Summary of the Thirteenth Meeting of the ITFDE (II)
October 29, 2008

The Thirteenth Meeting of the International Task Force for Disease Eradication (ITFDE) was convened at The Carter Center from 8:30am to 4:00 pm on October 29, 2008. Topics discussed at this meeting were the status of the global campaigns to eliminate lymphatic filariasis (LF) and to eradicate dracunculiasis (Guinea worm disease), an update on efforts to eliminate malaria and LF from the Caribbean island of Hispaniola (Dominican Republic and Haiti), and a report on the First Program Review for Buruli ulcer programs.

The Task Force members are Dr. Olusoji Adeyi, The World Bank; Sir George Alleyne, Johns Hopkins University; Dr. Julie Gerberding, Centers for Disease Control and Prevention (CDC); Dr. Donald Hopkins, The Carter Center (Chair); Dr. Adetokunbo Lucas, Harvard University; Professor David Molyneux, Liverpool School of Tropical Medicine (Rtd.); Dr. Mark Rosenberg, Task Force for Child Survival and Development; Dr. Peter Salama, UNICEF; Dr. Lorenzo Savioli, World Health Organization (WHO); Dr. Harrison Spencer, Association of Schools of Public Health; Dr. Dyann Wirth, Harvard School of Public Health, and Dr. Yoichi Yamagata, Japan International Cooperation Agency (JICA). Four of the Task Force members (Hopkins, Adeyi, Lucas, Rosenberg) attended this meeting, and three others were represented by alternates (Dr. Stephen Blount for Gerberding, Dr. Mark Young for Dr. Salama, Dr. Dirk Engels for Savioli).

Presenters at this meeting were Dr. Eric Ottesen of the Task Force for Child Survival and Development, Dr. Patrick Lammie of the CDC, Dr. Ernesto Ruiz-Tiben of The Carter Center, Dr. David Joa Espinal of the National Center for Tropical Disease Control (CENCET) in the Dominican Republic, and Dr. Jean-Francois Vely of Haiti's Ministry of Public Health and Population.

Lymphatic Filariasis Elimination

The ITFDE last considered this initiative in October 2002. Most (~95%) cases of lymphatic filariasis are caused by infection with *Wuchereria bancrofti*; other related parasites that infect humans are *Brugia malayi* in southeast Asia and *Brugia timori* in Indonesia. There is no animal reservoir of *W. bancrofti*, and potential reservoirs of the two other infections do not appear to be significant for humans. The infection is transmitted to humans by bites of infected mosquitoes (*Anopheles, Culex, Aedes, Mansonia*). Currently 1.303 billion persons are estimated to be at risk of LF, of which 120 million are infected, including 40 million persons with overt disease, in 83 endemic countries.[1] The conclusion of the previous ITFDE in November 1992 that LF was potentially eradicable (published in 1993) was the first such declaration by an international body, and it stimulated adoption of a resolution to that effect at the World

[1] World Health Organization, 2008. Global programme to eliminate lymphatic filariasis. *Wkly Epidemiol Rec* 83:333-341.

Health Assembly in 1997 (WHA 50.29) and the subsequent global campaign. The formal goal of the global LF program is to eliminate LF "as a public health problem", with the year 2016 as an informal target for interrupting transmission. The current strategy to interrupt transmission of LF calls for mass administration of a two-drug regimen (Mectizan@ or DEC, plus albendazole) in a single dose annually for 4-6 years.

The three main challenges of the Global Program to Eliminate LF (GPELF) are to scale up interventions in all endemic areas, to document evidence that the current strategy is interrupting transmission of LF, and to develop reliable evidence-based guidelines for deciding when to stop mass drug administration (MDA) and for conducting surveillance after halting MDA.

Between 2001 and 2007, the GPELF has provided a cumulative total of nearly 2 billion treatments to at least 570 million persons, including 546 million treatments in 2007 alone (41.9%) of the 1.303 billion persons at risk. Treatment rates for individuals in the different regions of WHO vary, however, from 8.9% (0.98m/11m) in the Americas (AMRO), to 12.3% (47m/382m) in Sub-Saharan Africa (AFRO), 42.3% (15.5m/37.6m) in Western Pacific (WPRO), 56.1% (482m/859m) in South-east Asia (SEARO), and 2.4% (0.308m/12.9m) in the Eastern Mediterranean (EMRO).[1] In some areas of Africa, scaling up MDA is constrained by co-endemicity of *Loa loa* infections, which are considered to be a contra-indication to MDA for LF.

China and the Republic of Korea were verified as having eliminated LF transmission in 2007 and 2008, respectively. There is also evidence that LF transmission has apparently been interrupted in several Pacific islands, Zanzibar, and Togo following several years of MDA. However data also show that indices in Ghana and Burkina Faso, which had higher levels of endemic LF, have not been suppressed below the currently recommended threshold after five years MDA.

