



Date: March 26, 2003



From: WHO Collaborating Center for  
Research, Training and Eradication of Dracunculiasis

Subject: GUINEA WORM WRAP-UP #131

To: Addressees

### Detect Every Case, Contain Every Worm!

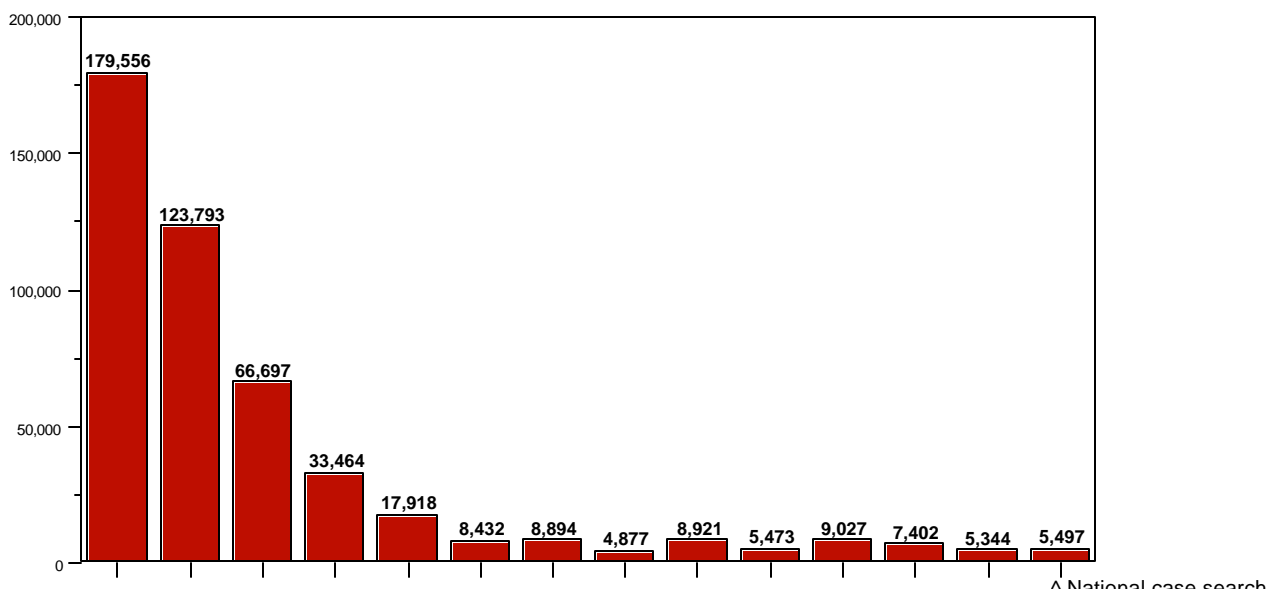
#### GHANA: ARE THE RIGHT PEOPLE MAD ENOUGH YET?

Ghana held its first semi-annual national program review for 2003 on March 10-11, 2003 at Ho, in the Volta Region. About 130 persons participated, including the deputy regional minister for the Volta Region; the deputy minister of health, Mr. Moses Dani Bah; other ministry of health officials; the national program coordinator, Dr. Andrew Seidu-Korkor; and representatives from UNICEF, WHO, U.S. Peace Corps, Ghana Red Cross Society, Church of Christ, and Global 2000 of The Carter Center.

Confirming both the success of current active surveillance and the consequences of earlier official negligence, an outbreak of over 400 cases in 59 villages of Volta Region's Nkwanta District during January-March 2003 was reported at this meeting. The outbreak investigation, which was still incomplete, was triggered when technical assistants in adjoining Nanumba District (Northern Region) followed up when patients from Nwanta District began to appear at a case containment center in Nanumba District to receive treatment for their emerging Guinea worms. Following the review meeting, the program made plans to complete the search of Nkwanta District villages immediately, and to begin trainings and implementation of Worm Weeks and other interventions there with the help of U.S. Peace Corps on March 22-28, 2003.

Figure 1

#### GHANA GUINEA WORM ERADICATION PROGRAM NUMBER OF CASES OF DRACUNCULIASIS REPORTED BY YEAR: 1989-2002\*



Ghana reported 5,497 cases of dracunculiasis in 741 villages in 2002, or 11% of the global total for that year. 95% of the cases occurred in only 15 of the country's 110 districts. Five of Ghana's 10 regions (Ashanti, Central, Greater Accra, Upper East and Western) reported only imported cases in 2002, all of them reportedly contained. Ghana reported 15% more cases in January 2003 (859) than in January 2002 (744). The epicenter of Ghana's remaining endemic area is in the eastern part of the Northern Region, encompassing land that is very fertile—including the three top yam-producing districts in the country—and draws migratory seasonal farmers from many other areas of Ghana.

