

Date: Oct 18, 2012



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

Subject: GUINEA WORM WRAP-UP #215

To: Addressees

GUINEA WORMS ATTACK KAPOETA EAST COUNTY

**SSGWEP, ALLIES CLOSING IN WITH COUNTER-OFFENSIVE;
EXPERTS SEE CHANCE TO DEFEAT FEARSOME FOE AND END LONG WAR**

Juba, South Sudan. As of January-September 2012, South Sudan's resolute Guinea Worm Eradication Program (SSGWEP) had forced 81% of all Guinea worms remaining in the country into only one of South Sudan's 79 counties: Kapoeta East. Kapoeta East County (KEC) is the epicenter of infection in the

Figure 1

South Sudan Guinea Worm Eradication Program
Counties Reporting Cases During 2012* (N=8)

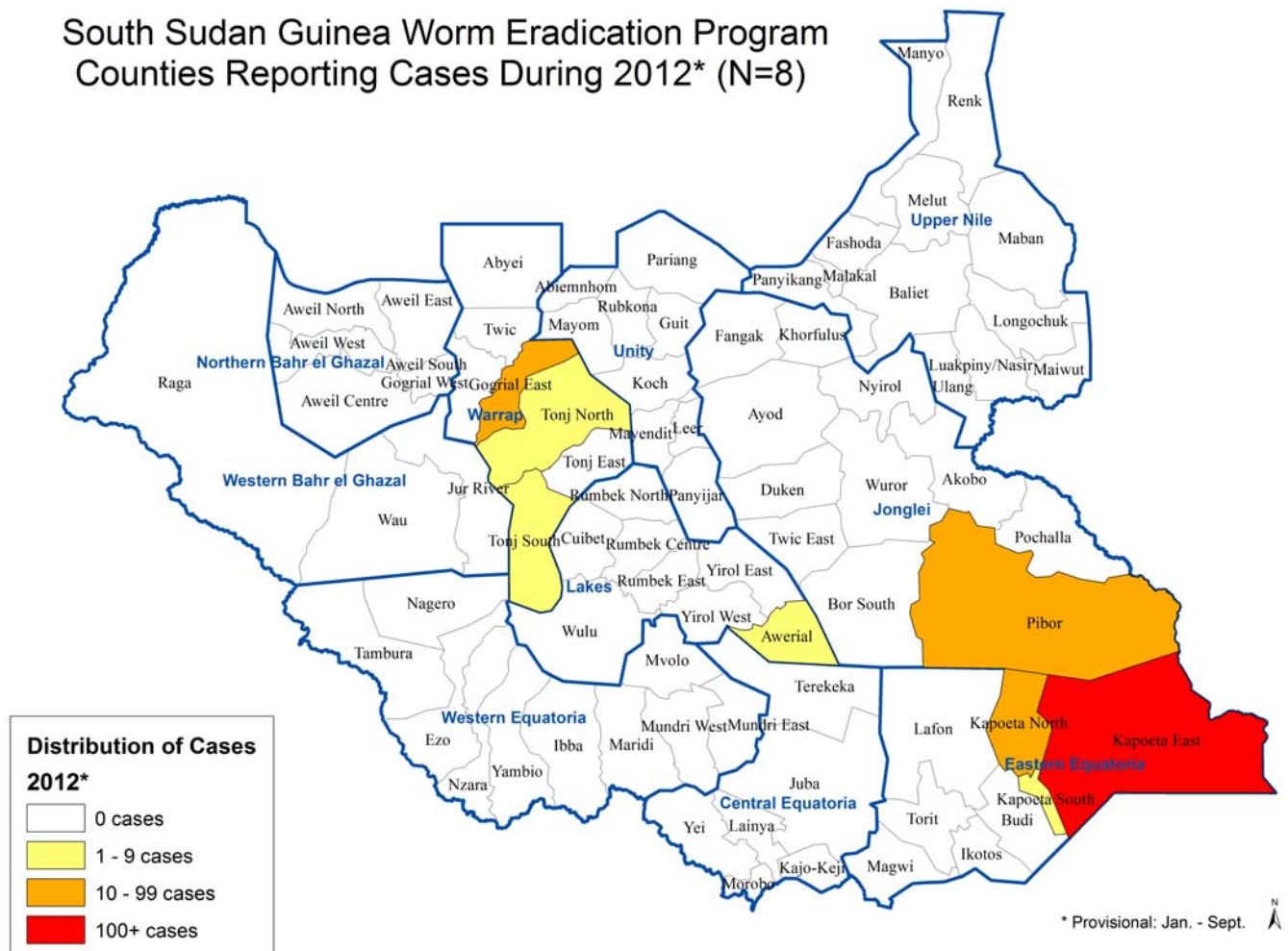
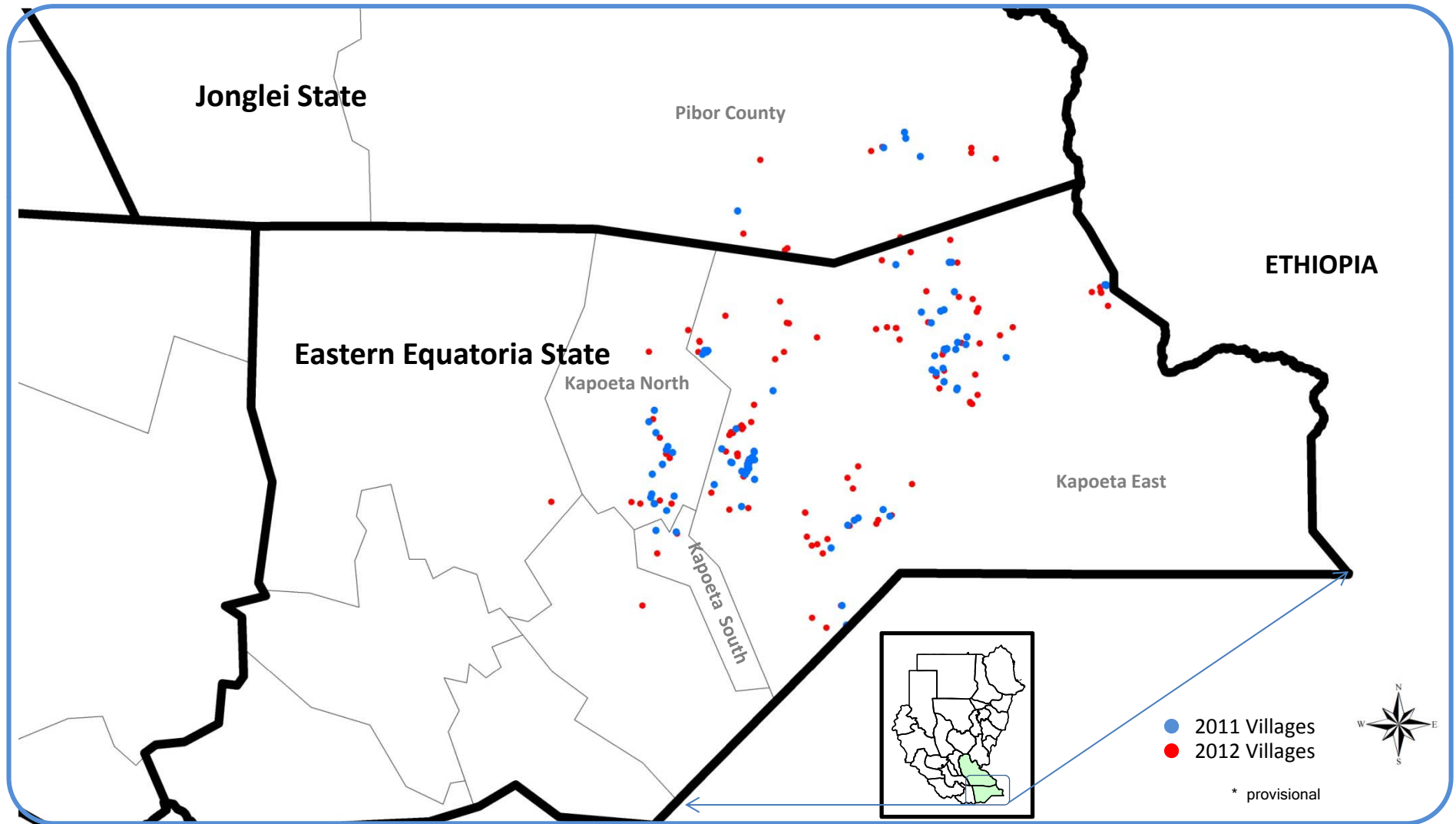


