DEPARTMENT OF HEALTH & HUMAN SERVICES

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

Memorandum

Date: January 30, 2015

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

Subject: GUINEA WORM WRAP-UP #231

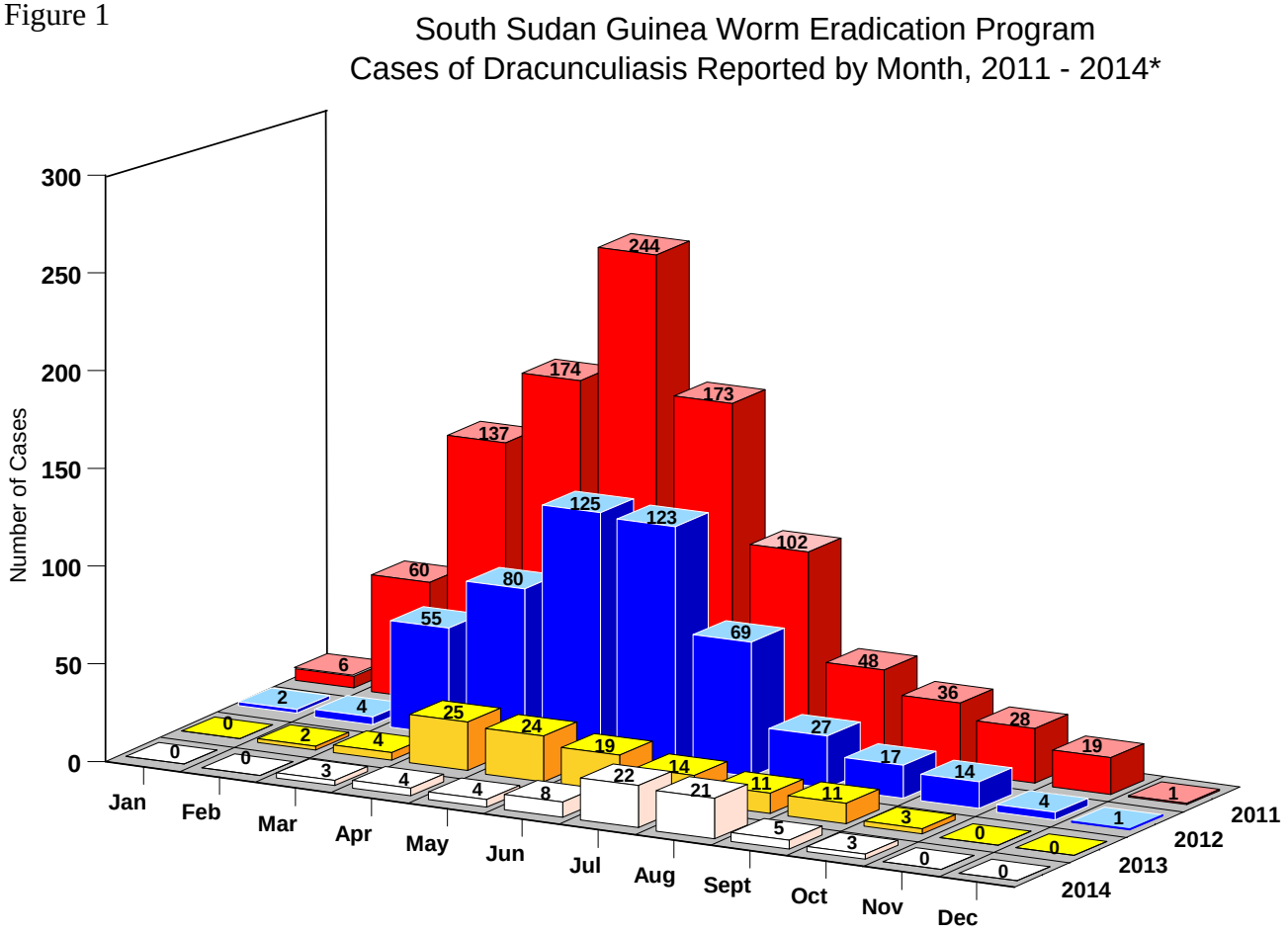
To: Addressees

"*The worm will be the judge of the quality of our work last year*." Makoy Samuel Yibi

SOUTH SUDAN CLOSING IN ON THE WORM

The South Sudan Guinea Worm Eradication Program (SSGWEP) made solid progress in 2014, despite the outbreak in Kapoeta East County (KEC) in July-August. South Sudan reported zero cases in January, February, November and December 2014 (**Figure 1**).

Figure 1



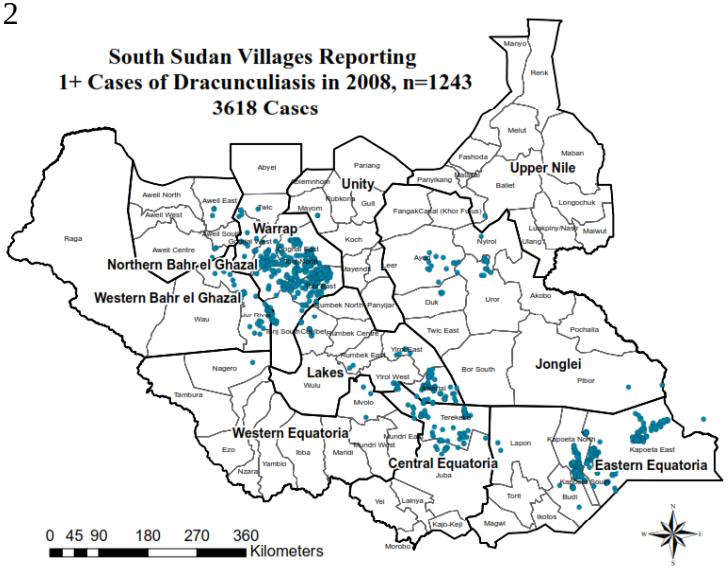
The overall number of cases was reduced by 38% (from 113 cases in 2013 to 70 cases in 2014) and the number of villages reporting one or more cases was reduced by 53% (from 79 to 37), with only 13 villages with endemic transmission reporting indigenous cases in 2014 (24 other villages reported cases imported from those 13).

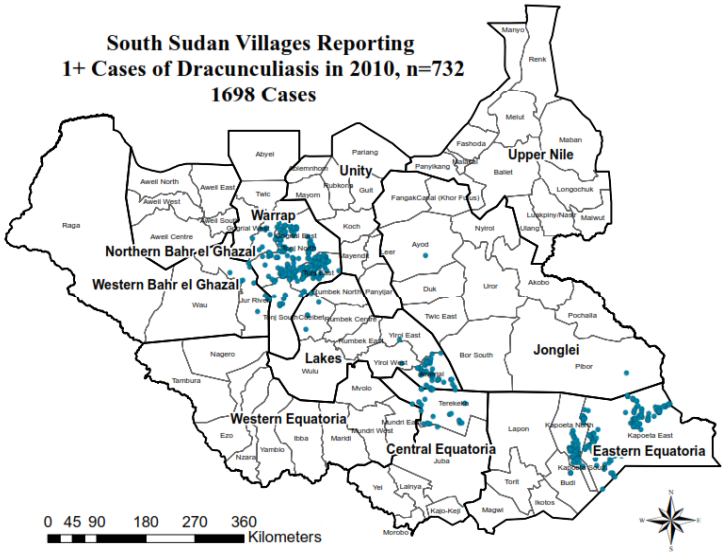
In the 79 villages that reported 113 cases in 2013, cases were reduced by 95%, to only 6 cases (83 % contained) in 2014; the remaining 64 cases (66% contained) in 2014 were in 34 villages that reported no cases (31 villages) or were not under surveillance (3 villages) in 2013: observations that reflect the significant population movements in South Sudan. Of South Sudan's 79 counties and 10 states, cases were reported from only 4 counties in 2 states (Eastern Equatoria-58 cases; Lakes-12 cases) in 2014. KEC of Eastern Equatoria state reported 57 (81%) of all cases, and was the source of the single case reported from Kapoeta South County, making KEC responsible for 83% of South Sudan's cases in 2014. In Lakes state, Awerial County reported 11 cases and Wulu County reported one case (**Figure** 2) (**Table 1**).