Ghana increased the coverage of endemic villages with most interventions in 2002, as shown in Table 1.

Table 1 **Coverage by Interventions in Ghana, 2001-2002**

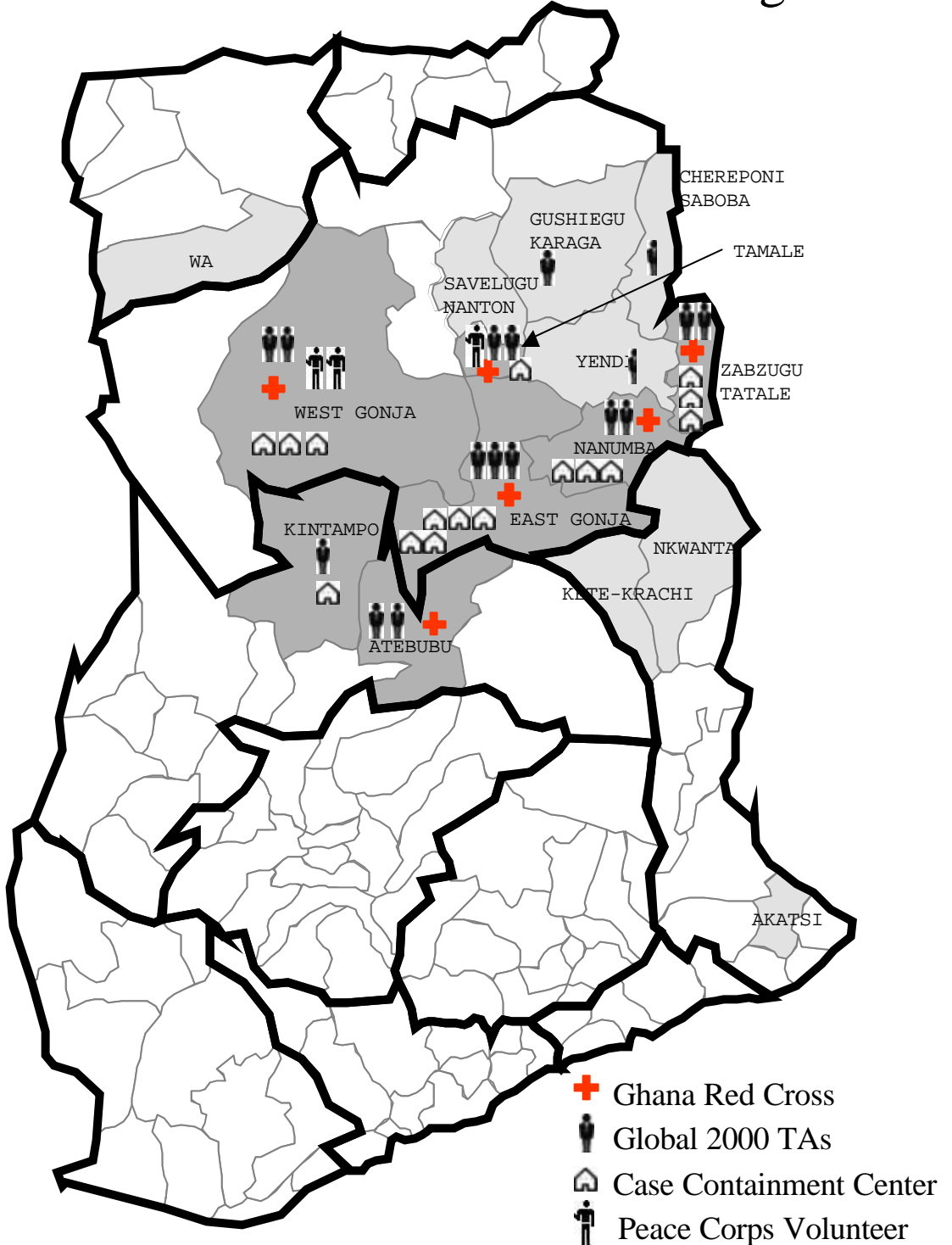
<b>Intervention</b>	<b>2001</b>	<b>2002</b>
Endemic village with 100% filters	85%	95%
Endemic village using Abate	20%	26%
Endemic village with 1+ safe water	34%	44%
Percentage of cases contained	68%	66%
Number of cases reported	5,344	5,497
Number of villages reporting 1+ case	784	741

