



**DEPARTMENT OF HEALTH & HUMAN SERVICES**

Public Health Service  
Centers for Disease Control  
and Prevention (CDC)  
Memorandum

Date: January 26, 2007



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

Subject: GUINEA WORM WRAP-UP #169

To: Addressees

*"I do not know what has become of our nation, which used at one time to set great examples in everything." Voltaire, 1769*

**GHANA: 20 YEARS WAR ON GUINEA WORM; NORTHERN REGION LAGS**

The Golden Anniversary of Ghana's epochal achievement of political independence on March 6, 1957 is fast approaching. That 50 year milestone in March 2007 is also the date by which Ghana now aims to finally stop transmission of dracunculiasis by containing all subsequent cases of the disease that occur in Ghana, and thus expecting no more cases of the "Fiery Serpent" after March 2008. In escalating its efforts, Ghana is focusing to achieve the promise first made when its Guinea Worm Eradication Program began in December 1987—a promise that has seen no sustained national reduction in cases over the past 12 years.

Since the Program Review of Ghana's Guinea Worm Eradication Program in Atlanta in August 2006 however, the Government of Ghana has announced free treatment for persons with Guinea worm disease at all public hospitals and clinics, declared the disease to be a public health emergency in the Northern Region, replaced 10 of 12 under-performing district and regional supervisors, opened ten case containment centers to complement existing health facilities, kicked off a major public awareness offensive that includes radio, television, newspapers, billboards, *durbars*, appearances by Miss Ghana 2005, and a ministerial press conference on January 22, released 5 billion cedis (~\$500,000) to the Ghana Health Service for the program, begun distributing 372,000 pipe filters, and introduced improved water supply in the highest endemic community (Savelugu: 411 cases in 2006), with improved water supply for the second-highest village (Diare: 298 cases) to follow in January 2007. During a visit to Brong Ahafo Region on January 16, President J.A. Kufuor expressed his surprise that Guinea worm disease is reportedly increasing in Ghana and directed minister of health Maj (Rtd) Courage E.K. Quashigah to submit a report to him on the situation.

Ghana reported 4,132 cases of dracunculiasis from 605 communities in 2006, but only 346 communities reported indigenous cases. This is a 4% increase from the 3,981 cases Ghana reported in 2005 (Table 1, Figure 5). Ghana is now by far the main remaining focus of this disease in West Africa (Figure 1), having assumed the role formerly held by Nigeria (Figure 2), despite having already consumed one-third more donated ABATE® Larvicide than Nigeria (62,800 liters, vs. 47,160 liters). Ghana's immediate neighbor Cote d'Ivoire reported only 6 cases in 2006, Burkina Faso reported 5 cases, and Togo reported 29 cases, including 4 cases exported to Togo from Ghana (Table 1, Figures 5 and 6). Two Malian nationals were reported as cases of dracunculiasis by Ghana during November 2006. (Burkina Faso reports that three cases of dracunculiasis were imported from Ghana in early January 2007). 90% of Ghana's cases in 2006 were in the Northern Region, which lags all other endemic regions in reducing the disease in recent years

