



Date: January 11, 2016

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

Subject: GUINEA WORM WRAP-UP #238

To: Addressees

"The worm will be the judge of the quality of our work last year."
Makoy Samuel Yibi, January 21, 2015

**PROVISIONAL COUNT FOR 2015: 22 CASES OF GUINEA WORM DISEASE
WORLDWIDE**

The four remaining endemic countries of Chad, Ethiopia, Mali and South Sudan have reported a provisional total of only 22 cases in 2015, which is an unprecedented reduction of 83% from the 126 cases reported worldwide in 2014 (Figures 1-3, and Table 1).

Figure 1

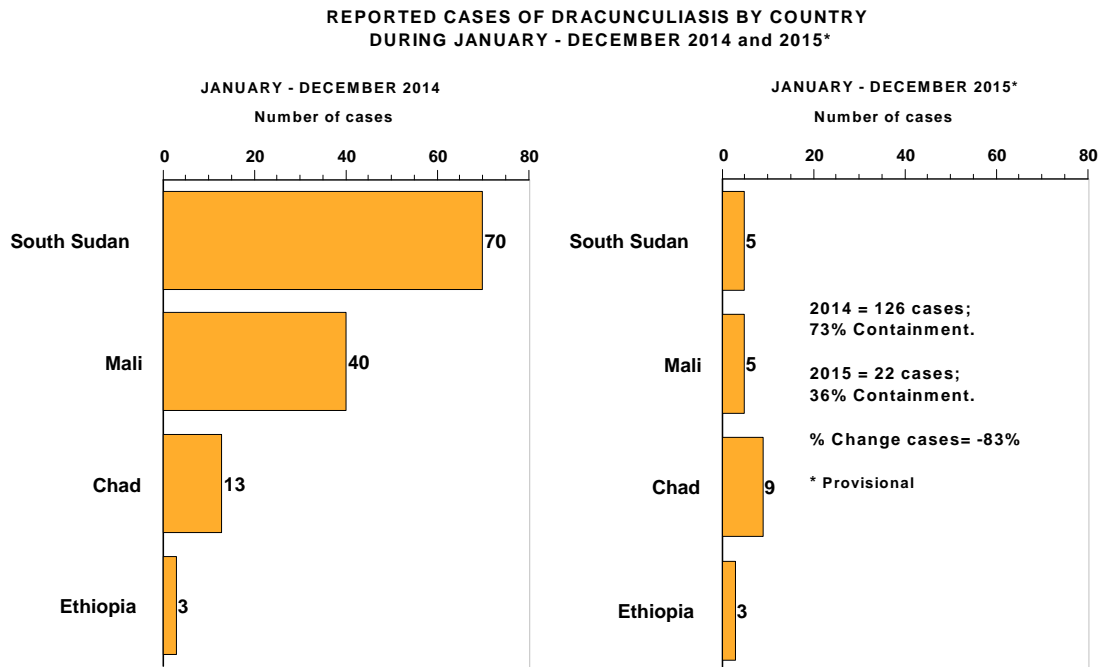


Table 1

Number of Reported Cases of Guinea Worm Disease Contained and Number Reported by Month during 2015*
(Countries arranged in descending order of cases in 2014)

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	0/0	0/0	0/0	0/0	1/1	1/2	0/1	0/0	0/0	0/1	0/0	2/5	40%
MALI [§]	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/1	0/0	3/3	0/1	0/0	3/5	60%
CHAD	0/0	0/1	0/2	0/1	0/0	0/2	0/1	0/1	0/0	0/1	0/0	0/0	0/9	0%
ETHIOPIA	0/0	0/0	0/0	0/0	1/1	0/0	0/0	1/1	0/0	1/1	0/0	0/0	3/3	100%
TOTAL*	0/0	0/1	0/2	0/1	1/1	1/3	1/3	1/4	0/0	4/5	0/2	0/0	8/22	36%
% CONTAINED	0%	0%	0%	0%	100%	33%	33%	25%	0%	80%	0%	0%	36%	

*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 a case of GWD did not meet all case containment standards.

[§]Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Tinbuktu and Gao Regions; contingent on security conditions during 2015 the GWEP continued to deploy one technical advisor to Kidal Region to oversee the program.