Ghanaian students from a Nurses Training College and sixty-seven (67) representatives of three overseas volunteer organizations (U.S. Peace Corps, Voluntary Services Overseas, and Dutch) conducted Guinea Worm Week V from February 22 to March 1, 2003. The volunteers and students conducted house-to-house visits, case searches, and filter inspections, demonstrations, and distributions in 100 communities of the seven most endemic districts in the Northern Region (6) and Brong Ahafo Region (Atebubu District). More than 10,000 adults and nearly 9,000 children were present for the health education activities during the Worm Week. UNICEF/Ghana funded durbars and/or case searches in dozens of communities in ten districts of the Northern Region in January – March 2003. The new Regional Director of Health Services for Northern Region, Dr. Elias Sorie, said during the meeting that he is holding his district directors of health services “directly responsible” for the conduct of Guinea worm eradication activities in their respective districts. He said regional and district health authorities must “take ownership” of the Guinea Worm Eradication Program.

*Editorial note: Intimations of this outbreak were reportedly known to some health officials in Nkwanta District and Volta Region as early as December 2002. Their failure to act promptly is a disservice to the people of Nkwanta, a danger to Nkwanta's neighbors, a disgrace to the responsible health authorities of Volta Region, and an embarrassment to Ghana. Changing such casual attitudes towards Guinea worm eradication and such reckless neglect of duty is a prerequisite for eradicating dracunculiasis from Ghana (Figure 1).*

Figure 2

# Ghana Guinea Worm Eradication Program



Placement of additional manpower in the 15 districts reporting 95% of all cases in 2002, 7 districts (solid pattern) reported 76% of all cases in 2002.

Figure 3

## Reported Cases of Dracunculiasis By Year

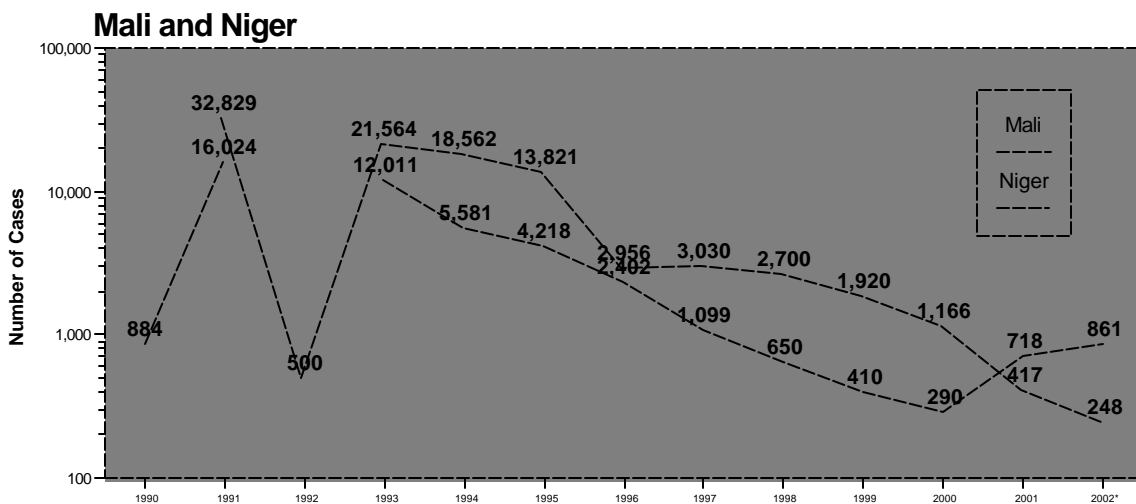
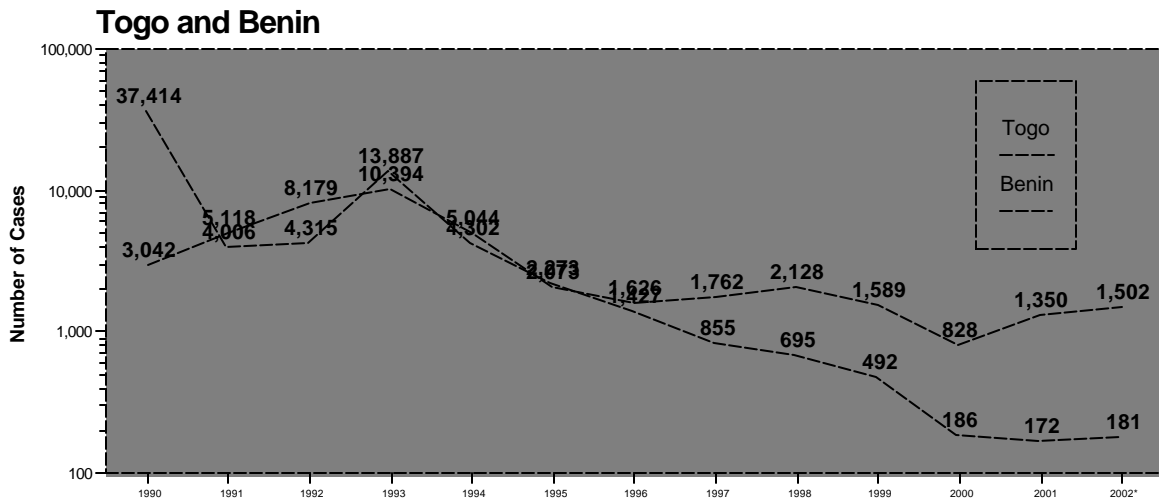
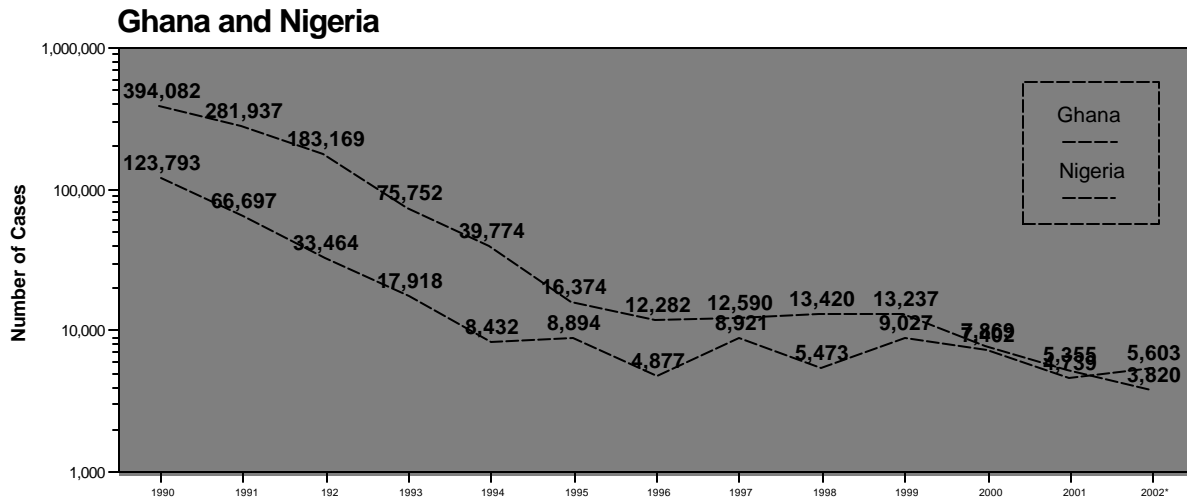