Figure 1

# Distribution of 4,604 cases of Dracunculiasis in West Africa: January – December 2006\*

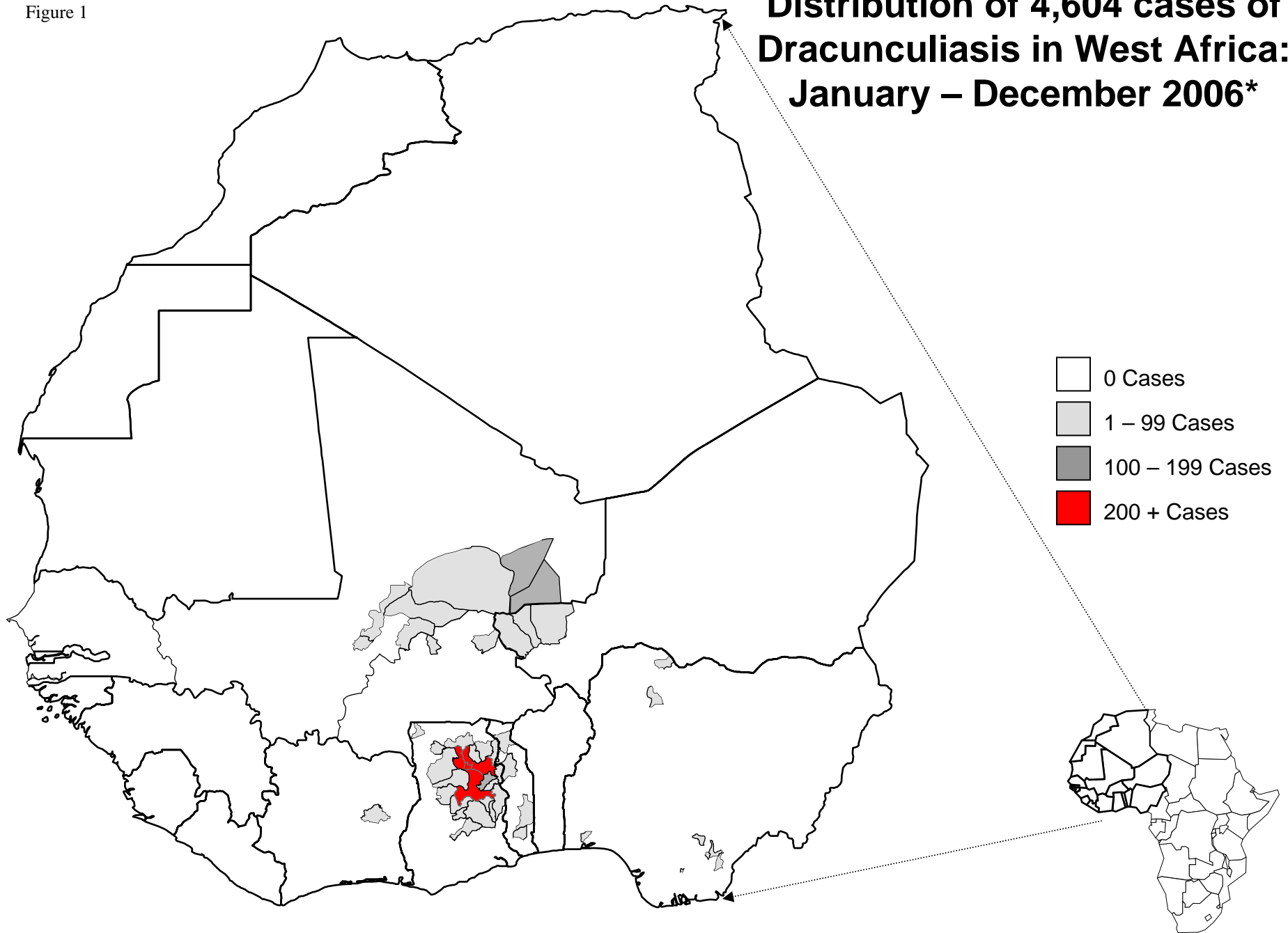


Figure 2

**Number of Cases of Dracunculiasis Reported: Ghana and