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

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	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
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
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
ETHIOPIA	0/0	0/0	0/0	0/0	0/0	2/2	0/0	0/0	0/0	0/0	0/0	0/1	2/3	67
TOTAL*	1/1	1/1	4/4	4/5	3/5	8/11	14/25	15/23	19/24	13/16	9/9	1/2	92/126	73
% CONTAINED	100	100	100	80	60	73	56	65	79	81	100	50	73	

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

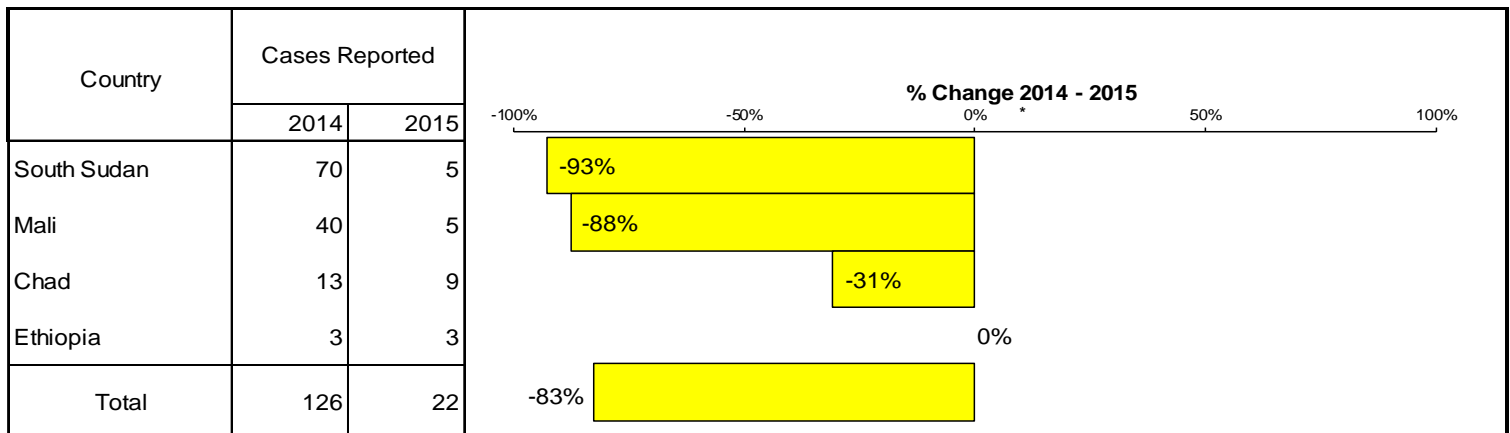
Cells shaded in yellow denote months when a case of GWD did not meet all case containment standards.

[§]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).

South Sudan and Mali, the two countries that had the most cases and the greatest problems with insecurity in 2014 led the way with provisional reductions of 93% and 88% respectively. Worm specimens from all 22 cases were confirmed as *Dracunculus medinensis* by the Division of Parasitic Diseases and Malaria laboratory at the Centers for Disease Control and Prevention (CDC). Zero cases were reported worldwide in January, September and December 2015, and for the first time, all four countries ended the year with less than ten cases each. The number of villages reporting one or more cases was reduced from 54 to 20 between 2014 and 2015, and for the third consecutive year, no cases were exported from one country to another. Only 36% (8/22) of the cases were contained in 2015, which is less than the 73% case containment rate achieved in 2014, but transmission may still not have taken place even if one or more of the standard criteria (see last page) are not met, e.g., if cases were not discovered within 24 hours after the worm began to emerge (thus failing one of the criteria for case containment), or if contamination of water did not occur at all. Moreover, it is standard practice by all GWEPs to also prevent transmission by applying ABATE to any water source contaminated by a human patient or by an infected animal within 10-14 days (the time range required by first stage larvae (L1) in copepods to metamorphose into the L3 infective stage. The updated line listings of cases (Tables 2- 5) for the four countries are on following pages.

