient during late 2002 and early 2003. Between 2002 and 2003, the need for the development of a social marketing and social mobilization program was recognized, and a strategy was developed. In 2003, two sentinel sites were established and baseline data was collected, and in July of 2003, DEC-salt was introduced. Guyana's Program to Eliminate Lymphatic Filariasis (PELF) is the only national program that uses the DEC-fortified salt exclusively (other than one small school program supported by Rotary International that provides albendazole to about 20% of the schoolchildren).

- Mapping completed in 2001
 - prevalence 9.33 (range 0.8–37.8%)
 - population at risk: 690,000
- Assessment of salt industry
 - 2 producers with capacity to produce DEC-salt
 - 1 producer with sustained production
 - salt (1,280 tons per year for domestic use)
- Sourcing of DEC active ingredient (WHO)
 - 10,330 kg of DEC (2,460 tons; 2-year supply)
- Quality control
 - lab capacity at production site at Guyana Food & Drug Department

Coverage

Mapping was completed and an overall prevalence of 9.3% (ranging from 0.8 to 37.8%) was detected. The at-risk population was estimated at about 690,000. The total amount of DEC needed to produce about two years' supply of consumer salt was calculated.² It was determined that about 2,560 tons were needed over two years (1,280 per year) for the domestic consumer market. A quality-control system was established within Guyana's Food and Drug Department.

Social mobilization

- Phase I (June 2002–May 2003)
 - Target decision-makers and key stakeholders
 - MoU signed with four importers
 - Public campaign launched (mass media advertisements)
 - “Get on the BUS”
 - Health workers
- Phase II (June 2003 to present)
 - Target general public (direct marketing)
 - Target salt sellers (shopkeepers, vendors)
 - Target specific groups (teachers, mothers receiving antenatal care, food providers)

The social marketing campaign was divided into several phases. During the period preceding the launch of the fortified [DEC-] salt in the marketplace, stakeholders were targeted based on the decisions they needed to make. This included not only the salt importers but also the people who would be selling the salt in the retail market. The public campaign was branded “Get on the BUS” (i.e., get involved in the use and promotion use of DEC-salt or *Buy Use and Share information on DEC-salt*). The second phase of the social mobilization campaign mainly targeted the general public. The retail sellers used direct marketing, as the market was very dependant on supply and demand. Like many markets, it was not clear which came first—the supply or the demand—so the program tried to build both at the same time, hoping to have enough supply as demand increased and to achieve the goal of at least 80% of the population accepting the use of DEC-salt. Other specific target groups were identified during this period, such as teachers (with whom the messages are reliably transmitted into the homes via children). In 2003, a program was developed for volunteers to train teachers to transmit these messages. Antenatal clinics for mothers (who are usually the purchasers of food commodities such as salt, and prepare the meals) were also targeted. Some small interventions have begun targeting food vendors (people who sell food around highly populated areas).

