



Date: April 20, 2009



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

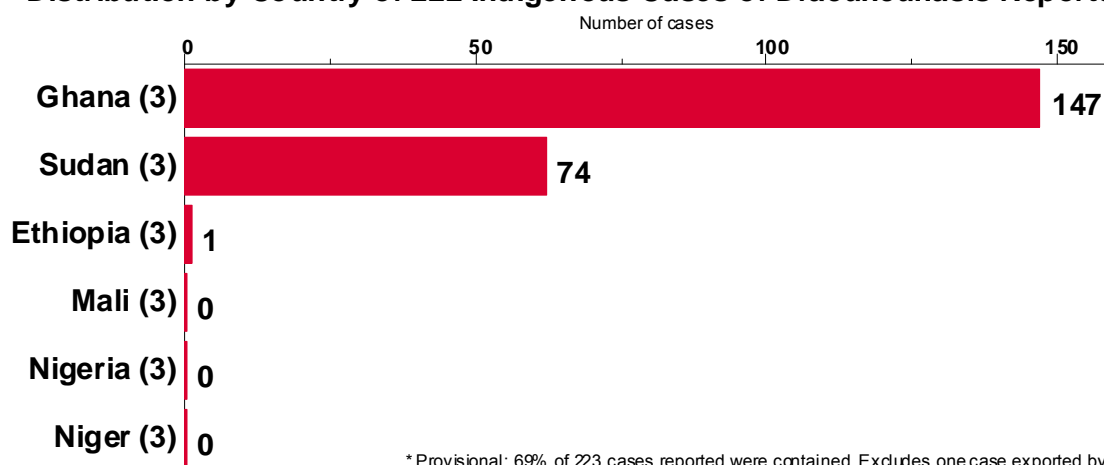
Subject: GUINEA WORM WRAP-UP #189

To: Addressees

**Months since last indigenous case of dracunculiasis:**  
**Niger: 5 months, Nigeria: 4 months, Mali: 3 months**

**Number of uncontained cases so far in 2009:**  
**Sudan: 49, Ghana: 8, Ethiopia: 0**

Figure 1  
**Distribution by Country of 222 Indigenous Cases of Dracunculiasis Reported: 2009\***



\* Provisional: 69% of 223 cases reported were contained. Excludes one case exported by Ghana into Niger. Numbers in parentheses indicate months for which reports have been received, i.e. (3) = January – March.

**GHANA: -27% FEWER CASES, 86% CONTAINED IN 1<sup>ST</sup> QUARTER 2009**

Ghana has reported 147 cases of dracunculiasis in 31 villages in January-March 2009 (Figure 1 and Table 2). This is a reduction of -27% compared to the 201 cases (Figure 2), and a reduction of -54% in the number of villages reporting one or more cases during the same peak season period of 2008 (10 villages reported indigenous cases so far in 2009 versus 24 during the same period in 2008). 97 of this year’s cases occurred in or were imported from the town of Fulfulso Junction in Central Gonja District of the Northern Region. Fulfulso Junction was also the source of a case that was detected in Niamey, Niger in March 2009 (see below).

So far this year 127 (86%) of the 147 cases reported have been contained (Table2) – containment of 12 additional cases is ongoing and expected – including 111 (76%) who were isolated in a Case Containment Center. Transmission is believed to have been blocked in all but 2 cases so

far this year, however. Although not all cases met the criteria for case containment (see definition of case containment on last page), it is still possible to prevent transmission to others by careful use of ABATE® Larvicide within ten days after patients potentially contaminated water sources, before the parasites become infective. The dates of worm emergence, case detection, and use of ABATE for each of the technically uncontained cases so far are summarized in Table 1. Of these, the patient in Gulumpe, a town of about 9,000 persons on the main road in Central Gonja District, is the uncontained case of most concern so far.