Figure 2

Number of Indigenous Cases Reported During the Specified Period in 2014 and 2015*, and Percent Change in Cases Reported



* Provisional

THE FINAL CHALLENGE: GUINEA WORM INFECTIONS IN DOGS

As the number of Guinea worm cases in humans has declined and surveillance has tightened, the number of dogs reported with emerging Guinea worms has increased significantly in Chad, and less so in Ethiopia. A single infected dog each has been detected in Mali and in South Sudan for the first time since the global Guinea Worm Eradication Program began. Sporadic Guinea worm infections in dogs and other animals are not unknown, having been reported historically in Kazakhstan and previously in this campaign in Cote d'Ivoire, Ghana, India, Mali, and Pakistan, as well as in experimental laboratory animals. These infections in dogs and other animals ceased after human infections were eliminated. The earlier infections in animals were attributed to *D. medinensis*, the Guinea worm of humans, but only recently

Table 2

South Sudan Guinea Worm Eradication Program
Line Listing of Cases of GWD During 2015

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?		Worm Specimen	
	Name	1 = EVAS	2 = NEVAS						(Yes, No, or Pending)	If No, Date of Abate Rx*		Name	1 = EVAS	2 = NEVAS	(Yes / No)	Description	(Yes / No)	Actions?	Date sent to CDC	Diagnosis
1.1	DAKBUONG	1		ABUYONG	AWERIAL	5	F	22-Jun-15	YES		2	DAKBUONG	1		NO	PATIENT LIKELY INFECTED IN DAKBUONG IN 2014	Yes		1-Jul-15	GW
2.1	LORIWO	1		JIE	KAPOETA EAST	25	M	11-Jul-15	YES	28-Aug-15 31-Aug-15	2	LORIWO	1		YES	POSSIBLE LOZUDOK OR KASSINGOR MOUNTAIN VILLAGES (STILL INVESTIGATING)	Yes		7-Jul-15	GW
3.1	ANGON		2	UDICI	JUR RIVER	12	F	26-Jul-15	NO	28-Aug-15 31-Aug-15	2	ANGON		2	NO	STILL UNDER INVESTIGATION	No		12-Aug-15	GW
3.2								25-Aug-15	NO	28-Aug-15 31-Aug-15									22-Sep-15	GW
4.1	RUMCHIETH		2	WUNLIT	TONJ EAST	28	F	25-Aug-15	NO	21-Sept-15 23-Sept-15	2	RUMCHIETH		2	NO	STILL UNDER INVESTIGATION	No		9-Sep-15	GW
4.2								11-Sep-15	NO	21-Sept-15 23-Sept-15									22-Sep-15	GW
5.1	AWELPINY		2	NGOP	YIROL WEST	16	F	9-Nov-15	NO	13-Nov-15	2	AWELPINY		2	NO	STILL UNDER INVESTIGATION			3-Dec-15	GW

NEVS = Non Endemic Villages
Gardens = Farming areas of villages
CC = Cattle Camp
CCC = Case Containment Center

Table 3

Mali Guinea Worm Eradication Program
Line Listing of Cases of Guinea worm Disease during 2015

Case #	Name	village/locality of detection				Age	Sex	Ethnicity	Village/Locality of Detection			Date GW emerged (D/M/Y)	Case contained? (Yes/No/Pending)	Patient contaminated sources of water	Date ABATE applied (D/M/Y)	Source* of infection established? (Yes/No)	Worm Specimen	
		1= VAS	2=VNAS	District	Region				Name	District/ payam/ woreda	County/ Region						Date sent to CDC (D/M/Y)	Diagnosis
1.1	Parassilame		2	Tominian	Segou	18	M	Peulh	Parassilame	Tominian	Segou	1-Jul-15	No	No	13-Aug-15	No	8-Apr-15	GW
1.2												12-Aug-15	Yes	No	13-Aug-15	No	No	
2.1	Tanzikratene	1		Ansongo	Gao	12	M	Black Touareg	Tanzikratene	Ansongo	Gao	1-Oct-15	Yes	No	no*	Yes (Tanzikratène)	10-Jul-15	GW
2.2	Tanzikratene	1		Ansongo	Gao	12	M	Black Touareg	Tanzikratene	Ansongo	Gao	28-Oct-15	Yes	No	no*	Yes (Tanzikratène)	No	
3	Tanzikratene	1		Ansongo	Gao	17	M	Black Touareg	Tanzikratene	Ansongo	Gao	20-Oct-15	Yes	No	21-Oct-15	Yes (Tanzikratène)	13-Nov-15	GW
4	Tanzikratene	1		Ansongo	Gao	35	M	Black Touareg	Tanzikratene	Ansongo	Gao	25-Oct-15	Yes	No	25-Oct-15	Yes (Tanzikratène)	13-Nov-15	GW
5	Ngariatane	1		Gourma Rh	Tombouctou	45	F	Peulh	Ngariatane	Gourma Rhar.	Tombouct.	17-Nov-15	No	No	18-Nov-15	Yes (Ngariatane)	25-Nov-15	GW