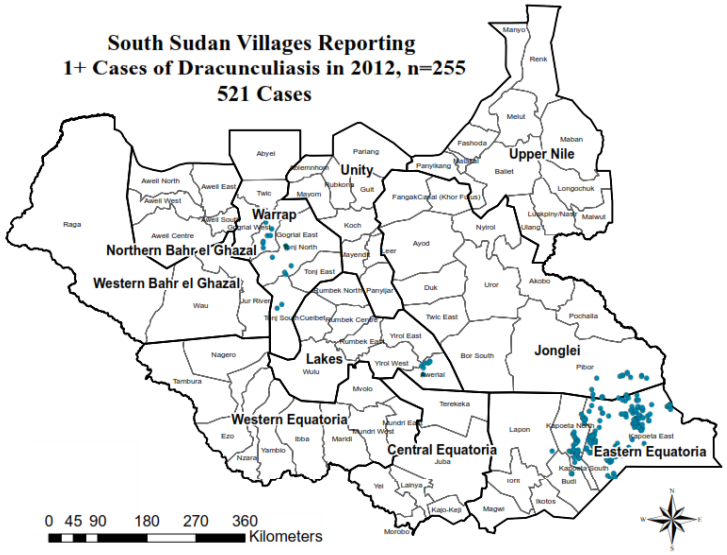
KEC is now the head of the *Dracunculus* snake in South Sudan. The SSGWEP contained 67% of cases in 2013 and in 2014, but 65% of cases in KEC were contained in 2014. A total of 57 cases from Eastern Equatoria state, including 6 cases not meeting the standards of case containment, were admitted to one of its 7 case containment centers. The new cash reward (equivalent of $100; introduced in April 2014) for reporting a case of GWD is very motivating, and by July 2014, 81% of 546 households surveyed in KEC knew of the reward. Of 123 villages within endemic clusters in KEC, the reporting rate was 99% in 2014; while 98% had Abate applied at least once, had cloth filters in all households and pipe filters in 80% or more of the population, and had received monthly health education. However, only 16% had at least one source of safe drinking water. UNICEF helped to provide new borehole wells during 2014 in 4 villages in KEC and 2 villages in Awerial County. So far drilling is already underway in 2015 in 6 villages of KEC that together reported 22 cases in 2014. An additional 13 villages of KEC that reported 15 cases last year are targeted to get safe water in 2015 also. These encouraging data were reported by SSGWEP director Mr. Samuel Makoy and his team at the annual review of the program.

South Sudan held the 9th Annual Review of its GWEP in the Meeting Hall of the Ministry of Parliamentary Affairs, in Juba on January 21-22. The theme of the meeting was "Together for a Final Push to Eliminate Guinea Worm Disease in South Sudan". Among other accomplishments, including those cited above, this annual review meeting illustrated the Government of South Sudan's exemplary political support for its GWEP. The meeting was opened by the Vice President of South Sudan, H.E. James Wani Igga. Other participants in the Opening Ceremony, that was chaired by Health Undersecretary Dr. Makur Matur, included the Governor of Eastern Equatoria State H.E. Louis Lobong; the national Minister of Cabinet Affairs Hon. Dr. Martin Elia Lomuro; national Minister of Health Hon. Dr. Riek Gai Kok; national Minister of Electricity, Dams, Irrigation, and Water Hon. Jemma Nunu Kumba; 6 state ministers of health, including Hon. Dr. Margaret Itto of Eastern Equatoria State; and four county commissioners, including the commissioners of Kapoeta East, North and South counties. Participants also included the Country representatives of WHO (Dr. Tarande Manzila), UNICEF (Mr. Jonathan Veitch), and The Carter Center (Ms. Carla Blauvelt); a member of the International Commission for the Certification of Dracunculiasis Eradication (ICCDE; Dr. Abolhassan Nadim); two invited guests from the GWEP of Sudan, and Mr. Aryc Mosher of the Bill and Melinda Gates Foundation, as well as technical assistants, program officers

Figure 2


South Sudan Villages Reporting
1+ Cases of Dracunculiasis in 2008, n=1243
3618 Cases
Upper Nile
Unity
Warrap
Northern Bahr el Ghazal
Western Bahr el Ghazal
Lakes
Jonglei
Western Equatoria
Central Equatoria
Eastern Equatoria
0 45 90 180 270 360
Kilometers


South Sudan Villages Reporting
1+ Cases of Dracunculiasis in 2010, n=732
1698 Cases
Upper Nile
Unity
Warrap
Northern Bahr el Ghazal
Western Bahr el Ghazal
Lakes
Jonglei
Western Equatoria
Central Equatoria
Eastern Equatoria
0 45 90 180 270 360
Kilometers


South Sudan Villages Reporting
1+ Cases of Dracunculiasis in 2012, n=255
521 Cases
Upper Nile
Unity
Warrap
Northern Bahr el Ghazal
Western Bahr el Ghazal
Lakes
Jonglei
Western Equatoria
Central Equatoria
Eastern Equatoria
0 45 90 180 270 360
Kilometers

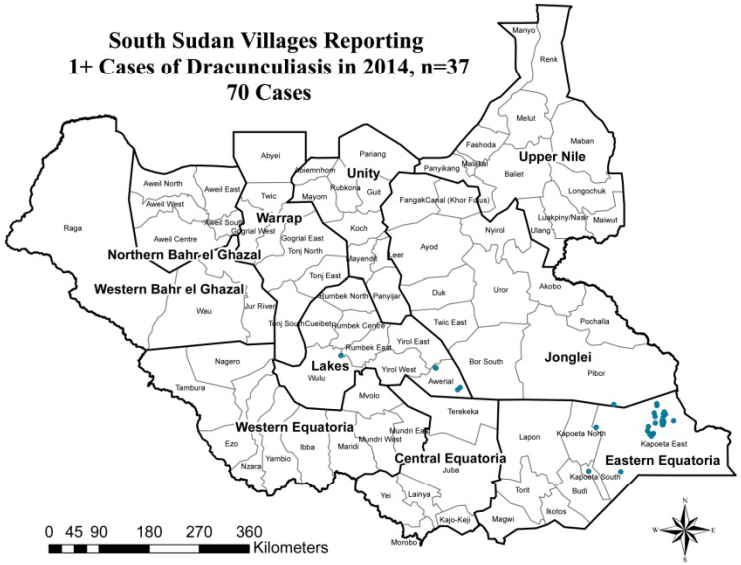

South Sudan Villages Reporting
1+ Cases of Dracunculiasis in 2014, n=37
70 Cases
Upper Nile
Unity
Warrap
Northern Bahr el Ghazal
Western Bahr el Ghazal
Lakes
Jonglei
Western Equatoria
Central Equatoria
Eastern Equatoria
0 45 90 180 270 360
Kilometers

Table 1

South Sudan Guinea Worm Eradication Program
Line Listing of Cases: 2014

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established ? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
1.1	14	F	TOPOSA	CHOKOIN	KAUTO	KAPOETA EAST	3/11/2014	YES	NO		YES	30-Apr	GUINEA WORM
1.2							4/19/2014	YES	NO			30-Apr	GUINEA WORM
2.1	32	F	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	3/18/2014	YES	NO		YES	30-Apr	GUINEA WORM
2.2							4/17/2014	YES	NO			30-Apr	GUINEA WORM
3.1	10	F	TOPOSA	LOBOER	KAUTO	KAPOETA EAST	3/25/2014	YES	NO		YES	22-Apr	GUINEA WORM
3.2							4/3/2014	YES	NO			30-Apr	GUINEA WORM
3.3							4/26/2014	YES	NO			22-May	GUINEA WORM
3.4							5/14/2014	YES	NO			22-May	GUINEA WORM
4.1	6	M	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	4/6/2014	YES	NO		YES	30-Apr	GUINEA WORM
5.1	12	F	TOPOSA	LOKUTA	KAUTO	KAPOETA EAST	4/19/2014	YES	NO		YES	30-Apr	GUINEA WORM
5.2							4/29/2014	YES	NO			22-May	GUINEA WORM
5.3							4/30/2014	YES	NO			22-May	GUINEA WORM
6.1	10	M	TOPOSA	NAWOYAPAK	KAUTO	KAPOETA EAST	4/5/2014	YES	NO		YES	22-May	GUINEA WORM
7.1	22	F	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	4/11/2014	NO	MAYBE	4/9/2014	YES	23-Jun	GUINEA WORM
8.1	25	F	TOPOSA	KATIANYAUNG-AGILICHAIT-MARIAMAPEM CC	KAUTO	KAPOETA EAST	5/10/2014	NO	MAYBE	5/12/2014	YES	5-Jun	GUINEA WORM
8.2				NARENGEWI			7/8/2014	NO	MAYBE	5/12/2014		3-Aug	GUINEA WORM
9.1	5	M	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	5/19/2014	YES	NO		YES	13-Jun	GUINEA WORM
9.2							6/2/2014	YES	NO			13-Jun	GUINEA WORM
10.1	6	M	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	5/20/2014	YES	NO		YES	2-Jul	GUINEA WORM

Table 1 (cont.)