Figure 2

South Sudan Guinea Worm Eradication Program
Villages in Kapoeta Counties, Eastern Equatoria State, and Pibor County, Jonglei State
Reporting 1 or More Cases
Jan. – Sept 2011 (n=444) and Jan. – Sept. 2012* (n=261)



“Greater Kapoeta Focus” (Figure 1), which includes Kapoeta East, North, and South Counties of Eastern Equatoria State and adjacent Pibor County in Jonglei State, and is now the parasite’s main stronghold in South Sudan. Together, the four counties reported 92% of all Guinea worm cases in South Sudan in January-September 2012 (Table 1). Among the four counties, Kapoeta South, Kapoeta North, and Pibor have reduced their cases by 87%, 83% and 63% respectively so far this year, compared to 2011, but in Kapoeta East the reduction is 32%. Within KEC, 95% of all cases in January-September were concentrated in four of six payams, or sub-districts: Kauto (150 cases), Mogos (130 cases), Jie (67), and Narus (40) (Figure 2). Defeating Guinea worm here in 2013 will seal the disease’s fate and score a mighty victory for South Sudan and the world.

According to recent dispatches, the disease’s main offensive from March through September 2012 peaked in June and struck mostly those in the 6-35 year old age group, who suffered 87% of the casualties, with only 8% of cases being older than that. Among children 6-15 years old, 56% of the victims were males, predominantly “goat boys” responsible for herding small livestock. Among 16-35 year olds, 57% were females, many of whom were attacked while tending their gardens; affected males of that age were ambushed in isolated cattle camps. Some Toposa elders, great warriors in their youth, are concerned that their pastoral people are now suffering the most from a lowly worm. Observers note that although Guinea worm apparently has chosen to make its last stand in Kapoeta East County, even there its numbers have been reduced by over 71% since 2007.