Table 2

Number of cases contained and number reported by month during 2003\*

(Countries arranged in descending order of cases in 2002)

COUNTRIES REPORTING CASES	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED												TOTAL*
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	
SUDAN	/	/	/	/	/	/	/	/	/	/	/	/	0 / 0
GHANA	110 / 859	/	/	/	/	/	/	/	/	/	/	/	110 / 859
NIGERIA	389 / 568	179 / 245	/	/	/	/	/	/	/	/	/	/	568 / 813
TOGO	109 / 147	40 / 46	/	/	/	/	/	/	/	/	/	/	149 / 193
MALI	3 / 3	4 / 4	/	/	/	/	/	/	/	/	/	/	7 / 7
BURKINA FASO	6 / 6	/	/	/	/	/	/	/	/	/	/	/	6 / 6
NIGER	0 / 0	1 / 1	/	/	/	/	/	/	/	/	/	/	1 / 1
COTE D'IVOIRE	7 / 21	2 / 3	/	/	/	/	/	/	/	/	/	/	9 / 24
BENIN	21 / 21	1 / 1	/	/	/	/	/	/	/	/	/	/	22 / 22
ETHIOPIA	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0
MAURITANIA	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0
UGANDA	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0
TOTAL*	645 / 1625	227 / 300	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	872 / 1925
% CONTAINED	40	76											45