### **COURTING DISASTER IN NIGER: IMPORTED CASE MISHANDLED**

- **10 March 2009:** A Guinea worm emerges from the foot of a Nigerien woman who returned to Niamey in the summer of 2008 from living with her husband and sister for two years in Fulfulso Junction, Ghana.
- **17 March:** the patient was seen at the local Madina Health Center, educated to not enter the water, bandaged, and taken to the District Health Office, where appropriate staff were not available due to preparations for National Immunization Days (NID). The district authorities never sent the Madina Health Center nurse the requested investigation form for reporting the case, and never asked for the report.
- **3 April:** The Regional Health Office receives a report of a case of GWD notified by the Madina Health Center on the NID forms.
- **6 April:** Regional health authorities informed Niger's National Guinea Worm Eradication Program of the case. The National Program Coordinator of NGWEP, sends a message by e-mail to one person at The Carter Center Guinea worm office and to a person at WHO's African office, but does not have an e-mail address to notify Ghana.
- **13 April:** The person at The Carter Center returns from Africa, discovers the e-mail from Niamey, sounds the alarm about the case, and notifies the Ghana GWEP.
- **15 April:** Staff from Niger's GWEP visit the regional and local health offices concerned, and the imported case, 36 days after her worm emerged.

Fortunately, this patient says that she did not enter any drinking water source while her worm was emerging. Nigerien health authorities are now visiting her and her sister every two days. The Niger GWEP informed the Ghana GWEP of the husband's telephone number in Ghana. The Ghana GWEP has located the husband and is in touch with him. The Carter Center also notified the Program Coordinators in Burkina Faso, Cote d'Ivoire and Togo at the request of Ghana's National Program Coordinator.

Procedures for reporting imported cases are:

1. The GWEP should without delay complete the WHO recommended form for notification of imported cases of GWD with complete details; a) to allow the country from where the case has been alleged to have been exported to trace the residence and travel history of the case, and b) to investigate possible sources of infection in the country of origin. (See article on imported cases in Guinea Worm Wrap-Up # 187, March 2, 2009)
2. The completed and signed form should be faxed simultaneously to the local WHO country office and to the national GWEP coordinator of the exporting country, or a scanned copy of the form could also be sent via email to the WHO country office, the regional WHO focal point for Lymphatic Filariasis, and to the national GWEP coordinator. While emails are an immediate

Table 1

**Ghana Guinea Worm Eradication Program**  
**List of Uncontained Guinea Worm Cases and Interventions Against Transmission : 2009**

Case #	# Worms	Age	Sex	Ethnic Group	Profession	Village	District	Region	Date				Dected <24 hrs? (Yes / No)	Water Contaminated? (Yes / No)	Date ABATE Applied	Case Contained? (Yes / No)	Admitted to a Case Containment Center? (Yes / No)	Patient had Guinea worm last year? (Yes / No)	Imported Case? (Yes / No)	Probable Origin of Infection (name of village, zone, or
									Suspect Case Identified	Worm Began to Emerge	Village Volunteer, or Case Containment Center, began to contain case	Case Confirmed by a Supervisor								
GHANA																				
1.1	1	50	F	DAGOMBA	FARMER	GRUMANI	TOLON-KUMBUNGU	NORTHERN		1/11/2009	1/21/2009	1/11/2009	NO	NO		NO	YES	YES	YES	ISSAPE
2.1	1	19	M	DAGOMBA	STUDENT	KARAGA	KARAGA	NORTHERN		1/12/2009	1/13/2009	1/12/2009	NO	NO		NO	YES	NO	NO	
3.1	1	60	M	GONJA	FARMER	LAMSA	EAST GONJA	NORTHERN	1/21/2009	2/5/2009	1/23/2009	1/23/2009	YES	YES		NO	YES	NO	YES	BUNKWA
4.1	1	33	M	GONJA	FARMER	GULUMPE	KINTMPO NORTH	NORTHERN	1/31/2009	2/6/2009	2/6/2009	2/6/2009	YES	YES	2/7/2009	NO	YES	NO	YES	FUFULSO
5.1*	1	52	M	DAGOMBA	FARMER	SHISHEGU	TAMALE	NORTHERN	1/15/2009	1/16/2009		1/16/2009	YES	NO		NO	NO	NO	YES	ISSAPE
6.1	1	30	M	DAGOMBA	FARMER	NYOHINI	TAMALE	NORTHERN		1/26/2009	1/29/2009	1/29/2009	NO	NO		NO	NO	NO	YES	FUFULSO
7.1	1	7	F	DAGOMBA	FARMER	SAVELUGU	SAVELUGU-NANTON	NORTHERN		3/26/2009	3/27/2009	3/27/2009	YES	NO		NO	YES	NO	NO	
8.1*	2	30	F	GONJA	HOUSE WIF	KUSAWGU	CENTRAL GONJA	NORTHERN		3/20/2009		3/21/2009	YES	YES	3/25/2009	NO	NO	NO	YES	