The SSGWEP, its commander Mr. Samuel Makoy, and foreign allies (mainly The Carter Center, World Health Organization and UNICEF) are fighting back hard in 2012 and preparing for a decisive battle in 2013. Of South Sudan’s 79 counties, 57 were liberated (Guinea worm-free) already by 2009, 61 by 2010, 66 by 2011 and 71 as of September 2012 (Figure 3).

Two-thirds, or 66% of the enemy were contained in January-August this year, including more than half (58%) who were voluntarily confined in a Case Containment Center, accomplishments which should reduce next year’s infections even further. Meanwhile, the SSGWEP has augmented its forces, is reducing the size of supervisory areas, and is working to cover all the remaining pockets of disease completely with all or almost all interventions. The expected lull in combat in December 2012-February 2013, a period when only 7 cases were reported a year ago (Table 1), may be used to deploy “heavy artillery” to thin enemy ranks by providing safe sources of drinking water to as many priority endemic communities as possible during the imminent dry season when big drilling rigs can be transported most easily, before combat resumes in March. So far none of the 25 borehole wells allotted for the Greater Kapoeta Focus this year have been drilled. Micro-planning, re-supply and re-training for the SSGWEP forces’ door-to-door assault with intensive interventions next year is already underway.

A few smaller skirmishes have occurred west of the Nile, with 36 casualties reported from Warrap State in May-August, 1 case in Western Bhar al Ghazal in July and 3 victims in Lakes State, 1 in August and 2 in September. All three of the latter cases were infected in cattle camps and all three were contained at a Case Containment Center. Overall, cases in this rapidly fading front in the war have been reduced by 75% this year, from 160 cases in January-September 2011 to only 40 during the same period of 2012.

Figure 3 South Sudan Guinea Worm Eradication Program
Number of Endemic and Guinea Worm-free Counties: 2008 - 2012*

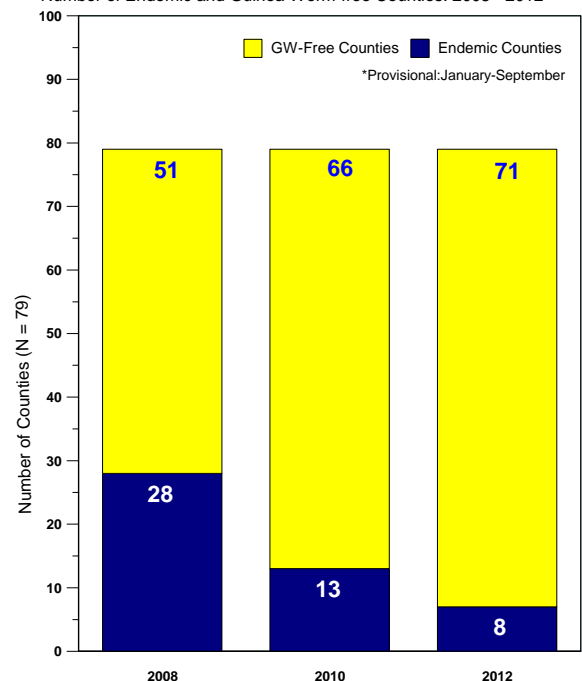


Table 1

SOUTH SUDAN GUINEA WORM ERADICATION PROGRAM
CASES REPORTED AND CONTAINED DURING DECEMBER 2011 AND DURING 2012* BY STATE, COUNTY AND MONTH

State	County	December 2011	Cases Contained / Cases Reported												% Contained	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		Total
Eastern Equatoria	Kapoeta East	1 / 1	1 / 1	2 / 3	34 / 48	46 / 69	62 / 94	67 / 102	35 / 56	11 / 20	9 / 14	/	/	/	267 / 407	66%
	Kapoeta North	0 / 0	1 / 1	1 / 1	1 / 2	1 / 3	5 / 8	3 / 4	4 / 5	2 / 4	0 / 0	/	/	/	18 / 28	64%
	Kapoeta South	0 / 0	0 / 0	0 / 0	1 / 1	1 / 2	0 / 0	1 / 1	0 / 0	0 / 0	0 / 0	/	/	/	3 / 4	75%
Jonglei	Pibor	0 / 0	0 / 0	0 / 0	1 / 4	3 / 7	4 / 7	4 / 5	0 / 0	0 / 0	0 / 0	/	/	/	12 / 23	52%
	Ayod	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Wuror	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
Warrap	Tonj North	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	3 / 5	0 / 0	0 / 0	1 / 1	0 / 0	/	/	/	4 / 6	67%
	Tonj East	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Tonj South	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0	0 / 0	/	/	/	1 / 1	100%
	Gogrial East	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	7 / 9	9 / 12	6 / 6	1 / 1	0 / 0	/	/	/	24 / 29	83%
	Gogrial West	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Twic Mayardit	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
Western Bahr Al Ghazal	Jur River**	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0	/	/	/	1 / 1	100%
Lakes	Awerial	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	1 / 2	/	/	/	1 / 3	33%
	Cuibet	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Yirol E.	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Yirol W.	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Maper	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Rumbek Centre	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Rumbek East	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
Central Equatoria	Terekeka	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
	Juba	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	/	/	/	0 / 0	0%
SOUTH SUDAN TOTAL		1 / 1	2 / 2	3 / 4	38 / 56	51 / 81	81 / 123	85 / 125	46 / 68	15 / 27	10 / 16	0 / 0	0 / 0	0 / 0	332 / 503	66%