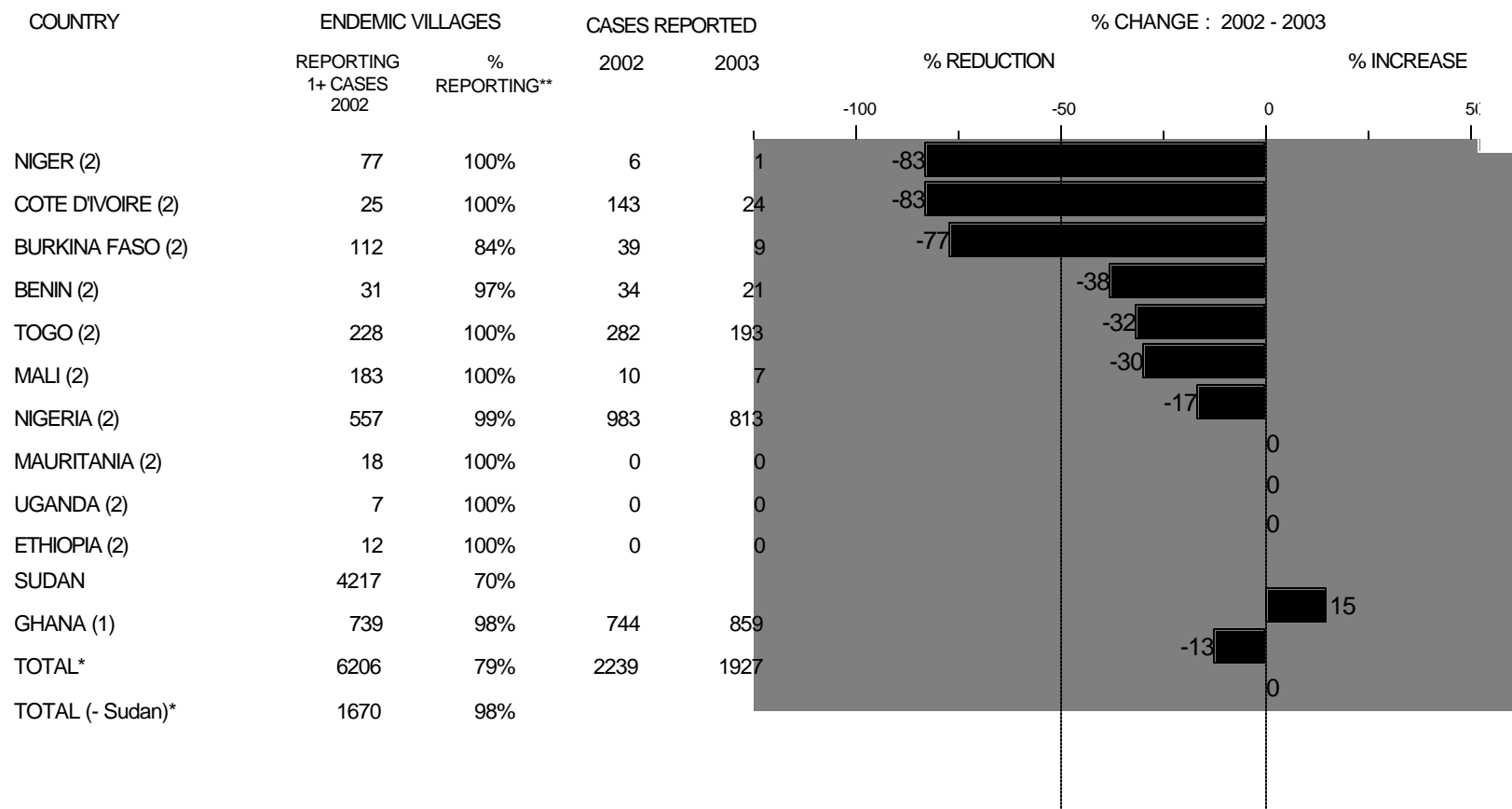
\* = PROVISIONAL

Shaded cells denote months when zero indigenous cases were reported. Numbers indicate how many imported cases were reported and contained that month.

For other imported cases see table of imported cases by month and by country.

Figure 4

## Percentage of Endemic Villages Reporting and Percentage Change in Number of Indigenous Cases of Dracunculiasis During 2002 and 2003\*, by Country



\* provisional

## **SURVEILLANCE OF GUINEA WORM AMONG THE NOMAD POPULATIONS OF BURKINA FASO, MALI AND NIGER**



A Workshop on guinea worm surveillance among nomad populations of Burkina Faso, Mali and Niger was organized by WHO in Dori, Burkina Faso from 26 to 28 February 2003. The purpose of the workshop was to identify a common approach to the surveillance of Guinea worm in populations migrating from one of the 3 countries to another and within the same country. Guinea worm Program Managers of Burkina Faso, Mali and Niger together with Guinea worm District Officers and District Medical Officers attended the workshop. During this workshop, patterns of migration of nomad populations were reviewed and maps showing the main routes of movements were drawn. Areas and periods of "nomadism" were also identified.