\* Patients refused bandaging / containment despite being detected within 24hrs

Table 2

Number of Cases Contained and Number Reported by Month during 2009\*  
(Countries arranged in descending order of cases in 2008)

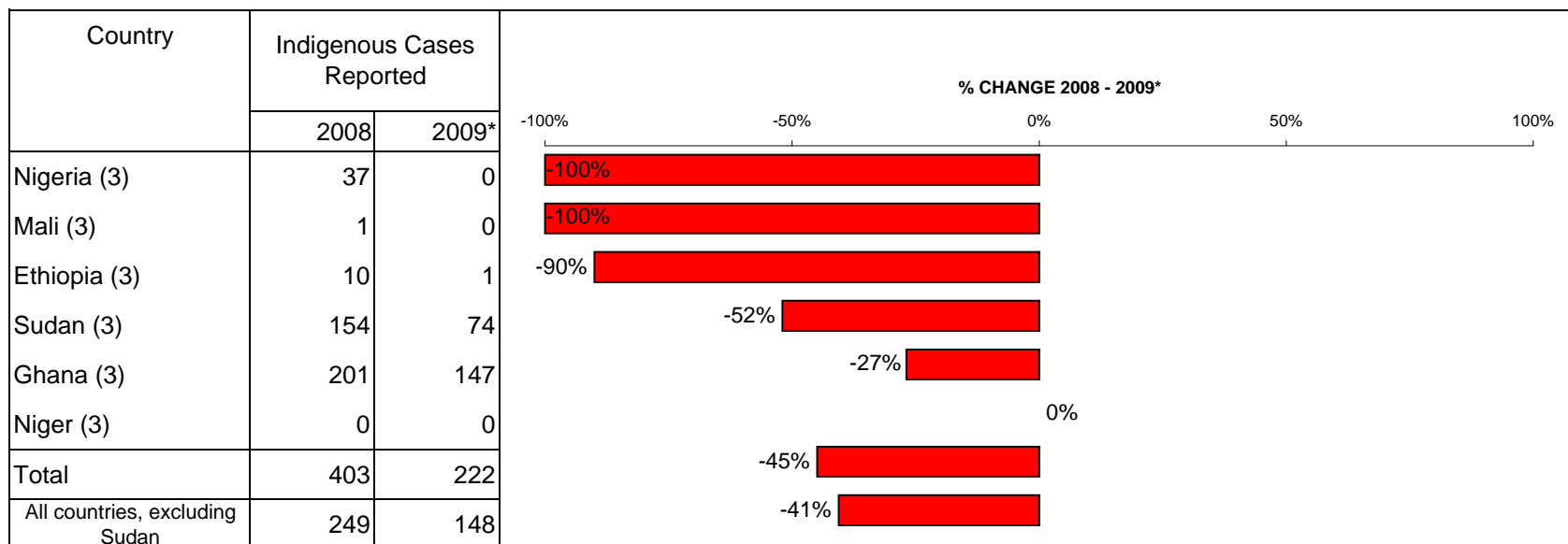
COUNTRIES REPORTING CASES	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													% CONT.
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
SUDAN	3 / 12	8 / 17	14 / 45	/	/	/	/	/	/	/	/	/	25 / 74	34
GHANA	40 / 45	49 / 50	38 / 52	/	/	/	/	/	/	/	/	/	127 / 147	86
MALI	0 / 0	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	0 / 0	100
ETHIOPIA**	0 / 0	0 / 0	1 / 1	6 / 6	/	/	/	/	/	/	/	/	7 / 7	100
NIGERIA	0 / 0	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	0 / 0	100
NIGER	0 / 0	0 / 0	0 / 1	/	/	/	/	/	/	/	/	/	0 / 1	0
TOTAL*	43 / 57	57 / 67	53 / 99	6 / 6	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	159 / 229	69
% CONTAINED	75	85	54	100									69	
% CONT. OUTSIDE SUDAN	89	98	72	100									86	

\* provisional

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

Figure 2

Number of Indigenous Cases Reported During the Specified Period in 2008 and 2009\*, and Percent Change in Cases Reported



\* Provisional: excludes cases exported from one country to another

(3) Indicates months for which reports were received, i.e., Jan. - Mar. 2009

method of communication, it may not always reach the intended party in time due to limitations of internet connections or of travel of the intended recipient.