No*: Abate was not applied because water was flowing due to rains
VAS= village under active surveillance.
NVAS= village not under active surveillance

Table 4

Ethiopia Dracunculiasis Eradication Program (EDEP)
Line Listing of Cases of Guinea worm Disease during 2015

Case #	Village or Locality of Detection			Woreda	Region	Patient				Case Contained?		1 = Imported 2=Indigenous	Home Village or Locality			Presumed Source of Infection Identified?		Presumed Source of Infection is a Known VAS?		Worm Specimen	
	Name	1= VAS	2= VNAS			Ethnicity	Age	Sex	Date GW Emerged (D/M/Y)	(Yes, No, or Pending)	If No, Date of Abate Rx		Name	1= VAS	2= VNAS	(Yes or No)	Name	(Yes or No)	Actions/Comments?	Date sent to CDC (D/M/Y)	Laboratory Confirmation
1.1	Gop Fishing Area	1		Abobo	Gambella	Agnuak	25	M	27-May-15	Yes	-	1	Gutok	1		Yes		No	One of group of four men associated with activities in the forest area, including Belak and Aruti ponds, and a swamp area near Bathor village (residence of December 2014 case of GWD).	25-Jun-15	GW
2.1	PRC Agnuak	1		Gog	Gambella	Agnuak	30	M	2-Aug-15	Yes	-	1	Akwaramero/ Bathor	1		Yes	-	Yes	One of group of four men associated with activities in the forest area, including Belak and Aruti ponds, and a swamp area near Bathor village (residence of December 2014 case of GWD).	28-Aug-15	GW
3.1	Akwaramero Farm/Bathor Village	1		Gog	Gambella	Agnuak	60	M	26-Oct-15	Yes		1	Bathor	1		Yes	Yes	Same area (Bathor and forest) associated with infections of cases 1.1 and 2.1 in 2014.	2-Dec-15	GW	

VAS = village under active surveillance
VNAS = village not under active surveillance

Table 5

Chad Guinea Worm Eradication Program
Line Listing of Cases of Guinea worm Disease during 2015

Case #	Village or Locality of Detection			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 VAS?	
						Age	Sex	Date GW Emerged (D/M/Y)	(Yes, No, or Pending)	If No, date of Abate Rx		Name	1 = VAS	3 = VNAS	(Yes or No)	Name	(Yes or No)	Actions/Comments?
	Name	1 = VAS	2 = VNAS															
1.1	Mourgoum		2	Dourbali	Chari Baguirmi	13	M	19-Feb-15	No	-	2	Mourgoum		2	No		No	Contaminated flowing water
2.1	Marabe I		2	Kyabe	Moyen Chari	8	F	7-Mar-15	No	-	2	Marabe I		2	No	-	No	Did not contaminate water
2.2								24-Mar-15										
2.3								13-Apr-15										
3.1	Diganaly	1		Guelendeng	Mayo-Kebi Est	9	M	28-Mar-15	No	6-Apr-15	2	Diganali	1		No	-	No	
3.2								5-Apr-15										
3.3								14-Apr-15										
4.1	Maicomb		2	Danamaji	Moyen Chari	3	M	28-Apr-15	No		2	Maicomb		2	No		No	
4.2								17-May-15										
4.3								17-May-15										
5.1	Mourabat	1		Bailli	Chari Baguirmi	14	M	24-Jun-15	No		2	Mourabat	1		yes	Pond 1km of Pandki	Yes	This boy and case 6.1 drank water from a contaminated pond last year . The pond was contaminated by a dog in Ngargue (1km from Pandori where both boys resided for several months last year)
6.1	Ferick Tchaguine		2	Lai	Logone Occidental	18	M	26-Jun-15	No		1	Mourabat		2	yes	Pond 1km of Pandki	Yes	This boy and case 5.1 drank water from a contaminated pond last year . The pond was contaminated by a dog in Ngargue (1km from Pandori where both boys resided for several months last year)
7.1	Houa Ali		2	Am-Timan	Salamat	12	F	6-Jul-15	No		1	Goz-Arachidia		2	No		No	
8.1	Mana Belegna	1		Massenya	Chari Baguirmi	54	F	17-Aug-15	No		1	Boulama Bororo Centre	1		No		No	
9.1	Kousseri		2	Kyabe	Moyen Chari	40	F	14-Oct-15	No	20-Oct-15	2	Kousseri		2	No		No	The patient has two villages of residence, depending on the time of year. During planting and harvesting season, she lives in Kousseri. During the remainder of the year, she lives in Tandja, which is a village very close to Kousseri.
9.2								18-Oct-15										
9.3								29-Oct-15										