Nigeria 1989-2006\***

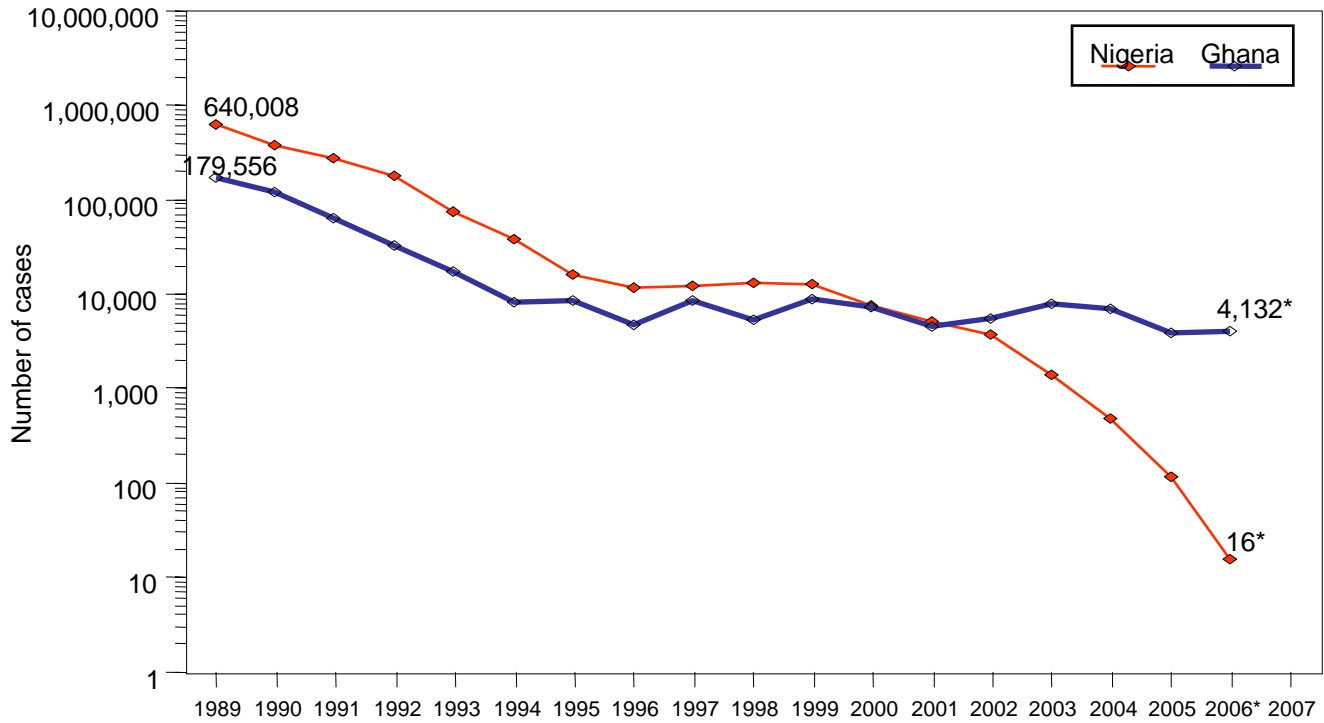
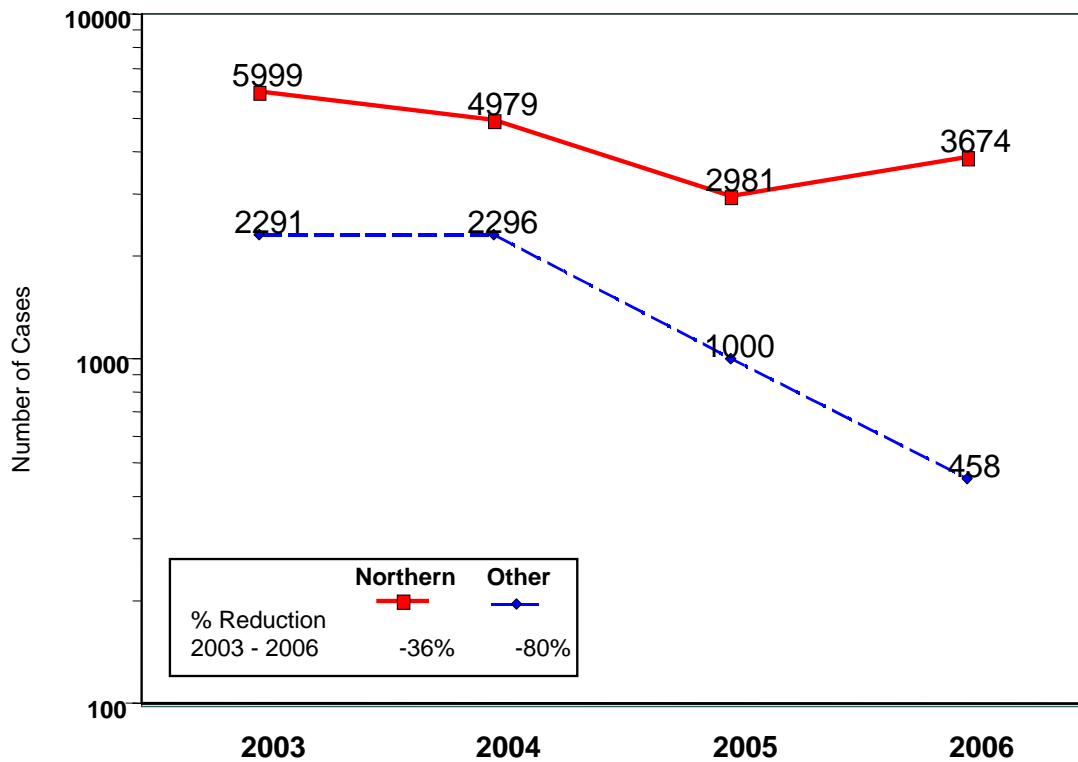


