



**DEPARTMENT OF HEALTH & HUMAN SERVICES**

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

Date: July 24, 2006



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

Subject: GUINEA WORM WRAP-UP #164

To: Addressees

**Count Down to Glory**

Consecutive months with zero indigenous cases:

Burkina Faso 6

Nigeria 1

World Cup Soccer: Ghana 2, USA 1

**ONLY 68 CASES OUTSIDE OF SUDAN & GHANA IN JANUARY-JUNE 2006**

The seven endemic countries remaining outside of Sudan and Ghana have reported a total of only 68 cases of dracunculiasis during the first six months of 2006 (Table 1, Figure 3). This is a reduction of -75% from the 271 cases that the same countries reported during January-June 2005. Burkina Faso, Ethiopia, Nigeria and Togo have all reported reductions in cases of more than 80% in this period, while Niger reports an increase of 23% (Figure 1). Ghana and Sudan have reported 99% of all cases so far this year (Figures 2 and 5). The dramatic increase in cases reported from Sudan is a direct result of increased access by Sudanese health workers and their partners to endemic areas of southern Sudan following last year's Comprehensive Peace Agreement between the two sides in the civil war. One consequence of the increase in cases reported from Sudan is that the total number of cases reported globally so far this year (12,226) has already exceeded the total number of cases reported during all of 2005 (10,674). The number of cases of dracunculiasis exported from one country to another has steadily decreased since 2002 (Figure 4). Only 6 cases have been exported during January to June 2006, compared with 27 cases in 2005, 69 in 2004, 67 in 2003, and 73 in 2002, during the same period.

**GHANA'S MINISTER OF HEALTH VISITS NORTHERN REGION AGAIN**



The minister of health of Ghana, the Honorable Major (Rtd.) Courage E.K. Quashigah, visited Tolon-Kumbungu District in Ghana's Northern Region on June 30<sup>th</sup>. During his visit, the minister discussed the status of the program with field staff of the Guinea Worm Eradication Program (GWEP), village volunteers, and village chiefs at a *durbar* in Wantugu village. The minister promised support to the volunteers to get the job done.

Tolon-Kumbungu is the second highest endemic district and Wantugu is the highest endemic village in Ghana in 2006 so far. The minister's tour ended with a visit to the Chirifoyili Dam water project, where he recognized the collaborative support of partners in helping to provide safe drinking water to the remaining endemic communities. The minister was accompanied by the new regional minister for the Northern Region, El Hajji Mustafa Ali Iddris (who was on his first official assignment), the Tolon-Kumbungu District chief executive, staff from the secretariat of the national GWEP, and representatives of UNICEF and The Carter Center. The minister of health previously visited the endemic village of Diare in Savelugu-Nanton District in September 2005.

Ghana has reported 2,590 cases in January-June 2006 (Figures 2 and 7), and Ghana's Northern Region has reported 88% of all cases in Ghana so far this year. An analysis by the program shows that 189 endemic villages reported 2,744 cases in January-May 2005 (79% of all cases) and the same villages reported 1,797 indigenous cases (78% of all cases) in the same period of 2006: a reduction of -35%. Meanwhile, of the 311 villages that reported only imported cases (479 cases, or 12% of all cases) in 2005, only 20 villages reported indigenous cases (49 cases, or 2% of all cases) in 2006. The Ghana GWEP rightly concludes from this analysis that for prioritization it "must focus and improve the quality of interventions in currently endemic villages". The latest status of interventions is as follows: 62% of cases contained in January-May 2006, 79% of endemic villages with cloth filters in all households, 25% treated with ABATE@ larvicide, 44% with at least one source of safe drinking water, and 95% with health education/community mobilization activities. An Interagency Coordinating Committee meeting was held on June 14<sup>th</sup>.

## SUDAN

The provisional total of 9,568 cases reported in January-June represents an increase of 171% from the 3,531 cases reported during the same period of 2005 (Figures 1, 2, and 8). These figures reflect reporting rates of 42% in 2005 and increasing reporting rates during 2006 (6% in January, 7% in February, 10% in March, 34% in April, and 73% in May) as the new government of South Sudan and the South Sudan GWEP have become operational. So far in 2006, at least 90% of 1,395 villages reporting one or more cases have had at least one health education session, 79% have cloth filters in all households, 56% have received pipe filters, 12% have had ABATE@ larvicide applied, and 12% have one or more safe sources of drinking water. Sub-offices and supervisory structures are established and fully functional in the four main focal areas.

WHO convened a consultative meeting to discuss plans for surveillance in Guinea worm-free areas of southern Sudan at the WHO-Southern Sudan Office in Juba on July 5-8. Participants included representatives from the South Sudan Guinea Worm Eradication Program, WHO, LFRC, and The Carter Center. The main gaps identified in the SSGWEP were the needs to obtain baseline data in selected areas, to strengthen surveillance, and for technical assistance regarding training. Participants developed an action plan to help address these points. Dr. Ernesto-Ruiz-Tiben of The Carter Center made a supervisory visit to the South Sudan GWEP (SSGWEP) during June 3-12. The SSGWEP has made great progress towards becoming a coherent eradication program, since the installation of the Government of South Sudan during September – October 2005, and the designation in December 2005 of Mr. Makoy Samuel as Focal Point for the SSGWEP and Mr. Steven Becknell as The Carter Center Resident Technical Advisor. With assistance from six Carter Center Technical Advisors, the SSGWEP has now trained village volunteers, zonal coordinators, and field officers in the four major focal endemic areas in South Sudan, established programmatic norms for case definitions, endemic villages, surveillance, and case containment. Moreover, the SSGWEP has begun to assess newly accessible areas suspected of having endemic transmission of GWD. This month Mr. Makoy Samuel was officially designated South Sudan's Guinea Worm Eradication Program Coordinator. Congratulations Makoy!!

## IN BRIEF:



UNICEF's New York headquarters has announced the appointment of Mr. Oluwafemi Odediran as the new senior advisor in charge of water supply. He replaces Mr. Mansoor Ali. Welcome, Femi! He will be assisted by Ms. Sue Coates, who is the new UNICEF regional advisor for water and sanitation in West and Central Africa, based in Senegal.