use the 1.1, 1.2...etc. system to designate number of GWs emerging from same case-patient.

VAS = village under active surveillance

VNAS = village not under active surveillance

has extensive genetic testing shown that the worms being recovered from animals now are indistinguishable from *D. medinensis*.

- Chad has reported provisionally Guinea worm infections in 483 dogs, 5 cats and 9 humans in 2015. Chad began offering a cash reward (~US \$20 equivalent) for reporting and tethering infected dogs early in 2015 (it reported 113 infected dogs in 2014). The current circumstances of transmission of Guinea worm infections to and from dogs in Chad are without parallel in other countries as well as in Chad itself before 2010. The intensive fishing industry and access to other aquatic animals in large lagoons along the Chari River provide an unusual ecology that presumably favours the peculiar epidemiology and transmission cycle being seen there now. The Chad GWEP is countering with enhanced education of residents presumed at risk to prevent infection of dogs by burying fish entrails (more than 80% did so in 2015) and to prevent infected dogs from contaminating water by tethering dogs with emerging worms (68% were tethered in 2015). Since October 2013 villagers have been urged to cook their fish well. Abate is used to treat cordoned areas of lagoons where infected dogs and/or humans are known to have contaminated water, since the entire lagoons are too large to be treated. Research is also underway to ascertain whether twice monthly treatment with Mectizan® (Heartgard) of dogs at risk of infection will prevent Guinea worms from developing in the dogs, as well as other studies. The impact of these interventions and research should be manifest later in 2016. The nine human cases of Guinea worm disease in 2015 is the lowest number of annual cases recorded in Chad since the current outbreak was discovered in 2010: 10, 10, 10, 14, 13, 9 cases respectively.
- Ethiopia has reported provisional totals of 3 Guinea worm cases in humans (vs. 3 cases in 2014), 13 infections in dogs and 1 infection in a baboon. Ethiopia began offering a cash reward (500 Birr, ~US\$24, but if reporter and dog owner are different persons, each receives 250 Birr) for reporting and tethering infected dogs in April 2015. Worm specimens from all of these cases and infections were confirmed as Guinea worms by CDC. All of the infections and cases occurred in Gog district of Gambella Region, except one case detected in adjacent Abobo district of the same region but who spent 2014 in Gog District. Ethiopia has reported less than ten cases of Guinea worm disease annually for five consecutive years. In 2011-2015 most cases in Ethiopia have been in men or older boys (male/female ratio 3:1), none of the 23 indigenous cases were under ten years old, and the cases were scattered with no clusters in villages, which suggests that transmission may be associated with male-specific activities away from villages, such as hunting, collecting wood and collecting honey in the forest. Ethiopia's advantages are that the number of its infections is still small (3 infected dogs and one unconfirmed infected baboon were reported in 2014), all are located in a relatively small area of one district, and most of the water bodies in that area are small enough to treat with Abate. Ponds around all areas with infected humans, dogs or baboon were treated with Abate throughout 2015. Although only four (31%) of the 13 infected dogs in 2015 were tethered before worm emergence and thus contained, 33 (70%) of 47 Guinea worms emerging from dogs were contained. All three human cases were reportedly contained.
- Mali reported 5 cases in humans and one infected dog in 2015. Three of the cases occurred in October in the village of Tanzikratene (Ansongo district of Gao Region), which reported 29 cases in 2014. One case occurred in Ngariatane (Gourma Rharous district, Timbuktu Region) in November and one case in Parasilame (Tominian district, Segou

Region) in July. The infected dog was detected in the village of Ouan (Tominian district, Segou Region) in November and was tethered since before the worm emerged. This is the first confirmed Guinea worm in a dog in Mali, although an apparent Guinea worm emerged from a donkey in Mali during the campaign several years ago. Mali does not yet offer a cash reward for reporting and tethering an infected dog.