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established ? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
11.1	18	M	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	5/23/2014	YES	NO		YES	7-Jul	GUINEA WORM
12.1	28	M	TOPOSA	LORIWO	JIE	KAPOETA EAST	5/30/2014	NO	MAYBE	6/2/2014	YES	13-Jun	GUINEA WORM
12.2							6/14/2014	NO	MAYBE	6/2/2014		1-Jul	GUINEA WORM
13.1	15	M	TOPOSA	NAKITIRIOK CC	KAUTO	KAPOETA EAST	6/1/2014	YES	NO		YES	13-Jun	GUINEA WORM
14.1	30	M	TOPOSA	DOCHA	JIE	KAPOETA EAST	6/2/2014	YES	NO		YES	12-Jul	GUINEA WORM
15.1	13	M	TOPOSA	LOCHAPIO	KAUTO	KAPOETA EAST	6/6/2014	YES	NO		YES	23-Jun	GUINEA WORM
16.1	32	M	TOPOSA	TELEMABOYO	NARUS	KAPOETA EAST	6/10/2014	YES	NO		YES	23-Jun	GUINEA WORM
16.2							6/11/2014	YES	NO			23-Jun	GUINEA WORM
16.3							9/27/2014	YES	NO			2-Oct	GUINEA WORM
17.1	12	F	TOPOSA	ITIBO	KAUTO	KAPOETA EAST	6/17/2014	YES	NO		YES	1-Jul	GUINEA WORM
18.1	31	F	DINKA	DAK BUONG	ABUYONG	AWERIAL	6/21/2014	YES	NO		YES	12-Jul	GUINEA WORM
19.1	16	M	TOPOSA	NGISIGAR	MACHI I	KAPOETA SOUTH	6/28/2014	NO	MAYBE	7/2/2014	YES	1-Jul	GUINEA WORM
20.1	4	F	DINKA	DAK BUONG	ABUYONG	AWERIAL	7/16/2014	YES	NO		YES	3-Aug	GUINEA WORM
21.1	50	F	DINKA	DAK BUONG	ABUYONG	AWERIAL	7/16/2014	YES	NO		YES	22-Sep	GUINEA WORM
22.1	19	M	TOPOSA	NATITIA	NARUS	KAPOETA EAST	7/19/2014	YES	NO		YES	8-Aug	GUINEA WORM
23.1	5	M	DINKA	DAK BUONG	ABUYONG	AWERIAL	7/21/2014	YES	NO		YES	13-Aug	GUINEA WORM
24.1	24	F	DINKA	YEPIC	PULUK	AWERIAL	7/22/2014	NO	MAYBE	7/24/2014	YES	22-Sep	GUINEA WORM
25.1	25	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/23/2014	NO	MAYBE	7/25/2014	YES	3-Aug	GUINEA WORM
25.2							8/16/2014	NO	MAYBE	7/25/2014		27-Aug	GUINEA WORM
25.3							8/17/2014	NO	MAYBE	7/25/2014		22-Sep	GUINEA WORM
25.4				LOTULIAMOE			10/11/2014	NO	MAYBE	7/25/2014		23-Oct	GUINEA WORM

Table 1 (cont.)

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established ? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
26.1	20	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/23/2014	NO	MAYBE	7/25/2014	YES	27-Aug	GUINEA WORM
27.1	12	M	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/25/2014	NO	MAYBE	7/23/2014	YES	27-Aug	GUINEA WORM
28.1	22	F	TOPOSA	KORICHUPA	KAUTO	KAPOETA EAST	7/26/2014	NO	MAYBE	7/30/2014	YES	27-Aug	GUINEA WORM
29.1	20	M	TOPOSA	LOTUKOMOE	KAUTO	KAPOETA EAST	7/27/2014	NO	MAYBE	7/31/2014	YES	2-Oct	GUINEA WORM
29.2							9/11/2014	NO	MAYBE	7/31/2014		10-Nov	GUINEA WORM
30.1	14	F	DINKA	DAK BUONG	ABUYONG	AWERIAL	7/27/2014	YES	NO		YES	22-Sep	GUINEA WORM
30.2							8/3/2014	YES	NO			13-Aug	GUINEA WORM
31.1	30	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/27/2014	YES	NO		YES	27-Aug	GUINEA WORM
31.2							9/8/2014	YES	NO			2-Oct	GUINEA WORM
32.1	40	M	TOPOSA	BUNYAYE	KAUTO	KAPOETA EAST	7/28/2014	NO	MAYBE		YES	27-Aug	GUINEA WORM
33.1	45	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/28/2014	YES	NO		YES	15-Sep	GUINEA WORM
34.1	8	F	DINKA	WUNKUM	ABUYONG	AWERIAL	7/28/2014	YES	NO		YES	22-Sep	GUINEA WORM
35.1	30	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/28/2014	YES	NO		YES	2-Oct	GUINEA WORM
36.1	24	M	TOPOSA	LONGELENGOR-KUCHARA-KAITAKITOE CC	KAUTO	KAPOETA EAST	7/28/2014	NO	MAYBE		YES	27-Aug	GUINEA WORM
36.2							9/13/2014	NO	MAYBE			13-Oct	GUINEA WORM
37.1	15	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/29/2014	NO	MAYBE		YES	2-Oct	GUINEA WORM
38.1	10	M	TOPOSA	PARPAR	KAUTO	KAPOETA EAST	7/29/2014	YES	NO		YES	27-Aug	GUINEA WORM
38.2							8/16/2014	YES	NO			22-Aug	GUINEA WORM
39.1	26	M	TOPOSA	TARADUNA	KAUTO	KAPOETA EAST	7/29/2014	YES	NO		YES	27-Aug	GUINEA WORM
40.1	16	M	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	7/30/2014	YES	NO		YES	6-Aug	GUINEA WORM
40.2							8/15/2014	YES	NO			15-Sep	GUINEA WORM

Table 1 (cont.)

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established ? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
43.1	5	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	8/3/2014	YES	NO		YES	22-Sep	GUINEA WORM
43.2							8/4/2014	YES	NO			22-Sep	GUINEA WORM
43.3							8/15/2014	YES	NO			10-Nov	GUINEA WORM
44.1	26	M	TOPOSA	EDOUKWANGA	KAUTO	KAPOETA EAST	8/4/2014	YES	NO		NO		
45.1	20	M	TOPOSA	LOTABO	NARUS	KAPOETA EAST	8/8/2014	NO	MAYBE	8/9/2014	YES	6-Sep	GUINEA WORM
45.2							8/28/2014	NO	MAYBE	8/9/2014		15-Sep	GUINEA WORM
46.1	20	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	8/4/2014	YES	NO		YES	26-Sep	GUINEA WORM
46.2							9/14/2014	YES	NO			23-Oct	GUINEA WORM
47.1	4	M	DINKA	WUNKUM	ABUYONG	AWERIAL	8/8/2014	YES	NO		YES	22-Sep	GUINEA WORM
48.1	15	F	TOPOSA	NAPEICHEBE	KAUTO	KAPOETA EAST	8/8/2014	NO	MAYBE		YES	22-Sep	GUINEA WORM
49.1	21	M	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	8/9/2014	YES	NO		YES	13-Oct	GUINEA WORM
50.1	10	F	DINKA	DAK BUONG	ABUYONG	AWERIAL	8/10/2014	YES	NO		YES	22-Sep	GUINEA WORM
51.1	10	M	DINKA	DAK BUONG	ABUYONG	AWERIAL	8/12/2014	YES	NO		YES	22-Sep	GUINEA WORM
52.1	21	F	TOPOSA	LORIWO	JIE	KAPOETA EAST	8/13/2014	YES	NO		YES	15-Sep	GUINEA WORM
53.1	24	M	TOPOSA	KACHILABO CC	KAUTO	KAPOETA EAST	8/14/2014	NO	MAYBE		YES	22-Sep	GUINEA WORM
53.2				LOLIMO			10/2/2014	NO	MAYBE			13-Oct	GUINEA WORM
54.1	4	F	DINKA	NYICIER CC	PULUK	AWERIAL	8/16/2014	YES	NO		YES	15-Dec	GUINEA WORM
55.1	17	F	TOPOSA	LOBURIN	KAUTO	KAPOETA EAST	8/16/2014	NO	MAYBE	8/21/2014	YES	2-Oct	GUINEA WORM
56.1	36	F	TOPOSA	MUNA	KAUTO	KAPOETA EAST	8/21/2014	YES	NO		YES	2-Oct	GUINEA WORM
56.2							8/30/2014	YES	NO			22-Sep	GUINEA WORM
57.1	18	M	TOPOSA	LOPASMOE	KAUTO	KAPOETA EAST	8/23/2014	YES	NO		YES	10-Nov	GUINEA WORM

Table 1 (cont.)

