



Date: July 26, 2013

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

Subject: GUINEA WORM WRAP-UP #220

To: Addressees

Detect, Contain, & Explain EVERY Case!!!

SOUTH SUDAN REDUCES CASES BY 85% IN JUNE, 81% IN JANUARY-JUNE



The South Sudan Guinea Worm Eradication Program continues to record exceptional reductions in cases in 2013. With only 19 cases reported in June 2013 compared to 123 cases reported in June 2012, the program has achieved reductions of 85% for the month, and 81% cumulatively for the first six months of 2013 (Figure 1, Table 2). Of the 74 cases reported so far this year, 53 (72%) were reportedly contained, compared to 64% of all cases contained in 2012. Table 1 is a line listing of the 24 cases reported in May 2013 to continue the line listing of 31 cases reported in January-April that was included in the previous issue.

Figure 1

South Sudan Guinea Worm Eradication Program
Cases of Dracunculiasis Reported by Month, 2011 - 2013*

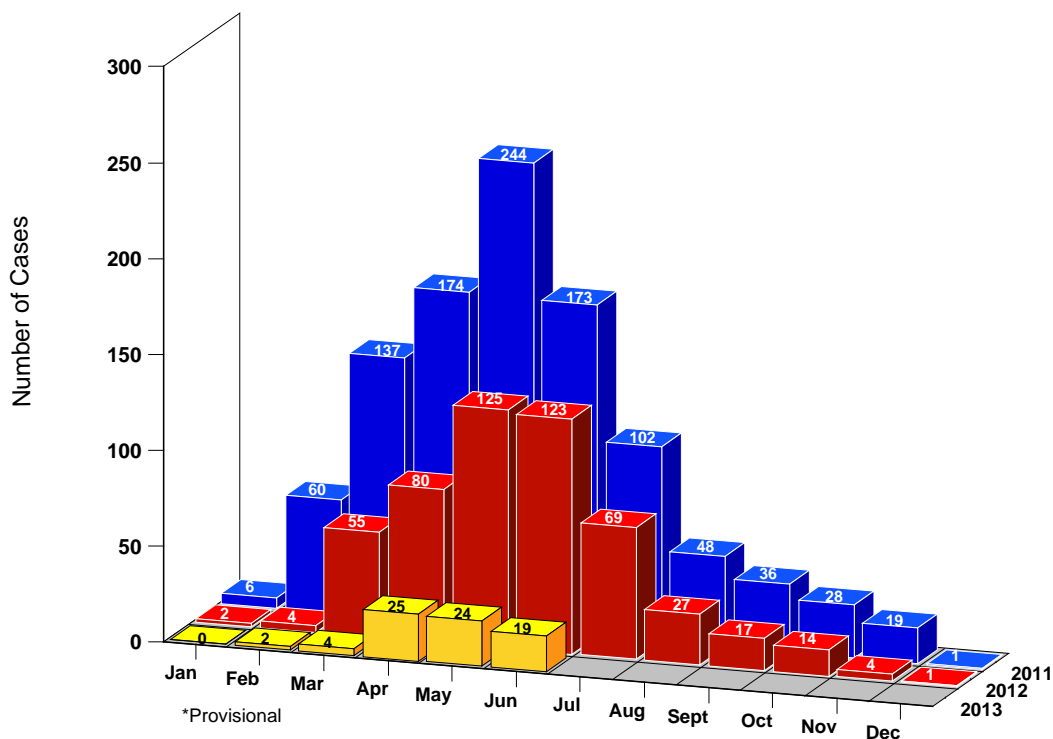


Table 1

**SOUTH SUDAN GUINEA WORM ERADICATION PROGRAM
LINE LISTING OF CASES OF GWD DURING 2013***

Case #	Village or Locality of Detection			Payam	County	Age	Sex	Date GW emerged	Case Contained?		1 = Imported 2 = Indigenous	Home Village or Locality			Presumed Source of infection identified?		Presumed Source of infection is a known EVA?	
	Name	1 = EVAS	2 = NEVAS						(Yes, No, or Pending)	If no, date of Abate Rx*		Name	1 = EVAS	2 = NEVAS	(Yes / No)	Name	(Yes / No)	Actions?
32.1	LOKOITIMOE	1		KAUTO	KAPOETA EAST	45	M	1/5/13	YES		1	LOKOITIMOE	1		YES	NABS- SPECIFIC SOURCE NOT IDENTIFIED, PASSED THROUGH EN ROUTE TO MORUKOMOD (ACHAKAR)	UNKNOWN	POSSIBLY IN ACHAKAR
32.2	LOKOITIMOE	1		KAUTO	KAPOETA EAST	45	M	3/5/13	YES		1	LOKOITIMOE	1		YES	NABS- SPECIFIC SOURCE NOT IDENTIFIED, PASSED THROUGH EN ROUTE TO MORUKOMOD (ACHAKAR)	UNKNOWN	POSSIBLY IN ACHAKAR
33.1	LOKWAAR	1		KAUTO	KAPOETA EAST	11	F	1/5/13	YES		2	LOKWAAR	1		YES	NAPESEMORET STREAMS WITHIN NAWOYAPETA GARDENS	YES	FULL INTERVENTIONS IN PLACE
34.1	NADAPAKALE CC	1		KAUTO	KAPOETA EAST	10	M	1/5/13	NO	3/5/13	2	LOKWAAR	1		YES	NAPESEMORET STREAMS WITHIN NAWOYAPETA GARDENS	YES	FULL INTERVENTIONS IN PLACE- PART OF ENDEMIC CLUSTER
35.1	NAJO	1		KAUTO	KAPOETA EAST	9	F	2/5/13	YES		2	NAJO	1		YES	SUSPECTED AREA- GARDENS OF KALOBELENY	YES	FULL INTERVENTIONS IN PLACE- OTHERS IN GARDEN IN SAME AGE GROUP ON HIGH ALERT