3. GWEPS should raise awareness at all levels of the ministry of health about the importance and priority of the national Guinea worm eradication effort, and about the urgent need for staff at any level of the health system to initiate immediate measures to report cases and contain transmission of GWD.

### **NIGERIA CELEBRATES NATIONAL GUINEA WORM DAY, INVESTIGATES RUMORED CASE FROM MALI**

Nigeria celebrated its National Guinea Worm Disease Eradication Day on 20 March 2009 in Abuja. Activities included a press briefing by the Federal Minister of Health Prof. Babatunde Oshotimehin. The press briefing was also addressed by former Nigerian Head of State General (Dr) Yakubu Gowon. Other participants included representatives of Nigeria's National Guinea Worm Eradication Program (NIGEP), the chairman of Nigeria's Guinea Worm Steering Committee, The Carter Center, UNICEF, WHO and other partners. The celebration also included mass distribution of posters, and received nationwide coverage on radio, television, newspapers and magazines.

Nigeria is the only endemic or recently endemic country that appears to have a nationwide surveillance and response system in place and high awareness about rewards for reporting any alleged or suspect cases of Guinea worm disease. That system reacted rapidly, albeit indirectly, recently in response to a suspect case thought to have been imported into Lagos, Nigeria from Gao Region of Mali. The alleged case was a Malian national living in Lagos who had visited places in Gao Region of Mali during the 2008 transmission season. A Nigerian pharmacist became aware of the suspect case in the young man who lived in her neighborhood, and she contacted The Carter Center via the internet on March 16. After obtaining more details and contact information, on March 19 The Carter Center alerted its office in Nigeria, which visited the alleged case and conducted an investigation on March 21. The patient did not have Guinea worm disease, but is being monitored because of his travel to a known endemic area. NIGEP and Carter Center staff have begun conducting health education, community mobilization and surveillance for GWD among Malian groups in Lagos.

### **ETHIOPIA REPORTS INDIGENOUS CASES IN GAMBELLA REGION**

By the end of the first week in April, the Ethiopian Dracunculiasis Eradication Program (EDEP) had reported one indigenous case in March and 6 indigenous cases in April so far. All were reported from Pugnido Town and the near-by refugee camp, all were contained in the Case Containment Center at Pugnido health center, and all received the cash reward of 100 birr ~ (\$10). A line-listing of these cases is given in Table 3. This represents a reduction of -90% from the 10 cases reported in March 2008 (Ethiopia reported 23 cases in April 2008). This year's cases appear to be the result of two persons who contaminated a water source along a footpath between Pugnido Town and farming communities in Ethiopia last year.

Mr. Philip Downs of The Carter Center visited this program in March, and reports that the EDEP has increased the number of supervisors and field assistants at district and regional levels who speak the local language, and are more diligent and aggressive in investigating each case and ensuring that each worm is contained. Mr. Downs was not accompanied on his visit to Gambella