A CD ROM containing geographic information on the relevant areas of the 3 countries was provided to each program manager. The information collected in future will be incorporated in these maps to facilitate visualization and analysis of the epidemiological situation. Information will be shared by the 3 countries. A field exercise was carried out to test and adapt the data collection instrument and to train participants to the use of GPS. The Program Managers of the three countries will submit a plan of action and budget to WHO before the end of March 2003. It is expected that the surveillance will be in place before the start of the 2003 transmission season.

### **WHO CONDUCTS EXTERNAL EVALUATION IN MAURITANIA**

An external evaluation of Guinea Worm Eradication Program in Mauritania was carried out from 19 February to 10 March 2003. The objectives of the evaluation were to assess the surveillance and intervention activities of the programme. WHO led the evaluation in collaboration with CDC, UNICEF and the Mauritanian Government. Four teams composed each of an external evaluator, a national evaluator and a facilitator traveled each to specific endemic areas or formerly endemic areas to evaluate the program. The evaluation covered 8 Wilayas (Regions), 14 Moughataas (Districts) and 149 localities (35 endemic villages, 64 under-surveillance villages and 50 villages with no history of the disease). In addition, the activities of the program on the central level was assessed. A total of 1105 heads of households were interviewed. The result of the evaluation is expected to be available by May 2003.

### **WHERE IS TRANSMISSION OCCURRING? MAKING MORE EFFECTIVE USE OF PROGRAM RESOURCES AND TARGETING OF INTERVENTIONS AGAINST DRACUNCULIASIS**

The end-point of the campaign to eradicate dracunculiasis is well known to all of us, i.e., to stop transmission of the disease in every place where it occurs. Stated more simply, stopping transmission means preventing everyone with emerging Guinea worms from contaminating sources of drinking water and stopping people from drinking contaminated water. If these objectives are understood by all of us, why is it that it has been so difficult to make more rapid progress in preventing infected individuals from contaminating sources of drinking water and from drinking contaminated water?

Clearly, the quality of surveillance and interventions against the disease, the quality of supervision, and cultural factors are all parts of the answer to the question. However, too often Guinea Worm Eradication Programs [GWEPs] have not focused enough on concentrating their available time and resources on those places where transmission is really occurring. With only 13,000 cases reported outside of Sudan from less than 2,000 villages during 2002, leaders must be constantly aware of which strategies and interventions are being applied, where and why. As the number of reported cases decreases, the GWEPs must accelerate the tempo of all interventions and not assume they can continue doing business as usual. That is why we have asked the question, “What’s new for 2002-2003?” GWEPs have been encouraged to move aggressively to intensify health education, social mobilization and to improve the effectiveness of case containment by making surveillance more active, to detect every case as the Guinea worm(s) emerges and to effectively contain transmission from every worm that emerges. If we are to stop transmission of Guinea worm disease [GWD] from all endemic areas outside of Sudan by the end of 2004, GWEPs must become more effective in the implementation of all interventions. Below is a short list of critically important issues that require immediate attention as well as recommendations for resolving them, during this critical phase of the eradication campaign.

1. A case of Guinea worm disease is the first occurrence in a person during a calendar year of a skin lesion with a Guinea worm protruding from the lesion.

Flaw: Only **new** cases are reported through the system. The records for persons having 2<sup>nd</sup>, 3<sup>rd</sup>, or more Guinea worms are usually not reported since these are not new cases. Hence, any failures to fully contain transmission from persons having more than one Guinea worm may help explain why high rates of case containment may not be followed by a commensurate reduction in overall cases the following year. Such failures may also help explain the occurrence of unexpected outbreaks of the disease a year later.

**Recommendation:** Require that all supervisors leave a copy of their logs (which they routinely must keep to determine who is a new case or not) containing information on the containment of transmission from all persons having additional Guinea worms emerge during the calendar year, and that they maintain an accurate record of these events and outcomes at the District level. Higher-level supervisors are expected to access these records to evaluate the consistency of quality of efforts to contain transmission at the village or case containment center level.

2. Detect cases within 24 hours of worm emergence and prevent patients from contaminating sources of drinking water, i.e. “contain cases”.

Flaw: There may be a disconnection between the above standard and the actual frequency of surveillance at the village level. To adhere to the standard, searches for cases need to be conducted daily in endemic areas. If cases are not detected the day the Guinea worm emerges or too much time elapses, the patient has a greater likelihood of ambulating and contaminating water.