- South Sudan reported 5 cases in humans and one infected dog, its first, in 2015. The infected dog occurred in the household of Case #3 in Jur River county of Western Bahr El Ghazal State. The dog's worm emerged in September; the dog was killed by a snake bite in October. No other infected dogs have been reported in South Sudan since the onset of the program in 2006.

ETHIOPIA HOLDS ANNUAL PROGRAM REVIEW IN GAMBELLA

The Ethiopian Dracunculiasis Eradication Program (EDEP) held its annual Program Review in Gambella Town on December 14-15, 2015 under the leadership of National Program Coordinator, Mr. Amanu Shirafa. The Honorable Mr. Gutlak Tup, President of Gambella Regional State, and Honorable World Laureate Dr. Tebebe Yemane Berhan, Goodwill Ambassador for Guinea Worm Eradication in Ethiopia participated in the first day of the meeting, which was held at Gambella government house auditorium. The President spoke of the need to finish the job and offered the full support of his government. Other senior participants included the Director General of the Ethiopia Public Health Institute (EPHI) Dr. Amha Kebede (who represented the Federal Minister of Health) and Gambella Regional Health Bureau Head Dr. Lou Obup Opiew, in addition to representatives of The Carter Center (Mr. Craig Withers, Dr. Ernesto Ruiz-Tiben, Mr. Adam Weiss and Ms. Kate Braband), and the World Health Organization (Dr. Esther Arcy Aceng-Dokotum, Dr. Dieudonne Sankara and Dr. Zeyede Kebede). Dr. Lou promised to lend his strong support to the program, including greater engagement of Health Extension Workers. The list of recommendations from the review is replicated below.

EDEP 2015 NATIONAL REVIEW MEETING RECOMMENDATIONS

1. EPHI should provide a monthly update of EDEP activities through the EPHI newsletter and website; Gambella Regional Health Bureau (RHB) should also use available media outlets and disseminate similar information.
2. EDEP should work to achieve country wide cash reward awareness of 80% or greater; EDEP should monitor progress of awareness on regular basis.
3. EPHI and Gambella RHB should conduct supervisory visits assessing EDEP activities in all level 1 districts monthly and all level 2 districts quarterly. A report should be submitted after each visit.
4. EDEP should ensure that both the National and Regional Technical Working Groups (TWGs) meet monthly, i.e. 12 National TWG meetings shall be held at EPHI and 12 Regional TWG meetings should be held at Gambella RHB.
5. EPHI should ensure the Integrated Disease Surveillance and Response (IDSR) units treat all GWD rumors as a public health emergency and notify the local

surveillance system immediately. The EDEP should monitor the number of rumors reported by the IDSR, schools and other reporting units on a monthly basis.

6. EPHI should ensure surveillance officers investigate any rumor of GW within 24 hours of receiving reports from IDSR units. The EDEP should monitor the proportion of rumors investigated within 24 hours on a monthly basis.
7. EDEP National Coordinator should work full time on GWEP. The program should also have full time GWEP Officer(s).
8. Gambella RHB should advocate to UNICEF and the Regional Water Bureau to drill boreholes in Ablen, Akweramero and Atheti villages.
9. WHO should assign more GW Officers to cover all of the refugee camps activities.
10. EPHI should work to include a GWD module into Public Health Emergency Management (PHEM) training manual.
11. EDEP should identify gaps in supply of field materials (e.g. cameras, GPS, laptops, Satellite phones) and fill identified gaps for the level 1 and level 2 districts.
12. EDEP should develop and implement a strategy with the Ministry of Defense, Ministry of Federal Affairs, Ministry of Foreign Affairs and the UN to access remote and insecure areas that fall under their mandate.
13. EDEP should ensure establishment of immediate communication between districts, zones and regions to exchange immediate information about GWD rumors. The communication between two neighbouring countries should go through the national program coordinators.
14. EDEP should ensure that there is collaboration and integration with neglected tropical diseases (NTDs) programs and others, to raise country wide public awareness about GWD.

SOUTH SUDAN GWEP HOLDS ANNUAL REVIEW IN JUBA

Led by its Director Mr. Samuel Makoy Yibi, South Sudan's Guinea Worm Eradication Program (SSGWEP) convened its annual Program Review at the Crown Hotel in Juba on December 9-10, 2015. The National Minister of Cabinet Affairs, Honorable Martin Elia Lomuro opened the meeting on behalf of the Minister of Health. The Undersecretary of Health Dr. Makur Matur Kariom chaired the Opening and Closing Ceremonies. About 85 persons participated in the meeting where other participants included the Ministers of Health of Eastern Equatoria, Warrap, Western Bahr Al Ghazal and Lakes States; several county commissioners; representatives from the Ministries of Water and Irrigation, and of Mining and Petroleum; The Carter Center (Mr. Craig Withers, Dr. Ernesto Ruiz-Tiben, and Mr. Adam Weiss and Ms Kate Braband), World Health Organization (Dr. Andrew Seidu Korkor and Evans Lyosi), and UNICEF; as well as program officers and technical assistants. The recommendations are listed below.

2015 SOUTH SUDAN GWEP REVIEW MEETING RECOMMENDATIONS

1. The SSGWEP should ensure consistent follow up on rumors and suspects in Level I, II and III Surveillance areas, including accurate completion of patient investigation forms.
2. The SSGWEP should maintain an organized filing and record keeping system of all documents used in response to rumors and suspects in all Surveillance areas (Preparation for WHO Certification process).
3. The SSGWEP should conduct a more thorough investigation of all three cases (Angon, Rumcieth and Awelpiny) to determine the exact source of transmission.
4. The SSGWEP should involve the Members of Parliament, County Commissioners and politicians in the development and implementation of Guinea worm eradication and cash reward awareness strategies.
5. The SSGWEP should integrate active case search and awareness activities with the NTD Mass Drug Administration in all states.
6. The SSGWEP should establish cross border surveillance between Lakes and Western Equatoria.
7. The SSGWEP should work with the IDSR/EWARN managers and other surveillance systems to follow up on all Guinea worm alerts within 24 hours and ensure proper documentation of the investigations and follow-up.
8. The SSGWEP should monitor dog infections and outline an effective strategy to address dog infections, if necessary.
9. The Ministry of Electricity, Dams, Irrigation and Water Resources, State Ministry of Physical Infrastructure, Local Government and UNICEF should continue to prioritize Guinea worm endemic villages and clusters for water points and rehabilitation of non-functional water points.
10. The Ministry of Electricity, Dams, Irrigation and Water Resources, State Ministry of Physical Infrastructure, Local Government and UNICEF should mobilize the communities and foster ownership/sustainability of water facilities by community leaders and members.

REWARD AWARENESS AND RUMORS OF CASES

Chad reported 1,798 rumors of cases in January-November 2015 and investigated 1,757 (98%) within 24 hours. Reward awareness surveys in January-November found 81% awareness of the cash reward for reporting a case in humans among 713 persons surveyed in Level I areas and 48% awareness among 712 persons surveyed in Level III areas. Awareness of the reward for reporting an infected dog was 77% and 30% in Level I and Level III areas, respectively.

Ethiopia reported 8,072 rumors in 2015. Overall awareness of the cash reward for reporting a case of GWD was reported to be 69% in 2015, compared to 63% in 2014.

Mali reported 588 rumors of cases in January-November 2015 and investigated 576 (98%) within 24 hours. Reward awareness surveys in November found 75% awareness (77/110) in Level I areas and 98% awareness in Level II areas (650/660).

South Sudan reported 7,130 rumors of cases in January-September 2015. Reward awareness was reported as 62% (1038/1680) overall, including 85% (953/1121) in Level I areas.

DONATIONS

BILL & MELINDA
GATES foundation

The Carter Center is grateful for the Bill & Melinda Gates Foundation's recent contribution of \$15 million to support the Guinea Worm Eradication Program between 2015 and 2016.