Table 3

**List of Guinea Worm Cases and Interventions Against Transmission  
2009-Ethiopia**

Case #	# Worms	Age	Sex	Ethnic Group	Profession	Village	District	Region	Date				Delected <24 hrs? (Yes / No)	Water Contaminated? (Yes / No)	Date ABATE Applied	Case Contained? (Yes / No)	Admitted to a Case Containment Center? (Yes / No)	Patient had Guinea worm last year? (Yes / No)	Imported Case? (Yes / No)	Probable Origin of Infection (name of village, zone, or country)
									Suspect Case Identified	Worm Began to Emerge	Village Volunteer, or Case Containment Center, began to contain case	Case Confirmed by a Supervisor								
1.1	1	18	M	Agnua	Student	Pugnido town/ Ulegn	Gog	Gambella	29-Mar-09	30-Mar-09	29-Mar-09	30-Mar-09	Yes	NO	NO	YES	YES	NO	NO	Menio pond or road pond
2.1	3	24	F	Agnua	House lady	Pugnido town/ Ulegn	Gog	Gambella	18-Mar-09	1-Apr-09	18-Mar-09	1-Apr-09	Yes	NO	NO	YES	YES	NO	NO	Menio pond or road pond
2.2										2-Apr-09	18-Mar-09		Yes	NO	NO	YES	YES	NO	NO	
2.3										2-Apr-09	18-Mar-09		Yes	NO	NO	YES	YES	NO	NO	
3.1	2	45	F	Agnua	House lady	Pugnido town/ Ulegn	Gog	Gambella	20-Mar-09	2-Apr-09	20-Mar-09	2-Apr-09	Yes	NO	NO	YES	YES	NO	NO	Menio pond or road pond
4.1	2	12	F	Agnua	Student	Refugee camp/ Akobo	Gog	Gambella	27-Mar-09	2-Apr-09	27-Mar-09	2-Apr-09	Yes	NO		YES	YES	NO	NO	Menio pond or road pond
4.2										3-Apr-09	3-Apr-09		Yes	NO		YES	YES	NO	NO	
5.1	1	11	F	Agnua	Student	Pugnido town/ Katabari	Gog	Gambella	27-Mar-09	3-Apr-09	27-Mar-09	3-Apr-09	Yes	NO		YES	YES	NO	NO	Menio pond or road pond
6.1	3	14	F	Agnua	Student	Refugee camp/ Akobo	Gog	Gambella	31-Mar-09	3-Apr-09	31-Mar-09	3-Apr-09	Yes	NO		YES	YES	NO	NO	Menio pond or road pond
6.2										3-Apr-09	31-Mar-09	3-Apr-09	Yes	NO		YES	YES	NO	NO	
7.1*																				

\* 7.1 details pending formal report

**SUDAN GUINEA WORM ERADICATION PROGRAM  
STATUS OF INDICATORS IN ENDEMIC VILLAGES (EVS) DURING 2006 - 2008**

Figure 3

Year	<u>2006</u>	<u>2007</u>	<u>2008</u>
Villages reporting indigenous cases	3,137	1,765	947
No. of endemic villages	3,137	3,023	2,301
No. of cases	20,582	5,815	3,618