* Provisional: as of October 15, 2012

** Case in July was imported from Tonj South County

 1-4 cases of GWD
 5-9 cases of GWD
 10+ cases of GWD

Table 2

Number of Cases Contained and Number Reported by Month during 2012*
(Countries arranged in descending order of cases in 2011)

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*	
SOUTH SUDAN	2 / 2	3 / 4	38 / 56	51 / 81	81 / 123	85 / 125	46 / 68	15 / 27	10 / 16	/	/	/	331 / 502	66
MALI [^]	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 3	0 / 0	3 / 3	/	/	/	4 / 7	57
CHAD	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 2	0 / 1	2 / 4	1 / 2	/	/	/	3 / 9	33
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 1	1 / 1	0 / 0	0 / 0	1 / 1	0 / 0	/	/	/	2 / 3	67
TOTAL*	2 / 2	3 / 4	38 / 56	51 / 82	82 / 124	86 / 128	46 / 72	18 / 32	14 / 21	0 / 0	0 / 0	0 / 0	340 / 521	65
% CONTAINED	100	75	68	62	66	67	64	56	67				65	
% CONT. OUTSIDE S. SUDAN	0	0	0	0	100	33	0	60	80				47	

*Provisional

Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many imported cases were reported and contained that month.

Cells shaded in yellow denote months when transmission of GWD from one or more cases was not contained.

[^] Beginning in April 2012 reports include only Kayes, Koulikoro, Segou, Sikasso, Mopti Regions; the GWEP is not currently operational in Timbuktu, Kidal, and Gao Regions.
Three cases exported from Mali to Niger during September (all 3 contained) are included in Mali's reported cases.

Number of Cases Contained and Number Reported by Month during 2011
(Countries arranged in descending order of cases in 2010)

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*	
SOUTH SUDAN	5 / 6	46 / 60	99 / 138	135 / 173	180 / 244	129 / 173	70 / 102	37 / 48	28 / 36	19 / 28	14 / 19	1 / 1	763 / 1028	74
MALI	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 3	1 / 3	2 / 3	0 / 1	1 / 1	0 / 1	0 / 0	5 / 12	42
ETHIOPIA [^]	0 / 0	0 / 0	1 / 2	1 / 1	4 / 4	1 / 1	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	7 / 8	88
CHAD	0 / 0	1 / 1	0 / 0	0 / 1	0 / 0	0 / 0	1 / 2	1 / 4	0 / 0	0 / 0	0 / 0	1 / 2	4 / 10	40
GHANA	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0
TOTAL*	5 / 6	47 / 61	100 / 140	136 / 175	184 / 248	131 / 177	72 / 107	40 / 55	28 / 37	20 / 29	14 / 20	2 / 3	779 / 1058	74
% CONTAINED	83	77	71	78	74	74	67	73	76	69	70	67	74	
% CONT. OUTSIDE S. SUDAN	0	100	50	50	100	50	40	43	0	100	0	50	53	

* provisional

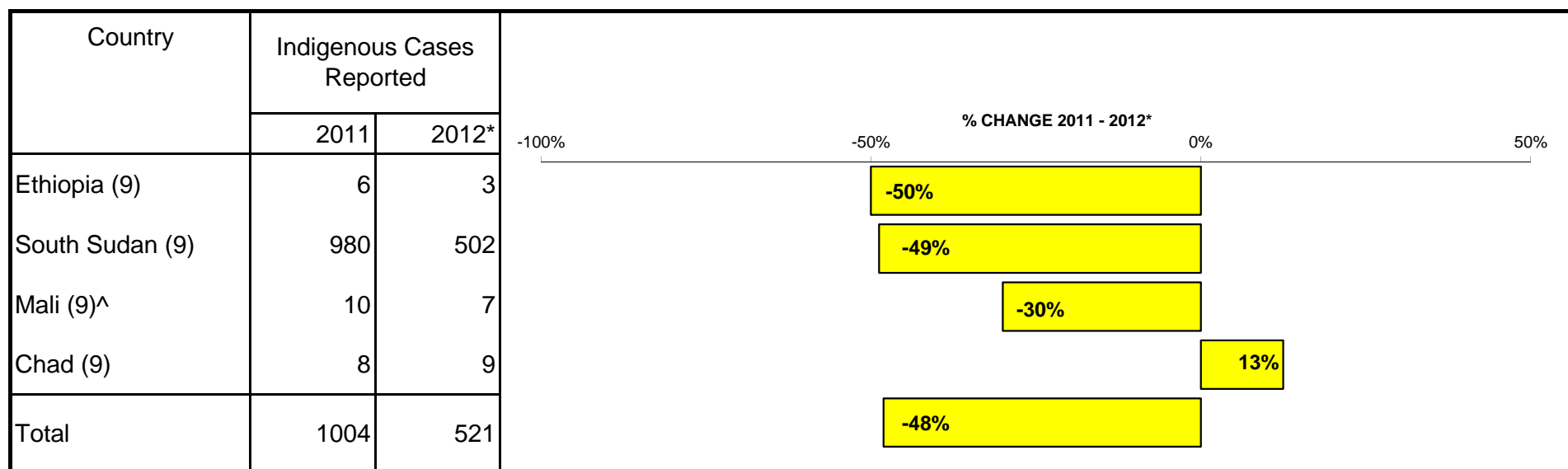
Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many imported cases were reported and contained that month.

