



Eye of the Eagle



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THE CARTER CENTER

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Trachoma Review Focuses on Program Output, Quality

The Carter Center's 14th Annual Trachoma Program Review took place from March 11–13, 2013. The theme was "Efficient Program Delivery: Doing More, Better, Faster." Each national trachoma control program presented program output, successes, and challenges from 2012 and plans for 2013.

Representatives from ministries of health and The Carter Center in six countries—Mali, Niger, Nigeria, South Sudan, Sudan, and Ethiopia—participated in the

meeting, as did a representative from Chad's Ministry of Health. Also in attendance were representatives from implementing organizations, academic institutions, and donor agencies.

The theme of the first day was "more" and started with a presentation from Dr. Paul Emerson, the director of the Carter Center's Trachoma Control Program, who discussed the purpose of operational research in trachoma programs. Then he showed how such research to improve program delivery to meet elimination goals is the starting

point for overall community health and development.

Stephanie Palmer, program development coordinator at The Carter Center, reported results from a quality-of-life assessment in women with trachoma in rural Niger. Other presentations included an update on the effort to map global prevalence of trachoma, a review of criteria for post-endemic surveillance, and a presentation on potential areas of collaboration for trachoma control programs and water, sanitation, and hygiene

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THE CARTER CENTER



Waging Peace. Fighting Disease. Building Hope.

River Blindness Elimination New Goal for Program

Historically, the focus of the Carter Center's River Blindness Program has been to eliminate the disease in the

Americas and control it in Africa. But due to changing scientific opinion and its own success in the field, the Center is shifting its strategy and will now

work to help eliminate the disease in all places where the program operates.

In 2002 scientists met at The Carter Center to explore the global eradicability of river blindness (Dadzie et al. *Filarial Journal* 2003: <http://www.filariajournal.com/content/pdf/1475-2883-2-2.pdf>). Conference attendees



Moses Katabarwa

Under a new program focus, treatments for river blindness will increase to two or four times a year.

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Trachoma

Electronic Data Collection Saves Time, Money

Carter Center staff in Ethiopia have found that using portable electronic devices in the field for collecting data saves the program money and provides faster results. Personnel using a system called Swift Insights in summer 2012 were able to make trachoma survey results available two months sooner—35 percent faster—compared with collecting data on paper questionnaires.

Data were entered in the field using tablet computers, eliminating the need for staff to transfer information from paper questionnaires collected in the field into computers later.

Swift Insights, developed in collaboration with Georgia Tech graduate volunteers, allows Carter Center staff in Ethiopia to download collected survey data immediately following the completion of the field work and present results to the Ministry of Health, which then can make immediate program decisions.

A recent study documenting the cost of trachoma prevalence surveys found that data entry from paper questionnaires to a computer database accounted for 10 percent of all incremental costs. The estimated

cost of collecting data with paper questionnaires plus supplies in 360 communities was \$13,883. Incremental cost of the first deployment of Swift Insights on 24 tablet computers plus accessories to survey 354 communities in the Amhara region was \$10,320. The tablets and accessories have been reused in subsequent surveys. Even with the cost of purchasing 10 additional tablets to increase the number of survey teams to cover 531 communities, The Carter Center estimates that electronic data collection has saved approximately \$16,477 since 2011.

The Swift Insights software can be used with any mobile computing device operating on the Android platform. For example, Sudan Ministry of Health's trachoma control program has deployed the Barnes & Noble Nook e-reader for data collection in trachoma survey activities, including the recent subdistrict-level assessment of 160 communities in five districts. Some of the benefits of this e-reader for the field include long battery life, crisp contrasting screen for use in bright daylight, and affordability (under \$100 per device).

Use of Swift Insights is planned for



Aisha E. Stewart

Using a computer tablet to collect data, a health worker conducts a household interview in Amharic for a trachoma impact assessment in Ethiopia.

upcoming subdistrict-level trachoma prevalence surveys to determine whether elimination targets have been met in Mali and Niger. Such an expansion will mark the utility of Swift Insights in Amharic, Arabic, French, and English. Future applications might include routine program data collection and reporting, as well as the ability to immediately generate up-to-date charts to track progress toward annual targets.

Trachoma Review

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(WASH) programs.

Under the theme of “better,” the second day of the review focused on ways to improve current trachoma work and included updates from academic institutions that have partnered with The Carter Center for research.

Dr. Zerihun Tadesse, Ethiopia

country representative for The Carter Center, provided survey results on MalTra week antibiotic coverage. Occurring twice a year, MalTra week is a one-week event in which government health officers and volunteers blanket a region of Ethiopia to detect and treat malaria and treat trachoma through mass drug administration.

Dr. Kadri Boubacar, deputy national coordinator of Niger's

trachoma control program, presented results from a survey on the prevalence of postoperative trichiasis in four districts. Dr. Jonathan King, epidemiologist for The Carter Center, presented the findings from a survey showing that multiple years of exposure to the SAFE strategy—surgery, antibiotics, facial cleanliness, and environmental improvement—lead to decreased trachomatous scarring,

Trachoma

Trachoma Health Education Target of Broad Review

The Carter Center's Trachoma Control Program has embarked on a multicountry assessment of its health education activities. This assessment, now completed in Ethiopia, Mali, South Sudan, and Sudan, identifies best practices in trachoma health education to determine which can be broadened for greater impact within and across programs. The Center is currently refreshing activities in all six countries where it works.