Figure 3

**Ghana Guinea Worm Eradication Program  
Number of Cases of Dracunculiasis Reported by Region: 2000 - 2006\***



\* provisional

(Figure 3). 77% of Ghana's cases were reported from only five districts, all of which are in the Northern Region: Savelugu-Nanton, Tolon-Kumbungu, Tamale, Yendi, and East Gonja.

Case containment rates have risen significantly in recent months with the re-introduction of case containment centers and adjustment for adherence to the strict definition of case containment, so that the percentage of cases reportedly contained in 2006 rose to 75% (vs. 62% in 2005) (Figure 4). The share of Ghana's cases reported monthly that was isolated in case containment centers rose from 1% in October to 10% in November to 14% in December 2006 (Ghana's overall case containment rates for those months were 78%, 94%, 85%). As of December 2006, 98% of endemic villages had received health education, 95% had cloth filters in each household, 47% had at least one source of safe water, and 27% had water sources treated with ABATE® Larvicide.

**Figure 4**

**Ghana Guinea Worm Eradication Program % Cases Contained by Month 2006 - 2007\***

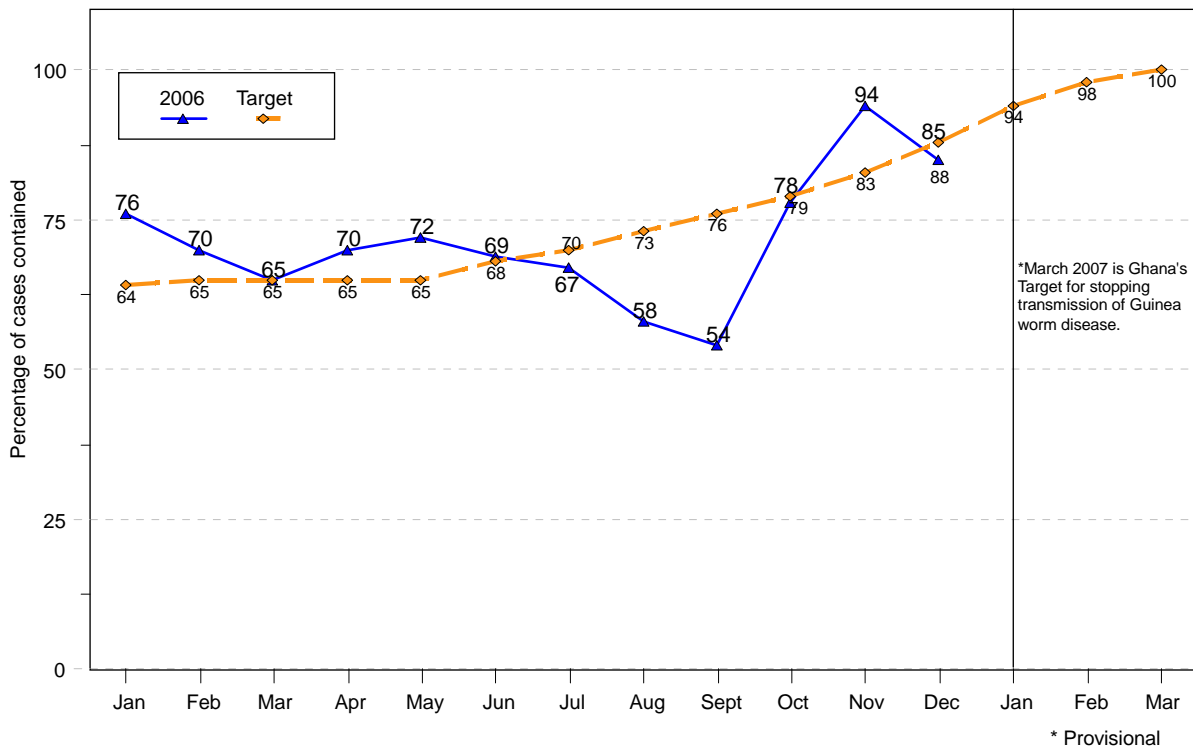


Table 1

Number of Cases Contained and Number Reported by Month during 2006\*  
(Countries arranged in descending order of cases in 2005)