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established ? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
58.1	14	F	TOPOSA	LOMAYO	KAUTO	KAPOETA EAST	8/25/2014	YES	NO		YES	2-Oct	GUINEA WORM
59.1	27	M	TOPOSA	LOKUPE	KAUTO	KAPOETA EAST	8/25/2014	NO	MAYBE	8/26/2014	YES	2-Oct	GUINEA WORM
60.1	25	M	DINKA	PAN KUNYUK	BARGEL	WULU	8/27/2014	NO	MAYBE	9/5/2014	NO	6-Sep	GUINEA WORM
60.2							9/3/2014	NO	MAYBE	9/5/2014		15-Sep	GUINEA WORM
61.1	22	M	TOPOSA	CHILAKWA	KAUTO	KAPOETA EAST	8/29/2014	YES	NO		YES	2-Oct	GUINEA WORM
61.2							8/29/2014	YES	NO			2-Oct	GUINEA WORM
62.1	40	F	TOPOSA	BUNYAYE	KAUTO	KAPOETA EAST	8/31/2014	YES	NO		YES	10-Nov	GUINEA WORM
63.1	25	F	TOPOSA	MUNA	KAUTO	KAPOETA EAST	9/2/2014	YES	NO		NO		
64.1	24	M	TOPOSA	AMINABEI	KAUTO	KAPOETA EAST	9/6/2014	NO	MAYBE	9/15/2014	YES	22-Sep	GUINEA WORM
65.1	40	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	9/10/2014	YES	NO		YES	10-Nov	GUINEA WORM
66.1	24	M	TOPOSA	NAMERUMA-LOTER	KAUTO	KAPOETA EAST	9/18/2014	YES	NO		YES	10-Nov	GUINEA WORM
66.2							10/29/2014	YES	NO			10-Nov	GUINEA WORM
67.1	25	M	TOPOSA	LORIWO	JIE	KAPOETA EAST	9/28/2014	YES	NO		NO	23-Oct	GUINEA WORM
68.1	40	F	TOPOSA	NASUWATKOU	KAUTO	KAPOETA EAST	10/11/2014	NO	MAYBE		YES	10-Nov	GUINEA WORM
69.1	6	M	TOPOSA	TARADUNA	KAUTO	KAPOETA EAST	10/14/2014	YES	NO		YES	23-Oct	GUINEA WORM
70.1	25	M	TOPOSA	AMINABEI	KAUTO	KAPOETA EAST	10/19/2014	NO	MAYBE		YES	10-Nov	GUINEA WORM

* Source: known visit or residence of patient in a known endemic village/locality or village/cluster where cases of GWD occurred 10-14 months before GW emerged, and verified by the GWEP.

and other staff of the SSGWEP, for a total of about 130 participants. WHO was also represented by Dr. Dieudonne Sankara of its headquarters, while Drs. Donald Hopkins and Ernesto Ruiz-Tiben, Mr. Craig Withers and Mr. Adam Weiss attended from Carter Center headquarters.

The governor of Eastern Equatoria, the national minster of health and the state minister of health of Jonglei all worked in or with the GWEP earlier in their careers. The national minister of health said the SSGWEP is one of the most successful programs in his ministry, "and for this generation of South Sudanese". **When introducing the vice president, the minister of cabinet affairs said South Sudan did not want to be the last country to eliminate GWD, but it must "defeat these three"[Chad, Ethiopia, Mali].**

CHAD: PECULIAR EPIDEMIOLOGY CONTINUES; DOG INFECTIONS DOUBLE IN 2014

Chad has reported 13 cases (62% contained) of Guinea worm disease in humans and 113 dogs with Guinea worm infections in 2014. This is a 7% reduction in human cases (from 14) and a greater than 100% increase in dog infections (from 54) compared to 2013. A line listing of the cases in 2014 is summarized in **Table** 2. While the number of cases reported in humans annually has ranged between 10 and 14 over the past five years, the number of infected dogs has increased steadily since 2012 (**Figure 3**). According to on-going laboratory studies at the Centers for Disease Control and Prevention (CDC) and the Sanger Institute, the Guinea worms recovered from humans and dogs in Chad are all *Dracunculus medinensis* and indistinguishable from one another.

Figure 3

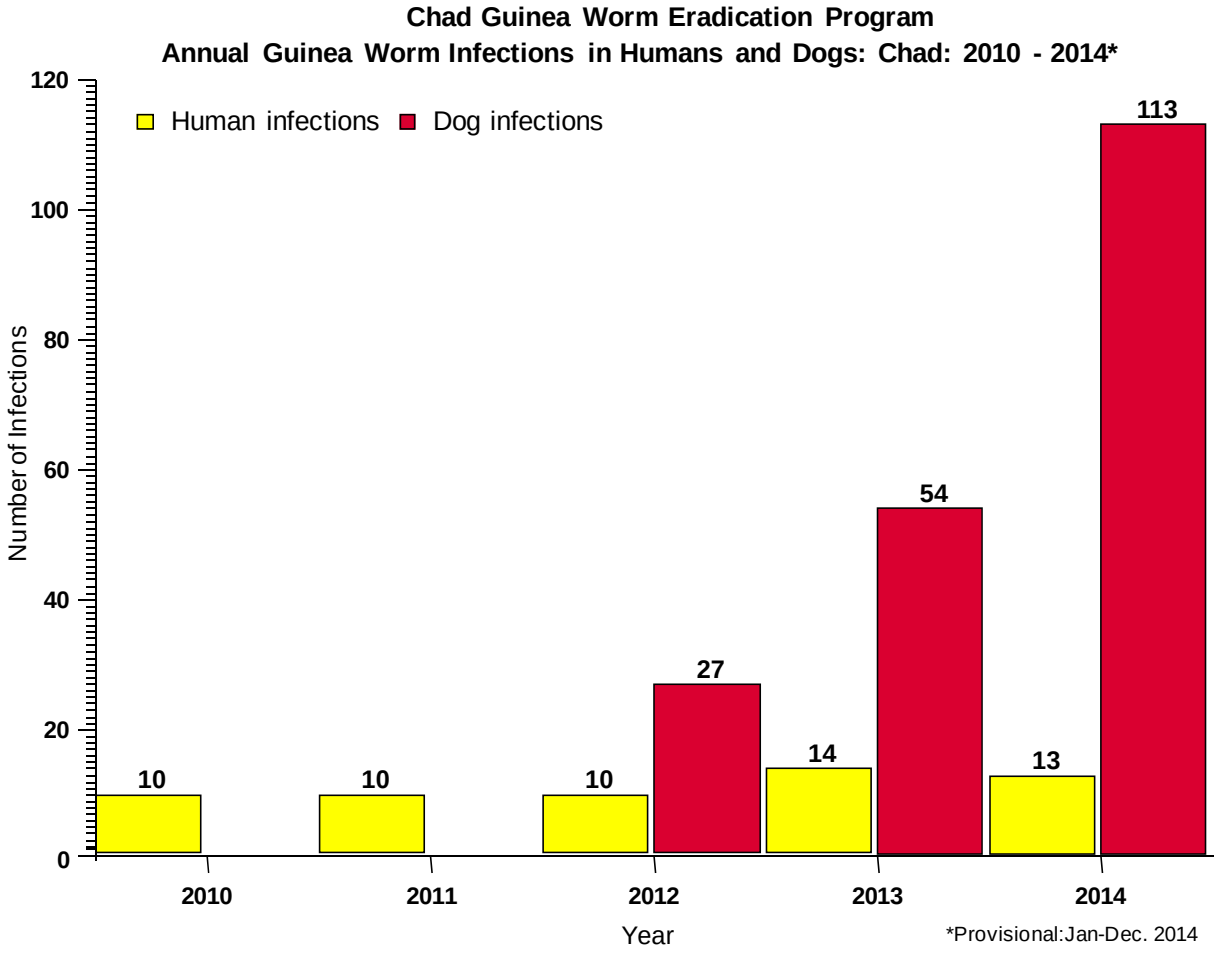


Table 2

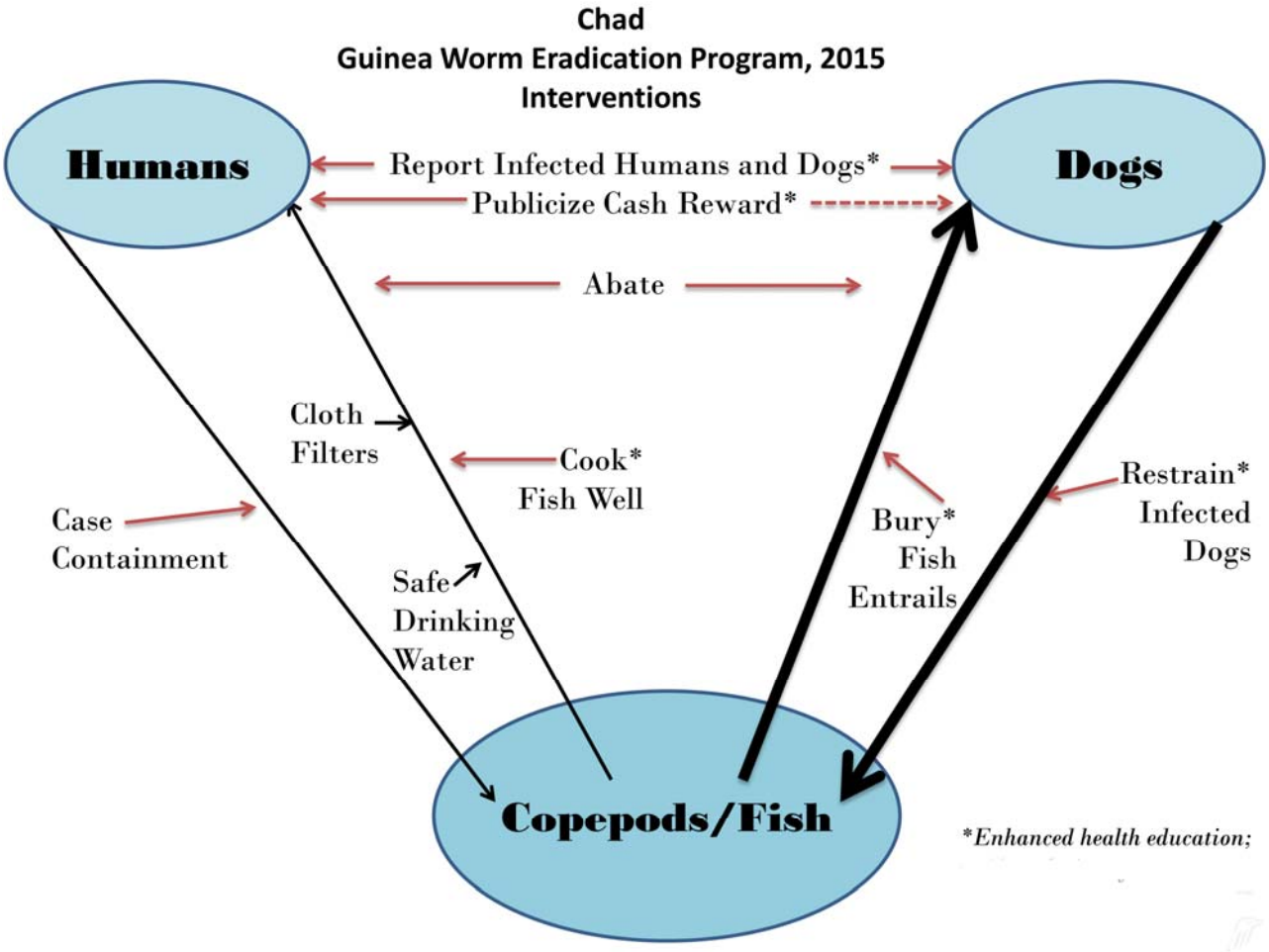
Chad Guinea Worm Eradication Program
Line Listing of Cases: 2014