For health education delivered in schools, new curricula and other school-based activities are being developed to reduce transmission of trachoma in school-age children, who are particularly vulnerable.

In Sudan, school health education activities are being scaled up to reach two states that previously had no school-based activities. In Nigeria, classroom materials have been developed and piloted. The Carter Center is now evaluating and revising them.

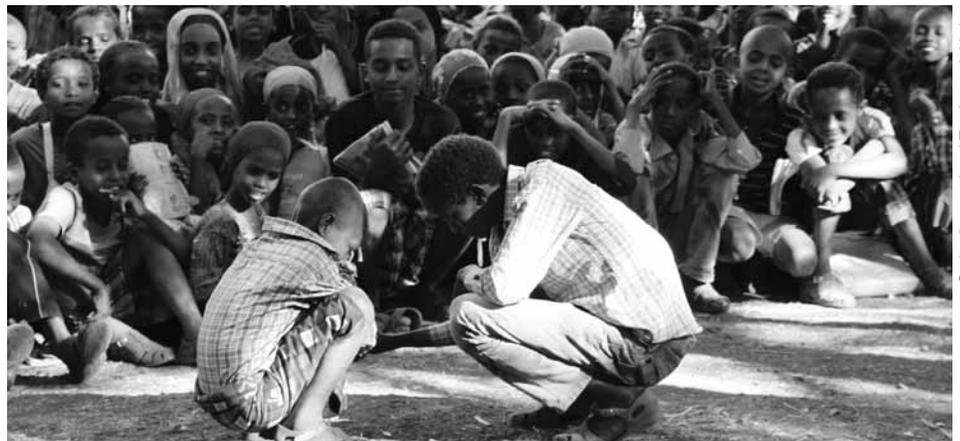
In Ethiopia, the country with the strongest school health program, a graduate student will study how to more effectively reach children with health education in preparation for revising the trachoma curriculum.

In nine districts in Niger, teachers will receive training on a curriculum developed by Carter Center partner Helen Keller International to speed progress toward the 2015 elimination target. And the program in South Sudan is working with UNICEF and UNESCO to include trachoma health education in life skills flip charts and curriculum in primary schools that reach high-priority areas.

School-age children are not the only group receiving trachoma education. During surgical campaigns, mass drug administration campaigns, soap-making microfinance programs, and latrine building, all community

members are targeted for health education. In addition, in South Sudan, hygiene promoters have been given trachoma flip charts to educate people in their target areas. In Sudan, people are being trained to provide trachoma health education in low-endemicity areas.

As assessments of activities conclude, Carter Center staff will continue to identify and implement the most effective activities. As one school director in Ethiopia said: "The eye is essential. Without the eye, students can't read, can't learn, can't know. We must always give the eye care."



Two Ethiopian boys perform a drama about trachoma for schoolchildren in eastern Amhara region.

Ogden/International Trachoma Initiative

the precondition for the blinding form of trachoma. Other presentations included a study exploring systematic differences between schoolchildren and children who do not attend school and an update on best practices in mass drug administration.

Presentations on the third day of the review, under the theme of "faster," focused on increasing program efficiency. Zeinab Abdalla, Carter

Center program officer in Sudan, discussed preliminary findings from an ongoing study in Sudan looking at accelerating mass drug administration in districts where active trachoma is between 5–9 percent. A student from Emory University's Rollins School of Public Health presented findings from an impact survey in Nigeria following two years of mass drug administration. Lisa Dickman, Carter Center assistant

director, presented findings from a multicountry assessment of health education.

Meeting presentations showed that the national programs are making progress toward their elimination targets. Also, current operational research initiatives hold promise for improving future program delivery and assisting these national programs in meeting their goals.

Trachoma

Ethiopian Girl Helps Family Fight Trachoma

By Aisha Stewart

We met 13-year-old Azmera Yogzaw in the community of Chals, Ethiopia, during a trachoma program impact assessment. Chals is a small community of about 900 residents located in the West Gojam zone in the Amhara region, over an hour's walk from a main road. Azmera and her family were the first family in the community to be surveyed and eagerly greeted the survey team. During the impact assessment, survey teams visited 7,324 households like Azmera's in 209 clusters over four weeks. The teams interviewed household representatives, screened family members for trachoma, and conducted a school-age-child assessment in half of the clusters. Azmera's mother answered questions about her household, and Azmera agreed to participate in the child assessment. Azmera also shared her experience with trachoma control efforts, which took place at her school, a 30-minute walk away.



Use of latrines such as this helps control the spread of trachoma.

What did the health extension worker teach you about trachoma?

"I like to study science and math. I especially like it when the health worker comes because we learn about ways to have good health. I always tell my family what I learned about good health at school too. I learned that trachoma is an eye disease that can cause blindness. To prevent trachoma, the health worker told us that it's important to wash your face every day. I make sure to wash my face at least once each day, and make sure that my three younger brothers and sisters do too."