**Recommendation:** Surveillance must be pro-active, there must be sufficient manpower at the village level to search for cases daily in an effective manner, and supervision of the case containment process needs to be done weekly at the village level to also match the tempo of surveillance for cases. Part of the standard for case containment includes having supervisors confirm the containment process within 7 days of the occurrence of the case. These supervisory



Table 3  
 Relationship Between the Number of Villages/Localities Reporting 1+ and 5+ Cases, and the Number of Cases Reported  
 From Those Villages/Localities during 2002 by Country

Country	Number of Villages/Localities Reporting		% Villages Reporting 5+ Cases	Number of Cases from Villages/Localities Reporting		% of Cases Reported from Villages/Localities Reporting 5+ Cases
	1+ Cases	5+ Cases		1+ Cases	5+ Cases	
Ghana	749	221	30%	5,545	4,595	83%
Nigeria	557	169	30%	3,815	3,089	81%
Togo	232	57	25%	1,502	1,200	80%
Mali	173	68	39%	821	646	79%
Burkina Faso	112	28	25%	525	407	78%
Niger	91	14	15%	248	130	52%
Cote d'Ivoire	26	4	15%	198	170	86%
Benin	31	7	23%	181	145	80%
Mauritania	18	3	17%	42	22	52%
Total	1989	571	29%	12,877	10,404	81%

confirmation visits to the village may not be necessary if the patient is admitted to a containment center immediately after the GW emerges.

3. An endemic village is one where chains of locally acquired infections with Guinea worm disease can be established, i.e., villages where locally acquired cases during the last year or longer are linked.

Flaw: The vast majority (71%, see below and attached table) of villages in endemic countries outside of Sudan that reported cases in 2002 reported less than 5 cases. The vast majority of cases from villages reporting 1-4 cases only during 2002 were likely imported from elsewhere within the country or from a neighboring endemic country. Currently, these investigations are not being done systematically or consistently in all places. As a result, most of these cases are never investigated, but invariably these villages are automatically declared by the GWEP as ‘newly infected’, implying that transmission of the disease is now endemic and all of the interventions against the disease are to be provided to these villages (without valid confirmation as to whether transmission is endemic or not).

**Recommendation:** Investigate all alleged cases from villages that during the preceding year did not report cases or that reported only imported cases to determine if the infection may have been acquired elsewhere and to cross report such cases to the probable place where the infection originated. Report these as “villages under surveillance because of imported cases” and do not include these in the listing of endemic villages unless endemic transmission is established. Activate village volunteers to carry out surveillance, and provide training, materials, and supervision. Apply Abate only if the case investigation reveals that the imported case(s) contaminated sources of drinking water (there is a 10-day window of time to apply the Abate and prevent any secondary transmission from ensuing). Do not implement other interventions unless evidence dictates that these are necessary.

Table 3 is based on provisional data on number of villages/localities reporting cases, and on the number of cases reported from those villages/localities, and the proportion of cases those villages/localities reported during 2002. A total of 1,989 villages in the 9 countries reported 1+ cases during 2002, but only 579 (29%) of the villages reported 5+ cases, and 71% reported 1-4 cases each. These 1,989 villages reported 12,877 cases or 99% of the 13,000 cases reported in 2002 outside of Sudan. However, a total of 10,404 (81%) cases were reported from the 571 (29%) of the villages that reported 5+ cases. This strongly suggests that GWEPs are overextending their time and resources to cover a large number of so called “endemic villages” where the evidence of endemic transmission is tenuous or non-existent. Attention to this relationship is critical to effectively target resources, particularly Abate and cloth filters during 2003-2004. This analysis reveals that there are only about 571 priority villages outside of Sudan that really need to be targeted for the most thorough implementation of the full range of interventions against Guinea worm disease. This task is obviously much more manageable and our collective attention can really be focused on those places where the likelihood of transmission is far greater. We should take heart about how close we are to the end point of this campaign, renew our enthusiasm, and increase our confidence that the end of this quest is near. Onwards!

**IN BRIEF**

Nigeria has now established Case Containment Centers in three Local Government Areas: Obi in Benue State, and Ibarapa North and Iseyin in Oyo State. Seventy-four, or 32% of the 229 cases reported in Nigeria in February 2003 were contained in the containment centers. In Obi LGA, authorities have established a 12-hour time limit after emergence of the worm for detecting new cases.

Cote d'Ivoire. *Agent renforts* M. Bourginard and M. Siriki are working hard to detect and contain cases in Tanda District, despite the ongoing civil unrest in the country. Cote d'Ivoire has reported only 24 cases, all in Tanda District, during January-February 2003, compared to 143 cases during the same two months of 2002. Tanda District reported 93% of Cote d'Ivoire's cases in 2002.

Togo reports that 63 of the 193 cases reported in January-February 2003 were contained in Case Containment Centers. The national program coordinator, Mr. K. Ignace Amegbo, and Global 2000/Carter Center consultant Ms. Azalia Mitchell, attended part of the semi-annual review meeting in Ghana on March 10-11.