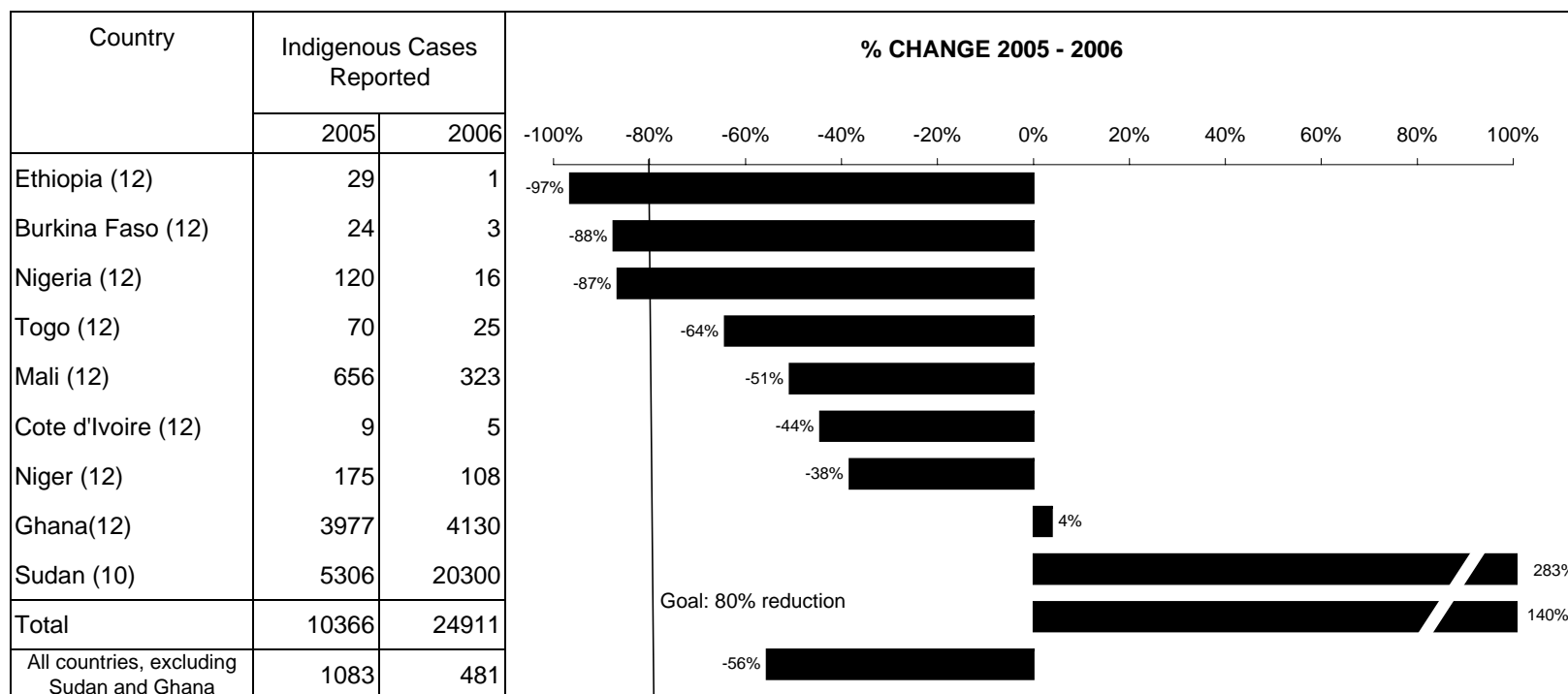
COUNTRIES REPORTING CASES	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													%
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
SUDAN	0 19	6 29	23 104	238 2721	2016 4765	2195 3798	2159 3429	1304 2331	1171 2050	623 1064	/	/	9735 20300	48
GHANA	473 621	426 606	281 433	282 403	241 337	201 293	109 162	45 77	21 39	112 144	386 412	509 605	3086 4132	75
MALI	3 3	1 1	0 0	1 1	3 3	14 14	11 14	66 72	79 91	59 81	27 41	7 8	271 329	82
NIGER	2 2	0 0	0 0	1 2	6 6	7 7	11 12	17 21	15 21	17 20	13 17	2 2	91 110	83
NIGERIA	0 0	10 14	0 0	0 0	0 1	0 0	0 0	0 0	0 0	0 0	0 0	1 1	11 16	69
TOGO	1 1	2 3	0 0	0 1	1 1	2 2	0 0	5 5	1 1	1 1	5 7	5 7	23 29	79
BURKINA FASO	0 0	0 0	0 0	0 0	0 0	0 0	1 1	0 1	0 1	1 1	1 1	0 0	3 5	60
COTE D'IVOIRE	0 0	0 0	0 0	0 0	0 0	2 2	2 2	0 0	1 1	0 0	0 0	0 0	5 5	100
ETHIOPIA	1 1	0 0	0 0	0 0	1 1	1 1	0 0	0 0	0 0	0 0	0 0	0 0	3 3	100
UGANDA	0 0	0 0	0 0	0 0	0 0	0 0	1 1	0 0	1 1	0 0	0 0	/	2 2	100
TOTAL*	480 637	445 653	304 537	522 3128	2268 5114	2422 4117	2294 3621	1437 2507	1289 2205	813 1311	432 478	524 623	13230 24931	53
% CONTAINED	75	68	57	17	44	59	63	57	58	62	90	84	53	
% CONT. OUTSIDE SUDAN	76	70	65	70	72	71	70	76	76	77	90	84	75	

\* provisional

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

Figure 5

Number of Indigenous Cases Reported During the Specified Period in 2005 and 2006\*, and Percent Change in Cases Reported