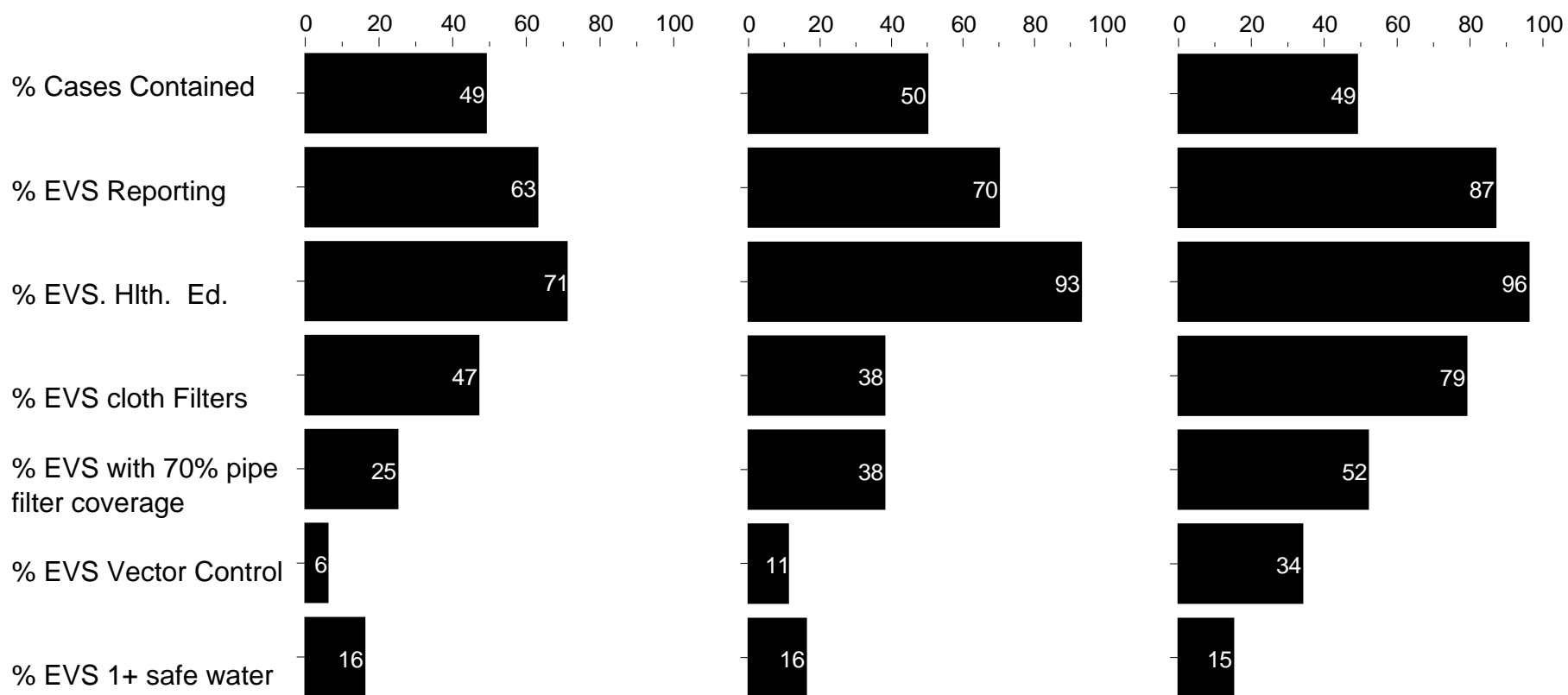




Table 4

**Dracunculiasis Eradication Campaign: Status of Interventions:2008\***

Countries Reporting Cases in 2008	Number of reported cases (indigenous) in 2008*	Number of reported cases (imported) in 2008*	% of all cases reported that were contained during 2008*	Overall % change in cases in endemic villages/localities during 2007-2008	Villages/Localities								
					2008*			Status of Interventions during 2007-2008					
					No. reporting one or more cases	No. reporting only imported cases	No. reporting indigenous cases	Endemic villages 2007-2008	% reporting monthly <sup>^</sup>	% with filters in all households <sup>^</sup>	% using Abate <sup>^</sup>	% with one or more sources of safe water <sup>^</sup>	% provided health education <sup>^</sup>
Sudan	3,618	0	<b>49%</b>	-38%	1,243	296	947	2,301	87%	79%	34%	15%	96%
Ghana	501	0	<b>85%</b>	-85%	131	85	46	197	98%	75%	58%	46%	100%
Mali	417	0	<b>85%</b>	33%	69	43	26	113	100%	100%	56%	21%	100%
Ethiopia	39	2	<b>78%</b>	~	11	9	2	2	100%	98%	70%	50%	100%
Nigeria	38	0	<b>100%</b>	-48%	5	3	2	4	100%	100%	100%	80%	100%
Niger	2	1	<b>67%</b>	-82%	3	1	2	7	100%	100%	86%	71%	100%
Burkina Faso	0	1	<b>100%</b>	NA	1	1	NA	NA	NA	NA	NA	NA	NA
Total	4,615	4	<b>57%</b>	-52%	1,463	438	1,025	2,624	89%	79%	37%	18%	96%
Total outside Sudan	997	4	<b>85%</b>	-73%	220	142	78	323	100%	80%	70%	42%	99%

\* Provisional

<sup>^</sup> The base of the percentage is the number of villages/localities where the program applied interventions during 2007-2008

NA = Not applicable

Region by the National Program Coordinator, Mr. Gole Ejeta, but worked with regional and local health authorities.

## **STATUS OF INTERVENTIONS AND CASE CONTAINMENT CENTERS IN 2008**

Summary statistics for each of the national GWEP during 2008, including coverage of interventions in the 2007-2008 endemic villages, is summarized in Table 4, and the proportion of cases contained in case containment centers is summarized in Table 5. Cases of Dracunculiasis exported from one country to another are shown in Table 6.

## **WHO REPORTS**



### **WORKSHOPS ON GUINEA WORM INFORMATION MANAGEMENT SYSTEM (GWIMS)**

WHO organized two workshops of the data managers of GWEPs and national surveillance officers: one for French speaking countries, held during April 7-9 in Bamako, Mali, and one for English speaking countries, held in Addis Ababa, Ethiopia during April 20-22, 2009. Representatives from Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Mali, Niger, Nigeria, Sudan, Togo, and Uganda attended the Workshops, reviewed the strengths and weaknesses of the existing data management and information system for reporting on GWD as well as the interventions carried out under GWEP. Participants welcomed the data management application (GWIMS) developed by WHO and requested technical assistance for its implementation. Best practices for managing Guinea worm eradication data were identified, including sharing of information with the national integrated disease surveillance and response system (IDSR) and the need to adhere to standard definitions.