Challenges

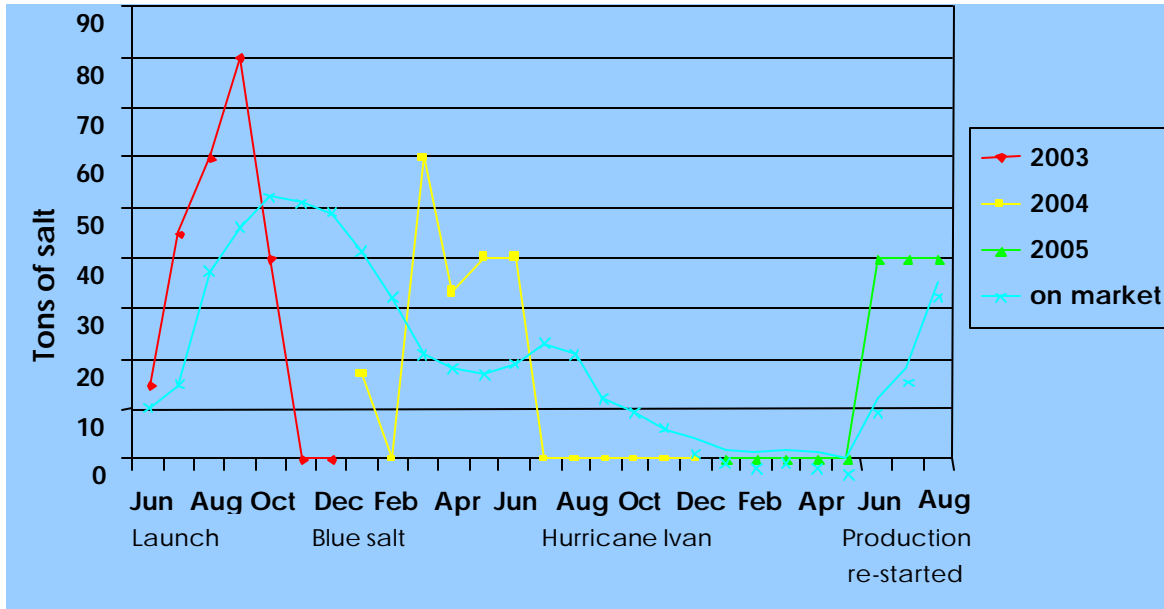
Quality control

The quality-control system is now able to detect problems with DEC-salt, but it is not clear if the discoloration problem (blue salt) has been solved permanently. Figure 4 shows the dramatic increase in the amount of imported DEC-salt in 2003, followed by a period of decline, corresponding to December 2003, when the salt stock started to change color. Color changes were noted following the

² In addition to the salt used at the household level, there was also a commercial need for salt, e.g., for salted fish and other products strictly for the export market, mainly Europe and the United States. At that time, DEC-salt could not be used in those products.

receipt and distribution of the packaged salt in Guyana and not during shipment; most persons reported changes in the salt after they had purchased and opened the package. This caused many difficulties, mainly a negative impact in terms of product acceptance.

Figure 4. DEC-salt imports (one importer)



Supply and demand

- Only one DEC-salt producer in the region
- Need for continuous and reliable supply of good-quality DEC-salt
- Competition from non-DEC-salt (non-iodized salt)

There is only one DEC-salt producer, so whenever that company can't produce the DEC-salt, the supply drops to zero. There is also competition from non-DEC-salt, especially salt imported from CARICOM (Caribbean Economic Community) countries, which have no import tariff. In terms of maintaining demand, some type of motivation or incentive to buy DEC-salt needs to be determined. As shown in Figure 4, public acceptance was growing (reaching almost 80%, a level that was maintained for two years) but dropped off significantly with the discoloration problem at the end of 2003. Efforts were made to correct the discoloration problem, and there were some periods of irregular supply. Then, in 2004, a hurricane damaged the production plant. These facilities had to undergo some re-modification, especially the packaging plant, so no DEC-salt was imported during that period. There was still some residual stock, but the supply had dropped to almost negligible levels by the end of 2004, and it took seven months to get production back on track. The first shipments of the new (improved) fortified salt were received in early June. So far there have been three more large deliveries. It is hoped that demand can be rebuilt from its current level (which is lower than that following the initial launch in 2003).

Limited funding

There is very little funding for the social mobilization program but the MOH has reallocated funds saved from supported programs such as HIV, TB and Malaria to sustain the LF elimination program.

As of January 2006, there is an opportunity to reallocate some government funding originally earmarked for these World Bank–GFATM programs into some of the other neglected diseases areas. The national AIDS Program also received support through U.S. President George Bush’s Emergency Plan for AIDS Relief; additional funds from this program may be available to the *Healthy Communities Initiative*. As part of the promotional program, more funding may be available for the social mobilization programs.

Coverage

There is limited information available on coverage, which is an important issue. So there is a need to find a dependable means of measuring coverage. Surveys would be the optimum method, but in January 2005 there was extensive flooding along the coastal land belt, so PAHO and the MoH organized an outreach program instead to try to examine the level of acceptance. The sample that was collected indicated that only about 48.6% used DEC-salt (see Table 4). And it has been estimated that social marketing reaches only about 45% of the population, most of whom are people who have already accepted DEC-salt (the more affluent, educated communities). This proportion needs to be raised to about 80%, so social marketing needs to be emphasized.