Where does your family collect water for drinking, cooking, and washing?

"I'm responsible for collecting water for my family. Even though it is a farther walk, I always go to a protected water source to collect our water. It takes a little longer to get there, but I always want to make sure there is enough safe water for everyone in my family to bathe and wash their clothes."



Aisha Stewart

Azmera Yogzaw, age 13, collects water from a safe source to protect her family, though it takes her longer to walk there.

Can you tell us what you learned about latrines in school?

"In school, my teacher and our health worker taught us we should always use a latrine. This helps to keep our village clean and keeps flies away. The health worker encourages our community members to build their own latrines, and she shows people how to do it. Lots of families have built latrines because the health worker showed them latrines can keep away diseases like trachoma."

To further prevent the spread of trachoma, Azmera and her family have taken several rounds of the antibiotic Zithromax[®], donated by Pfizer Inc and distributed by teams of Carter Center-supported volunteers during the annual MalTra week campaign. MalTra is an integrated intervention to address malaria and trachoma, both of which are endemic in the Amhara region where Azmera lives.

"My family and I all have taken tablets for trachoma many times. At school, we learn that it's important to take the tablets every year. I'm glad that my family gets medicine. And I'm glad that I get to learn about health topics at school so my family and I can stay healthy," she said.

Editor's Note: Stewart was a summer 2012 graduate assistant in the Carter Center's Trachoma Control Program. She traveled to Ethiopia to help assess the impact of the Center's trachoma prevention activities in partnership with the local communities and regional health bureau.

River Blindness

River Blindness

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concluded that river blindness (onchocerciasis) could be eliminated in the Americas, but not in Africa. That is, with ongoing interventions, African victims could be spared the worst of the disease, but transmission of river blindness likely would persist. Now, owing in part to the Carter

Center's accomplishments in both Latin America and Africa using an accelerated treatment schedule of the medicine Mectizan,[®] donated by Merck, prevailing opinions have been transformed. Many experts now believe river blindness can be eliminated in Africa as well.

The Center is moving forward with an eight-year plan to interrupt river blindness transmission everywhere

the Center currently assists by 2020. The change in goals in Africa was due largely to decisions by the ministries of health in Ethiopia and Nigeria to aim for elimination of river blindness transmission, in coordination with activities to eliminate lymphatic filariasis.

As a result of this new focus, the Center's program will now be named the River Blindness Elimination Program.

At Annual Review, Center Sets Largest Treatment Goal

At its 17th Annual River Blindness Program Review, March 5–7, The Carter Center set a goal to help provide more than 20 million treatments in 2013 of the medicine that treats and prevents the disease, an increase of 40 percent. The increased treatment goal is a result of the changing focus of the program from control to elimination in the African countries where it works.

The review, hosted in Atlanta, Ga., addressed program progress, including integrated lymphatic filariasis and schistosomiasis efforts. Since 1996, The Carter Center has assisted ministries of health to distribute more than 172 million treatments of Mectizan,[®] donated by Merck, and provide health education to either control or eliminate river blindness.

In 2012, the Carter Center's River Blindness Program assisted in 14,337,510 treatments in six countries (see Figure 1). The program works in 10 countries, but four of these, located in the Americas, are no longer providing treatment because they have interrupted or eliminated transmission. The program reached 94 percent of its treatment target through its grassroots



Lisa Satterfield

Former U.S. President Jimmy Carter (center) attended the 17th Annual River Blindness Program Review in Atlanta, Ga.

network of community-directed Mectizan distributors. Nearly 150,000 distributors were trained in 2012, managed by almost 25,000 community supervisors and ministry of health district personnel.

The elimination of river blindness as a new program objective was a major point of discussion during the meeting. In 2012, the Carter Center Board of Trustees approved the change from a strategy of river blindness control to a new goal of interruption of transmission (elimination) in all Carter Center–assisted areas by 2020. In collaboration with individual country

governments, this shift will require new assessments and enhanced interventions where transmission persists and in new areas where treatments have never been given. Treatments now will be administered twice or four times a year, rather than annually. Thus, the 2013 ultimate treatment goal for all Carter Center–assisted river blindness programs has grown to over 20 million, compared with 2012's 15 million.

Meeting participants also discussed the Carter Center's new collaboration with the Envision project, sponsored by U.S. Agency for International

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River Blindness

Treatment Goal

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Development (USAID) and RTI International, which is now supporting the Center's programs in Nigeria and Uganda.

Dr. Frank Richards, director of the Carter Center's lymphatic filariasis, malaria, river blindness, and schistosomiasis programs, chaired the review. Special guest Dr. Adetokunbo Lucas, recipient of the 2013 Jimmy and Rosalynn Carter Humanitarian Award from the National Foundation for Infectious Diseases, discussed the impact of river blindness treatments in Nigeria. Former U.S. President Jimmy Carter, who attended the review on March 7, offered additional perspectives on the program's accomplishments.