36.1	NAKUMOGO CC		2	KAUTO	KAPOETA EAST	14	M	4/5/13	YES		1	KANADOME KAKAUEA MOGOS SOUTH		2	NO	NO LINKS THUS FAR. INDICATED AS IMPORTED FROM	NA	STILL UNDER INVESTIGATION
37.1	LOOLENG	1^		KAUTO	KAPOETA EAST	36	M	5/5/13	YES		2	LOOLENG	1		YES	PONGO II/KALOBELENY GARDENS- SPECIFIC SOURCE NOT YET IDENTIFIED	YES	FULL INTERVENTIONS IN PLACE AT HOME VILLAGE AND SUSPECTED BOMA OF INFECTION (PART OF KALOBELENY ENDEMIC CLUSTER)
38.1	LOKWAAR	1		KAUTO	KAPOETA EAST	7	F	5/5/13	YES		2	LOKWAAR	1		YES	NAPESEMORET STREAMS WITHIN NAWOYAPETA GARDENS	YES	FULL INTERVENTIONS IN PLACE
39.1	LOPUSINGOLE	1		KAUTO	KAPOETA EAST	13	F	7/5/13	NO	28 MAY 2013 (2ND WORM CONTAMINATED WATER)	2	LOPUSINGOLE	1		YES	NAKAI STREAM CUTS	YES	FULL INTERVENTIONS IN PLACE
40.1	NAGARIO		2	KAUTO	KAPOETA EAST	11	F	8/5/13	YES		1	NAGARIO		2	YES	LOKWAAR VILLAGE IN NAWOYAPETA NABS- RELATED TO CASES NATUBA AND NACHAI- NAPESEMORET GARDEN SOURCE	YES	FULL INTERVENTIONS IN PLACE AT GARDENS AND VILLAGES
41.1	LOTEYO	1		LOTIMOR	KAPOETA EAST	8	M	8/5/13	YES		2	LOTEYO	1		YES	SON OF UNCONTAINED 2012 CASE- GARDENS	YES	FULL INTERVENTIONS IN PLACE
42.1	NARIWORE		2	PARINGA	KAPOETA NORTH	14	F	9/5/13	YES		1	NARIWORE		2	YES	WAS MARRIED INTO PARINGA, WAS IN NAKUELEMU MOGOS SOUTH IN 2012- FROM LOKIPIN VILLAGE	YES	FULL INTERVENTIONS IN PLACE IN HOME ENDEMIC CLUSTER
43.1	NANYANGALOB CC		2	KAUTO	KAPOETA EAST	21	F	11/5/13	YES		1	LOKWAAR, NAWOYAPETA- NABELENKINEA	1		YES	LOKWAAR VILLAGE IN NAWOYAPETA NABS- RELATED TO CASES NATUBA AND NACHAI- NAPESEMORET GARDEN SOURCE	YES	FULL INTERVENTIONS IN PLACE AT GARDENS AND VILLAGES
44.1	LORUONOMOR	1		MOGOS	KAPOETA EAST	8	F	13/5/13	YES		2	LORUONOMOR	1		YES	NAKUELEMU GARDENS	YES	FULL INTERVENTIONS IN PLACE
45.1	MORUESE CC		2	KAUTO	KAPOETA EAST	13	M	14/5/13	NO	ABATED CUTS IN KURON RIVER IN NAMOROPUS CCS (LOKITELAN KALIO)	1	BILA	1		YES	SUSPECTED AREA- GARDENS OF KALOBELENY	YES	FULL INTERVENTIONS IN PLACE- OTHERS IN GARDEN IN SAME AGE GROUP ON HIGH ALERT
46.1	LOTIIRA	1^		KAUTO	KAPOETA EAST	32	F	15/5/13	YES		2	LOTIIRA	1		YES	NAPESEMORET STREAMS WITHIN NAWOYAPETA GARDENS	YES	FULL INTERVENTIONS IN PLACE
47.1	NATIPIPI CC		2	MEOUN	PIBOR	20	F	15/5/13	NO	FLOWING WATER	1	LOWI, NAWOYAPETA NABELENKINEA			YES	TENTATIVELY LINKING TO GARDENS IN NAWOYAPETA- NABELENKINY	YES	FULL INTERVENTIONS IN PLACE AT GARDENS AND VILLAGES
48.1	LOKIPIN	1		MOGOS	KAPOETA EAST	25	F	17/5/13	YES		2	LOKIPIN	1		YES	NAKUELEMU GARDENS	YES	FULL INTERVENTIONS IN PLACE