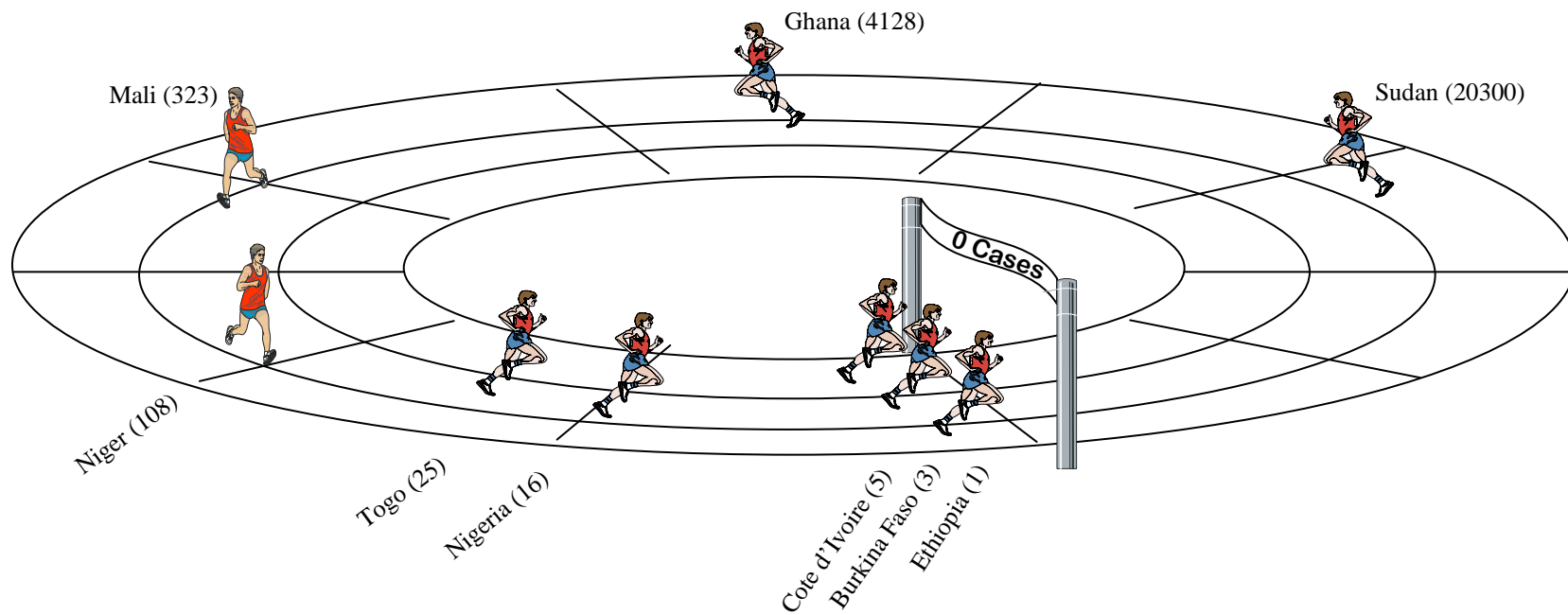
Overall % change outside of Sudan = -9%

(11) Indicates months for which reports were received, i.e., Jan. - Nov. 2006

\* Provisional

Figure 6

# GUINEA WORM RACE: 2006\*



\*Indigenous Cases only  
provisional

**IN BRIEF:**



**Sudan.** The South Sudan GWEP detected and cross-notified four cases of dracunculiasis imported from the Gambella Region of Ethiopia into the Akobo area of Jonglei State during December 2006 (Table 2). These are the very first cases of dracunculiasis ever alleged to be exported from a neighboring country into Sudan, since the beginning of the Sudanese eradication program in 1994. Insecurity in the Gambella Region of Ethiopia during the last 2-3 years has severely constrained the Ethiopian Dracunculiasis Eradication Program (EDEP) staff's access to the endemic villages in that region. During 2006 the EDEP reported only one indigenous case of dracunculiasis and 2 cases imported from South Sudan. The cases imported into South Sudan may be an indication that there is transmission of dracunculiasis in areas of Gambella Region that are inaccessible to the EDEP.

Table 2

Sudan Guinea Worm Eradication Program  
Summary of Cases Imported from Ethiopia

Patient	Sex	Age	Occupation	Nationality	Locality of detection in Sudan				Date					Contained (yes/no)	
					Name	Nearest Town	State	Payam	Arrival in Sudan	Detection	GW emergence	Case Confirmed	Cont. Began		GW pulled out
1	Female	30	Farmer	Sudanese	Ojogi	Alali	Jonglei	Akobo	Dec-06	29-Dec-06	29-Dec-06	31-Dec-06			NO
2	Male	45	Farmer	Sudanese	Ojogi	Akobo	Jonglei	Akobo	Sep-06	3-Jan-07	3-Jan-07	6-Jan-07			NO
3	Male	25	Farmer	??	Ojogi	Alali	Jonglei	Akobo	Nov-06	2-Jan-07	2-Jan-07	5-Jan-07			NO
4	Male	10	Farmer	Sudanese	Aparawang	Alali	Jonglei	Akobo	Nov-06	2-Dec-06	22-Dec-06	24-Dec-06			NO