### **CONSULTATIONS TO NIGERIA AND UGANDA**

The Ministry of Health of Nigeria has requested WHO to advise on strengthening nation wide surveillance for GWD. WHO/Geneva and WHO/AFRO staff plan to visit Nigeria during April 23 – May 1, 2009.

WHO/Geneva and WHO/AFRO staff will conduct an assessment of Uganda's GWEP during April 27 – May 5, 2009.

### **IN BRIEF:**

Sudan has reported 74 cases during January – March 2009, -52% versus 154 cases in the first quarter of 2008 (Table 2 and Figure 2). The status of key program indicators in endemic villages in 2006-2008 is summarized in Figure 3. A three day facilitation workshop on behavior change communication was held in Kapoeta, Southern Sudan during March 11-13, 2009 with the objective of teaching Technical Advisors and Field Officers of the SSGWEP how to facilitate a dialogue with residents of endemic communities leading to an understanding of why dracunculiasis exists in their community, and consensus regarding what behavior changes residents agree to adopt in order to prevent transmission of dracunculiasis. About 25 program staff attended.

Table 5

**Global Campaign to Eradicate Guinea Worm Disease  
Role of Case Containment Centers in 2008**

Country*	2008						
	Number of Cases Reported (national)	Number of Cases Contained (national)	% of national cases contained	Number of CCCs in which cases were contained	Number of Cases Contained at CCCs	% of national cases reported that were contained at a CCC	% of national cases contained that were contained at a CCC.
Sudan	3,618	1781	49	0	0	0	0
Ghana	501	428	85	11	183	37	43
Mali	417	354	85	3	124	30	35
Ethiopia	41	32	78	1	32	78	100
Nigeria	38	38	100	1	38	100	100
Niger	3	2	67	3	2	67	100
Total	4,618	2635	57	19	379	8	14
Outside Sudan	1,000	854	85	19	379	38	44

\*Excludes one case of GWD imported into Burkina Faso.

CCC is an ad hoc facility or existing primary health care facility or hospital.

Table 6

**Dracunculiasis Eradication Campaign  
Reported Importations and Exportations of Cases of Dracunculiasis: 2008**

From	To	Month and number of cases imported												Number of cases exported	
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		Total
Ghana - Burkina Faso					1									1	1
Sudan - Ethiopia				1						1				2	2
Mali - Niger			1											1	1
Total		0	1	0	2	0	0	0	0	1	0	0	0	4	

**MEETINGS:**

An Informal Meeting with Ministers of Health of Guinea Worm Affected Countries will be held during the World Health Assembly in Geneva, Switzerland on 20 May 2009 from 18:00 to 20:00. This meeting will review the status of and commitment for eradication of dracunculiasis.

The next meeting of the International Commission for the Certification of Dracunculiasis Eradication will be held at World Health Organization headquarters in Geneva on October 21-23, 2009.

The World Health Organization will host a review meeting of the GWEPs in French speaking African countries now in the pre-certification stage of eradication in Geneva during May 7-9, 2009.

#### EMAIL ADDRESSES OF PROGRAM COORDINATORS OF NATIONAL GWEPs:

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Ethiopia	Dr. Gole Ejeta Yembo	gole_ejeta@yahoo.com
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Togo	Dr. Dotse Bayake	grishdotse@yahoo.fr
Uganda	Dr Peter langi	peter-langi@health.go.ug

#### DEFINITION OF CASE CONTAINMENT

A case of Guinea worm disease is contained if all of the following conditions are met:

1. The patient is detected before or within 24 hours of worm emergence; **and**
2. The patient has not entered any water source since the worm emerged; **and**
3. The village volunteer has properly managed the case, by cleaning and bandaging until the worm is fully removed, and by giving health education to discourage the patient from contaminating any water source (if two or more emerging worms are present, the case is not contained until the last worm is pulled out); **and**
4. The containment process, including verification that it is a case of Guinea worm disease, is validated by a supervisor within 7 days of the emergence of the worm.

#### Recent Publications

Wakabi, Wairagala, 2009. Africa sees obstacles to guinea worm disease eradication. The Lancet 373:1159. April 4.

*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 the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, NCZVED, 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 is <http://www.cdc.gov/ncidod/dpd/parasites/guineaworm/default.htm>.



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