Cells shaded in yellow denote months when transmission of GWD from one or more cases was not contained.

[^] one case of GWD (not contained) was imported into Ethiopia from South Sudan during March and a second (contained) during May.

Figure 4

Number of Indigenous Cases Reported During the Specified Period in 2011 and 2012*, and Percent Change in Cases Reported



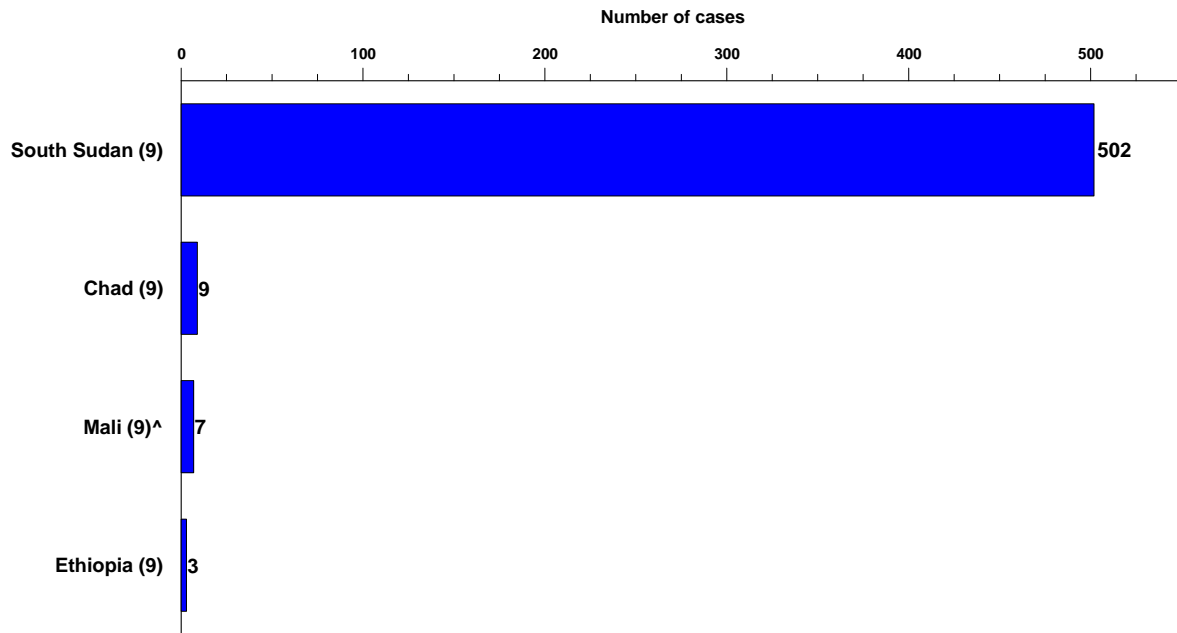
* Provisional. Numbers in parentheses indicate months for which reports have been received, i.e., (9) = January - September. Excludes cases exported from one country to another.
 ^Beginning in April 2012 reports include only Kayes, Koulikoro, Segou, Sikasso, Mopti Regions; the GWEP is not currently operational in Timbuktu, Kidal, and Gao Regions. Three cases exported from Mali to Niger during September (all 3 contained) are included in Mali's reported cases.

PROGRESS TOWARDS ERADICATION

During January-September 2012 the four currently endemic countries reported 521 cases of GWD (including three cases exported from Ansongo District, Gao Region of Mali into Tillaberi District of Niger during September 2012). Transmission was prevented from 340 (65%) of the 521 cases reported (Table 2, and Figure 5). The 521 reported cases represent a 48% decrease in cases compared to 1,004 cases reported during the same period in 2011.

Figure 5

Distribution By Country of 521 Cases of Dracunculiasis During 2012*



*Provisional as of Oct. 16, 2012.

Cases reported Jan - Sept 2011 = 980

Cases reported Jan - Sept 2012 = 521

Change in cases = - 47%

Numbers in parentheses indicate months for which reports have been received, i.e., (9) = January -September 2012

^Beginning in April 2012 reports include only Kayes, Koulikoro, Segou, Sikasso, Mopti Regions; the GWEP is not currently operational in Timbuktu, Kidal, and Gao Regions. Three cases exported from Mali to Niger during September (all 3 contained) are included in Mali's reported cases.