WHO, CDC and other partners have suggested criteria/guidelines for stopping MDA and for post-treatment surveillance--guidelines that have been evolving since 2000 and which are still a work in progress. The current working hypothesis is that reducing prevalence of microfilaria in humans to <1% will stop LF transmission. One suggested *provisional* set of guidelines for stopping treatment would require at least five annual rounds of MDA with coverage of at least 65% (total population), plus microfilaria prevalence levels of 1% or less in one sentinel site and in another spot check site, and no more than three ICT antigen-positive 6-7 year old children among 30 clusters of 30 children each, with ELISA (Og4C3) confirmation of any positive ICT tests. Potential guidelines for stopping transmission and recommended methodology for monitoring for any recrudescence of transmission after MDA has been stopped (post-MDA surveillance) are being assessed by WHO, CDC and other groups in several geographic areas, with support of the Bill & Melinda Gates Foundation. Such guidelines may vary according to local epidemiological situations and prevalence levels, but ideally will use standardized methods in order to yield comparable data.

Conclusions and Recommendations

1. The ITFDE commends the progress made to date by the GPELF, and believes that the experience and data acquired in recent years validate the Task Force's earlier conclusion that annual MDA with appropriate drugs can interrupt transmission of LF and achieve global eradication of the disease.
2. WHO guidelines for a) stopping MDA and b) post-treatment surveillance are needed urgently, and efforts to evaluate relevant options for these criteria and recommendations should be given very high priority. These guidelines should be revised as better data become available to indicate actual thresholds in different epidemiological situations. Important technical challenges include the need for better tools for monitoring and evaluating transmission and infection.
3. More emphasis needs to be given to scaling up MDA in Sub-Saharan Africa, where nearly one-half (335 million) of the untreated people at risk of LF (757 million) is located as of 2007. Effective strategies for interrupting transmission of LF in areas where *Loa loa* is endemic are key to accomplishing this.
4. Another 377 million untreated persons at risk are in WHO's Southeast Asia Region. Effective strategies for interrupting transmission of LF in urban areas are particularly important here.
5. The GPELF should monitor its progress towards achieving its Ultimate Treatment Goal by tracking the proportion of at risk population(s) receiving MDA, not by comparing geographic or unit coverage, which inflates coverage figures.

Dracunculiasis Eradication

Dracunculiasis (Guinea worm disease) is caused by the nematode *Dracunculus medinensis* and there is no non-human reservoir of the infection. The ITFDE included dracunculiasis among its original list of six eradicable diseases in 1993, and last reviewed the status of this eradication campaign in 2003. In 2004 the World Health Assembly and ministers of health of the endemic countries resolved to stop transmission of this disease by the end of 2009 (WHA 57.9). The main intervention strategies include health education, use of cloth filters, treatment of water sources with ABATE® Larvicide, isolation of individual patients and provision of permanent safe sources of drinking water wherever possible.

Approximately 120 million persons were estimated to be at risk of dracunculiasis, of whom 3.5 million persons in 20 countries were estimated to be infected, as of 1986. At the end of 2007, only 9,585 cases were reported, from 2,016 endemic villages in five African countries.[2] All three formerly endemic countries in Asia are free of the disease, and the WHO has certified 180 countries as dracunculiasis-free, including six of the 20 countries where the disease was endemic when the Dracunculiasis Eradication Program

[2] Hopkins DR, Ruiz-Tiben E, Downs P, Withers PC Jr, Roy S, 2008. Dracunculiasis eradication: Neglected no longer. *Am J Trop Med Hyg* 79(4):474-479.

(DEP) began. At the time of this report to the ITFDE, a global total of 3,976 cases had been reported so far in 2008 (January-September for all countries except Sudan, where data were available through August) in six countries: Sudan (3,102 cases), Ghana (464), Mali (330), Ethiopia (40 cases, 38 of which are of disputed origin), Nigeria (37) and Niger (1), excluding 4 cases exported from one country to another. The cumulative number of cases reported in January-September 2007 was 58% less than the number reported in the same period of 2006, and the cumulative number of cases reported in January-September 2008 has been reduced by 54% from the number of cases reported during January-September 2007. The number of cases exported from one country to another has declined from 143 in 2003 to 15 in 2007 and 4 so far in 2008. Sudan has reduced the number of cases reported so far this year by 40%, Ghana by 85%, Niger by 90% and Nigeria by 14%. All of the cases reported so far this year in Nigeria appear to have been contained, but only 49% of cases in Sudan have reportedly been contained. Bringing the water supply sector to bear in communities where dracunculiasis is endemic has been very difficult, due to various bureaucratic, political, financial, geological and other factors.