Table 4. Household survey on use of DEC-salt

Study of 1,620 households (6,840 persons)
• Household use of DEC-salt: 48.6% (750)
○ middle-class communities (urban): 51%
○ lower-income communities (urban): 38%
○ squatters (rural): 16%
• Shops selling DEC-salt: 33.2% (59/184)
• Health centers promoting DEC-salt: 23

Some positive indications regarding product acceptance were revealed among the various consumer communities, however. For example, once DEC-salt was accepted among the affluent communities it was readily utilized and continually purchased. And marketing DEC-salt along with iodized salt proved helpful, as most of the market seeks iodized salt. So including iodine is a good selling point. The survey also found that (1) about 33.2% of retailers in the high-priority communities—the ones with high prevalence, which were mostly in peri-urban and rural areas—were selling DEC-salt, and (2) nurses in about 23 Health Centers were actively promoting the DEC-salt. In this context, direct marketing (as opposed to mass promotional campaigns) seems more effective.

Attrition of personnel

Keeping trained professionals in Guyana is a major challenge. This year there was been a turnover of 130 people. The migration rate of trained health professionals is even higher, especially for nurses. Last week the final LF training program for 2005 was completed. For the third year, at that workshop in New Amsterdam, the participants were all new. There were three previous training activities in this area, but all of the nurses trained prior to this year have migrated to the United States, Canada, or the UK.

There is also a problem of attrition in the area of monitoring and evaluation. Most of the initial technicians trained in quality management have left. There are new groups of persons who must be trained in analyzing iodine levels, for example, and in the use of a rapid test being developed at Emory University that could be done at the household level. These are useful tools that might help promote the program, such as testing the different salt available at the household level (e.g., in terms of iodine content) to demonstrate to the consumer that some competing salt does not have the ingredients it claims to have.

Access to communities

The social mobilization groups have been working well but need to expand and reach more people (current campaigns only reaching 45% of the population). There is a need to revise the strategy as a whole and to involve more local level staff, but this can be difficult. As in Brazil, and Haiti, in some public health communities in Guyana, external health workers are not allowed, or cannot penetrate the system easily. These are often the high-priority communities in terms of outreach for LF. Within those communities, there are people who can provide trustworthy, reliable help, so the program needs to rely more on local-level staff and get people from within those communities to be more involved. And these are the communities that need to be reached.

Competition for funding

Access to funding for LF is often difficult due to the focus on competing infectious disease priorities such as AIDS, malaria, and TB.

Successes

Synergies

- Opportunity taken to integrate Universal Salt Iodization program goals
- Morbidity program implemented along with other care programs (e.g., foot care for diabetes and leprosy through Skin Clinics in PHC centers)
- LF program development via *Healthy Communities Initiative*

Cross-program synergies, such as the common objectives with the Universal Salt Iodization goals, have helped promoting the consumption of DEC-salt. Additionally, other synergies were developed within the morbidity program, mainly in collaboration with the Foot Care Program. There were also some remarkable successes reaching lymphedema patients through skin care services and leprosy clinics, which are established throughout Guyana. The LF program itself has stimulated interest in at least two communities in the peripheral sentinel site areas, where the *Healthy Community Initiatives* are incorporated. These synergies seem critical in selling a program that people don't always see as a priority, and the program aims to build on that.

Co-fortification with iodine

- Quality control regarding iodine content established with DEC-salt testing
- DEC-salt fluoridated as well as iodized, which may provide additional benefits

In the distribution of the fortified salt, the individual packaging format that was selected was helpful in building consumer confidence regarding the quality of the product compared with other salt products. During the product preparation period, when other salt in the market was being examined, it was found that salt labeled as "iodized" often had disastrously low levels of iodine or none at all. This problem was disseminated to the public, along with the fact that DEC-salt labeled as "iodized" is, in fact, iodized. Because DEC-salt is individually packaged, consumers are less likely to require a manufacturer's guarantee that what is on the label is what they are getting (as opposed to traditionally

packaged salt, which was imported in large quantities and packaged and sold in small plastic bags by individual retailers, so people never knew what they were getting). Hence, quality control for the iodine levels was established, along with the DEC testing, which was done at both the manufacturing point in Jamaica, where there is a single plant, and upon entry of the salt shipment into Guyana. The salt is also fluoridated, which may have some additional benefits.