Case #	Village or Locality of Detection			Payam	County	Age	Sex	Date GW emerged	Case Contained?		1 = Imported 2 = Indigenous	Home Village or Locality			Presumed Source of infection identified?		Presumed Source of infection is a known EVA?	
	Name	1 = EVAS	2 = NEVAS						(Yes, No, or Pending)	If no, date of Abate Rx*		Name	1 = EVAS	2 = NEVAS	(Yes / No)	Name	(Yes / No)	Actions?
49.1	KABELIEM CC		2	JIE	KAPOETA EAST	55	M	19/5/13	NO	NOT ABATED-DID NOT KNOW SOURCES ENTERED	1	DOCHA	1		YES	DOCHA (GARDENS/HERDING/FRUIT COLLECTION- SPECIFIC SOURCE NOT YET IDENTIFIED)	YES	FULL INTERVENTIONS IN PLACE AT HOME VILLAGE- GARDEN COVERAGE MEMO SENT OUT FOR IMPLEMENTATION
49.2	KABELIEM CC		2	JIE	KAPOETA EAST	55	M	14/6/13	YES (WORM) NO (CASE)	NOT ABATED-DID NOT KNOW	1	DOCHA	1		YES	DOCHA (GARDENS/HERDING/FRUIT COLLECTION- SPECIFIC SOURCE NOT YET IDENTIFIED)	YES	FULL INTERVENTIONS IN PLACE AT HOME VILLAGE- GARDEN COVERAGE MEMO SENT OUT FOR IMPLEMENTATION
50.1	NARIWOKITELA CC		2	KAUTO	KAPOETA EAST	12	F	22/5/13	YES		1	LOPUSINGOLE, BURUTAN NABELENKINEA	1		YES	LOPUSINGOLE, BURUTAN, NABS-NAKAI CUT STREAMS	YES	FULL INTERVENTIONS IN PLACE AT GARDENS AND VILLAGES
51.1	KACHALAKIENY	1 ^		KARUKOMUGE	KAPOETA NORTH	8	F	23/5/13	YES		2	KACHALAKIENY	1 ^		YES	SPECIFIC SOURCE NOT YET IDENTIFIED BUT THE VILLAGE IS IN THE SAME COMPOUND AS NALEMBEL, THE 2012 UNCONTAINED CASE	YES	FULL INTERVENTIONS IN PLACE
52.1	NANGORWUA	1		MOGOS	KAPOETA EAST	11	M	23/5/13	YES		2	NANGORWUA	1		YES	CUT STREAMS LOORENG	YES	FULL INTERVENTIONS IN PLACE
53.1	DOCHA	1		JIE	KAPOETA EAST	8	M	25/5/13	YES		2	DOCHA	1		YES	DOCHA (GARDENS/HERDING/FRUIT COLLECTION- SPECIFIC SOURCE NOT YET IDENTIFIED)	YES	FULL INTERVENTIONS IN PLACE AT GARDENS AND VILLAGES
54.1	KARENGEMUK CC		2	KAUTO	KAPOETA EAST	25	M	27/5/13	NO		1	NAKOOR, KALOBELENY		2 (BUT PART OF ENDEMIC CLUSTER)	YES	SPECIFIC SOURCE NOT YET IDENTIFIED BUT KNOWS ALL KALOBELENY CASES AND DRANK WITH LOTABO THE LOOLENG CASE	YES	FULL INTERVENTIONS IN PLACE IN KALOBELENY
55.1	KAMIE	1		KAUTO	KAPOETA EAST	16	F	30/5/13	YES		2	KAMIE	1		YES	NEXT TO GARDEN OF 2012 CASE LEANING TOWARDS	YES	GARDEN ON HIGH ALERT
56.1	NAPIRIA	1		LOTIMOR	KAPOETA EAST	24	M	26/05/13	NO		2	ARIKIEKORE, NANGOLESE	1		NO	GARDEN/HERDING LEVEL	YES	PLATEAU ON HIGH ALERT- INTERVENTIONS IN PLACE
57.1	LONGAIMO CC		2	JIE	KAPOETA EAST	12	M	05/06/13	YES		1	DOCHA	1		YES	BUT THOUGHT TO BE ATTRIBUTED TO GARDENS IN DOCHA- GRAZING AREA NEAR LOOSUT- BROTHER OF	YES	HOME VILLAGES AND TA IS WORKING ON UPDATING ENDEMIC VILLAGE MAPS, GARDEN MAPS, AND GRAZING AREAS
58.1	LOTEYO	1		LOTIMOR	KAPOETA EAST	35	M	30/05/13	YES		2	LOTEYO	1		NO	GARDENS/GRAZING- SPECIFIC SOURCE NOT YET IDENTIFIED	YES	FULL INTERVENTIONS IN PLACE- LOTEYO IS ALWAYS ON HIGH ALERT
59.1	NALUKAPETE	1		MOGOS	KAPOETA EAST	56	M	07/06/13	YES		2	NALUKAPETE	1		YES	GARDENS (TENTATIVE)	YES	FULL INTERVENTIONS IN PLACE
60.1	NAKWARE	1		JIE	KAPOETA EAST	13	M	08/06/13	YES		2	NAKWARE	1		YES	SPECIFIC SOURCE NOT IDENTIFIED BUT THOUGHT TO BE ATTRIBUTED TO GARDENS/GRAZING AREA NEAR DOCHA/NAKWARE- POSSIBLY ATAPARS IN LOOSUT HUNTING, GRAZING AND GATHERING AREA	YES	FULL INTERVENTIONS IN PLACE
61.1	DOCHA	1		JIE	KAPOETA EAST	45	M	09/06/13	YES		2	DOCHA	1		YES	KOSURU GOAT HERDING/GARDEN AREA	YES	FULL INTERVENTIONS IN PLACE
62.1	KACHALAKIENY	1		KARUKOMUGE	KAPOETA EAST	24	F	07/06/13	NO	DID NOT ENTER WATER BUT DETECTED	2	KACHALAKIENY	1		YES	SPECIFIC SOURCE NOT YET IDENTIFIED BUT THE VILLAGE IS IN THE SAME COMPOUND AS NALEMBEL, THE 2012 UNCONTAINED CASE	YES	FULL INTERVENTIONS IN PLACE
63.1	NAGIRAKAI		2	KAUTO	KAPOETA EAST	29	F	07/06/13	NO	12/06/13	1	LOPUSINGOLE	1		YES	GARDENS- NABWELENKINE BURUTAN	YES	FULL INTERVENTIONS IN PLACE
64.1	NAMUSEAT	1		JIE	KAPOETA EAST	18	M	13/6 2013	YES		2	NAMUSEAT	1		YES	KOSURU NAMASURU GRAZING AREA	YES	FULL INTERVENTIONS IN PLACE AT HOME VILLAGE- GARDEN COVERAGE MEMO SENT OUT FOR IMPLEMENTATION
65.1	NAITAMOR CC		2	KAUTO	KAPOETA EAST	16	F	15/05/13	YES		1	KOTAMO	1		NO	MOGOS SOUTH- STILL UNDER INVESTIGATION	YES	FULL INTERVENTIONS IN PLACE IN MOGOS SOUTH KOTAMO AREA

Case #	Village or Locality of Detection			Payam	County	Age	Sex	Date GW emerged	Case Contained?		1 = Imported 2 = Indigenous	Home Village or Locality			Presumed Source of infection identified?		Presumed Source of infection is a known EVA?	
	Name	1 = EVAS	2 = NEVAS						(Yes, No, or Pending)	If no, date of Abate Rx*		Name	1 = EVAS	2 = NEVAS	(Yes / No)	Name	(Yes / No)	Actions?
66.1	LOKARIWON CC		2	MEOUN	PIBOR	9	F	12/06/13	NO	DETECTED 15 JUNE	1	ACHAKAR	1		YES	SOURCES AROUND ACHAKAR-NABS ROCK POND & SPRING, ERONYIT ATAPAR, NAPASEMARET, LONYANGAKIPI	YES	FULL INTERVENTIONS IN PLACE
67.1	LOPUSINGOLE	1		KAUTO	KAPOETA EAST	7	F	15/06/13	YES		2	LOPUSINGOLE	1		YES	NAKAI- BURUTAN GARDEN SOURCES	YES	FULL INTERVENTIONS IN PLACE
68.1	NAPUSIRIEYET		2	MOGOS	KAPOETA EAST	5	F	19/06/13	YES		2	NAPUSIRIEYET	1 ^		YES	GARDEN STREAMS IN NAKWALEMU GARDENS	YES	FULL INTERVENTIONS IN PLACE
69.1	LOKARIWON CC		2	MEOUN	PIBOR	25	F	19/06/13	YES		2	ACHAKAR	1		YES	TBD BUT SUSPECTED SOURCES AROUND ACHAKAR-NABS ROCK POND & SPRING, ERONYIT ATAPAR, NAPASEMARET, LONYANGAKIPI	YES	FULL INTERVENTIONS IN PLACE IN ACHAKAR
70.1	AMUKAT	1 ^		KAUTO	KAPOETA EAST	14	F	21/06/13	YES		2	AMUKAT	1 ^		NO	STILL UNDER INVESTIGATION- PATIENT MOSTLY IN VILLAGE LAST YEAR	NA	NANYANGNWA CLUSTER WILL BE TREATED AS ENDEMIC CLUSTER
71.1	LORIWA	1 ^		JIE	KAPOETA EAST	4	F	26/06/13	YES		2	LORIWA	1 ^		YES	GARDEN WATER SOURCE OF 2012 CASE NEXT TO MOTHERS GARDEN	NO (NOT BEFORE THIS CASE)	AREA IS BEING TREATED AS ENDEMIC- FULL INTERVENTIONS ARE IN THE WORKS. TRANSITION FROM IMPLEMENTING INTERVENTIONS AS CC TO VILLAGES BEING
72.1	KHORADEP		2	KASSINGOR	PIBOR	18	F	24/06/13	NO	NOT APPLIED- ENTERED LAKE/SWA MP	1	KHORADEP (THIS YEAR)/ NAKALINGARET LOOSUT (LAST YEAR)	2 (KHORA DEP)		YES	LOOSUT (GARDENS/NAMUSIA GARDENS IN LOPEAT)	YES	FULL INTERVENTIONS IN PLACE IN LOPEAT
73.1	NAKWARE	1		JIE	KAPOETA EAST	13	M	26/06/13	YES		2	NAKWARE	1		YES	(SPECIFIC SOURCE NOT IDENTIFIED BUT AREA) GRAZING AREA NAMAMSURU CC (DAILY), GARDENS AKALI	YES	FULL INTERVENTIONS IN PLACE IN LOPEAT

^^ Patient 2.1 is from Lomuta Boma but gave multiple different home villages, each time he was interviewed.

He was dropped off at a village he did not mention as his home village. He moves in the Cattle Camps most of the year and has family throughout the Supervisory Area.

** The cattle camp is now classified as an endemic cattle camp, but it was not previously known as an endemic source

1.1 Case # 1, First Guinea worm

EVAS endemic village under active surveillance

NEVAS non endemic village under active surveillance

^ Not at beginning of the year, but now is

Table 2

Number of Cases Contained and Number Reported by Month during 2013*
(Countries arranged in descending order of cases in 2012)

COUNTRIES WITH ENDEMIC TRANSMISSION	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													% CONT.
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
SOUTH SUDAN	0 / 0	1 / 2	1 / 4	18 / 25	19 / 24	13 / 19	/	/	/	/	/	/	52 / 74	70
CHAD	0 / 0	0 / 0	0 / 0	3 / 3	1 / 1	0 / 1	/	/	/	/	/	/	4 / 5	80
MALI	0 / 0	0 / 0	0 / 0	0 / 0	0 / 3	1 / 1	/	/	/	/	/	/	1 / 4	25
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 1	3 / 4	0 / 1	/	/	/	/	/	/	3 / 6	50
TOTAL*	0 / 0	1 / 2	1 / 4	21 / 29	23 / 32	14 / 22	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	60 / 89	67
% CONTAINED		50	25	72	72	64							67	

*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.

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

COUNTRIES WITH ENDEMIC TRANSMISSION	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	37 / 55	50 / 80	79 / 125	84 / 123	45 / 69	14 / 27	10 / 17	9 / 14	2 / 4	1 / 1	336 / 521	64
MALI [^]	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 3	0 / 0	3 / 3	0 / 0	0 / 0	0 / 0	4 / 7	57
CHAD	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 2	0 / 1	2 / 4	1 / 2	1 / 1	0 / 0	0 / 0	4 / 10	40
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 1	1 / 1	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0	0 / 0	0 / 1	2 / 4	50
TOTAL*	2 / 2	3 / 4	37 / 55	50 / 81	80 / 126	85 / 126	45 / 73	17 / 32	14 / 22	10 / 15	2 / 4	1 / 2	346 / 542	64
% CONTAINED	100	75	67	62	63	67	62	53	64	67	50	50	64	

*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.

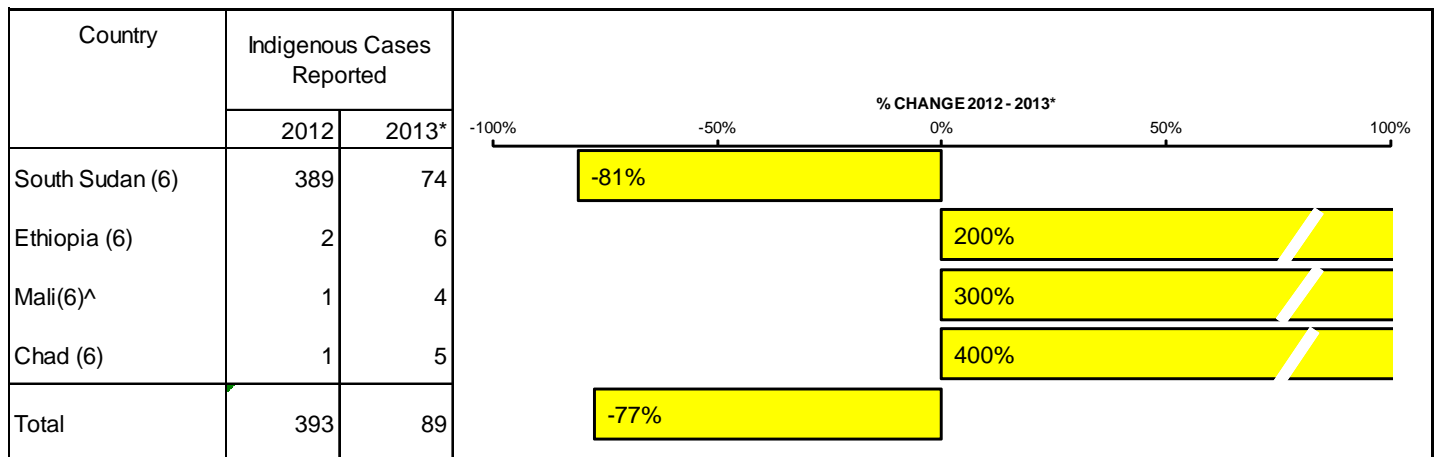
^

Three Malian residents, confirmed as cases of GWD in Niger during September 2012 (shown in italics), are included in Mali's total for the year. Mali has not ascertained the apparent source of these cases

Of the 10 counties (out of 80 total counties) currently under active surveillance (6,661 villages) in South Sudan, 5 have now reported zero indigenous cases of Guinea worm disease for twelve or more consecutive months: Kapoeta South (165 villages, 12 months) in Eastern Equatoria State; Tonj North (1,802 villages, 12 months), Tonj South (152 villages, 15 months), and Tonj East (1,258 villages, 19 months) in Warrab State; and Jur River (62 villages, 22 months) in Western Bahr Al Ghazal State. These 5 counties comprise 3,439 villages now under active surveillance, all of which are potential candidates to be transitioned to passive surveillance by the end of 2013.

Figure 2

Number of Indigenous Cases Reported During the Specified Period in 2012 and 2013*, and Percent Change in Cases Reported



* Provisional. Numbers in parentheses indicate months for which reports have been received, i.e., (6) = January -June 2013.

CHAD: 5 CASES IN JANUARY-JUNE



Chad reported one case in June 2013, bringing the total for 2013 to 5 cases reported so far, of which 4 (80%) were contained. These 5 cases were reported from 5 villages, none of which had reported a case of Guinea worm disease in 2010-2012, and all but one of which are in the at-risk area under active surveillance. The fifth patient, a five year old boy, resides in a village located about 3km north of the area under active surveillance. His worm was detected two days after it began to emerge. Although he reportedly did not contaminate any water source, the standards for case containment were not met. An updated line-listing of cases is given in Table 3. Chad reported only one case in the first six months of 2012, in June.

Dr. Ernesto Ruiz-Tiben of The Carter Center and Dr. Mark Eberhard of CDC visited Chad during June 1-14 to continue investigations into the epidemiology and ecology of transmission in this outbreak. A report is being prepared and will be presented to the government.

Dr. Fernand Toe will be ending his tour of duty as the Carter Center Resident Country Representative in Chad on August 13, 2013, and Ms. Corey Farrell will replace Dr. Toe effective on that date. Best wishes for success to Fernand and Corey in their new endeavors.

MALI: 4 CASES IN JANUARY-JUNE



Mali has reported 4 cases (25% contained) of Guinea worm disease during January-June 2013, versus 1 case (contained) reported during the same period of 2012. The updated line-listing is in Table 4. The case in June, which was contained, was reported from Etambar village (same as cases #2 & 3 this year) near Kidal Town. An uncontained case was reported from an area close to Etambar village in July 2012. Specimens from these patients have been sent to CDC. The Region of Kidal has not been fully accessible to national authorities, including the GWEP, since March 2012, because of insecurity, although periodic United Nations humanitarian groups have provided some opportunities for limited surveillance.

ETHIOPIA: 6 CASES IN JANUARY- JUNE, MINISTER VISITS



The Ethiopia Dracunculiasis Eradication Program (EDEP) has reported a total of 6 cases of Guinea worm disease (50% contained) during January-June 2013, as compared to 2 cases reported during the same period in 2012. Five of the cases were residents of Batpoulo, a hamlet of Terkudi village in Abobo District of Gambella Region where an uncontained case had a worm emerge on 26 April 2012. So far, investigations by the EDEP, assisted by The Carter Center and WHO staff suggest that the uncontained case from Terkudi in 2012 may have been the most likely source of infection of the 5 cases in Abobo District in 2013. However, surveillance in Abobo up to now has been too poor to exclude the likelihood of other (undetected) cases in this area in 2012. The sixth case, 37, male, was a resident of Wichini village in Gog District of Gambella Region through October 2012, when he moved to Pugnido Town, where he was detected and declared a case of GWD (Table 5) . His travel and residential history did not reveal any visits to Abobo Woreda in 2012, and Wichini has not reported a case since 2010. Worm specimens from all patients have been sent to CDC. Mr. Adam Weiss of The Carter Center conducted a supervisory visit and provided technical assistance to the program during May 7-15.

In follow up to discussions during the World Health Assembly in May, the Federal Minister of Health Dr. Kasete A. Birhane, visited Gambella Region on June 16-17 to urge stronger action to stop transmission of Guinea worm disease in the region. He was accompanied by other senior officials of the ministry of health as well as Drs. Lorenzo Savioli, Gautam Biswas, and Alhousseini Maiga of the World Health Organization, Carter Center Country Representative Dr. Zerihun Tadesse, and Dr. Julie Jacobson of the Bill & Melinda Gates Foundation. The delegation met with the entire cabinet of the Gambella regional administration. During this visit, it was agreed that the Federal Ministry of Health will implement direct “vertical” supervision of activities against Guinea worm disease, via a supervisor in the national ministry who will be responsible full time for this activity, in order to ensure more stringent monitoring, supervision and surveillance at national, regional and local levels. This will include expanding active surveillance for GWD to include villages of Abobo District (it already exists in Gog District), as well as improved surveillance for GWD in Guinea worm-free areas of Ethiopia.

UNICEF Country representative, Dr. Peter Salama, visited Gog on June 20, 2013 to follow-up on UNICEF support for the provision of safe water in Guinea worm endemic villages.

Table 3

CHAD GUINEA WORM ERADICATION PROGRAM
LINE LISTING OF CASES OF GWD DURING 2013

Case #	Village or Locality of detection				Zone / District	Region	Patient			Case Contained?		1 = imported 2= indigenous	Home Village or Locality				Presumed Source of infection identified?		Presumed Source of infection is a known EVA?	
	Name	1= EVAS	2= NEVAS	3=PSV			Age	Sex	Date GW emerged	(Yes, No, or Pending)	If no, date of Abate Rx		Name	1= EVAS	2= NEVAS	3=PSV	(Yes or No)	Name	(Yes or No)	Actions?
1.1	Miskine banana		2		Gambarou/ Mandelia	Chari Baguirmi	3	F	2-Apr-13	Yes		2	Miskine banana		2		No			
2.1	Koutoungolo		2		Onoko /Massenya	Chari Baguirmi	35	F	8-Apr-13	Yes		2	Koutoungolo		2		No			
2.2									28-Apr-13											
2.3									21-May-13											
2.4									21-May-13											
3.1	Gasse		2		Onoko /Massenya	Chari Baguirmi	50	F	9-Apr-13	Yes		2	Gasse		2		No			
4.1	Gourlong			3	Guelendeng	Mayo Kebbi E.	12	M	5-May-13	Yes		2	Gourlong			3	No			
5.1	Djarbou Choufou			3	Kondoul/Ma ndalia	Chari Baguirmi	6	M	16-May-13	No	Not necessary	2	Djarbou Choufou		2		No			
6.1	Bogomoro/ Qartier Gabri II		2		Bogomoro/ Bouso	Chari Baguirmi	25	M	19-Jul-13	Yes		2	Bogomoro		2		No			

the 1.1, 1.2...etc. system to designates the serial case number (first digit) and the number of GWs emerging (second digit) from same case-patient.

EVAS = endemic village under active surveillance

NEVAS = non endemic village under active surveillance

PSV = Passive surveillance village

Table 4

MALI GUINEA WORM ERADICATION PROGRAM
LINE LISTING OF CASES OF GWD DURING 2013

Case #	Village or Locality of detection				District or Woreda or Payam	County or Region	Patient			Case Contained?		1 = imported 2= indigenous	Home Village or Locality				Presumed Source of infection identified?		Presumed Source of infection is a known EVA?	
	Name	1= EVAS	2= NEVAS	3 = PSV			Age	Sex	Date GW emerged	(Yes, No, or Pending)	If no, date of Abate Rx		Name	1= EVAS	2= NEVAS	3 = PSV	(Yes or No)	Name	(Yes or No)	Actions?
1.1	Koukourou			3	Djenne	Mopti	17	F	2-May	No	NA	2	Koukourou			3	No		No	Case detecte > 24 hours. No ABATE applied as ponds were dry. Patient hospitalized and transmission from second worm was prevented.
1.2									11-May											
1.3									24-Jun											
1.4									24-Jun											
1.5									25-Jun											
1.6									28-Jun											
2.1	Iclahane Camp			3	Kidal	Kidal	30	M	10-May	No		2	Iclahane Camp			3	Yes	Agabo, Kidal	No	Health Education provided, filters distributed, and ABATE applied.
2.2									20-May											
2.3									30-May											
3.1	Etambar			3	Kidal	Kidal	28	M	11-May	No		2	Etambar			3	Yes	Agabo, Kidal	No	Health Education provided, filters distributed, and ABATE applied.
3.2									31-May											
3.3									31-May											
3.4									31-May											
3.5									31-May											
4.1	Etambar			3	Kidal	Kidal	20	F	1-Jun	Yes		2	Etambar			3	Yes	Agabo, Kidal	No	

1.1 = Case # 1, First GW

EVAS = endemic village under active surveillance

NEVAS = non endemic village under active surveillance

PSV = Passive surveillance villages

Table 5

ETHIOPIA DRACUNCULIASIS ERADICATION PROGRAM
LINE LISTING OF CASES DETECTED DURING 2013

CASE.GW#	VILLAGE OR LOCALITY OF DETECTION			KEBELE	WOREDA	AGE	SEX	DATE OF GW EMERGENCE	CASE CONTAINED		1= INDIGENOUS 2= IMPORTED	HOME VILLAGE OR LOCALITY				PRESUMED SOURCE OF INFECTION IDENTIFIED?		PRESUMED SOURCE OF INFECTION IS A KNOWN EVA?		
	NAME	1=EVAS	2=NEVAS						3= PSV	Y/N/PENDING		DATE OF ABATE RX	NAME	1=EVAS	2=NEVAS	3=PSV	Y/N	NAME	Y/N	ACTIONS?
1.1	Ojwom			3	Elia	Itang	60	M	29-Apr-13	No	May 3 Abongomera Pond; May 10 Abongomera 2 pond, Agulkidi pond.	2	Batpoulo			3	No		No	Depuyi pond as well as ponds around Ojwom village where the patient was detected have been abated
1.2							60	M	15-May-13											
1.3							60	M	16-May-13											
2.1	Batpoulo			3	Perpengo	Abobo	28	M	4-May-13	Yes		1	Batpoulo			3	No		No	Guule, Awude or Depuyi ponds. All three ponds/group of ponds have been abated
3.1	Batpoulo			3	Perpengo	Abobo	24	M	17-May-13	Yes		1	Batpoulo			3	No		No	Guule, Awude or Depuyi ponds. All three ponds/group of ponds have been abated
4.1	Batpoulo			3	Perpengo	Abobo	40	M	20-Feb-13	Yes		1	Batpoulo			3	No		No	Guule, Awude or Depuyi ponds. All three ponds/group of ponds have been abated
5.1	Pugnido Town/PRC Agnuak		2		3	Gog	37	M	22-Feb-13	No		1	Pugnido		2		No		Pending	
5.2							37	M	22-May-13											
5.3							37	M	17-Jul-13											
6.1	Batpoulo			3	Perpengo	Abobo	33	F	10-Jun-13	No		1	Batpoulo			3	No		No	Guule, Awude or Depuyi ponds. All three ponds/group of ponds have been abated

1.1 = Case # 1, First GW

EVAS = Endemic villages under active surveillance

NEVAS= non endemic village under active surveillance

PSV= passive surveillance village

PRC = Pugnido Refugee Camp

NIGERIA AND COTE D'IVOIRE: INTERNATIONAL CERTIFICATION TEAMS' (ICTs) VISITS AND VERIFICATION OF INTERRUPTION OF TRANSMISSION.