The main remaining challenges for the DEP now are mostly in Mali, where an outbreak of over 300 cases in 2007 and 2008 resulted from importation of the disease by one itinerant koranic student in 2006. Control of the outbreak in Mali is made even more difficult by insecurity in that area (near the border with Algeria). Sporadic insecurity, difficult logistics, and weak infrastructure are key challenges remaining in Southern Sudan (the northern states of Sudan reported their last indigenous case in 2001). Ethiopia, which reported zero indigenous cases for 20 consecutive months in 2006-2008, now appears not to have interrupted indigenous transmission of the disease, owing partly to insecurity in the Gambella Region, bordering Southern Sudan. The origin of most of the 40 cases reported in Ethiopia so far in 2008, however, is still disputed. WHO has begun working with the remaining endemic countries to help develop adequate surveillance in dracunculiasis-free areas, but this has been constrained by inadequate funding.

Conclusions and Recommendations

1. The ITFDE commends the DEP for the considerable progress achieved since the last review of this program, including actions taken in response to recommendations made at that previous review.
2. Three high priorities for the DEP now are to raise case containment rates in Southern Sudan, help develop sustainable surveillance in dracunculiasis-free areas of the endemic countries remaining, and to increase its advocacy and publicizing of the DEP in order to strengthen political and financial support for the final stages of the program.

Elimination of Malaria and Lymphatic Filariasis on Hispaniola

Hispaniola (Dominican Republic and Haiti) is the only remaining focus of endemic malaria among the islands of the Caribbean and also contains over 90% of the lymphatic filariasis in the entire Western Hemisphere. The status of these two diseases on this island is thus relevant to the global campaign to eliminate LF and to recent exploratory discussions of perhaps eradicating malaria eventually. The ITFDE reviewed this subject in May 2006 and again in October 2007, urging the two nations and their partners to eliminate both diseases from the island as quickly as possible.

MDA with DEC and albendazole is the main intervention against LF on Hispaniola, but in Haiti there is a pilot study in one municipality to see if DEC-fortified salt would be an effective intervention. The Dominican Republic now expects to eliminate its seven remaining residual foci of LF by 2010. LF is still endemic in 110 of the 140 *communes* in Haiti, where interventions are currently underway in 53, and expected to be underway in 78 endemic *communes* in 2009. Malaria is endemic throughout Haiti and in 83 of 143 *municipios* in the DR. Diagnosis and treatment of malaria are provided free of charge in the DR, but not in Haiti. Serious constraints to efforts to control these diseases, especially in Haiti, include inadequately trained manpower, weak public health infrastructure and insufficient funds, even before the island was devastated by four hurricanes in four successive weeks during the summer of 2008. The Global Fund for AIDS/HIV, Tuberculosis and Malaria announced recently that it will provide a grant of US$45 million to Haiti and $8.7 million to the DR to help support national activities to control malaria in 2009-2013, following its current grant of $14.6 million (2004-2009) to Haiti alone. Other international assistance for one or both diseases in either or both countries is being provided or supported by the CDC (for LF), The Bill & Melinda Gates Foundation (for LF), the PAHO (for LF and Malaria), Sogebank Foundation (for Malaria) Notre Dame University (for LF), and USAID (for LF and Malaria), among others.

In follow up to the previous recommendations of this Task Force, in September 2008 The Carter Center announced a one-year $322,000 “Hispaniola Initiative” to help Haiti and the DR begin collaborative efforts to eliminate both diseases from the island in an integrated fashion. This initiative will support bi-national cooperation to control malaria in the adjacent border communities of Dajabon, DR and Ouanaminthe, Haiti, as well as a small effort to evaluate the use of malaria vector control approaches to supplement MDA for LF in another community in Haiti. Funds, long-lasting insecticidal bed nets and other equipment and supplies for the initiative arrived on the island in October. Haiti and the DR have formed a bi-national committee, which will meet for the first time in November. Representatives of the two countries thanked The Carter Center for the recent assistance.

Conclusions and Recommendations

1. The Task Force commends the DR’s progress towards LF elimination, and it appreciates the recent assistance provided to Haiti and the DR by TCC under its

Hispaniola Initiative, as well as the recently announced grants from the Global Fund for combating malaria in both countries in 2009-2013.

2. The Task Force urges Haiti and the DR to prepare a plan to intensify and expand their bi-national collaboration, and the Task Force emphasizes the need for interested development partners to help these two countries eliminate malaria and LF from Hispaniola soon.
3. The Task Force encourages Haiti to continue its study of the efficacy of DEC-fortified salt to combat LF in Haiti.

The Task Force was pleased to hear that the first Program Review for Buruli Ulcer, which was convened in Cotonou for representatives of Benin, Cote d'Ivoire, Ghana and Togo (with Nigerian observers) on October 21-23 by WHO and The Carter Center in response to the recommendation made by the Task Force in October 2007 was very successful. WHO will publish a summary of that review in the *Weekly Epidemiological Record* early in 2009.