Plan of Action

- Maintain NTF
 - Health minister to chair NTF
 - Focus on reaching government goal
 - Funding
 - Working sub-groups established
 - DEC-Salt Working Group
 - Social Mobilization and Communication Group
 - Morbidity Control Group
 - Monitoring and Evaluation Working Group

The Plan of Action for 2006 includes maintaining the NTF. This has been a difficult area, particularly with the Global Fund requirement for the Country Coordinating Mechanism (CCM). Many of the people that were traditionally part of the NTF have become trapped in meetings for TB and malaria (especially malaria, as many of those who work in LF were involved in the malaria program). And many of those people are fatigued from the myriad committee meetings. So the NTF format is being restructured, but it is still very necessary. The health ministers have indicated that they would like to assume the chair of that entity to help increase focus on the government goal, which is to try to eliminate LF altogether, but there are some funding constraints. There are also several work groups examining social mobilization and communication, morbidity control, and monitoring and evaluation (M&E).

DEC-salt Working Group

MoH, salt importers, United Nations Children's Fund (UNICEF), CDC, PAHO/WHO, Guyana Food & Drug Department

- Increase production/importation and strengthen quality control of DEC-salt
- Explore possibilities of second importer accessing DEC-salt from Jamaica
- Explore possibilities of building additional DEC-salt production capacity in Colombia or some other country
- Explore fortification in Guyana (currently one importer with interest)
- Possible control importation of non-DEC-salt

Initially, the program structure included some type of salt board or salt agency. This has not materialized, however, because of competing interests, especially in the commercial sector. It is hoped that this can be put together soon, considering the need to increase production, strengthen the quality-control system, and explore the possibilities for a second importer. The marketing manager of the company that produces the DEC-salt was recently in Guyana, and seems willing at this point to entertain another company importing salt from that same producer. There is a limit as to how much

the program can get involved in that process, however. It seems likely that the marketing department of the exporter in Jamaica can do this without program involvement. In terms of a second production capacity, Colombia seems to be a realistic option, as there is an importer from Colombia. Cuba is another possibility, but they also have some difficulties with salt discoloration (blue salt). So they need to fix that problem but are still interested in producing the DEC-salt. One importer has been asked repeatedly about fortification in Guyana, but most importers will only buy from their own market (from whomever is selling salt cheapest, including Brazil, Colombia, Venezuela, and several other countries). In-country fortification might be helpful. It may also be possible to establish control measures, although it's likely that for both DEC- and non-DEC-salt these would be more easily put in place if the product were combined with iodized salt (because achieving restrictions on the importation of non-iodized salt could be a difficult process).

Social Mobilization and Communication Group

- MoH, PRO, Health Promotion Unit, PAHO/WHO
 - Enhance current promotional efforts (health worker, teachers, community leaders)
 - Revise social mobilization strategy (more involvement of local-level staff)
 - Enhance social mobilization program to reach depressed and low-income communities

Morbidity Control Group

- MoH (Medical Officer, Nurse Coordinator)
- Skin Care Services (HD, Diabetic Foot Care)
- Georgetown Public Hospital Corporation (GPHC) (surgeons, Surgical Outpatient Department [SOPD] Supervisor)
- RHS (Regional Health Services)
- Private hospitals
- Private physicians
- Nursing homes
 - Expand lymphedema CARE program
 - Training for surgeons
 - Increase hydrocele surgery and after-care
 - Management protocol for other clinical manifestation of LF

M&E Working Group

- MoH, CDC, Emory Group, PAHO/WHO
 - Enhance monitoring of DEC-salt quality
 - Production, packaging, ordering, etc.
 - DEC and iodine content at household level
 - Sentinel site monitoring (mf, antigenemia, and disease burden)
 - Two fixed sites (January–February 2006)
 - Two mobile sites (January–February 2006)
 - DEC-salt coverage survey
 - January–March 2006

Addendum³

Program Manager Shamdeo Persaud provided the following update in March 2006, including a table listing the numbers for at-risk and infected population in Guyana (see Table A-1).