Table 1

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

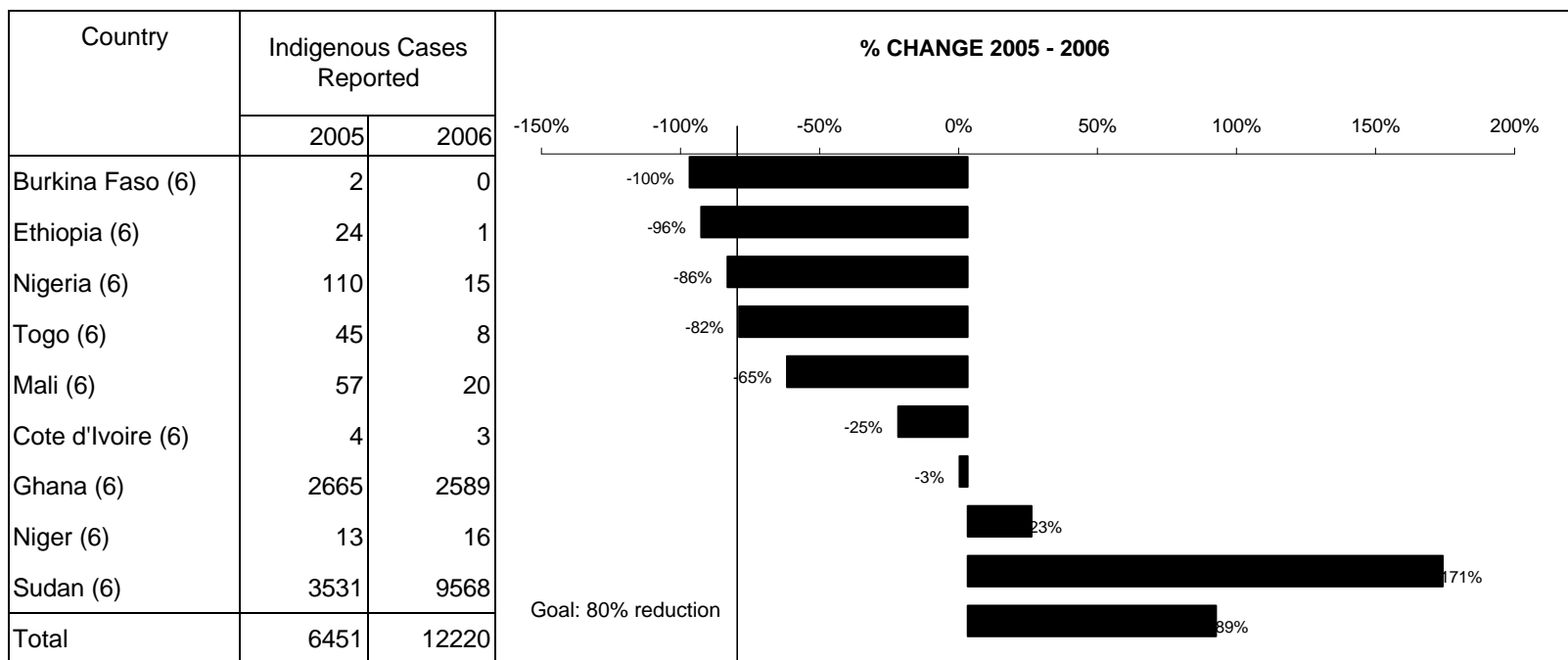
COUNTRIES REPORTING CASES	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													%
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
SUDAN	0 1 2	7 9	176 358	2323 3126	2684 4962	/ 1111	/	/	/	/	/	/	5190 9568	54
GHANA	397 608	378 587	267 411	237 390	160 322	126 272	/	/	/	/	/	/	1565 2590	60
MALI	3 3	1 1	0 0	1 1	3 3	14 14	/	/	/	/	/	/	22 22	100
NIGER	2 2	0 0	0 0	1 2	6 6	7 7	/	/	/	/	/	/	16 17	94
NIGERIA	0 0	10 14	0 0	0 0	0 1	0 0	/	/	/	/	/	/	10 15	67
TOGO	1 1	2 3	0 0	0 1	1 1	2 2	/	/	/	/	/	/	6 8	75
BURKINA FASO	0 0	0 0	0 0	0 0	0 0	0 0	/	/	/	/	/	/	0 0	0
COTE D'IVOIRE	0 0	0 0	0 0	0 0	0 0	3 3	/	/	/	/	/	/	3 3	100
ETHIOPIA	1 1	0 0	0 0	0 0	1 1	1 1	/	/	/	/	/	/	3 3	100
TOTAL*	404 617	398 614	443 769	2562 3520	2855 5296	153 1410	0 0	0 0	0 0	0 0	0 0	0 0	6815 12226	56
% CONTAINED	65	65	58	73	54	11							56	
% CONT. OUTSIDE SUDAN	66	65	65	61	51	51							61	