MALI: SOME SURVEILLANCE IN NORTH

According to recent reports received from the National Coordinator of Mali's Guinea Worm Eradication Program (GWEP), Dr. Gabriel Guindo, there is more surveillance for GWD in the three rebel-held regions of northern Mali than has seemed apparent after this takeover last March. Since June, Mali's GWEP recruited some local staff to supervise activities in Gao and Timbuktu Regions, and has delivered some filters for distribution, but not Abate. In addition, WHO and multiple partners, including Non-Governmental Organizations (NGOs), conduct humanitarian missions in parts of all three northern Regions, including searches for cases of Guinea worm disease. One of the NGOs, Medecins Du Monde (Belgium), is active only in Kidal Region, where it has worked on GWD since 2007 from seven health centers located mostly in Kidal District. Only two of the 9 known endemic villages that reported cases in 2011 or 2012 (Alkite and Talkot, in Kidal Region) are not now accessible to the program (Figure 6). All villages targeted for active surveillance in Gao (Gao and Ansongo Districts) and Timbuktu (Gourma Rharous District) Regions; including two endemic villages, are visited monthly by supervisory staff who report to the GWEP. The five other endemic villages in Mopti and Segou Regions are accessible to the program, visited regularly by GW workers, some of whom were relocated from the north of the country, and supervised monthly, including by the national secretariat. Mali's GWEP has conducted three investigations in follow-up to the three cases from Mali that were reported by Niger in September, and found no evidence of cases in the implicated area of Mali in 2011 or 2012.

A team from WHO comprising Drs. Alhousseini Maiga and Dieudonne Sankara and Mr. Guy-Patrick Massoloka visited Mali on September 11-20. The WHO mission visited four districts in Segou where they conducted a crude survey of ten people in each district to assess awareness of the reward for reporting a case of GWD. In two endemic districts that were receiving radio messages about the rewards, 9/10 and 7/10 people knew about the reward. In two non-endemic districts not receiving radio messages, 0/10 and 0/10 knew of the reward. Mr. Craig Withers of The Carter Center also made a brief supervisory visit to Bamako in September.

Figure 6

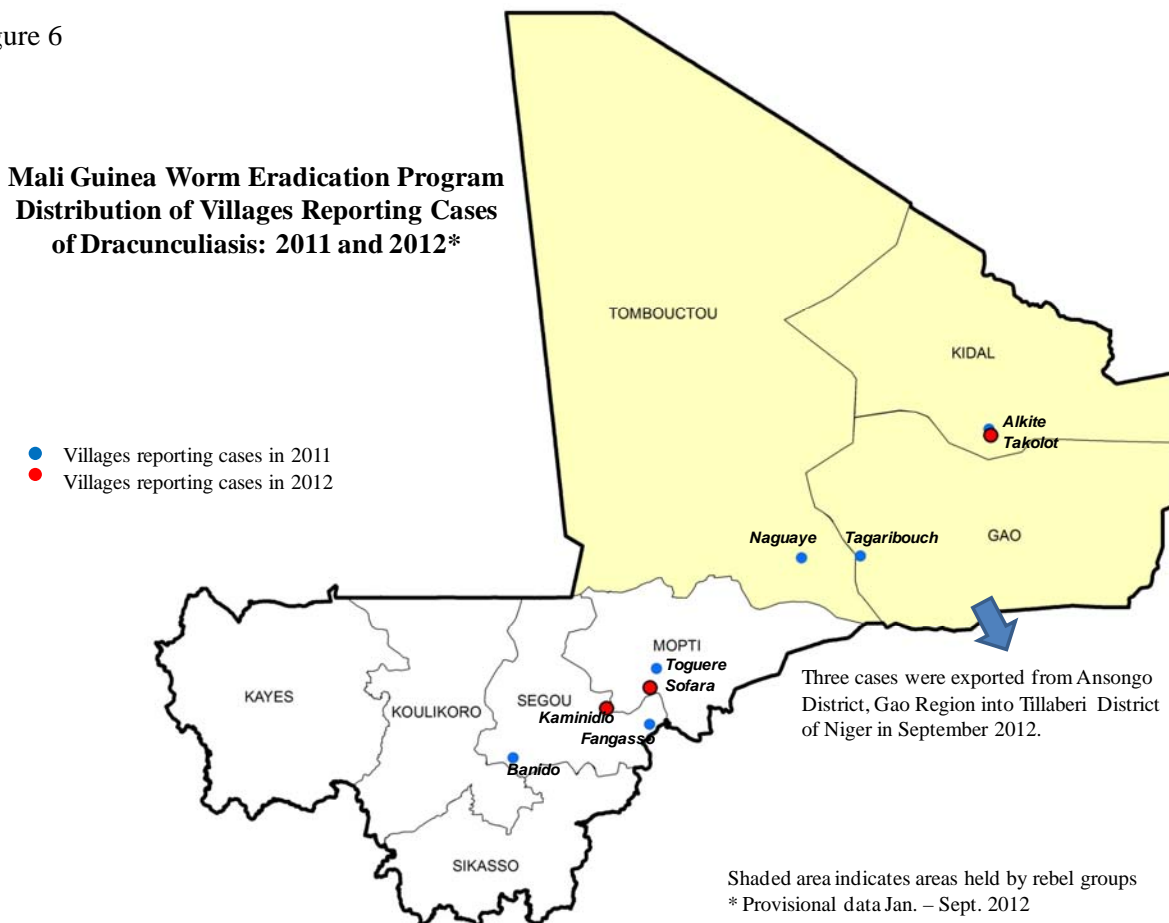
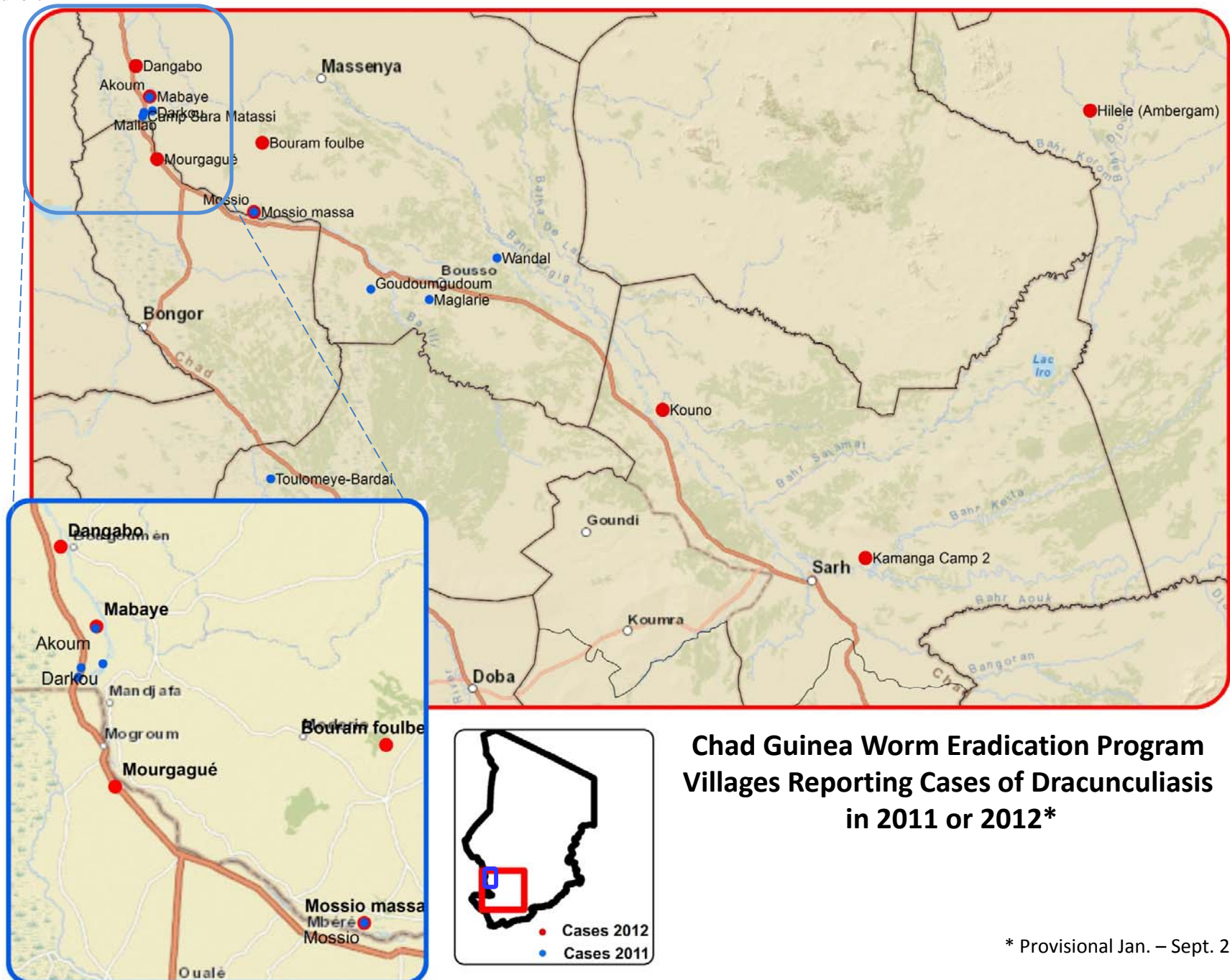


Figure 7



* Provisional Jan. – Sept. 2012

CHAD: IMPROVING SURVEILLANCE

There are now two endemic localities in Chad: the cluster of villages in Mossio, Bousso District, and the Akoum-Mabaye villages, Mandalia District; both in Chari Baguirmi Region where cases in 2012 are linked to cases in 2011 (Figure 7 and Table 3). Mr. Craig Withers and Dr. Ernesto Ruiz-Tiben of The Carter Center visited Chad during October 5-13 to assess the active surveillance system in the high-risk areas of Mayo Kebbi West and Chari Baguirmi Regions, where the majority of cases of GWD were detected during 2010-2012, so far. The team was accompanied by Mr. Ngarodjel Djimadoumadji, GWEP National Coordinator, Mrs. Neloumta Ngarhor, GWEP Data Manager, and Carter Center staff: Dr. Fernand Toé, Resident Country Representative, and Technical Advisors Ms. Amelie Cardon, Bronwyn Nichol, Corey Farrell, and Kristen Grenon. The team visited 10 villages in Ba Illi, Bongor, Guelendeng, Mogrom, and Mandalia Districts, interviewed 2-4 village volunteers per village, and residents at large in 2-4 households per village to assess knowledge of GWD, of their village volunteers and about rewards. Each village volunteer was queried about instructions received by their supervisors regarding frequency of household visits, time of day to conduct case searches, designated number of households, time required to complete household by household case searches, and information they provided to residents during the searches. The information provided by the village volunteers to residents was verified via questions addressed to randomly selected residents during household visits. Both village volunteers and residents at large in all villages visited were very well informed about GWD and its prevention. All readily recognized GWD and provided their local language name for it. All knew what to do if persons with signs and symptoms were detected, including who to report to, and about the modality of rewards. The frequency of case searches by volunteers in their designated areas was every 2-3 days, usually in the mornings, and most required 2-4 hours to complete. The team felt confident that if such levels of performance and awareness are maintained any case of GWD in the high-risk areas should be promptly detected and successfully contained. The team was impressed by the apparent strong rapport between the village residents and program staff.