Patient	Origin					Comments
	Country	Region	District	Village or Locality	Date of Departure	
1	Ethiopia	Gambella	Abobo	Agog	Mar-06	Patient said nearest town is Pugnido, Abobo Woreda
2	Ethiopia	Gambella	Abobo	Agog	Jul-06	Patient said nearest town is Pugnido, Abobo Woreda
3	Ethiopia	Gambella	Abobo	Agog	Oct-06	Patient said nearest town is Pugnido, Abobo Woreda
4	Ethiopia	Gambella	Abobo	Agog	Apr-06	Patient said nearest town is Pugnido, Abobo Woreda

NOTE: PUGNIDO, ETHIOPIA IS SITE OF A SUDANESE REFUGEE CAMP.



**Niger** will hold the annual in-country review of its Guinea Worm Eradication Program during January 24-26, in Dosso District. Niger reduced its cases by -40% overall between 2005 and 2006, with all 110 cases reported in 2006 occurring in Tillaberi Region. In Tillaberi Region, Tera District reduced its cases by -63% (from 100 cases to 37) over that period, while Tillaberi District's reported cases increased from 63 to 64.



**Nigeria** reported only 16 indigenous cases during 2006 and for the first time since the eradication campaign began, Nigeria reported fewer cases than Togo, which reported 25 indigenous cases.



**Liberia.** From December 11-22, 2006, an International Certification Team (ICT) consisting of two WHO Temporary Advisors (Dr. Frederick Wurapa, Dr. Jennifer Verani) and one staff member from WHO-Geneva (Dr. Ahmed Tayeh) visited Liberia to assess the country for possible recommendation to the International Commission for the Certification of Dracunculiasis Eradication (ICCDE). The ICT visited 60 communities,



covering 55% of the country's districts and 13 out of 14 counties. No active cases of Guinea worm disease were detected. A total of five rumors were investigated; three appeared to represent isolated imported cases with no further spread that occurred 5-10 years ago, and two were dubious reports of events that occurred >20 years ago. Among the communities surveyed, 80% were found to have at least one functioning borehole well with hand pump. The overwhelming majority of people interviewed were unaware of the disease and none reported a term for Guinea worm in their local dialect. The ICT concluded that there is no evidence of endemic transmission and that Liberia must maintain surveillance in order to promptly detect and respond to any imported cases.



**Sierra Leone.** From October 2-17, 2006, an International Certification Team (ICT) consisting of 3 WHO Temporary Advisors (Dr. Samuel Z. Bugri, Dr. Nabil Aziz and Dr. Sharon Roy) visited Sierra Leone to assess the country for possible recommendation to the International Commission for the Certification of Dracunculiasis Eradication (ICCDE). The ICT visited 98 communities in eight of the 13 Districts in Sierra Leone. More than 70% of these communities had continuous supplies of safe drinking water.

Most community members were unaware of Guinea worm disease and had no name for dracunculiasis in their local languages. The ICT detected no active cases of dracunculiasis during their visit. Although community members reported rumors of five suspected cases, none of these suspected cases represented recent and indigenous transmission. The ICT concluded that the risk for endemic transmission of GWD in Sierra Leone is low and that Sierra Leone could be certified as being dracunculiasis-free.

## MEETINGS

The next meeting of the International Commission for Certification of Dracunculiasis Eradication will be held at the World Health Organization in Geneva during March 5-7, 2007.

The proposed venue and dates for the next meeting of Program Managers of GWEPs is Ouagadougou, Burkina Faso, March 27-29, 2007.

*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>.*



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