\* provisional

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

Figure 1

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%

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

\* Provisional

Figure 2

**Distribution by Country of 12,220 Indigenous Cases of Dracunculiasis Reported January - June 2006\***

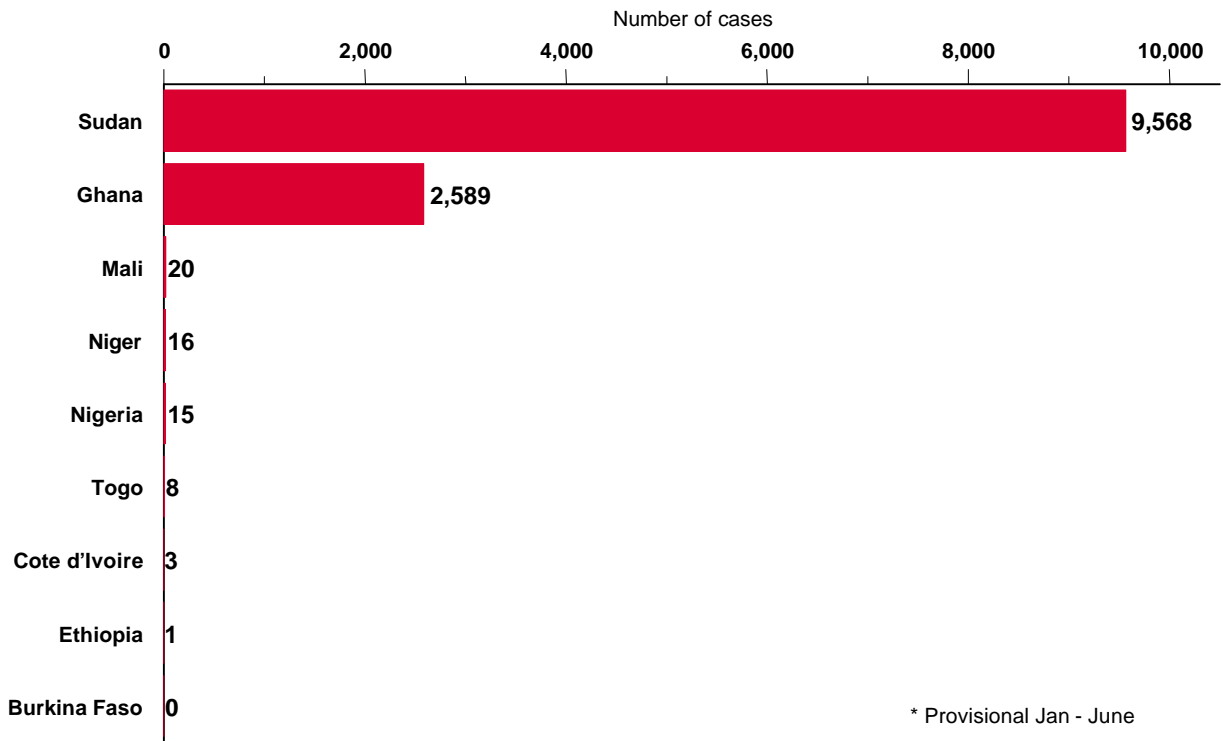
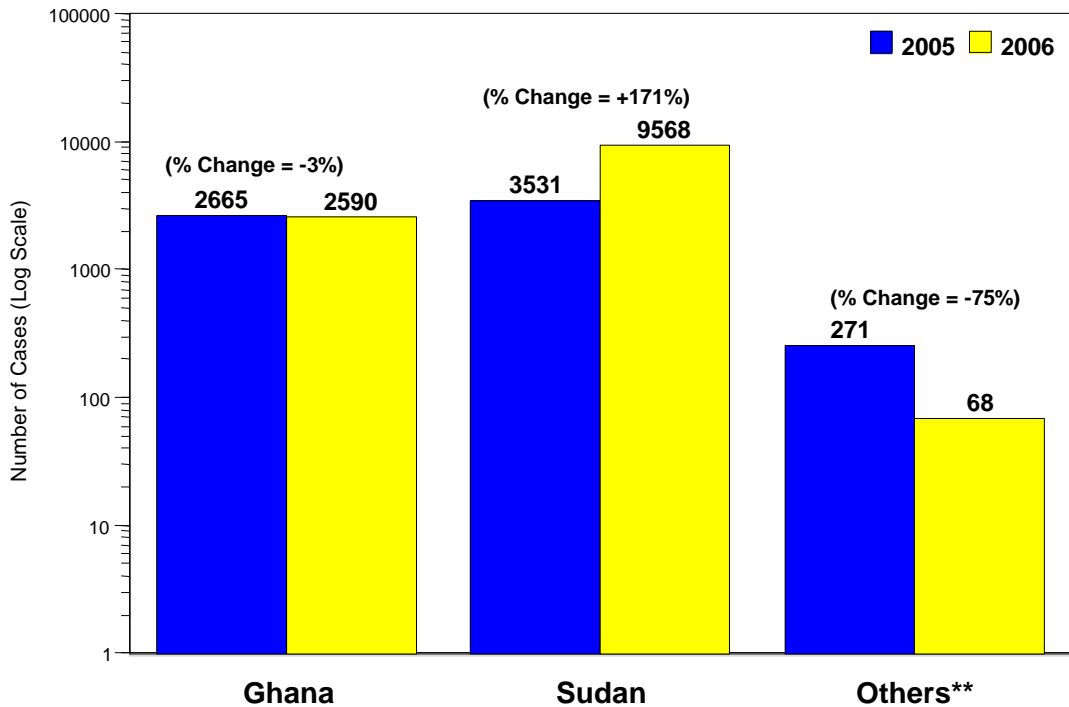


Figure 3 **Change in Dracunculiasis Cases, January - June 2005 and January - June 2006\*; Ghana, Sudan, and All Other\*\* Endemic Countries**



\* Provisional

\*\* Burkina Faso, Cote d'Ivoire, Ethiopia, Mali, Niger, Nigeria, and Togo

Figure 4

**Distribution of Exported Cases of Dracunculiasis During January - June 2000 to January - June 2006\* and Annual Total**