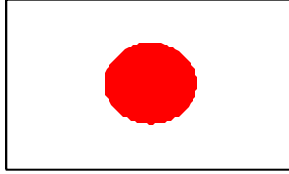
Sudan held a Guinea Worm Day in Terekeka, in the most endemic province in Bahr Al-Jabal State, to help accelerate interruption of transmission of dracunculiasis there. Participants included the state governor, the national program coordinator, Dr. Nabil Aziz, the national UNICEF representative, state ministers of health of Bahr Al-Jabal and West Equatoria, staff of Sudan's GWEP, and about 500 local villagers. UNICEF has agreed to fund \$50,000 worth of grey baft cloth for preparing cloth filters.

Global 2000, in partnership with Sudan Production Aid (SUPRAID) conducted health education sessions with participants from all six Payams in Twic County, (North Bahr Al Ghazal State) during the Twic Olympics in early February 2003. The health education sessions included distribution of household filter cloths and pipe filters to participants and the military in the area. Global 2000 also provided support to SUPRAID to complete 49 boreholes in Twic County by May 15 through their water and sanitation program. This program is being carried out in partnership with UNICEF, Inter-monde, the Executive Chiefs of Twic County, and the civil administration authorities of Twic County. The water and sanitation teams will work in highly endemic Guinea worm areas, and have been trained to conduct health education sessions and to distribute household filter cloths and pipe filters. Adventist Relief and Development Agency (ADRA) received funds from Global 2000 to implement Guinea worm eradication program activities in all six Payams of Twic County through August 2003. ADRA plans to reach up to 800 endemic villages. The first 400 would be reached before April.

## **BURKINA FASO HOLDS ANNUAL REVIEW MEETING, IN OUAHIGOUYA**

Burkina Faso's Guinea Worm Eradication Program held its annual program review meeting in Ouahigouya on March 20-21. Participants included district and regional health authorities from the key endemic areas remaining, as well as representatives of the major external partners: UNICEF, WHO, U.S. Peace Corps, and Global 2000 of The Carter Center. The program announced plans to hold Worm Weeks in 23 endemic villages between March and June 2003. The targeted villages, which are among the 35 most endemic villages in the country, reported 314, or 53% of the 592 cases reported in Burkina Faso in 2002.

## JAPAN PROVIDES MORE ASSISTANCE FOR SUDAN



On February 25, 2003, the Embassy of Japan in Khartoum signed an agreement to provide a grant of \$81,781 to Global 2000/The Carter Center's office in Khartoum under the Government of Japan's Grant Assistance for Grass-roots project. This grant will be used mainly to supply household filters for Sudan's Guinea Worm Eradication Program. In a press release issued at the time of the signing, the embassy stated that "The Japanese Government hopes that this aid will effectively contribute to the eradication of the Guinea worm, which inflicts many parts of the Sudan... the Government of Japan would like to confirm its belief in strengthening friendly relations existing between the Japanese and Sudanese peoples." This is the fourth such grant provided to The Carter Center office in Khartoum by the Embassy of Japan for Sudan's GWEP, following previous grants totaling \$393,000 in 1999, 2001 and 2002.

## GATES FUNDING FOR WATER SUPPLY INTERVENTIONS BY UNICEF



The Gates Guinea Worm Grant Committee has approved a grant of \$2,175,000 to UNICEF to help fund new drinking water sources and rehabilitation of old sources in five endemic countries: Ghana, Nigeria, Burkina Faso, Togo and Mali. The purpose of this grant is to help accelerate safe water supply efforts in Guinea worm-endemic villages of those key countries, which include the main endemic areas remaining outside of Sudan.

The grant will be implemented over the next two years. The proposed respective grant amounts and targets are \$525,000 for 206 new wells and 100 rehabilitated wells in Ghana, \$450,000 for 170 new and 100 rehabilitated wells in Nigeria, \$400,000 for 150 new and 60 rehabilitated wells in Burkina Faso, \$410,000 for 180 new and 50 rehabilitated wells in Togo, and \$300,000 for 80 new and 70 rehabilitated wells in Mali. UNICEF will use other funding of its own to strengthen health education, training and community mobilization in the targeted communities.

*Inclusion of information in the Guinea Worm Wrap-Up does not constitute "publication" of that information.  
In memory of BOB KAISER.*

For information about the GW Wrap-Up, contact Dr. James H. Maguire, Director, WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, NCID, Centers for Disease Control and Prevention, F-22, 4770 Buford Highway, NE, Atlanta, GA 30341-3724, U.S.A. FAX: 770-488-7761. The GW Wrap-Up web location has changed to <http://www.cdc.gov/ncidod/dpd/parasites/guineaworm/default.htm>



CDC is the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis.