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Summary of the Fifth Meeting of the ITFDE (II)
October 14, 2003

This fifth meeting of the International Task Force for Disease Eradication (ITFDE) was convened at The Carter Center from 9:00am to 4:00pm on October 14, 2003. The Task Force reviewed the status and strategies of the Dracunculiasis Eradication Program, and discussed potential ways to strengthen broader disease control, eradication and primary health services.

The Task Force members are: Sir George Alleyne, Pan American Health Organization (PAHO); Dr. Pascal Villeneuve, UNICEF; Dr. Robert Hecht, The World Bank; Dr. Julie Gerberding, Centers for Disease Control and Prevention (CDC); Dr. David Heymann, World Health Organization (WHO); Dr. Donald Hopkins, The Carter Center; Dr. Adetokunbo Lucas, Nigeria; Professor David Molyneux, Liverpool School of Tropical Medicine; Dr. Mark Rosenberg, Task Force for Child Survival and Development; 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). Seven of the Task Force members (Alleyne, Hopkins, Molyneux, Rosenberg, Spencer, Wirth, Yamagata) attended this meeting, and two others were represented by alternates (Dr. James Hughes for Gerberding, and Dr. Ahmed Magan for Villeneuve). Resource persons attending this meeting were Drs. James Maguire and Frank Richards of CDC; Dr. Nevio Zagaria of WHO; Dr. James Zingeser and Mr. Craig Withers of The Carter Center, and Dr. Stanley Foster of the Rollins School of Public Health at Emory University.

Dracunculiasis Eradication

The presentations on dracunculiasis eradication were given by Drs. Ernesto Ruiz-Tiben and Donald Hopkins of The Carter Center.

Dracunculiasis is contracted by persons who drink water from stagnant ponds or wells containing tiny water fleas (copepods) that harbor infective larvae of *Dracunculus medinensis*. The meter-long adult worms emerge through the skin, usually of a lower extremity, about 10-14 months later. The pain and secondary infections associated with the emerging worm disable many victims, rendering them unable to farm, attend school, or undertake other tasks for periods averaging 2-3 months. There is no vaccine or curative treatment, but the infection can be prevented by teaching villagers to filter their water through a fine cloth, to avoid entering drinking water sources when they have a worm emerging, by treating water sources with ABATE® larvicide, or by providing safe water sources from borehole wells.

The global Dracunculiasis Eradication Program (DEP) began under the auspices of the International Drinking Water Supply and Sanitation Decade (1981-1990) in 1980. Only

four countries (India, Pakistan, Ghana, Nigeria) began national programs by 1990; all but one of the others (Central African Republic) began in 1991-1995. Since 3.5 million persons were estimated to suffer from the disease in 1986, the number of cases has been reduced by more than 98% (to ~55,000) and endemic villages by 91% (to ~2,000 outside of Sudan) in 2002, when Sudan reported 76% of all cases and more than 6,000 known endemic villages. Seven of the endemic countries, including all three recently endemic Asian countries, have already interrupted transmission of the disease. The World Health Organization (WHO) has certified 151 countries as free of dracunculiasis, including recently endemic India and Pakistan. WHO is seeking to ascertain whether dracunculiasis is endemic in Central African Republic, which has reported cases sporadically, including at least some imported from Sudan, over the past decade.

The DEP has used a basic village-based strategy of surveillance, health education, community mobilization, distribution of cloth filters to each household, ABATE® larvicide treatments, and advocacy for improved water supplies for endemic villages from the beginning of the global campaign. This has been supplemented in recent years by an intensified patient-based strategy of case containment (voluntary isolation), provision of pipe filters for personal use, and cash rewards for reporting cases. Recent innovations include pre-fabricated filters (1999), increased technical assistance (since 2000), pipe filters and case containment centers (2001), increased "Worm Weeks" of intensive health education (2002), and a targeted mass media campaign (2003). The number of person-months of technical advisors provided has increased from 28 in 1999 to 174 in 2002 and 120 so far in 2003; Worm Weeks from 3 in 1999 to 53 so far in 2003; and case containment centers from 4 in 2001 to 73 so far in 2003.

The Dracunculiasis Eradication Program includes a vast coalition of bilateral and international donors, foundations, NGOs, private corporations, and other partners - all supporting village based health workers and ministries of health in the remaining endemic countries. Among the four major external partners, The Carter Center has lead responsibility for assisting endemic countries reporting over 100 cases per year; WHO has lead responsibility for assisting countries with 100 cases or less, and sole responsibility for certification of eradication; UNICEF assists selected countries with improving water supplies and social mobilization; and CDC provides technical assistance to partner organizations and national eradication programs.

So far in 2003, Sudan (61%) and Ghana (28%) have reported 89% of all cases, and other endemic countries have reduced their cases by 45% (from 4,821 to 2,673) since 2002. Sudan is the main challenge to completing the eradication of dracunculiasis, since the 20 year old civil war prevents access to some of the heavily endemic areas in the south of the country. Sudan's Guinea Worm Eradication Program (GWEP) has established considerable momentum since 1995 however, with 54% fewer cases in January-July 2003 than in the same period of 2002, and a political agreement to settle the civil war is now expected before the end of 2003. An estimated US$50 million will be required to completely eradicate dracunculiasis from Sudan over about 5 years after the civil war ends. Post-war strategy in Sudan will give geographic priority to the highest endemic areas plus three border areas that are key sources of cases exported to Ethiopia and

Uganda, and it will give programmatic priority to detecting and intervening in newly accessible high endemic villages as quickly as possible. The program is already intervening in about 6,400 of an estimated 10,000 endemic villages in Sudan.

Ghana is the major remaining endemic country of West Africa, followed by Nigeria, Togo and the tri-border area of Mali, Niger and Burkina Faso. Ghana has reported 76% more cases so far in 2003 than in the same period of 2002, as a result of improved supervision and surveillance. Intensified efforts in Ghana since mid-2002 are apparently starting to be felt as cases in Ghana began declining (relative to a year ago) in the most recent months. Nigeria and Togo have reported 52% and 42% reductions in cases so far this year compared to a year ago. Dracunculiasis is increasingly confined to smaller and smaller areas in West Africa, including in Ghana. The main residual challenges here are complacency (since cases are now much fewer than before), insecurity in some endemic areas (e.g. parts of Mali, Niger, Ghana, Nigeria, Cote d'Ivoire), difficulties in engaging marginalized populations at high risk of the disease (e.g. Konkomba in Ghana, Black Touaregs in Mali, Niger and Burkina Faso), and weak surveillance in large areas that are no longer endemic but still at risk of imported cases.

Conclusions and Recommendations

1. The Task Force reaffirms the previous Task Force's conclusion that dracunculiasis is eradicable, with additional assurance provided by results achieved over the past decade.
2. The Task Force commends the good progress of the global campaign, including in Sudan, despite the civil war there.
3. The Dracunculiasis Eradication Program should continue using current strategies to implement control measures as extensively as possible in all accessible areas, while continuing to explore innovative approaches wherever appropriate, especially for Sudan.
4. Given the campaign's impressive achievements so far, the apparently imminent settlement of Sudan's civil war, and the need for escalated political and financial support of the final push to complete the eradication of dracunculiasis, more aggressive advocacy and publicity is strongly recommended, including beyond the endemic countries themselves.
5. Data regarding the efficacy of pipe filters, case containment centers, Worm Weeks, etc., should be published in scientific journals, with appropriate statistical data, in order to document the contributions of these apparently effective innovations to the success of the program.
6. The national GWEPs should be urged to record, compile and compare data about the intervals between worm emergence, detection, and beginning of containment measures in individual patients. The distribution of such intervals should be monitored and "outliers" investigated, in addition to calculating average intervals.
7. Cross-border meetings and prompt cross-border notification of imported cases require additional attention at this stage.

8. There is need to establish quickly sustainable surveillance networks so as to assure adequate surveillance of dracunculiasis in the post-eradication period, which already exists in large parts of some still endemic countries.
9. While existing interventions are adequate for eradicating dracunculiasis, discovery of an effective treatment by an existing anti-microbial agent or agents would be a welcome addition to operations in the final stages, especially in Sudan. The Task Force suggests that consideration be given to exploiting any available opportunities to document impact on dracunculiasis of mass treatments with albendazole and ivermectin (for onchocerciasis and lymphatic filariasis), and during Phase 3 trials of moxidectin against onchocerciasis in areas where onchocerciasis and dracunculiasis are co-endemic. Continued genomic sequencing of *D. medinensis* DNA also bears consideration, as it would help ascertain the species of this and closely related parasites, it could serve as a sensitive probe for commensal Wolbachia, and it would provide another tool to evaluate potential susceptibility of *D. medinensis* to anti-helmintics.

Disease Control, Eradication and Primary Health Services

After a brief introduction by Dr. Hopkins, this topic was opened for discussion.

The issue is not how can targeted disease control or eradication programs strengthen primary health, nor to establish the relative value of "vertical" vs. "horizontal" programs, but rather how to develop primary health services by applying some of the approaches that characterize successful targeted programs. A distinction is made here between primary health care (i.e. the broad strategy adopted in 1978 at Alma Ata for the achievement of Health For All[1]) and primary health services that represent the first point of contact with individuals for any health services. It is in the latter sense that we refer to primary health services here.

Many donors want to support disease-specific initiatives (e.g. polio eradication), but find support of broader services, (e.g. routine childhood immunization) less attractive. Two big changes since the conference on primary health care was held at Alma Ata, USSR, in 1978 are that 1) many more tools are now available for mass disease prevention efforts (e.g. new vaccines and drugs, corporate donations, funding by the Bill & Melinda Gates Foundation) and 2) the impact of HIV/AIDS adds urgency by increasing demand for some services and distorting responses by medical systems because of the greater funding available for HIV/AIDS.

There was some discussion that reconstructing health services in Sudan after twenty years of civil war will be the biggest challenge over the next decade, as Afghanistan is now.

[1] The minimal elements of primary health care, as defined at Alma Ata, include health education, proper nutrition, safe water and basic sanitation, maternal and child health care (including family planning), immunization, prevention and control of locally endemic diseases, treatment of common diseases and injuries, and provision of essential drugs. Community participation was also mentioned as an important aspect, but has since been subject to many different interpretations by different disease control programs.

Perhaps public health services in Sudan should be built around the existing successful dracunculiasis eradication and onchocerciasis control programs, while focusing on health as an entry point to broader rural development.

The dissenting view was expressed that perhaps public health workers should "focus on what we can do well", namely controlling or eradicating diseases one at a time. In this conception, improving general public health services is too big a task for a single group. It's also hard to show progress, long –term, and unpopular with donors. The view was also expressed that health sector reforms and decentralization of services have weakened targeted programs, which require strong centralized leadership. We can take as a given that targeted programs help strengthen primary health services.

Conclusions and Recommendations:

1. More does need to be done to help countries strengthen their primary health services, especially in Africa.
2. There is need for a framework that incorporates both targeted programs (integrated as much as possible; aiming to reduce morbidity and mortality; externally funded for the long-term) and regular primary health services (minimal priority services; requires increased political will, national commitment and funding; must be sustainable). Existence of such regular primary health services would provide a "platform" for implementation of some targeted programs, among other benefits. The common goal of both parts of this dual framework would be to improve people's health, and it would use disease-specific outcomes to drive the process.
3. The "value-added" here could be in advocating for a systems - (essential functions, such as surveillance, epidemiology, supervision, job analysis, training, diagnostic laboratory services, etc.) rather than a disease-based approach. Such systems are common to all targeted programs and such an approach could facilitate understanding of ways to integrate targeted programs with each other and to define optimal relations between targeted programs and routine services.
4. Many agencies and groups are interested in this subject. A new approach should bring more rigor to discussion and implementation of ideas. Three phases could be considered: first, review results of recent (e.g. Antwerp last year) and upcoming (e.g. Berlin this December) meetings on related topics, to further analyze what has been done and discussed already. Second, consider convening a meeting, perhaps using the Dahlem format[2], with commissioned papers submitted in advance, to include all major interested parties. And third, implement suggestions and recommendations developed at the meeting in 2 or 3 countries and evaluate the impact.

[2] Dowdle, W.R. and Hopkins, D.R., eds., 1998. *The Eradication of Infectious Diseases*. New York: John Wiley & Sons.