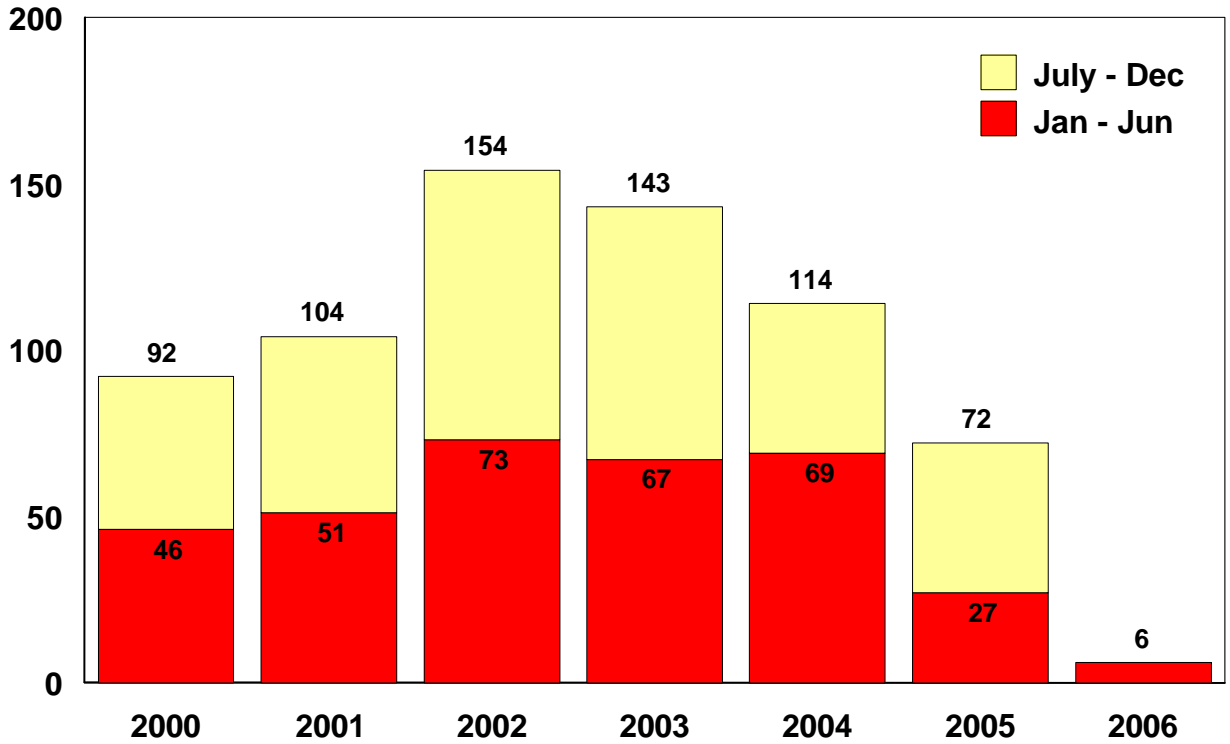
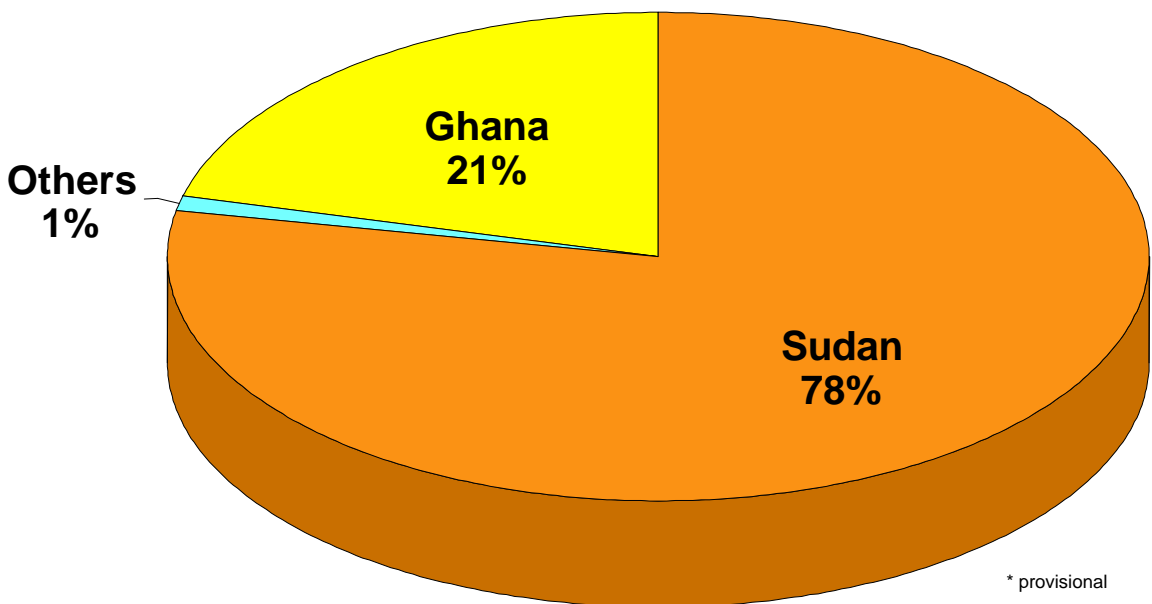


Figure 5

**Distribution of 12,226 Cases of Dracunculiasis Reported During January - June 2006**



## ETHIOPIA



Ethiopia reported one indigenous case of GWD in June. Although the case was detected in Gambella Town, the patient is a resident of Awukoy Village, in Gog District of Gambella Region, and had a history of drinking water from the six ponds, including infamous Shikawo pond, in Awukoy that were incriminated in the transmission of 21 of the 29 indigenous cases reported in Ethiopia during 2005. A pond in this village was the source of 21 of the 29 indigenous cases reported in Ethiopia in 2005. The patient is a man who denied travel out of the district for the past 15 months. This is the first indigenous case reported in Ethiopia since August 2005. A Guinea Worm Day was observed at Dipach Health Post and in Pugnido town of Gog District on June 29 and June 30, 2006.

## COTE D'IVOIRE



Morphological examination and DNA assay on the specimen obtained from the alleged Guinea worm patient from Arrah village in Bongonou during April 2006 and which was examined at The CDC, Atlanta revealed that it was not a parasite and did not match the DNA of *Dracunculus medinensis*. Hence, this was not a case of Guinea worm disease. This was the first alleged indigenous case of GWD reported from Cote d'Ivoire since September 2005. This incident emphasizes the importance of submitting specimens for laboratory examination as countries report sporadic cases. For example, no such specimen was obtained from the alleged case reported in Bukkuyum Local Government Area of Nigeria in May, for which the emergence of a Guinea worm was not confirmed by the supervisor and for which no plausible source of infection has been found.

A case of GWD has been reported from the village of Lendoukro in Bongouanou District. The worm emerged on June 14 and is being forwarded to CDC for examination. This village reported 4 cases of GWD in June 2005. All intervention methods are being implemented.

## BURKINA FASO



A case of GWD imported from Cote d'Ivoire was reported from a Kidbtenga Village in Zorgho Sanitary District in July. The patient, a 40 year old Burkinabe farmer, was a resident of Sinfra, Cote d'Ivoire, during the past five years, but returned to Burkina Faso in February 2006. This case was promptly cross-notified to Cote d'Ivoire and the status of endemic GWD in Sinfra is currently under investigation. A Worm Week was observed in Kouini; another will be held in Tondia- Kanuge and Zargaloutan on July 24-29.

## MALI



Mali has reportedly contained all 22 cases detected in January-June 2006 (Table 1, Figures 2 and 9). Ten of the cases were reported from Ansongo Region and 12 from Mopti Region. One of the cases was imported from Niger. The 12 cases in Mopti Region in June were all in or near two villages (Gouloumbo 9 cases/5 uncontained and Toulewendo 57 cases/25 uncontained) where some cases were not contained in 2005. The cases in Ansongo Region were also all traced to known endemic areas from 2005.

## TOGO



Hand pumps for all 14 new bore hole wells funded by the Bill & Melinda Gates Foundation have been installed, including in Kissafo, the most endemic village remaining in Togo (reported 4 of 8 cases so far this year) (Figure 11). UNICEF expects to provide an additional 8 new borehole wells by the end of 2006.