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established? (Yes/No)	Worm Specimen	
				Name	Payam	County						Date sent to CDC (D/M/Y)	Diagnosis
1	9	F	Sara Madjigay	Maimou	Sarh	Moyen Chari	18-Jan-14	yes	no	no	no- eats fish	18-Apr-14	GW
2	52	F		Yadime	Bousso	Chari Baguirmi	14-Fev-14	yes	no	no	no- eats fish	18-Apr-14	GW
3	11	F	Sara	Nanguigoto	Guelendeng	Mayo Kebbi Est	7-Mar-14	yes	no	no	yes- Lelgoui pond	18-Apr-14	GW
4	11	M	Massa	Bongor	Bongor	Mayo Kebbi Est	12-Apr-14	yes	no	no	Yes-Toyobo Pond-Digini village	18-Apr-14	GW
5.1	40	M	Mongo	Kalam Kalam	Mandelia	Chari Baguirmi	5/19/2014	no	no	no	no- eats fish/sells frogs	19-Aug	GW
5.2							6/3/2014	no	no	no			
6	13	F	Sara Kaba	Massa Kaba	Kyabe	Moyen Chari	30-Jun-14	no	no	no	no- eats fish	19-Aug-14	GW
7	22	F	Sara Kaba	Moudjougoussou	Kyabe	Moyen Chari	15-Jul-14	no	no	no	no- eats fish	19-Aug-14	GW
8	30	F	Sara	Kirah	Sarh	Moyen Chari	18-Jul-14	yes	no	no	no- eats fish	17-Sep-14	GW
9	28	F	Baguirmi	Boti	Bousso	Chari Baguirmi	24-Jul-14	no	yes	24-Aug-14	no- eats fish	17-Sep-14	GW
10	20	M	Rouga	Am-Bissirigne	Am-Bassirigne	Salamat	20-Aug-14	?	?	no	?	17-Sep-14	GW
11	5	F	Sara	Maimou	Sarh	Moyen Chari	24-Sep-14	yes	no	no	Yes, same house as case #12 (2013), niece of case #13 (2013), same concession as dog #43 (2014)	20-Oct-14	
12	4	F	Mbaye	Lapia	Moissala	Mandelia	22-Nov-14	yes	no	no	no	November	GW
13.1	8	F	Mbaye	Lapia	Moissala	Mandelia	12/6/2014	yes	no	no	no	December	GW
13.2							12/26/2014	yes	no	no			

* **Source:** known visit or residence of patient in a known endemic village/locality or village/cluster where cases of GWD occurred 10-14 months before GW emerged, and verified by the GWEP.

There were an average 1.15 worms per infected human (range 1-2) and an average 1.53 worms per infected dog (range 1-10) in 2014. In Chad, the proportion of Guinea worms that have emerged from dogs compared to humans has increased exponentially over time from 2.7 in 2012 to 3.9 in 2013 to 8.7 in 2014. Moreover, the monthly incidence of human cases has been scattered throughout the year over the past five years, but infections in dogs peak at the end of the dry season in May-June, coincident with the mass harvesting of fish (*peche collective*) conducted at that time[*]. The working hypothesis is that all or most Guinea worm infections in Chad are acquired by humans eating under-cooked fish and dogs eating discarded raw fish entrails, and are mediated by fish acting as a transport or paratenic host of the parasite. This is a dynamic unlike that seen in any other endemic country in the global Guinea Worm Eradication Program, including in Chad itself during its eradication campaign in the 1990s (**Figure 4**). It thus appears that dogs in Chad are infected with Guinea worms that originated in humans, although dogs apparently are now the main driving force of Guinea worm infections in humans and dogs in Chad.

Figure 4



[*] See Eberhard ML, et. al.,2014. The peculiar epidemiology of Dracunculiasis in Chad. Am J Trop Med Hyg 90:61-70.

Interventions timeline:

- Village-based surveillance for cases of Guinea worm disease (GWD) became operational in Chad again in April 2012, with 757 villages under active surveillance by the end of 2014, of which 90 villages had one or more infections in dogs and/or humans in 2013-2014. Approximately 66% of Chadians surveyed were aware of the cash reward for reporting a case of GWD in 2014.
- Enhanced health education to urge villagers to cook, dry, or smoke fish well and not allow dogs to eat raw fish entrails began in October 2013. All villages under active surveillance received such enhanced health education messages in 2014, and at least some have begun to bury fish entrails. Random spot checks will be conducted monthly in 2015 to assess related changes in behavior in households and fish markets.
- Beginning in February 2014 villagers have been encouraged to tether infected dogs until the worms have emerged completely; 45 (40%) of the 113 infected dogs were tethered in 2014.
- Selective use of ABATE@ Larvicide in cordoned areas of the vast lagoons along the Chari River where most cases have occurred commenced in August 2014.
- Although the main mode of transmission in Chad now is not believed to occur by drinking contaminated water, 73% of the 90 villages that had a Guinea worm infection in humans and/or dogs in 2013-2014 have a safe source of drinking water already, and the Government of Chad aims to reach all affected villages with safe water by December 2015.

MALI REPORTS 40 CASES; NATIONAL REVIEW IN FEBRUARY

Mali has reported a provisional total of 40 cases of Guinea worm disease in 2014, of which 35 (88%) were reportedly contained (**Table 3 and 6**). A line listing is in **Table** 3. This is an increase of 264% from the 11 cases reported in 2013. The cases in 2014 occurred in three villages: Tanzikratene (29 cases/28 contained) in Ansongo district of Gao Region, Nanguaye (10 cases/7 contained) in Gourma Rharous district of Timbuktu Region, and Fion (1 uncontained case) in Tominian district of Segou Region. The source of the single sporadic case in Fion in October is unknown. No cases were reported from Kidal Region, where surveillance is incomplete due to insecurity but does include the known endemic areas from 2013, for the first time since the outbreak was discovered there in 2007 (Kidal reported 3 cases in 2013).