Other attendees included representatives from the ministries of health of Ethiopia, Nigeria, Sudan, and Uganda; the African Program for Onchocerciasis Control; the Bill & Melinda Gates Foundation; CBM; Center for Child Well-Being; U.S. Centers for Disease

Control and Prevention; Children Without Worms; Eck Institute for Global Health; GlaxoSmithKline; Harvard University; Izumi Foundation; Lions Clubs International Foundation; Liverpool School of Neglected Tropical Diseases; Mectizan Donation Program; Ohio University; RTI International; Sightsavers International; Saudi Fund for Development; Task Force for Global Health; International Task Force for Disease Eradication; and University of South Florida.

Reports from individual countries are provided below.

Nigeria

In 2012, a total of 6,056,437 Mectizan treatments for river blindness were distributed in Nigeria by the Ministry of Health with assistance from The Carter Center. Nigeria trained or retrained over 38,000 community drug distributors to accomplish this work.

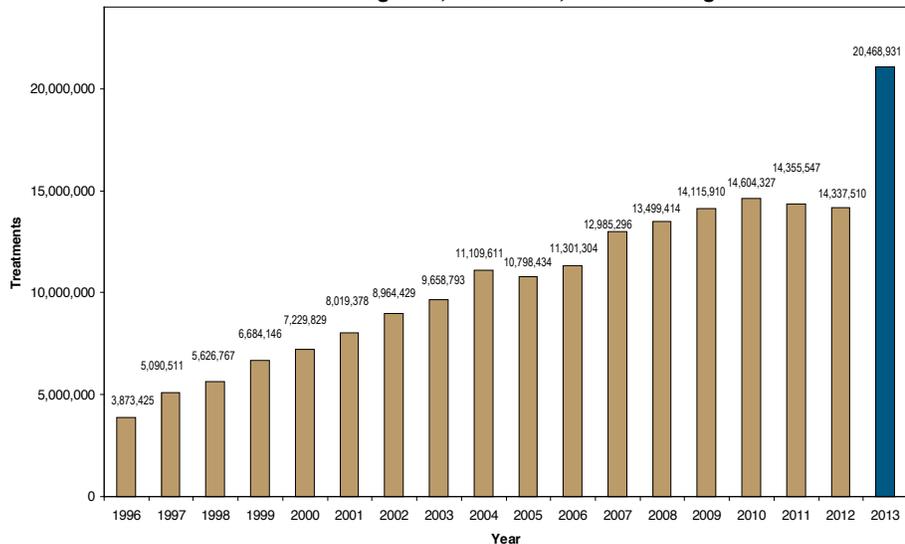
The Carter Center's lymphatic filariasis (LF) program is integrated with the river blindness program in Plateau and Nasarawa states, combining Mectizan with albendazole, donated

by GlaxoSmithKline. In 2012, the programs assisted in 3,147,903 combined treatments for LF. The Carter Center also conducted an LF transmission assessment survey, following recently published guidelines from the World Health Organization. The survey determined that LF transmission had been interrupted and that mass drug administration for LF could be stopped in 2013 in the two states, which have a population of approximately 4 million people. Longstanding mass drug administration of nine or more years and recent distribution of long-lasting insecticidal bed nets in two states contributed to this success.

In 2012, The Carter Center assisted in 1,172,859 praziquantel treatments for schistosomiasis in the four states of Delta, Edo, Nasarawa, and Plateau. The majority of the praziquantel used in Nigeria is donated to The Carter Center through the World Health Organization by Merck KGaA (E-Merck) of Germany. Whenever possible and appropriate, praziquantel treatments are given simultaneously with LF or river blindness treatments because the three drugs involved—ivermectin, albendazole, praziquantel—can be safely taken at one time. The Izumi Foundation supports this program in Delta and Edo states.

In 2013, the Envision project is supporting the mapping of soil-transmitted helminths and schistosomiasis in the nine states assisted by The Carter Center in southeastern Nigeria. If resources are made available, the program may soon begin to address LF in *Loa loa*-endemic areas, in the same area of Nigeria, using mass drug administration of albendazole combined with use of long-lasting insecticidal bed nets,

Figure 1 Treatments Delivered by Carter Center–Assisted River Blindness Programs, 1996–2012, and 2013 Target



River Blindness

in accordance with new guidelines from the World Health Organization. Over 60 million bed nets have already been distributed throughout Nigeria for malaria control.

Ethiopia

In Ethiopia, 4,882,782 people were treated with ivermectin in 2012 in Carter Center–assisted areas, a 52 percent increase over 2011 treatments, as the program moved into newly identified endemic districts. Over 70,000 community drug distributors were responsible for these treatments. In 2013, Ethiopia is beginning twice-per-year treatments in support of its national plan to eliminate river blindness. The Carter Center’s work in Ethiopia is based on a longstanding partnership with the Ministry of Health, Lions Clubs, and the Lions Clubs SightFirst Program. The Carter Center–assisted LF elimination program expanded from one to three zones, increasing total treatments nine-fold as compared with 2011 to 711,701 combined Mectizan and albendazole treatments, 92 percent of the treatment goal of 772,827.

Uganda

The Uganda program administered over 2.8 million Mectizan treatments in 2012, provided by over 38,000 community distributors. At its meeting in August 2012, the Ugandan Onchocerciasis Elimination Expert Advisory Committee recommended treatments be halted in three more foci where transmission has been interrupted, and the government of Uganda agreed. In 2012, the Lions-Carter Center–assisted Uganda program expanded into a large, previously untreated area called the North I focus. This area, highly endemic for river

blindness, was previously embroiled in conflict and thus unreachable. The Lions-Carter Center–assisted program also is receiving Envision program support for river blindness elimination. Of 18 Ugandan foci, one has eliminated the disease, six have interrupted transmission, four are under post-treatment surveillance, and three are suspected of interrupting transmission and need more data for verification.

Sudan

Sudan’s Lions-Carter Center effort to eliminate river blindness supported the Ministry of Health in delivering 266,233 treatments, administered by 2,365 community distributors. The Abu Hamad focus successfully stopped treatment in 2012 after the Ministry of Health determined that transmission has been interrupted. The report of this effort appeared in the *American Journal of Tropical Medicine and Hygiene* (Higazi et al., 2013). The Carter Center will continue to assist in the three-year post-treatment surveillance phase.

The Americas

The Carter Center’s Onchocerciasis Elimination Program for the Americas (OEPA) aims to interrupt onchocerciasis (river blindness) transmission in the Americas using Mectizan mass administration every six months or every three months. The OEPA coalition includes the ministries of health of six countries, Lions Clubs, Lions Clubs International Foundation, the Bill & Melinda Gates Foundation, the Pan American Health Organization and World Health Organization, Mectizan Donation Program, U.S. Centers for Disease Control and Prevention, and USAID. In September 2012, USAID made a generous five-year grant to The Carter Center for OEPA.

Of 13 endemic foci in six countries, seven have now stopped mass drug administration and passed successfully through three years of post-treatment surveillance, designed to demonstrate that no transmission has occurred in the absence of active interventions. Once the surveillance period is completed, a focus is deemed to have eliminated onchocerciasis. Four foci are no longer providing Mectizan treatment, but still are under post-treatment surveillance. The newest addition to this list is the Northeast focus in Venezuela, which stopped mass treatments at the end of 2012. Colombia submitted a request in 2011 to the World Health Organization to be certified as free of onchocerciasis. Ecuador completed its third year of post-treatment surveillance in 2012 and is expected to submit its request for certification in 2013.

A total of 236,272 Mectizan treatments were given in the Americas in 2012 in the three remaining endemic areas in Brazil and Venezuela. In 2013, only 4 percent of the original population at risk in the Americas will receive treatment due to ongoing disease transmission. This population resides in two foci in Venezuela and Brazil, which comprise a single area across the border of the two countries. The population of these foci is about 25,000, but the difficult Amazonia terrain makes this last bastion of onchocerciasis in the Americas a challenge to eliminate. The indigenous Yanomami people who live in the area are migratory, difficult to locate in dense jungle, and frequently cross the border. Effective air transport and binational cooperation are critical to ridding the Americas of the remaining onchocerciasis.

River Blindness

Uganda: Transmission Ends in Three Foci

Editor's Note: The following press statement was released by the Uganda Ministry of Health.

Uganda has successfully interrupted the transmission of onchocerciasis (river blindness) in three more foci in four districts: Kibaale (Mpamba-Nkusi focus), Maracha (Maracha-Terego focus), and Mitooma and Bushenyi (Imaramagambo focus).

Under the National Onchocerciasis Control Program, the country has for the last 18 years (1993–2011) distributed ivermectin in these districts. In Kibaale district, semi-annual mass treatment with the oral drug ivermectin (Mectizan®) donated by the U.S. company Merck was supplemented by vector elimination.

This latest achievement continues to demonstrate that river blindness elimination is possible in Africa and follows the February 2012 announcement that Uganda interrupted transmission in its first three foci. A phased approach is being implemented with the goal of interrupting transmission of this age-old scourge in the whole country by 2020.

Currently, there are no cases attributed to onchocerciasis (river blindness) in the three foci. In light of this evidence, suspension of treatment

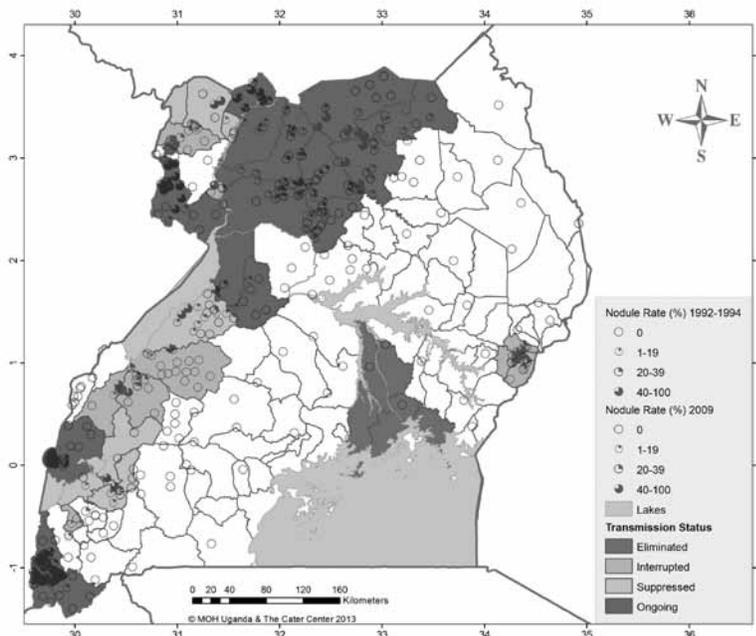
with Mectizan was recommended for river blindness–endemic communities in these foci. The recommendation was made by the fifth session of the Uganda Onchocerciasis Elimination Expert Advisory Committee in August 2012 based on Uganda guidelines for interruption of transmission that were adapted from the WHO criteria for certification of elimination of onchocerciasis. The recommendation was later endorsed by the National Certification Committee of the Ministry of Health during their fifth meeting at the end of October 2012, meaning the foci will begin a three-year post-treatment surveillance period before the areas can be declared free from the disease.

As a result, 561,170 treatments of Mectizan, donated by Merck, USA, will no longer be needed for these foci. This brings the total treatments to be

stopped to approximately 1,232,568 people since the elimination policy was launched in 2007. To date, Uganda has interrupted transmission in six of the 18 originally endemic foci. In this regard, Uganda has rapidly made great strides toward elimination of onchocerciasis, and this is in line with the shift from control to elimination of onchocerciasis being supported internationally.

River blindness is a parasitic disease and is transmitted by the bites of female black flies that breed in fast-flowing rivers. The disease affects 35 districts in Uganda with 3.5 million people at risk. It is one of the neglected tropical diseases that causes severe itching, vision impairment, and can lead to permanent blindness.

This success of these interventions has been through the efforts of the National Onchocerciasis Control Program of the Ministry of Health with support of the technical and implementing partners including The Carter Center, WHO/African Program for Onchocerciasis Control (APOC), Sightsavers and Envision/RTI, and Merck. We also acknowledge the support of Kibaale, Mitooma, Bushenyi, and Maracha district local governments, the district onchocerciasis coordinators/neglected tropical diseases personnel, focal persons, supervisors, community medicine distributors, and the communities for their support and cooperation that allowed this to be achieved.



This map shows the status of transmission of river blindness in the foci of Uganda.

River Blindness

Guatemalan Group Bridges Art, Health Education

When Catalina Garcia proclaims, “We’re going to take the streets of Patalul,” it isn’t a threat—or is it? Dressed as the black fly vector that spreads river blindness, she is surrounded by people in vests stamped “OEPA,” the Onchocerciasis Elimination Program for the Americas led by The Carter Center. Behind her are others dressed up as Mectizan® bottles who dance to a marching band, and up ahead is a superhero on stilts with “Mectizan” emblazoned on his chest, honoring the disease-fighting drug donated by Merck. People from seven districts in central Guatemala have come to celebrate the news that as of late 2011, river blindness transmission was interrupted.

Garcia is a member of a nonprofit artistic expression troupe called Caja Ludica—the “playful box.” OEPA worked with Caja Ludica to craft activities that would educate, engage, and inspire. A community collaboration, hundreds of locals—kids to seniors—participated in the events.

The two days of festivities in Patalul are more than a fiesta. They are a careful integration of health education activities called Art as a Bridge to Health. Alba Lucia Morales, OEPA’s health adviser, believes looking at the disease through a creative lens provides benefits beyond river blindness education. “You are also contributing to other tools for life, for community building, and for cooperation between different community health initiatives,” said Morales.

That cooperation is important as Guatemala undergoes three years of post-treatment surveillance before

the disease can be declared eliminated. Dr. Mauricio Sauerbrey, director of OEPA, says keeping the message alive in once-endemic communities is critical. “We’ve recently stopped Mectizan drug delivery in this area,” said Sauerbrey, “but we have to keep the population alert in case there is a resurgence of the disease.”

Dr. Carlos Diaz, who coordinates Guatemala’s onchocerciasis elimination program, said others should take notice. “This celebration is an excellent mechanism and strategy—the playfulness and the art—to keep the attention of the people.”



Emily Staub

A member of a Guatemalan artistic expression group, Catalina Garcia shows schoolchildren a dance as they learn about the worm that caused onchocerciasis in many Guatemalans.

The playfulness and the art are catching the attention of other health programs. As street parades are bringing awareness to the Day of Nonviolence Against Women and World AIDS Day, it is clear that while onchocerciasis is no longer spreading in Guatemala, what might be spreading is the idea that art can bring communities together and improve health.

Dominguez Receives Award

The Carter Center congratulates Dr. Alfredo Dominguez, senior epidemiologist at its Onchocerciasis Elimination Program for the Americas office in Guatemala, for receiving the 2012 Science Award from Mexico’s Chiapas state. The Chiapas governor, the Hon. Juan Sabines, presented the award to Dr. Dominguez during the annual InterAmerican Conference on Onchocerciasis on Nov. 22, 2012.

Dr. Dominguez, a native of Chiapas, won the award for his leadership in



Dr. Alfredo Dominguez

the successful effort to interrupt the transmission of river blindness (onchocerciasis) there in 2011.

Malaria Meeting Reviews Ethiopian, Nigerian Programs

The fourth annual review of the Carter Center's Malaria Control Program was convened on March 8 in Atlanta, Ga. Ministry of health officials and the Center's field office staff in Ethiopia and Nigeria provided reports on their malaria control work (summarized below). Participants discussed program successes and challenges from 2012 and made recommendations for 2013. Attending the meeting were representatives from the Bill & Melinda Gates Foundation, PATH/MACEPA, the U.S. Centers for Disease Control and Prevention, International Public Health Advisors, Lions Club of Ethiopia, Malaria Foundation International, Emory University, Johns Hopkins University, Colby College, Tulane University, and the University of Notre Dame. Also present was Dr. Adetokunbo O. Lucas of Nigeria, who was recently awarded the Jimmy and Rosalynn Carter Humanitarian Award by the National Foundation for Infectious Diseases.

The agenda also included talks on historical and current examples of efforts to eliminate malaria at the national or subnational levels. Dr. Randall Packard of Johns Hopkins University and Dr. James Webb of Colby College, both historians of public health, discussed lessons that can be learned from the successes and failures of the first World Health Organization malaria eradication program that was abandoned in 1969.

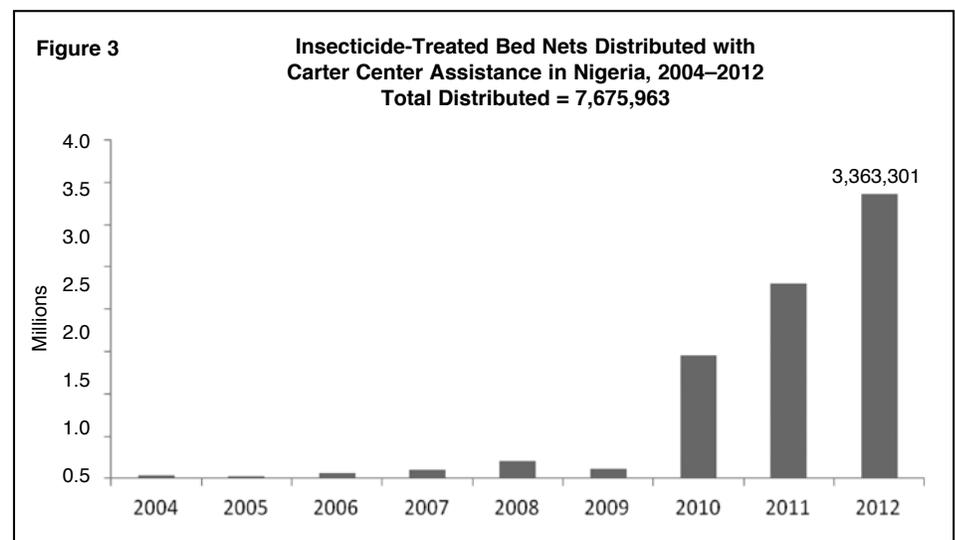
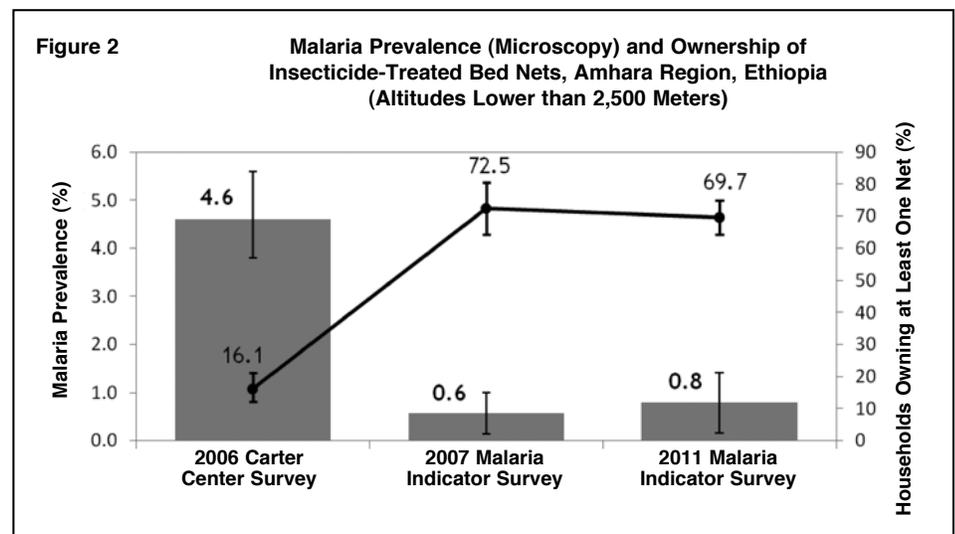
Ethiopia

Dr. Zerihun Tadesse summarized Carter Center-supported malaria control activities in Ethiopia in 2012. The Center's office provided assistance to

the national Ministry of Health and the regional health bureaus in Amhara, Oromia, Beneshangul Gumuz, and Southern Nations, Nationalities, and People's regions for activities including monitoring bed net ownership and use, providing supportive supervision and training on malaria diagnostics and treatment, and screening for and treating fever cases in the context of mass drug administration campaigns for trachoma (MalTra weeks) in Amhara. An estimated 8,204 health

workers received malaria training in 2012, including those trained during MalTra weeks. A total of 43,340 cases of malaria were treated during two MalTra weeks: East Amhara in May 2012 and West Amhara in November 2012.