## NIGER



Although transmission from all but one of the 17 cases reported (3 were imported, including 2 from within Niger and one from Mali) from 9 localities during January-June 2006 was reportedly contained (Table 2), we note that these same 9 localities reported 31 cases in 2005, of which 30 were reportedly contained. If transmission from all but one of the 30 cases in 2005 was really contained, where did the 14 cases in 2006 from the 8 villages containing 100% of cases in 2005 originate? Two possible scenarios may explain this question. Firstly, the population of these localities (nomadic camps) changes annually and the 14 cases so far in 2006 were infected elsewhere in 2005. Secondly, there was transmission in 2005 in these localities that was undetected by the Niger GWEP. One way or another, the GWEP has not yet explained the plausible origin of the cases in 2006.

## NEW DONATION FROM NORWAY

The Government of Norway has informed The Carter Center of a new donation of \$1 million over two years in support of the global Guinea Worm Eradication Program. These funds will be matched by the Bill & Melinda Gates Foundation. Norway has been a contributor to the peace and health programs since The Carter Center was founded in 1989. Over \$5 million has been granted to the Guinea Worm Eradication Program from Norway during that time.

## ETCHERS DONATE SERVICES



The Guinea worm statue, designed by Kim Griffin of the Griffin Design Firm, is displayed in the lobby of The Carter Center.

The statue honors countries that have attained at least one year with zero indigenous cases of Guinea worm disease.

In preparation for the upcoming Guinea worm eradication ceremony honoring four countries that stopped transmission of the disease, artist Kim Griffin visited Carter Center headquarters in Atlanta to gather the glass plate in the unique mahogany statue commemorating the year in which countries have stopped transmission of Guinea worm disease. Benin, Central Africa Republic, Mauritania, and Uganda will be the latest group of countries to have their stop-transmission dates etched on the statue's glass plate. These four countries join seven others that have already stopped transmission nationwide.

When artist Griffin, designer of the Guinea worm eradication statue, delivered the statue's glass to Screen Works LLC, in Marietta, Georgia, she had no idea that she would soon witness first hand the impact of the international Guinea worm eradication campaign.

Returning to Screen Works to collect the finished glass, Griffin recalled her surprise when she learned the glass etchers wanted to meet her. In the workshop, two Togolese etchers, Vidjinagni Mawule Peter and Kepeku Yawo, greeted Griffin with tears in their eyes. Overjoyed to learn about the international Guinea worm eradication campaign, Mawule Peter explained that his cousin was currently suffering from Guinea worm disease. Both men were hopeful that one day soon Togo's stopped transmission date would be etched in the glass. The customer service manager at Screen Works LLC, Stephanie Heidlebach, was so moved by the effect the program's success had on her colleagues that she insisted on donating the new etchings.



Table 2

**Niger Guinea Worm Eradication Program**  
**Localities reporting cases during 2006\* and the status**  
**of case containment in 2005**

Région	District	Locality	Cases 2005		Cases 2006
			Reported	Not Contained	
Tillabéri	Sarakoira	Intakaret	3	1	3
Tillabéri	Sarakoira	Loumban	2	0	6
Tillabéri	Sarakoira	Tounkous	1	0	1
Tillabéri	Tera	Bandio	0	0	1
Tillabéri	Tera	Zano	17	0	1
Tillabéri	Tillabéri	Innamares	1	0	1
Tillabéri	Tillabéri	Sarlis	2	0	2
Tillabéri	Tillabéri	Timana	2	0	1
Tillabéri	Tillabéri	Tinbossett	2	0	1
Total			30	1	17

\* Provisional (January -June reports)

Status	Total	%
Cases in 2006 from localities where 2005 cases were not contained	3	17.6%
Cases in 2006 from localities where all 2005 cases were reportedly contained	14	82.4%

Localities reporting 100% case containment during 2005, number of cases reported during 2006, and percent of all cases reported in 2006*						
District	Locality	Cases 2005		Cases 2006		%
		Reported	Not Contained	Reported	District Total	
Sarakoira	Loumban	2	0	6	7	50%
	Tounkous	1	0	1		
Tillabéri	Sarlis	2	0	2	5	36%
	Tinbossett	2	0	1		
	Timana	2	0	1		
	Innamares	1	0	1		
Tera	Bandio	0	0	1	2	14%
	Zano	17	0	1		
Total		27	0	14	14	100%

\* Provisional. All cases were reported in the Region of Tillabéri

Figure 6

## NIGER GUINEA WORM ERADICATION PROGRAM ENDEMIC LOCALITIES IN 2005, UNCONTAINED CASES IN 2005 & NEW CASES DURING JAN-JUNE 2006