UNICEF resumed drilling and rehabilitation of borehole wells in northern Mali in January. However, the mechanized water supply system serving Tanzikratene requires repairs above and beyond what the UNICEF crew on the ground can currently provide. Mali doubled the amount of its cash reward for reporting a case of Guinea worm disease to the equivalent of $100 in August 2014, which may have increased villagers' willingness to report cases that occurred in September-October and thereafter. Surveys of awareness of the cash reward conducted in November and December found 96% of 200 persons surveyed in Mopti Region and 98% of 705 persons surveyed in Gao Region were aware of the reward, while 83% of 120 persons surveyed in Timbuktu Region in November were aware of the reward. Led by the national program manager of Mali's GWEP, Dr. Gabriel Guindo, the secretariat of the GWEP made supervisory visits to Segou & Tominian districts (Segou Region), Mopti (Mopti Region), Gossi (Timbuktu Region), and Gao & Ansongo districts

Table 3

Mali Guinea Worm Eradication Program

Line Listing of Cases: 2014

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established? (Yes/No)	Worm Specimen^	
				Name	District/ payam/ woreda	County/ Region						Date sent to CDC (D/M/Y)	Diagnosis
1	23	F	Black Touareg	Tanzikratène	Ansongo	Gao	8/31/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	9/26/2014	GW
2	18	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/3/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
3	7	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/3/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	9/26/2014	GW
4	21	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/3/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	9/26/2014	GW
5	48	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/7/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	9/26/2014	GW
6	13	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/8/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
7	70	M	Black Touareg	Nangaye	G.Rharous	Tombouctou	9/12/2014	No	Yes	9/11/2014	Yes (Nangaye)	10/8/2014	GW
8	25	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/13/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	9/26/2014	GW
9	35	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/14/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
10	30	M	Black Touareg	Nangaye	G.Rharous	Tombouctou	9/15/2014	No	Yes	9/11/2014	Yes (Nangaye)	10/8/2014	GW
11	20	F	Black Touareg	Nangaye	G.Rharous	Tombouctou	9/16/2014	No	Yes	9/11/2014	Yes (Nangaye)	11/10/2014	GW
12	22	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/17/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
13	4	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/20/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
14	20	F	Black Touareg	Nangaye	G .Rharous	Tomboutou	9/20/2014	Yes	No	9/11/2014	Yes (Nangaye)	11/10/2014	GW
15	16	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/22/2014	No	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
16	46	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/26/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
17	8	M	Black Touareg	Tanzikratène	Ansongo	Gao	9/26/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
18	8	F	Black Touareg	Tanzikratène	Ansongo	Gao	9/27/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
19	40	F	Black Touareg	Nangaye	G.Rharous	Tombouctou	9/27/2014	Yes	No	9/11/2014	Yes (Nangaye)	11/10/2014	GW
20	31	M	Black Touareg	Tanzikratène	Ansongo	Gao	10/4/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
21	4	M	Black Touareg	Tanzikratène	Ansongo	Gao	10/7/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
22	18	M	Black Touareg	Tanzikratène	Ansongo	Gao	10/10/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	10/20/2014	GW
23	16	F	Black Touareg	Tanzikratène	Ansongo	Gao	10/10/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
24	14	F	Black Touareg	Tanzikratène	Ansongo	Gao	10/11/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	12/22/2014	GW
25	18	M	Black Touareg	Nangaye	G.Rharous	Tombouctou	10/13/2014	Yes	No	9/23/2014	Yes (Nangaye)	11/10/2014	GW
26	12	M	Bobo	Fion	Tominian	Ségou	10/17/2014	No	yes	10/18/2014	Yes (Fion)	10/30/2014	GW
27	12	M	Black Touareg	Tanzikratène	Ansongo	Gao	10/21/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	12/22/2014	GW
28	7	F	Black Touareg	Tanzikratène	Ansongo	Gao	10/21/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	12/22/2014	GW
29	20	F	Black Touareg	Tanzikratène	Ansongo	Gao	10/21/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	11/10/2014	GW
30	23	F	Black Touareg	Nangaye	G.Rharous	Tombouctou	10/23/2014	Yes	No	9/23/2014	Yes (Nangaye)	11/10/2014	GW
31	3	F	Black Touareg	Nangaye	G.Rharous	Tombouctou	10/23/2014	Yes	No	9/23/2014	Yes (Nangaye)	11/10/2014	GW
32	30	F	Black Touareg	Tanzikratène	Ansongo	Gao	10/28/2014	Yes	No	9/1/2014	Yes (Tanzikratène)	12/22/2014	GW
33	20	M	Black Touareg	Tanzikratène	Ansongo	Gao	08/11/20014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
34	17	M	Black Touareg	Tanzikratène	Ansongo	Gao	11/11/2014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
35	7	M	Black Touareg	Tanzikratène	Ansongo	Gao	11/17/2014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
36	20	F	Black Touareg	Tanzikratène	Ansongo	Gao	11/19/2014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
37	19	F	Black Touareg	Tanzikratène	Ansongo	Gao	11/22/2014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
38	16	M	Black Touareg	Tanzikratène	Ansongo	Gao	11/26/2014	Yes	No	No	Yes (Tanzikratène)	12/22/2014	GW
39	7	M	Black Touareg	Nangaye	G.Rharous	Tombouctou	11/28/2014	Yes	No	No	Yes (Nangaye)	12/22/2014	GW
40	4	M	Black Touareg	Nangaye	G.Rharous	Tombouctou	11/30/2014	Yes	No	No	Yes (Nangaye)	12/22/2014	GW

* **Source:** known visit or residence of patient in a known endemic village/locality or village/cluster where cases of GWD occurred 10-14 months before GW emerged, and verified by the GWEP.

(Gao Region) in December 2014. The secretariat is unable to conduct supervisory visits of staff in Kidal Region because of insecurity. The national Guinea Worm Eradication Task Force has not been appointed yet. The Carter Center has supported the design and manufacture of a new "Guinea worm cloth" for Mali's GWEP.

Mali will hold the annual review of its GWEP in Bamako on February 16-17, 2015 to be followed by the annual meeting of National Program Managers for all four of the remaining endemic countries (Chad, Ethiopia, Mali, South Sudan) in Bamako on February 18-20.

ETHIOPIA REPORTS ANOTHER CASE IN DECEMBER; NATIONAL COORDINATOR LEAVES COUNTRY FOR THREE MONTHS

After five consecutive months with no reported cases, Ethiopia's Dracunculiasis Eradication Program (EDEP) detected a case of Guinea worm disease in a 37 year old Agnuak man who resides in Bathor village of Gog woreda (district) in Gambella Region. He was detected, reported and sent to the case containment center on the same day, December 2, 2014, that his worm began to emerge. A farmer, he reportedly had not been outside of Gog district for the past 14 months. He does not know any of the villages where there were Guinea worm infections in humans or dogs in 2013 or 2014. He buys sun-dried fish and gets his drinking water from ponds near his home and in the nearby forest. All eight ponds were treated with ABATE@ Larvicide the week after his first worm emerged. A second worm emerged on December 13 when he was in the case containment center.

Led by National Program Manager Mr. Gole Ejeta, the EDEP convened its annual review on December 3-4, 2014 in Jimma, with Mr. Ejeta as the highest ranking representative of the Federal Ministry of Health. Other participants in the meeting, which generated active discussion, included interested representatives from The Carter Center, the World Health Organization, the Bill & Melinda Gates Foundation, and staff of the EDEP. All three of Ethiopia's cases in 2014 were reportedly contained (**Table 4**). The EDEP had 156 villages under active surveillance in 2014 (vs. 91 villages in 2013). Ethiopia increased the amount of its cash reward for reporting a case of GWD to the equivalent of $100 in September 2014. The average level of reward awareness in Gambella Region, where all cases have occurred in recent years, increased from 40% in 2013 to 72% (range 51%-94%) in 2014. The program generated more rumors of GWD than expected in the three districts of greatest concern in Gambella Region 2014 (**Table 5**).

On December 16, 2014 Mr. Ejeta surprised the partners of the EDEP by informing them that he was leaving Ethiopia a few hours later to work on the outbreak of Ebola in West Africa for three months.

IN BRIEF

Sudan, which reported three cases of Guinea worm disease in June and September 2013 which appear to have been infected from undetected imported cases in 2012, reported no cases in 2014.

Table 4

Ethiopia Dracunculiasis Eradication Program

Line Listing of Cases: 2014

Case #	Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/ Pending)	Patient contaminated sources of water (Yes/No)	Date ABATE applied (D/M/Y)	Source* of infection established? (Yes/No)	Worm Specimen	
				Name	District/ payam/ woreda	County/ Region						Date sent to CDC (D/M/Y)	Diagnosis
1.1	65	M	Agunak	Gambella Town	Gambella Town	Ethiopia/Gambella	6/12/2014	Yes	No	6/19	No	16-Jul-14	GW
2.1	12	M	Agunak	Wichini	Gog	Ethiopia/Gambella	6/22/2014	Yes	No	6/23 & 6/24	No	24-Jul-14	GW
3.1	37	M	Agunak	Bathor	Gog	Ethiopia/Gambella	12/2/2014	no	y	12/8 & 12/9	No	5-Dec	GW
3.2							12/12/2014	no	no	12/12 & 12/14		Pending	Pending

* **Source:** known visit or residence of patient in a known endemic village/locality or village/cluster where cases of GWD occurred 10-14 months before GW emerged, and verified by the GWEP.

Table 5

Ethiopia Dracunculiasis Eradication Program

Observed and expected rumors of GWD, and number of hospitalizations based on suspicion of GWD: January - October 2014*

District of Gambella Region	Number of villages under active surveillance	Population	Observed Rumors*				Expected^ rumors per 1000 population	Ratio of observed to expected number of rumors	Suspects**	
			Number	Number of investigated < 24 hours	% investigated < 24 hours	Rate per 1000 population			Number hospitalized	% hospitalized
Abobo	77	23000	1682	1479	88%	73	644	2.61	185	11%
Gog	68	37802	1627	1428	88%	43	1058	1.54	74	5%
Itang	22	4260	300	270	90%	70	119	2.52	10	3%
Total	167	65062	3609	3177	88%	55	1822	1.98	269	7%

* A rumor is any information about possible cases of GWD.

** A suspect is a patient with one or more of the following signs or symptoms: localized itching, blister or swelling, skin lesion.

^ Assumes 28 expected rumors per 1000 population.

Table 6

Number of Reported Cases of Guinea Worm Disease Contained and Number Reported by Month during 2014*

(Countries arranged in descending order of cases in 2013)

Countries with Endemic Transmission	Number of Cases Contained / Numberof Cases Reported													% Contained
	January	February	March	April	May	June	July	August	September	October	November	December	Total*	
South Sudan	0 / 0	0 / 0	3 / 3	3 / 4	3 / 4	6 / 8	13 / 22	14 / 21	4 / 5	1 / 3	0 / 0	0 / 0	47 / 70	67
Chad	1 / 1	1 / 1	1 / 1	1 / 1	0 / 1	0 / 1	1 / 3	0 / 1	1 / 1	0 / 0	1 / 1	1 / 1	8 / 13	62
Mali §	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	14 / 18	12 / 13	8 / 8	0 / 0	35 / 40	88
Ethiopia	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	2 / 2	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	3 / 3	100
Total*	1 / 1	1 / 1	4 / 4	4 / 5	3 / 5	8 / 11	14 / 25	15 / 23	19 / 24	13 / 16	9 / 9	2 / 2	93 / 126	74
% Contained	100	100	100	80	60	73	56	65	79	81	100	100	74	

Countries Reporting Cases	Number of Cases Contained / Numberof Cases Reported													% Contained
	January	February	March	April	May	June	July	August	September	October	November	December	Total*	
Sudan^	/	/	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0

Total	1 / 1	1 / 1	4 / 4	4 / 5	3 / 5	8 / 11	14 / 25	15 / 23	19 / 24	13 / 16	9 / 9	2 / 2	93 / 126	70

*Provisional

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

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

§Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Tinbuktu and Gao Regions; in late April, the GWEP deployed one technical advisor to Kidal to oversee the program during the transmission season (for the first time since 2012).

^A Carter Center consultant, deployed to Kafia-Kingi area in South Darfur in March, implemented active village-based surveillance in Kafia-Kingi and four other at- risk villages, and began monthly reporting.

Number of Reported Cases of Guinea Worm Disease 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 / Numberof Cases Reported													% Contained
	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	8 / 14	7 / 11	7 / 11	2 / 3	0 / 0	0 / 0	76 / 113	67
Chad	0 / 0	0 / 0	0 / 0	3 / 3	1 / 1	0 / 1	3 / 3	1 / 1	0 / 0	0 / 0	0 / 3	0 / 2	8 / 14	57
Mali §	0 / 0	0 / 0	0 / 0	0 / 0	0 / 3	1 / 1	0 / 0	0 / 0	1 / 1	1 / 2	4 / 4	0 / 0	7 / 11	64
Ethiopia	1 / 1	0 / 0	0 / 0	0 / 1	3 / 4	0 / 1	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	4 / 7	57
Total*	1 / 1	1 / 2	1 / 4	21 / 29	23 / 32	14 / 22	11 / 17	8 / 12	8 / 12	3 / 5	4 / 7	0 / 2	95 / 145	66
% Contained	0	50	25	72	72	64	65	67	67	60	57	0	66	

Countries Reporting Cases	Number of Cases Contained / Numberof Cases Reported													% Contained
	January	February	March	April	May	June	July	August	September	October	November	December	Total*	
Sudan^	/	/	/	/	/	2 / 2	/	/	1 / 1	/	/	/	3 / 3	0%

Total	1 / 1	1 / 2	1 / 4	21 / 29	23 / 32	16 / 24	11 / 17	8 / 12	9 / 13	3 / 5	4 / 7	0 / 2	98 / 148	66

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

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

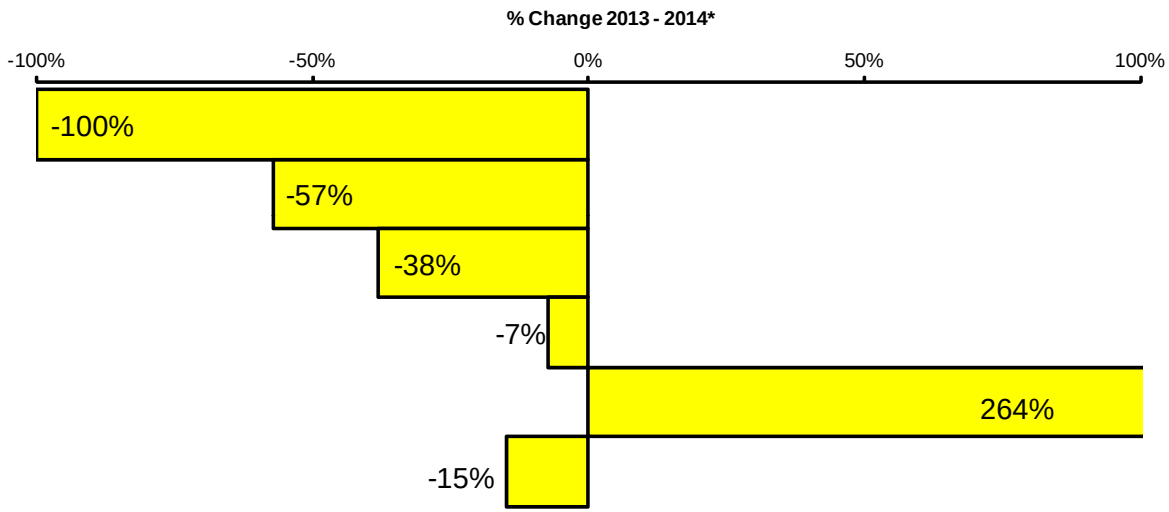
^ The South Sudan GWEP ceased operations on December 16, 2013 as a result of armed conflicts and insecurity. However, village volunteers and local supervisory staff remained in place and continued village-based surveillance throughout December, when zero

§ Since April 2012 reports include only Kayes, Koulikoro, Segou,Sikasso, and Mopti Regions; the GWEP was not fully functional in Timbuktu, and Gao Regions throughout 2013, and not at all in Kidal Region.

Figure 5

Number of Indigenous Cases Reported During the Specified Period in 2013 and 2014*, and Percent Change in Cases Reported

Country	Cases Reported	
	2013	2014*
Sudan^ (12)	3	0
Ethiopia (12)	7	3
South Sudan (12)	113	70
Chad (12)	14	13
Mali (12)	11	40
Total	148	126



* Provisional: Numbers in parentheses denote months for which data received, e.g., (12)= January-December

§ Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Timbuktu and Gao Regions; in late April 2014, the GWEP deployed one technical advisor to Kidal to oversee the program during the transmission season (for the first time since 2012).

^ Under pre-certification of eradication; reported three cases in 2013 from Kafia Kingi area of South Darfur State. A Carter Center consultant was deployed to Kafia-Kingi area in March 2014 to implement active village-based surveillance and interventions in Kafia Kingi and four other at-risk villages, all of which began reporting monthly as of the end of March.

EXHIBIT LAUNCHED AT AMERICAN MUSEUM OF NATURAL HISTORY IN NEW YORK

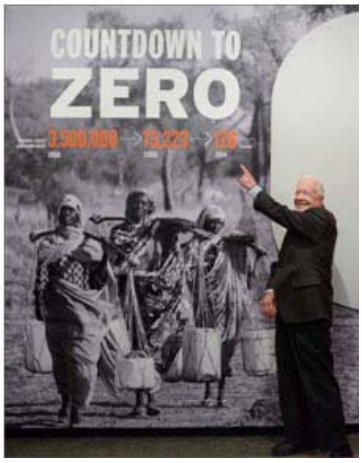


Photo courtesy of the American Museum of Natural History

Former U.S. President Jimmy Carter led the launching of the exhibition, "Countdown to Zero: Defeating Disease" at the American Museum of Natural History in New York City on January 12, 2015. President Carter used two press conferences and ten interviews involving about 100 media outlets to announce the provisional report of 126 cases of Guinea worm disease worldwide in 2014. The exhibition was developed in collaboration with The Carter Center and uses artifacts, photography and video mainly to showcase the campaign to eradicate Guinea worm disease, but it also summarizes the campaigns to eradicate smallpox and polio, and to eliminate onchocerciasis, lymphatic filariasis, and malaria. Approximately 150 guests joined a V.I.P. reception, and 900 persons witnessed a sold-out panel discussion on the topic of disease eradication, elimination and control that included President Carter, AMNH curator Dr. Mark Siddall, and Carter Center Vice-President Dr. Donald Hopkins, among others. The exhibit will remain on view in New York for at least six months. More information and a three minute long video are available via the museum's webpage: http://www.amnh.org/exhibitions/countdown-to-zero.

ICCDE10

The International Commission for the Certification of Dracunculiasis Eradication (ICCDE) held its tenth meeting at the headquarters of the World Health Organization (WHO) in Geneva, Switzerland, from 14 to 15 January 2015. A total of 8/9 members of the ICCDE were present together with representatives from WHO headquarters, WHO Eastern Mediterranean Region, WHO African Region, and experts from United States Centers for Disease Control and Prevention (CDC) and the Bill and Melinda Gates Foundation. The Carter Center representatives could not participate as the meetings coincided with an important advocacy event organized by The Carter Center at the American Museum of Natural History in New York focusing on Disease Eradication and highlighting the achievements of the GWEP in the presence of President Carter. Director General of WHO Dr. Margaret Chan was briefed by the Chairman and Co-Chair of the meeting. The Deputy Director General, Dr Asamoa Baah and Assistant Director General /HTM, Dr Nakatani attended a session each and were briefed by the ICCDE Members on the progress and remaining challenges towards global eradication of dracunculiasis.

The ICCDE reviewed Ghana's claim for interruption of transmission and unanimously concluded that transmission there had been interrupted according to established criteria. On recommendation of the ICCDE, the Director-General of WHO certified Ghana as free of dracunculiasis transmission on 14 January 2015. Ghana was the second most endemic country in the world in the 1990s after Nigeria, which was certified free of transmission in December 2013.

With Ghana certified, a total of 198 countries, territories and areas, representing 186 WHO Member States have been certified as free of dracunculiasis transmission. Only 8 countries remain to be certified.

The commission further discussed on the particular challenges with regard to eradication in the four remaining endemic countries- Chad, Ethiopia, Mali and South Sudan. The way forward to implement a cash reward for reporting GWD globally was also discussed.

The commission further acknowledged the tremendous progress so far by the Global campaign to eradicate Guinea worm disease, and made general and country specific recommendations in line with shortening the last mile leading to global eradication of Guinea worm disease.

SCIENTIFIC EXPERT GROUP MEETING

A Scientific Expert Group Meeting on operational research questions of programmatic importance for Dracunculiasis Eradication was held at the WHO headquarters, from 12 to 13 January 2015. A total of about 40 experts participated in this meeting which included the ICCDE Members, representatives from the Welcome Trust Sanger Institute, University of Basel, Swiss Institute of Tropical Medicine, IRED, Chad, Programme Managers/Directors of the GWEP/MOH from, Chad, Mali and South Sudan, The WHO Ethiopia GW National Program Officer, along with staff from WHO headquarters, WHO Eastern Mediterranean Region, WHO African Region, and experts from United States Centers for Disease Control and Prevention (CDC) and the Bill and Melinda Gates Foundation. The meeting was chaired by Dr. Sharon Roy, Director, WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, Centers for Disease Control and Prevention, USA.

The meeting focused on the peculiar infection of Guinea Worm Disease (GWD) in dogs in Chad, the lingering low level transmission of dracunculiasis in Ethiopia and other programmatic challenges which operational research can provide evidence to address at this important phase of the Eradication Program. The experts acknowledged and appreciated the ongoing research being carried out by The Carter Center, CDC and The Sanger Institute. A list of questions were formulated and prioritized.

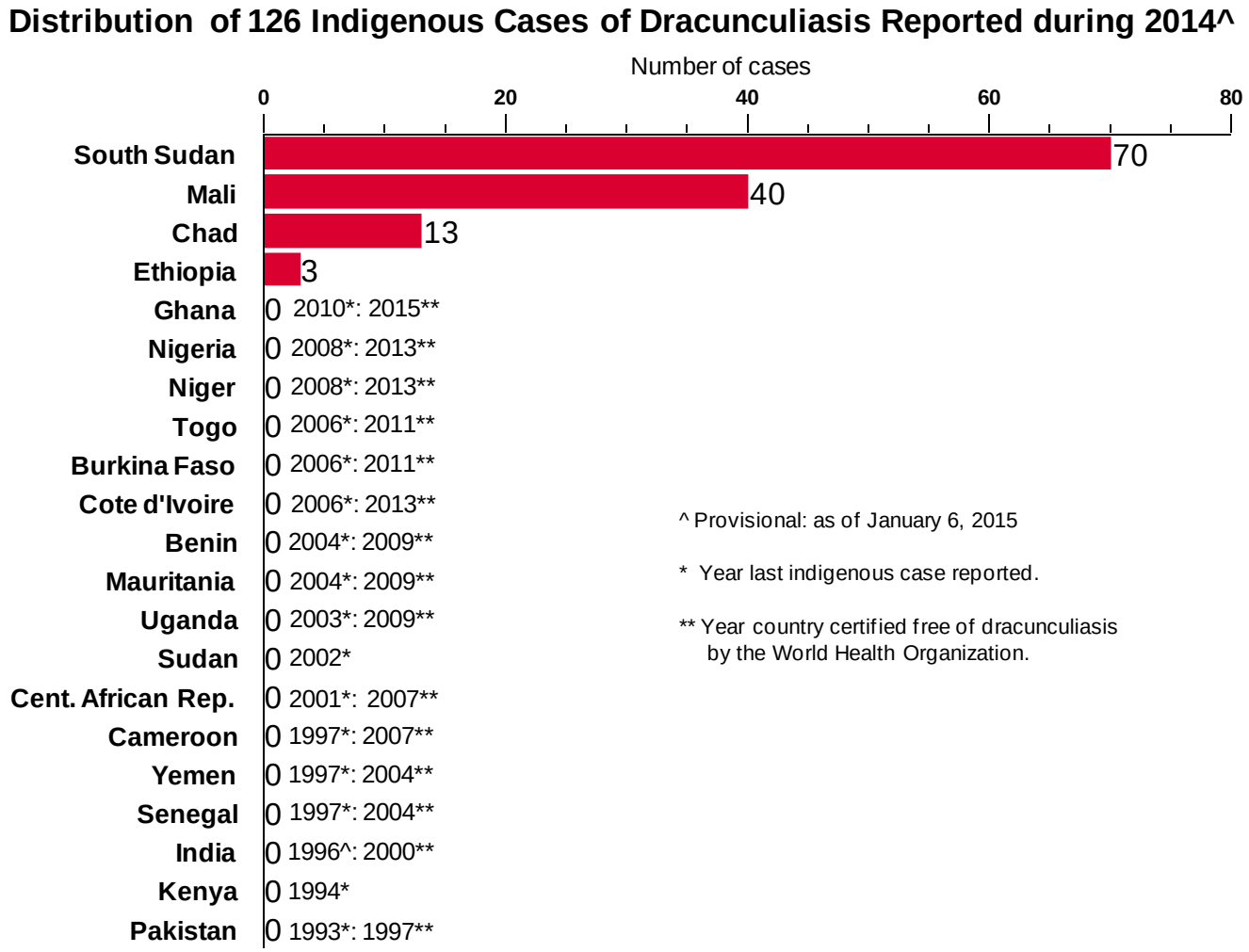
WHO SUPPORTIVE VISITS TO COUNTRIES

Dr Andrew Seidu Korkor, from AFRO/ISTWA, conducted a technical support mission to Ethiopia from 20th – 29th October to support the orientation of members of the National Certification Committee. A joint team, including the National Coordinator, Mr. Gole Ejeta and The WHO NPO for GWE, Dr. Zeyede Zeleke and two members of the EDEP NCC, made a joint field visits to Abobo, Itang and Lare woredas as well as the refugee crossing point with South Sudan and Reception Center at Pakag. They were briefed during the mission by field staff of The Carter Center and WHO. The mission afforded the members of the NCC to observe at first hand activities carried out in areas

under active surveillance and areas under passive surveillance as well as data management practices from the community level to the regional level.

Dr Andrew Seidu Korkor from AFRO/ISTWA, visited Kenya to participate in activities leading to the formal inauguration of the National Certification of Kenya. During the two-day meeting from 12-13 November, the participants discussed, among other issues, criteria for certification and statutory requirements for certification, certification process, role of stakeholders in the eradication effort, including WHO, The Carter Center, UNICEF and Government of Kenya and her agencies (particularly Ministries Health, Water Resources, Local Government, etc). The 8-member team was formally inaugurated by the Director of Medical Services, Dr. Nicholas Muraguri. It is chaired by Professor Wamae. The team will lead Kenya's preparations towards an ICT mission in 2015 and eventual certification. Other participants at the meeting included Dr.Tatu Kamau, Head of the Vector Borne Division of the MoH, Dr. Dunstan Mukoko, National Coordinator of the National Guinea Worm Eradication Programme and Dr. Joyce Onsongo, in charge of Disease Prevention and Control at the WHO country Office.

Figure 6



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

Note to contributors:
Submit your contributions via email to Dr. Sharon Roy (gwwrapup@cdc.gov) or to Dr. Ernesto Ruiz-Tiben (eruizti@emory.edu), by the end of the month for publication in the following month's issue. Contributors to this issue were: the national Guinea Worm Eradication Programs, Drs. Donald R. Hopkins and Ernesto Ruiz-Tiben of The Carter Center, Drs. Sharon Roy and Mark Eberhard of CDC and Dr. Dieudonné Sankara of WHO.

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http://www.cdc.gov/parasites/guineaworm/publications.html#gwwp

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World Health Organization

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