- DEC-salt program back on track (current supply of 71 55-kg barrels, enough for about 1,200 additional tons, which may fulfill demand through early 2007)
- Production capacity good (imports averaging about 40 tons every 8 weeks (this does not fulfill demand, however, so the program is working with a second importer to increase market availability)
- DEC-salt actively promoted in four of the high-target regions (September 2005 to March 2006); two more regions will be covered during second quarter of 2006
- Acceptance still good but awareness of need for consistent use of DEC-salt still low
- Sentinel study still pending as per availability of ICT cards from Binax (Dr. Patrick Lammie of the CDC/Atlanta trying to procure sufficient supply for sentinel site survey scheduled for April 2006); two sentinel sites have been selected and the program hopes to conduct thick blood smear survey in two additional mobile sites in 2005
- Most recent sentinel survey done in 2003 (prior to salt discoloration problem [i.e., blue salt])
- Continued expansion of CARE program for relief of suffering within PHC system (five of the 10 regions have an active program and 3 of the 6 main hospitals are performing hydrocele surgery)
- In 2005, 376 persons have been seen by CARE program (Region 4, Region 5, Region 6, and Region 10); Region 3 expects to open clinics in February 2006, and 76 patients have been registered.

Table A-1. At-risk and infected population

Country	Total population (-)	Estimated at-risk			Estimated infected		
		Individuals	% of country population	% of total population (all 7 countries)	Individuals	% of country population	% of total population (all 7 countries)
HAI	8,000,000	6,000,000	75%	3.0%	3,000,000	50%	35%
DOR	8,600,000	500,000	6%	0.2%	50,000	10%	<1%
GUY	751,296	630,000	86%	0.3%	50,000	8%	<1%
BRA	180,000,000	1,500,000	1%	0.7%	60,000	4%	<1%
COR	3,700,000	—	—	—	0	—	—
T&T	1,300,000	—	—	—	0	—	—
SUR	500,000	—	—	—	0	—	—
TOTAL	202,800,000	8,600,000	4%	4%	3,160,000	37%	37%

³ Program update provided 3/14/06 by Program Manager Shamdeo Persaud

DISCUSSION

Question. In relation to the ICT evaluation, it has been observed that the antigen indicator stays positive for many years. Regarding positive ICT cards, how would this be interpreted (for 20 microliters [ml] of blood analyzed via thick blood smears)? Because for treatment with medicated salt, this can be deceptive. For example, in China, despite three, four, or five years of treatment with the medicated salt, there has apparently been a re-emergence of positive cases. So it seems more sensitive quantitative tools are needed to document that the adult embryos have died in order to infer that transmission in an area has been interrupted.

Comment. In relation to the introduction of more sensitive tools to evaluate mainly the adult worms, if ICT is used there is some concern about the interpretation of the results. If quantitative tests are used, then prevalence can be evaluated pre- and post-treatment to show the decrease in antigenemia (to ensure the adult worms have died).

Response. Perhaps the cases reported in China are residual. Because the overwhelming experience there has been positive, in terms of the WHO criteria, China achieved the criteria for elimination predominantly with DEC-salt (although a combination of strategies was certainly used). There was some effort to look at the effect of DEC-salt on adult worms and antigenemia within a research context in Haiti. But Guyana's program is not operating within a research context. As the program manager can confirm, human resources there are stretched to the breaking point. For example, there's a 100% turnover of nurses every two years. So there has been a focus on the requirements that need to be met in order to adhere to WHO guidelines. It would be great to be able to look at ultrasound and quantitative antigen tests, but this has to be done within the context of clinical trials, or a research project, with adequate resources, and Guyana just doesn't have those.