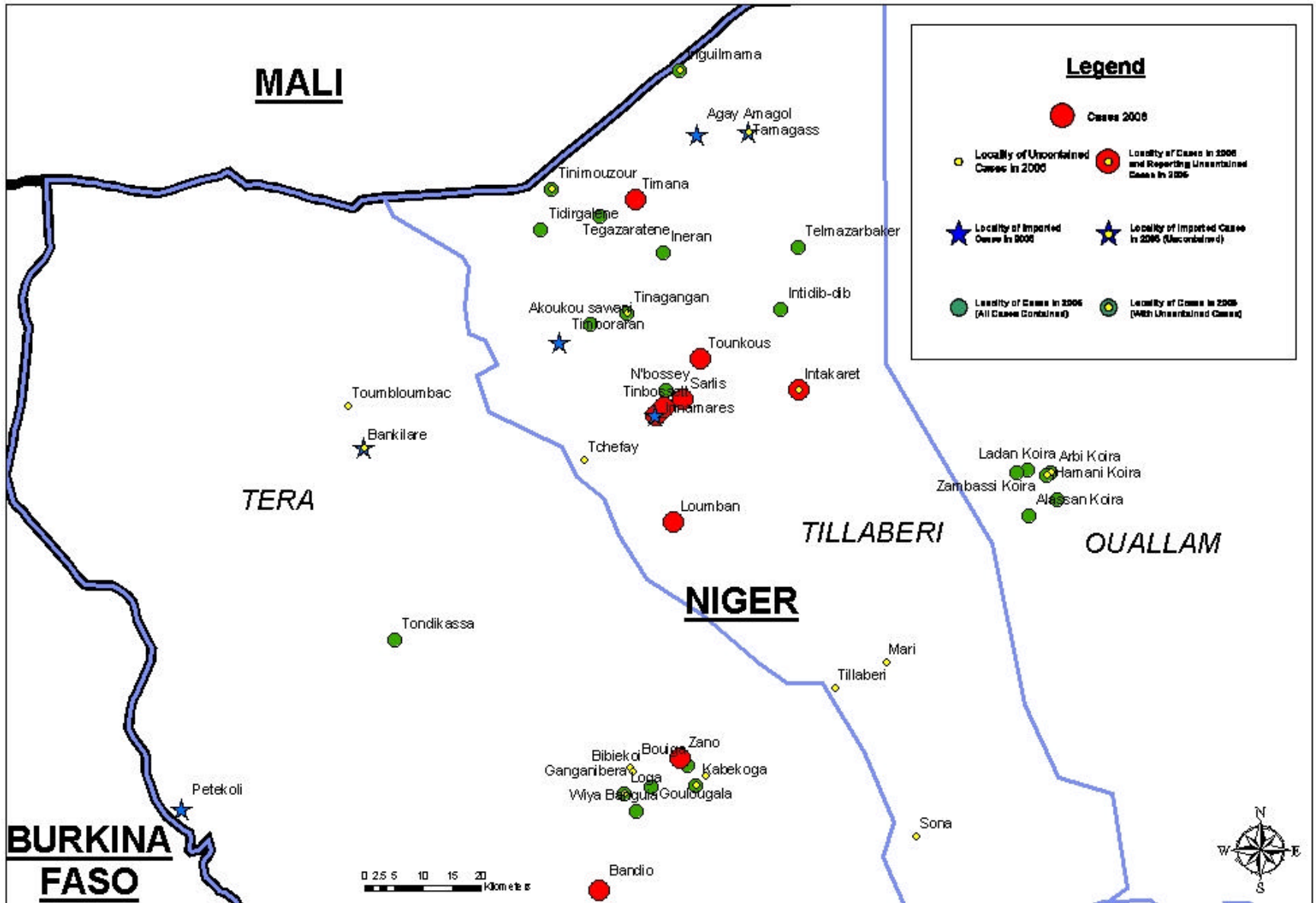


Figure 7

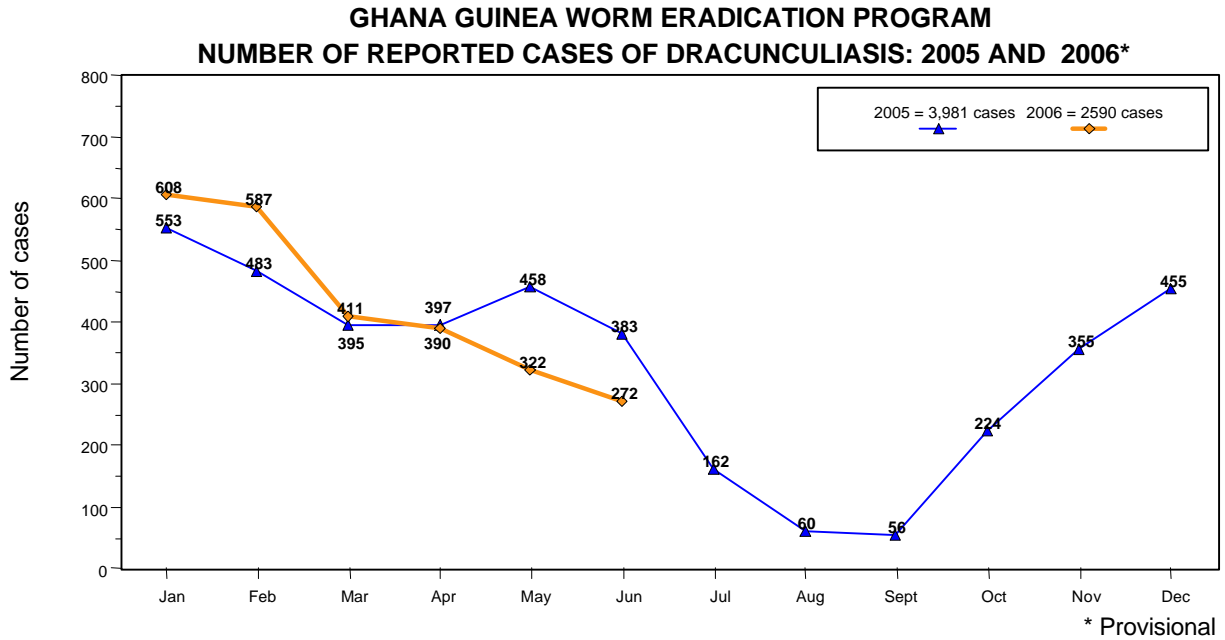


Figure 8

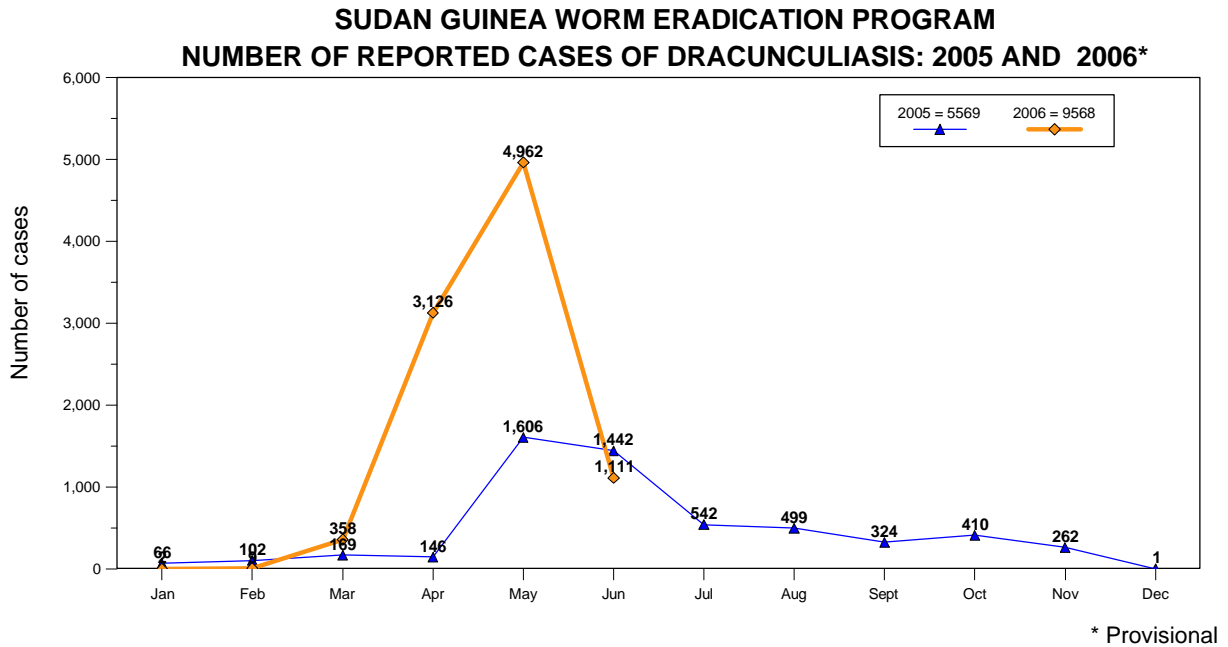


Figure 9

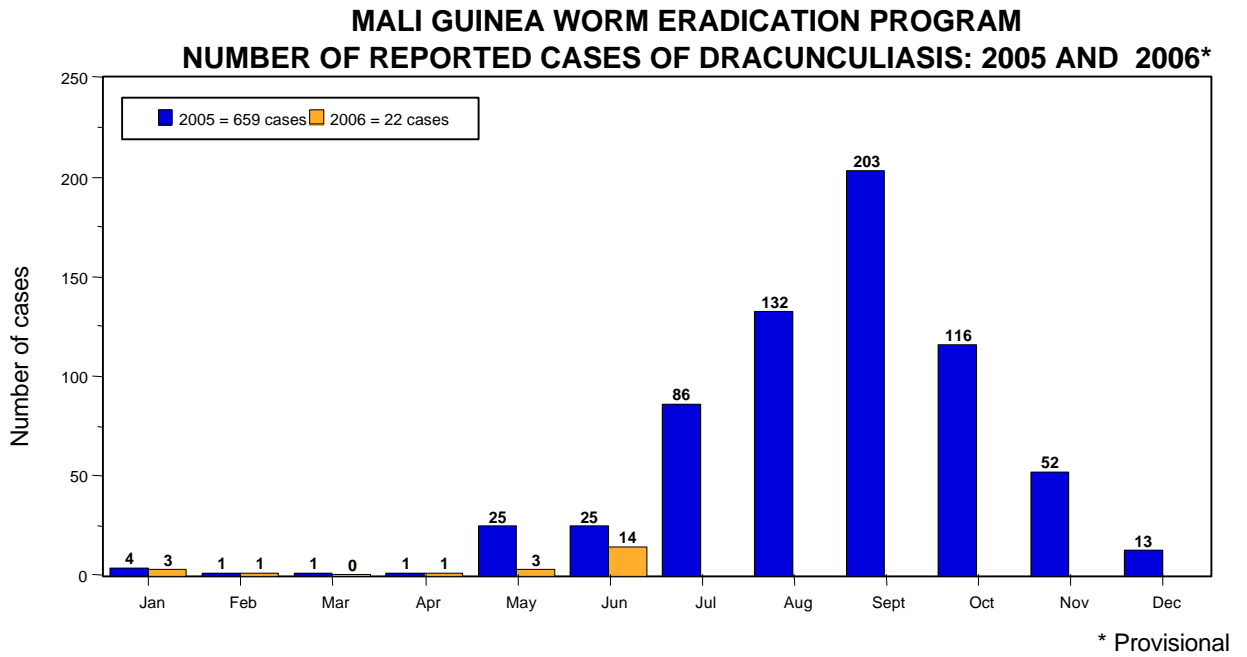


Figure 10

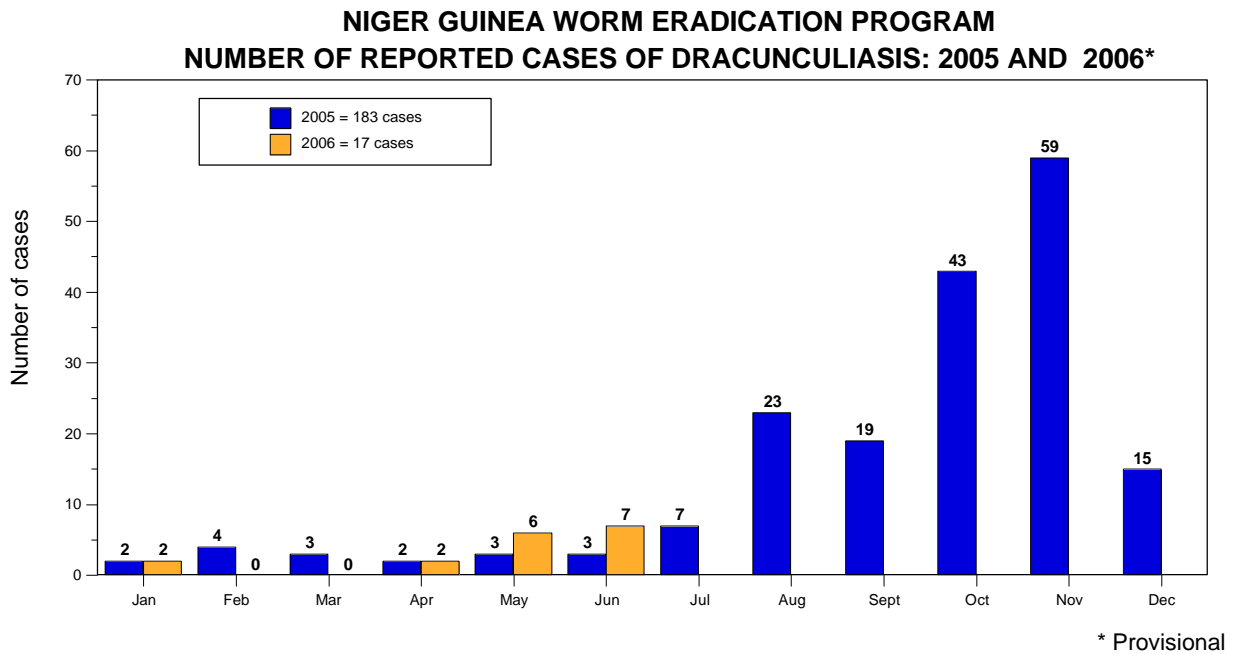


Figure 11

**TOGO GUINEA WORM ERADICATION PROGRAM  
CUMULATIVE CASES OF DRACUNCULIASIS BY MONTH 2005 - 2006\***

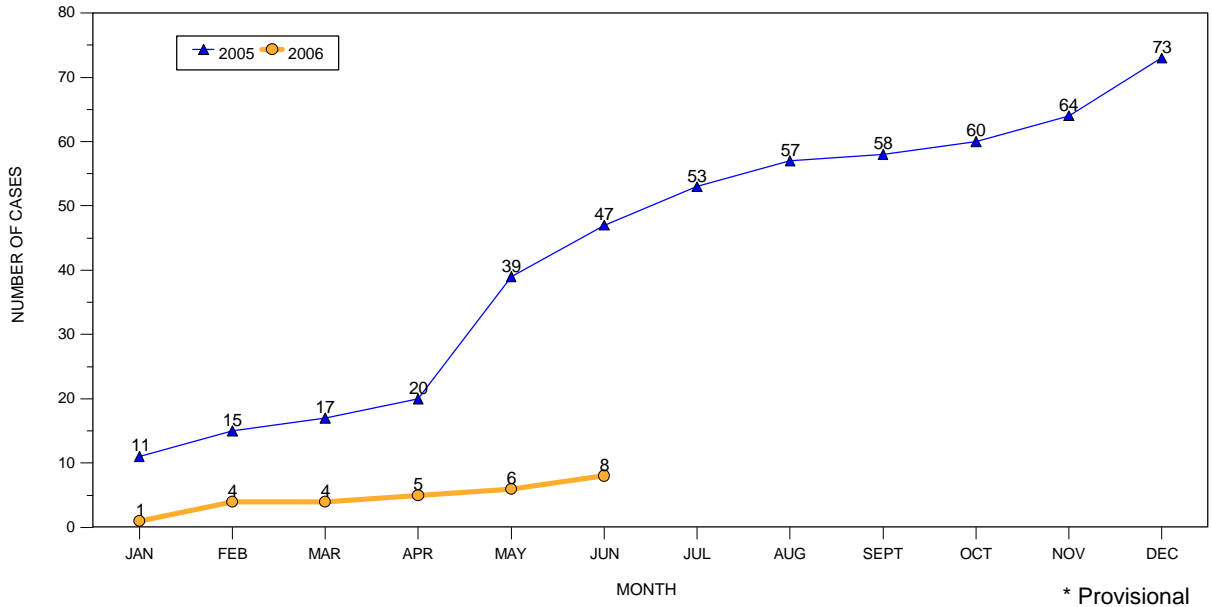
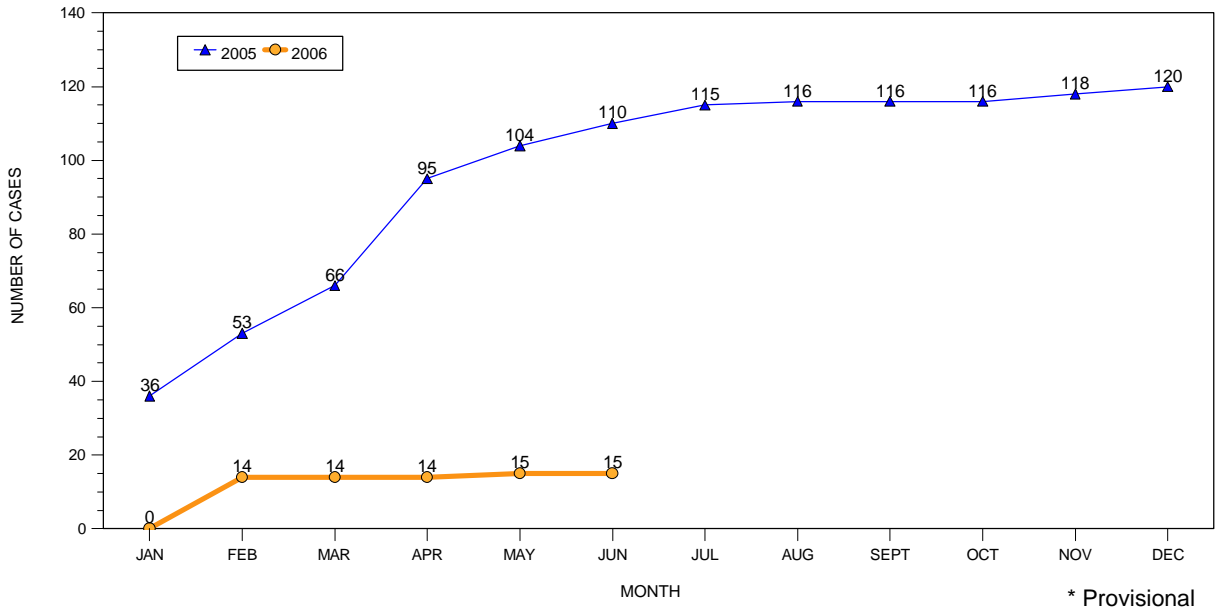


Figure 12

**NIGERIA GUINEA WORM ERADICATION PROGRAM  
CUMULATIVE CASES OF DRACUNCULIASIS BY MONTH 2005 - 2006\***



## 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.

## MEETINGS

- **Ghana GWEP Review** August 16-17, 2006, The Carter Center, Atlanta USA
- **Endemic Francophone Countries GWEP Review** November 14-15, 2006, The Carter Center, Atlanta USA
- **Ceremony for Benin, CAR, Mauritania, Uganda** November 15, 2006, The Carter Center, Atlanta, USA
- **South Sudan GWEP Review** December 5-6, 2006, Juba, Sudan

## RECENT PUBLICATIONS

Barry M, 2006. Slaying little dragons: Lessons from the dracunculiasis eradication program. [editorial]. Am J Trop Med Hyg 75: 1-2.

Rwakimari JB, Hopkins DR, Ruiz-Tiben E, 2006. Uganda's successful Guinea Worm Eradication Program. Am J Trop Med Hyg 75:3-8.

Wende C., 2003. Uganda Leads Africa's Charge Against Guinea Worm Disease. Lancet 361:1446.

*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, 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 is <http://www.cdc.gov/ncidod/dpd/parasites/guineaworm/default.htm>.*



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