The Carter Center also provided support for routine malaria surveillance in Amhara. Between January 2012, when a Carter Center-developed enhanced data management system was introduced, and the end



of the year, the percentage of eligible health facilities submitting weekly surveillance data increased from 51.6 percent to 90.5 percent. The Carter Center helped to coordinate timely and targeted responses to suspected malaria outbreaks identified using this surveillance system. These responses included house-to-house mass fever screening and test-and-treat campaigns, diagnostic test and treatment supply monitoring, targeted indoor residual spraying, and insecticidal bed net distributions.

Dr. Tadesse presented key Amhara-specific results of the 2011 National Malaria Indicator Survey. The percentage of households owning at least one insecticidal bed net increased from 16.1 percent in a 2006 Carter Center baseline survey to 72.5 percent in 2007 and 69.7 percent in 2011 (see Figure 2). Over this same period, malaria prevalence declined from 4.6 percent in 2006 to 0.6 percent in 2007 and 0.8 percent in 2011. Reported net use among children younger than 5 years in households owning a net was 59.4 percent.

Nigeria

Adamu Sallau, malaria coordinator for the Carter Center's Nigeria office, reported that the Center supported the distribution of 3.4 million insecticidal bed nets in Imo, Abia, and Edo states in 2012, the highest number of nets to date distributed with assistance from The Carter Center in a single year. Cumulatively, between 2004 and 2012, the Center supported the distribution of 7,675,963 nets in Nigeria (see Figure 3). Sallau also reported on efforts to increase collaboration between malaria and lymphatic filariasis programs in Nigeria and to develop innovative

Center Assists in Distribution of Over 9.4 Million Nets in Nigeria

In May 2013, 1.8 million long-lasting insecticidal bed nets were distributed in Nigeria's Delta state with support from The Carter Center. This marks the completion of mass distribution campaigns in Carter Center-assisted states as part of national efforts to increase net ownership. From 2009 through 2013, The Carter Center supported the distribution of approximately 8.8 million nets in seven states (see Table 1). Added to 623,000 nets distributed through other mechanisms since 2004, this brings the cumulative number of nets distributed with Carter Center support in Nigeria to over 9.4 million.

The next challenge will be to sustain net ownership. The Carter Center is collaborating with Nigeria's National Malaria Control Program to develop the national strategy for ongoing net distribution, focusing on the community-based component of the strategy. In Plateau state, community distributors from mass drug administration programs have been trained to monitor net ownership and needs, to distribute

approaches for continuous routine insecticidal bed net distribution. He presented routine malaria surveillance data from Plateau state and discussed needs to improve surveillance reporting. He also described the results of focus groups conducted to inform the development of community-directed behavior change communications interventions to be launched in Plateau in 2013.

Results from a 2012 malaria indicator survey conducted by The Carter

Center in Plateau indicate that the percentage of households owning at least one net of any kind increased from 34.8 percent in 2010, immediately before the mass distribution campaign, to 74.3 percent in 2012. The percentage of households owning at least two nets increased from 14.5 percent to 50.3 percent. Net use in households owning at least one net increased significantly from 42.1 percent in 2010 to 64.1 percent in 2012.

Table 1 Carter Center-Supported Mass Bed Net Distribution in Nigeria, 2010-2013

Year	State	Nets Distributed
Mass Net Distribution in National Scale-Up Campaigns		
2010	Plateau	1,424,254
2011	Ebonyi	942,148
	Enugu	1,267,506
2012	Abia	710,530
	Imo	1,451,209
	Edo	1,157,307
2013	Delta	1,744,109*
Other Net Distribution: Operational Research, Small-Scale Distribution		
2004-2012	Plateau, Nasarawa, Imo, Ebonyi	623,009
TOTAL		9,420,072*

* Provisional

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Global Health News

Sir Emeka Offor Foundation Joins River Blindness Fight

When The Carter Center began battling river blindness in Nigeria in 1996, Sir Emeka Offor's home state of Anambra was among the first to receive mass drug administration of Mectizan.[®]

Chairman and founder of the Nigerian-based company the Chrome Group, Offor shares the Carter Center's drive to reduce poverty and improve the quality of life for people living in remote communities.

Over 10 years ago, he established the Sir Emeka Offor Foundation, through which he funds education

programs, health care services, and infrastructure development, among other initiatives.

The Sir Emeka Offor Foundation recently gave the Carter Center's River Blindness Elimination Program a generous gift of \$250,000 to aid the program's work in southeastern Nigeria. This donation will be used for grassroots health education and drug distribution, reaching more than 10,000 villages. The Center is grateful for the opportunity to partner with the foundation to help the millions at risk of losing their sight and to provide



Emily Staub

A Nigerian child is measured to determine the proper dose of Mectizan, which treats and prevents river blindness. A new grant from the Sir Emeka Offor Foundation will fund river blindness treatment and health education in southeastern Nigeria.

the prospect of a country free of river blindness.