Conrad N. Hilton
FOUNDATION

The Carter Center is grateful for the Conrad N. Hilton Foundation's recent contribution of \$2 million to support the Guinea Worm Eradication Program between 2015 and 2017.

MEETINGS

- Mali GWEP Annual Review: Bamako, January 18-19, 2016
- Chad GWEP Annual Review: N'Djamena, January 25-26, 2016
- 20th Annual GWEP Program Managers Meeting: The Carter Center, Atlanta, March 9-11, 2016

RECENT PUBLICATIONS

Callaway, Ewen 2016. Dogs thwart effort to eradicate Guinea worm. *Nature* <http://www.nature.com/news/dogs-thwart-effort-to-eradicate-guinea-worm.1.19109>

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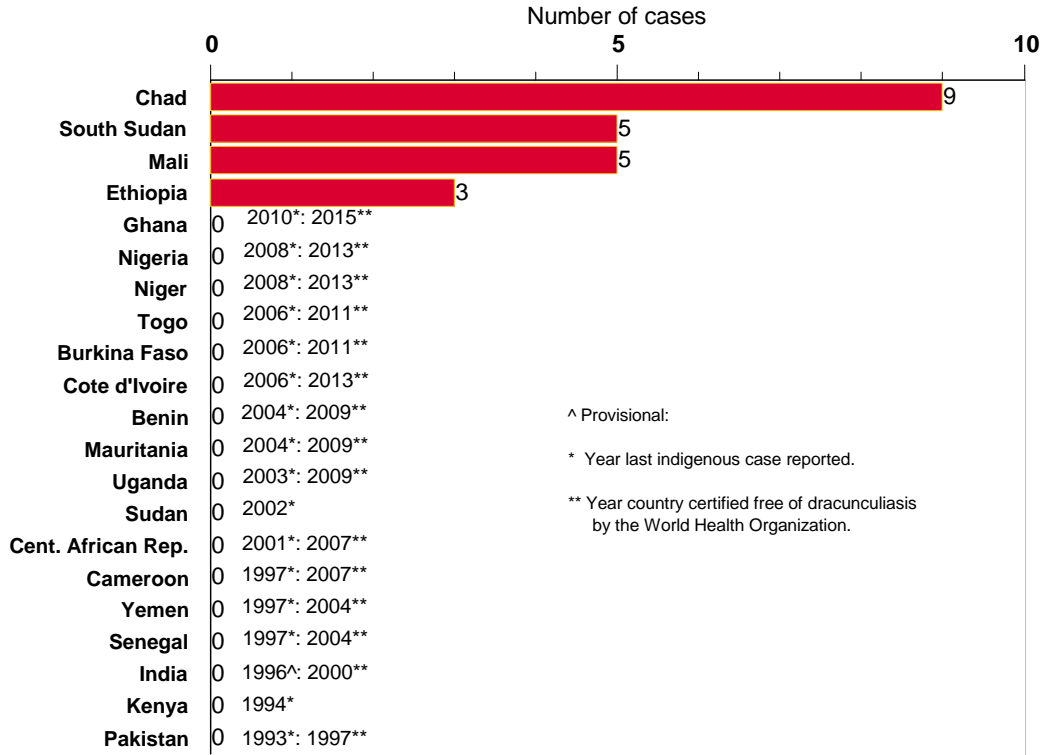
REVISED CRITERIA FOR A CONTAINED CASE

A case of Guinea worm disease is contained if all of the following conditions are met:

1. The patient is detected before or within 24 hours of worm emergence; and
2. The patient has not entered any water source since the worm emerged; and
3. The village volunteer has properly managed the case, by cleaning and bandaging until the worm is fully removed, and by giving health education to discourage the patient from contaminating any water source (if two or more emerging worms are present, the case is not contained until the last worm is pulled out); and
4. The containment process, including verification that it is a case of Guinea worm disease, is validated by a supervisor within 7 days of the emergence of the worm *and*
5. ABATE is used if there is any uncertainty about contamination of sources of drinking water, or if a source of drinking water is known to have been contaminated.

Figure 3

Distribution of 22 Indigenous Cases of Dracunculiasis Reported during 2015[^]



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 (eruziti@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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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.