Visit of the ICT to Nigeria 24 June to 12 July 2013. Following a request from Nigeria to be certified free of dracunculiasis transmission, the World Health Organization sent an International Certification Team (ICT) to Nigeria from 24 June to 12 July 2013. The ICT was led by Professor David Molyneux, member of the International Commission for the Certification of Dracunculiasis Eradication (ICCDE) and comprising of experts from Burkina Faso, Republic of Congo, Ghana, India and Uganda and national independent experts. The ICT mission to Nigeria was particularly challenging as the country, which is the most populous in sub-saharan Africa, had the highest burden of disease historically. Furthermore and pertinent to the ICT mission was the need to assess the situation in the states which are under a State of Emergency, and to obtain information to validate the claims in the Country Report. The ICT was able to engage the Nigerian Red Cross in Borno and Yobe States for obtaining data in the most challenging environments. After having been briefed in Abuja by the Nigerian Guinea worm Eradication Programme (NIGEP), the National Certification Commission and the Yakubu Gowon Centre, the ICT divided itself into 10 sub-teams and visited the sampled states over a 12 day period. The sample areas visited represented the diversity of the disease epidemiology, including historic endemicity as well as ecological, geo-political (all 6 zones were visited), demographic and cultural diversity, records of reporting, proximity to borders, and findings and recommendations of the previous independent external evaluation.

The sub-teams were provided with a standard methodology for selecting LGAs, and localities, along with standard questionnaires and forms. The teams were asked to focus on the following questions:

- 1 Is the state free of guinea worm disease (GWD) transmission?
- 2 Is the risk of importation of cases minimal, possible or high?
- 3 Are the state arrangements for dracunculiasis surveillance sufficiently sensitive to detect any imported cases or local transmission?
- 4 Could local transmission be detected or could transmission be re-established considering the current water supply situation, migrations etc?

After covering 17 states, and the Federal Capital Territory (FCT), 60 LGAs, 136 villages and communities and interviewing 1630 individuals, the ICT concluded : Based on its extensive review of records at all levels, and visits to localities and communities, the National Report which states that Nigeria is free of transmission of *Dracunculus medinensis* is valid for the sample sites visited and the ICT will recommend to the International Commission for the Certification of Dracunculiasis Eradication (ICCDE) that Nigeria be declared free of Guinea Worm Disease transmission.

The ICT, however, made the following recommendations to the Ministry of Health of Nigeria which have wider implications for the health of the population and the health system of the country.

- Despite the above recommendation that Nigeria is free of guinea worm transmission, there is a need for an improvement in the reporting through the Integrated Disease Surveillance and Response (IDSR) system at all levels of the health system. The value of the inclusion of guinea-worm surveillance during Immunization Plus Days (IPD) was an additional back up, which gave the ICT confidence about the ability to record the absence of GWD. However, the need for all health facilities in future to record zero cases in IDSR reporting is emphasized.
- The awareness of GWD and its transmission is high but until Global Eradication is declared, a high level of awareness and vigilance is necessary as in all previously certified endemic countries. The timely investigation of rumors and continued publicity of the reward for the finding of a confirmed case should continue.

- Given the status of Niger in the pre-certification phase and Chad being endemic, cross border coordination of disease surveillance, control and elimination activities should continue together with sensitization of those populations about the risk of GWD.
- The ICT considered that whilst there was reasonable access in most communities to a safe water supply, there was a serious deficiency in the maintenance of facilities. There is the need, therefore, for collaboration with the relevant actors in the water sector to further strengthen water supply sustainability systems, particularly at the LGA level.
- The ICT suggested that NIGEP submit a report to WHO on the activities and progress in the above areas, for the period between the departure of the ICT team in mid July 2013 and the end of November 2013, to provide further evidence of the absence of transmission and timely response to rumours, to place before the ICCDE.

The ICT congratulated the Nigerian Ministry of Health and the NIGEP and its partners in achieving this huge public health success in reducing the number of cases over a period of 25 years to zero from over 650,000 in nearly 6000 endemic villages. This was achieved through long term commitment from the Federal and State authorities supported by key partners and advocates, in particular, The Carter Center and the Yakubu Gowon Centre as well as the international and bilateral agencies WHO, UNDP, UNICEF and JICA.

Visit of the ICT to Côte d'Ivoire 2 to 19 July 2013. The ICT mission to Côte d'Ivoire, led by Dr Joel Breman, International Commission for the Certification of Dracunculiasis Eradication (ICCDE) member, along with experts from Mali, Niger, Togo and the CDC, USA and supported by independent national experts, was carried out from 2 to 19 July 2013. The mission was carried out by five sub-teams, each consisting of an international expert, a national expert, and a facilitator, fanned out throughout the country with the aim of 1) verifying the absence of transmission of Guinea worm disease and 2) assessing whether the surveillance system in place is strong enough to detect any imported cases should they occur.

Over the course of ten days in the field, the five teams visited 10 regional health departments and 25 districts, 64 health facilities, 137 villages, and interviewed 1432 individuals. The visits were planned to provide an epidemiologic sample targeting different ecologies, populations and levels of past guinea worm disease (GWD) burden. The teams systematically collected data on the knowledge of GWD, awareness of the reward system, access to safe water, and completeness and promptness of surveillance data. From 2009 to 2013 more than 490 rumors were recorded and investigated throughout the country; none of them was confirmed as a dracunculiasis case. The team also investigated 13 rumors uncovered over the course of the field visits, and guinea-worm disease was discarded.

A high proportion of the interviewed individuals had access to safe water. However, this varied greatly from one region to another. While most interviewed individuals could recognize GWD, knowledge of prevention measures and awareness of the reward were low. Completeness and promptness of the monthly reports was high at all levels of the health system, and healthcare workers were aware of case definitions and proper procedures for investigating and reporting rumors.

The certification team concluded that 1) there is sufficient evidence that no Guinea worm transmission has occurred in Côte d'Ivoire for at least the past three years, and 2) the surveillance system is sensitive enough to detect imported cases should they occur. The team therefore concluded that Côte d'Ivoire has met the WHO criteria for being declared free of GWD transmission.

However, several key recommendations were formulated:

1. Surveillance System

Surveillance for Guinea worm disease, including prompt investigation of rumors, should continue until worldwide certification of eradication of Guinea worm disease, with particular attention to areas at high risk of receiving imported cases.

2. Safe Water

Access to safe water has improved significantly. However, it should continue to be a priority. Particular attention should be paid to encampments, which are at high risk for reintroduction of transmission of Guinea worm disease, as they are likely to have a combination of poor access to safe water, poor access to the healthcare system, and a high proportion of migrants.

3. Education

Training of healthcare workers regarding Guinea worm disease should continue as a new generation of workers, who have never seen the disease, has entered the workforce. For the same reason, education of the population regarding guinea worm disease should continue, with focus on prevention measures.

4. Community Health Workers

The role of community health workers, a key part of the program until the end of transmission, should be revisited for continued surveillance.

The ICT congratulated the Government and the Ministry of Health of Côte d'Ivoire as well the National Guinea Worm Eradication Program and its partners whose dedicated work over the past 20 years has led to the current success. In spite of more than 12,000 cases being reported in Côte d'Ivoire in 1991 during the national case search, the disease transmission was interrupted in 2006. Key partners of the program included The Carter Center as well as the international and bilateral agencies WHO, UNDP, UNICEF and JICA. [N.B.: *US Peace Corps was also a major partner of the GWEP in Cote d'Ivoire.*] MAP International, an NGO, has played a significant role, along with UNICEF in providing improved drinking water sources to endemic localities.

TALES FROM CHAD: THE MALOUMRI SARA VILLAGE BOREHOLE WELL



During 2012 the borehole - well pump in the at-risk village of Maloumri Sara (population 283), Bousso District broke. The women in Maloumri Sara were obliged to haul unsafe water from distant ponds, as the borehole was their sole source of potable water. Residents had to rely on using cloth filters to protect themselves against Guinea worm disease (GWD).

When the Guinea Worm Eradication Program (GWEP) Technical Advisor (TA) for the area was informed that the pump was broken she met with the village water association to urge them to organize their needs and funds. The men were apathetic towards having to raise community funding, but the women who had to do the hard work of hauling water twice a day were much more engaged about the need. Due to repairs to the pump earlier in the year, plus poor compliance by residents with payment of monthly fees to the water association during past months, there was not enough money in the treasury to repair the pump. However, there seemed to be reluctance to take action to resolve the problem.

In November 2012 the GWEP TA with support from the GWEP leadership proposed to help the community to repair their pump. In February 2013 the proposal was approved, provided the Maloumri Sara community met certain conditions. These conditions included 1) that the chief and water association hold a community meeting to educate the population on paying monthly dues to the water association, and 2) to collect money past due to assist with pump repairs.

In March 2013, despite numerous visits by the GWEP TA, the village had yet to hold their community meeting. They were visited by senior GWEP staff, who discussed the importance of ownership and accountability with the chief and water association. In addition to the previous conditions it was agreed upon that if the community could present the dues for the month of March, the GWEP would help fill any small gap in funds for the pump repair. After this visit the population admitted they felt ashamed they had not taken initiative under the direction of the TA. As a result, residents, but the women in particular, promptly came together to collect funds, contacted the pump mechanic and had the pump repaired.

To highlight their efforts and remind other residents, the pump was named after the local women's group for development fund called "DEMERDE", meaning "Resourceful", which they had founded in 2006. A ceremony was held in May 2013 to install a sign with the pump name and congratulate the women's group for their continual actions and efforts to further community development. Figure 3 shows the sign and the borehole well in use, saving women water fetchers countless hours of walking with heavy loads of unsafe drinking water.

In June 2013 senior GWEP staff was able to visit Maloumri Sara and personally congratulate the community for their effort. The GWEP was presented with a thank you letter written by the head of the women's group with the assistance of Mr. Lazare Mbaïbi, Maloumri Sara resident and supervisor for the GWEP, Chad. The functionality of the borehole well has been maintained ever since.

Figure 3



RECENT PUBLICATIONS

Anonymous, 2013. Le Tchad s'est doté d'un plan d'action de surveillance active. Courrier d'Afrique No.43 (December/January 2013):64-66.

Awofeso N, 2013. Towards global Guinea worm eradication in 2015: the experience of South Sudan. Int J Infect Dis 17:e577-582.

Biswas G, Sankara DP, Agua-Agum J, Maiga A, 2013. Dracunculiasis (guinea worm disease): eradication without a drug or a vaccine. Phil Trans R Soc B 368:20120146 <http://dx.doi.org/10.1098/rstb.2012.0146>.

Breman JG, Arita I. 2013. The certification of smallpox eradication and implications for guinea worm, poliomyelitis, and other diseases: confirming and maintaining a negative. Vaccine 295(2011):D41-D48

Callahan K, Bolton B, Hopkins DR, Ruiz-Tiben E, Withers PC, Meagley K, 2013. Contributions of the Guinea worm disease eradication campaign toward achievement of the Millennium Development Goals. PLoS Negl Trop Dis 7(5): e2160. doi:10.1371/journal.pntd.0002160.

Hopkins DR, Ruiz-Tiben E, Weiss A, Withers PC Jr, Eberhard ML, Roy SL, 2013. Dracunculiasis eradication: and now, South Sudan. Am J Trop Med Hyg 89:5-10. doi:10.4269/ajtmh.13-0090.

Makoy S, Becknell SR, Jones AH, Waat G, Ruiz-Tiben E, Hopkins DR, 2013. Use of surveillance in disease eradication efforts, Part 2: Lessons learned in Guinea worm disease (dracunculiasis) eradication. In: *Infectious Disease Surveillance*, 2nd Ed, M'ikanatha NM, et. al. eds. Chichester, UK: Blackwell Publishing Ltd, pp41-53.

World Health Organization, 2013. Monthly report on dracunculiasis cases, January-April 2013. Wkly Epidemiol Rec 88:267-268.

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

Contributors to this issue were: the national Guinea Worm Eradication Programs, Drs. Donald R. Hopkins and Ernesto Ruiz-Tiben, of The Carter Center, Dr. Gautam Biswas of WHO, and Drs. Sharon Roy and Mark Eberhard of CDC.

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



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