A total of 1,744 village volunteers supervised by 65 village volunteer supervisors and 30 “Agents de Renfort” led by the four Technical Advisors manage the active village-based surveillance system in 632 villages, of which 616 (97%) reported during September (Table 4). Active village-based surveillance is currently being expanded to include 37 additional villages in the Kouno area of Bousso District, where one case of GWD was confirmed in August 2012.

While in Bongor Town, Chad, the team reviewed the available information about an alleged patient with GWD who is resident in Yagoua, Cameroon. The rumor about this alleged case surfaced in Bongor Town, which led Chadian GWEP staff team to visit the patient and his family in Yagoua. The alleged clinical presentation (an abscess from which 4 pieces of a large worm were obtained) a few days before the Chadian team’s visit, suggests the possibility of this person having had GWD. There is uncertainty as to whether Cameroonian ministry of health staff have yet formally investigated this alleged case, including its possible origin.

The team briefed with Dr. Saidou Pathé Barry, WHO Country Representative in Chad and Dr. Djimrassengar Honore, NPO/MAL-GWD WHO/N’Djamena, and with Drs. Rohingalaou Doundo, Director of Disease Control, and Mathias Djidms, Director of Communicable Diseases, Ministry of Health, Chad.

Table 3

Chad Guinea Worm Eradication Program
Villages Reporting Cases in 2010, 2011, and Jan. - Sept. 2012*

Vill#	Village	District	Cases		
			Number Contained / Number Reported		
			2010	2011	2012
1	Nanguigoto	Guelendeng	0 / 2	0 / 0	0 / 0
2	Mouraye	Massenya	0 / 1	0 / 0	0 / 0
3	Matassi	Mandalia	0 / 1	0 / 0	0 / 0
4	Abba Limane	Guelendeng	0 / 1	0 / 0	0 / 0
5	Aborgui	Massenya	0 / 1	0 / 0	0 / 0
6	Molkou	Guelendeng	0 / 1	0 / 0	0 / 0
7	Kakoua	Sarh	0 / 1	0 / 0	0 / 0
8	Sila	Melfi	0 / 2	0 / 0	0 / 0
9	Toulomeye-Bardai	Bere	/	1 / 1	0 / 0
10	Wandal	Bouso	/	0 / 1	0 / 0
11	Mailao marba	Mandelia	/	1 / 1	0 / 0
12	Mossio Vill. cluster	Bouso	/	0 / 1	2 / 2
13	Goudoumgudoum	Bouso	/	0 / 2	0 / 0
14	Darkou	Mandelia	/	0 / 1	0 / 0
15	Akoum-Mabaye	Mandelia	/	1 / 1	0 / 1
16	Camp Sara Matassi	Mandelia	/	0 / 1	0 / 0
17	Manglarie	Bouso	/	1 / 1	0 / 0
19	Mourgagué	Guelendeng			0 / 1
20	Hilele (Ambergan)	Aboudeia/Salamat			0 / 1
21	Bouram Foulbe	Massenya			1 / 1
23	Dangabo	Mandelia			0 / 1
24	Kouno Centre	Bouso			0 / 1
25	Kamanga 2 Camp	Kyabe			0 / 1
TOTAL			0 / 10	4 / 10	3 / 9

Table 4

Chad Guinea Worm Eradication Program

Parameters	2010	2011	2012*
Villages reporting cases	8	9	8
Disease-endemic villages	0	0	2
Villages under active surveillance	0	0	632
% of villages reporting monthly	0	0	97%
Reported cases of Guinea worm disease	10	10	9
% of reported cases contained	0	40%	33%
Number of districts reporting cases	5	3	6
Number of Village volunteers trained	31	41	1,744
Number of village volunteer supervisors	0	0	65
Number of "Agent de Renfort" supervisors	0	0	30
Number of Technical Advisors	0	4	5

* Provisional: January-September

RECENT PUBLICATIONS

Jack, Andrew 2012. A little effort can produce great strides. Financial Times October 10.

Murray, Sarah 2012. Eradication: Tide may be turning against Guinea worm. Financial Times October 10.

MEETINGS

South Sudan will hold its annual program review in Juba December 11-12, 2012.

The Executive Board of WHO will meet in Geneva January 21-29, 2013.

WHO/AFRO is requesting Ghana to consider hosting the next Annual Meeting of Program Managers of Guinea Worm Eradication Program in Accra during April 8-12, 2013.

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

WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, Center for Global Health, Centers for Disease Control and Prevention, Mailstop C-09, 1600 Clifton Road NE, Atlanta, GA 30333, USA, email: gwwrapup@cdc.gov, fax: 404-728-8040. The GW Wrap-Up web location is <http://www.cdc.gov/parasites/guineaworm/publications.html#gwwp>

Back issues are also available on the Carter Center web site English and French are located at http://www.cartercenter.org/news/publications/health/guinea_worm_wrapup_english.html.
http://www.cartercenter.org/news/publications/health/guinea_worm_wrapup_francais.html



**World Health
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