Comment. The comment "whatever salt is cheapest they will buy" provides an important discussion topic, because price competition will always exist (e.g., from un-fortified salt, i.e. salt without iodine or DEC). This suggests the need for a subsidy.

Response. Subsidies require additional funding, and it is difficult to find resources to offset them. Initially, UNICEF, through a CDC grant marked for nutritional purposes, provided a subsidy. This covered the cost (e.g., the additional cost for packaging) and labeling was initially borne through a subsidy. So when DEC-salt entered the market, prices stayed at the same level as that of non-DEC salt. But over time the subsidy funds dried up, and the prices seemed to start moving apart again, with DEC-salt more expensive than regular salt. So there's a need to look into ways of bringing the market price down. A subsidy could allow us to keep the price to at least the same level as that of the non-DEC [non-fortified] salt.

Comment. Salt subsidies—and the opportunities presented by them—are important. But they are also difficult to fund and maintain, especially now, without the [Bill & Melinda Gates Foundation] funds. But a salt subsidy combined with other strategies is key to successfully growing the program in terms of coverage and consumer acceptance. Perhaps the focus should be not only on how to restrict the import of salt without DEC but also on how to restrict the import of salt without iodine. Iodine provides an opportunity to ensure that imports of salt contain DEC, working with existing iodine regulations. Such efforts, combined with whatever subsidy can be developed and a strong strengthening of the community and households, targeted via the social marketing effort, would help advance the program. With respect to the supply of DEC-salt, Guyana, along with the DOR, Haiti, and Brazil should be sure to forecast their needs for DEC-salt *materia prima* to PAHO, and to communicate through the Regional Program Review Group (RPRG). Good forecasting is key.

Question. What was the experience in Guyana with identifying cases of lymphedema morbidity, particularly hydrocele? For example, what percentage was followed up with filarial etiology, and which technique was used to research the mf to infer this etiology?

Response. For morbidity cases at hospital sites, mf smears are taken from all cases presenting to a surgical clinic with hydrocele. ICT cards are not always used. Diagnoses are made based on clinical findings and not necessarily on the positivity of the slides themselves. So most cases that are reported are clinical diagnoses; the surgeons make the determination. In Guyana, very few cases of hydrocele are encountered that could be attributed to causes other than mf, so most hydrocele cases are reported as mf hydrocele.

Comment. Among the program goals identified in the Guyana presentation, achieving a stable supply of DEC-fortified salt seems the most important. This seems to be the main problem with the program strategy, as seen in the studies conducted regarding social mobilization and marketing plans related to the acquisition and use of DEC-salt among the population. Although serious problems occur when there is no stable supply, there are now agreements with the production company in Jamaica to prioritize production and respond to demand. So it seems that other aspects should also be emphasized in the work plan for 2006. One is morbidity, especially in the area of research and case detection, to strengthen the clinical and primary care components.

Question. Targeting some social mobilization efforts to marginalized communities is a good idea, but it may be necessary to change or adapt the message in some way. Has research on coverage suggested that even though the children could sing the [DEC-salt promotion] jingle, the parents weren't buying the salt? If so, what needs to be done to break down that barrier?

Response. The DEC-salt supply seems to be resolving itself, when there is instability. So it might be a good time to re-assess the strategy used in the initial campaign, which is basically a mass media approach—getting a jingle out and getting the public to buy into the idea [of using DEC-salt]. So the messages may have to be re-adjusted. And most indications are that some direct marketing is needed. So an assessment is necessary. Hopefully there will be access to technical assistance from someone with the capacity to assess the social marketing campaign and to make some useful recommendation as to how it should be reformatted and re-shaped. That will require a lot of work, almost as much as was needed to mobilize the communities for salt distribution.

Comment. The RPRG should ask the Secretariat to find a specialist in social marketing to benefit the DEC-salt program, which should be preserved. The experience has produced a lot of data, and it deserves to be maintained.