

Memorandum



Date: January 13, 2020

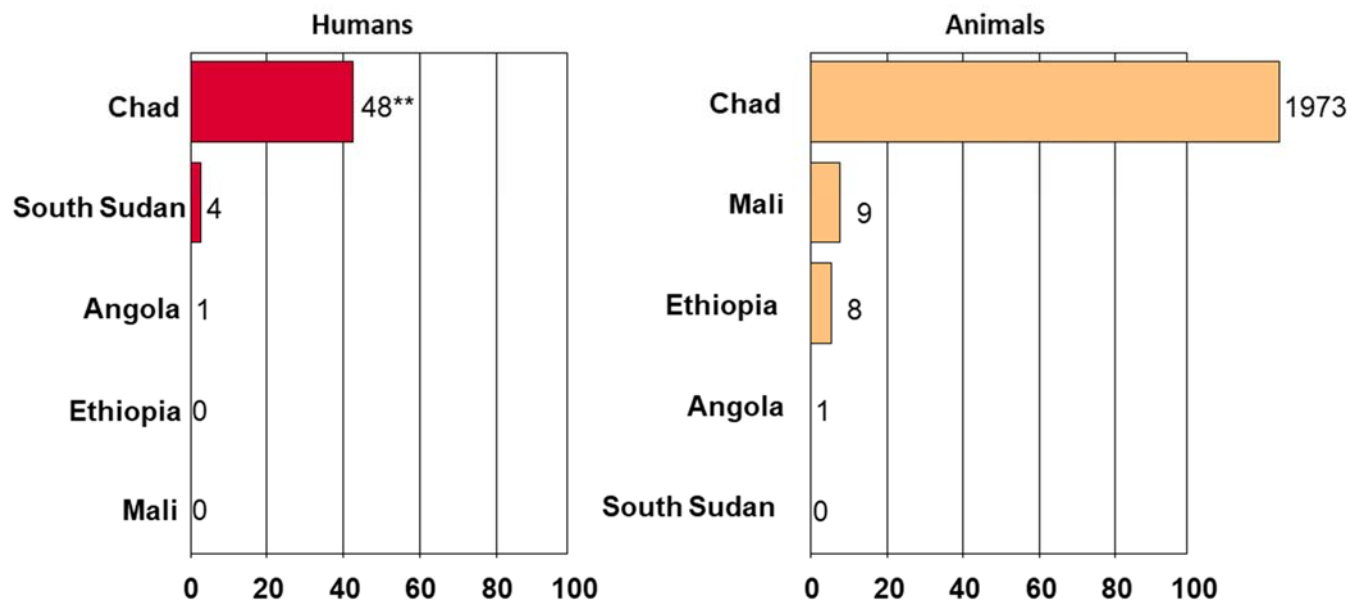
From: WHO Collaborating Center for Dracunculiasis Eradication, CDC

Subject: GUINEA WORM WRAP-UP #265

To: Addressees

"The pain of Guinea worm is worse than childbirth, because it is relentless."
 Anguec Kuot Atugo, Mother with Guinea worm disease in Akuyu, South Sudan

Guinea Worm Infections in Humans and Animals, 2019*



*Provisional

** Includes one case imported into Cameroon in March

MALI: NO HUMAN GW CASE IN FOUR YEARS!!!!

As of November 2019, Mali had *reported no case of Guinea worm disease in a human for four consecutive years*. Overall security improved significantly in endemic areas of the country during 2019. Trained indigenous Guinea worm workers are able to conduct surveillance for Guinea worm infections in humans and animals in most endemic areas despite residual pockets of insecurity in parts of Djenné district of Mopti Region and Tominian and Macina districts of Segou Region, but the national team still cannot supervise Tenenkou, Youwarou and Mopti districts of Mopti Region directly. Continued detection of Guinea worm infections in domestic dogs and cats in endemic

areas is one indication of functioning surveillance in most areas of concern. Mali's Guinea Worm Eradication Program reported 9 animals with Guinea worm infections in 2019 (8 dogs, 1 cat), compared to 20 infected animals (18 dogs, 2 cats) in 2018, for a *reduction in animal infections of 55%*. Six of the nine animal infections in 2019 (67%) *were contained* (see line-list in Guinea Worm Wrap-Up #263).

The regional Guinea worm eradication team from Mopti Region visited five health areas (Diafarabe, Dia, Diondiori, Thial, Tenenkou Central) of endemic Tenenkou district in December. They retrained eleven local health workers on application of Abate. They also discussed Guinea worm disease and the cash reward for reporting Guinea worm infections during a training session on nutrition that was supported by UNICEF for all 33 community health workers (*Agents de Sante Communautaires*, ASC) of the district. The ASC confirmed the absence of human and animal Guinea worm infections in all the areas under their responsibility. A GWEP team led by former GWEP Program Coordinator Dr. Gabriel Guindo visited Tominian, Markala and Macina districts of Segou Region on December 16-22. On December 11-20 members of Mali's National Committee for Certification of Dracunculiasis Eradication visited all eight districts of Segou Region to advocate for certification activities, supported by the World Health Organization (WHO). WHO also supported a cross-border meeting on Guinea worm eradication for Mali, Burkina Faso, and Cote d'Ivoire on November 19-20.

ETHIOPIA: NO HUMAN GW CASE IN TWO YEARS!!

As of the end of December 2019 Ethiopia had *reported no case of Guinea worm disease in a human for two consecutive years*, since December 2017. It also has reported no infected cats since August 2018. In 2018, Ethiopia reported 11 dogs, 5 cats and 1 baboon with Guinea worm infections, compared to 6 baboons and 2 dogs reported in 2019, a reduction of 53% in infected animals. The national program decided to remove the infected leopard from the line list of animals infected in 2019 (see previous issue of Guinea Worm Wrap-Up) since the worm had not emerged.

The Ethiopia Dracunculiasis Eradication Program (EDEP) held its 24th Annual Review Meeting in Gambella on December 17-18. Participants included the Gambella Regional State President, His Excellency Mr. Omod Ojulu; Guinea Worm Goodwill Ambassador the Honorable Dr. Tebebe Yemane Berhan, State Minister of Health Dr. Lia Tadesse; WHO Country Representative Dr. Boureima Hama Sambo; the Director General of the Ethiopian Public Health Institute Dr. Ebba Abate; Dr. Andrew Seidu-Korkor of the WHO Regional Office for Africa; Carter Center Country Representative Dr. Zerihun Tadesse and Carter Center Guinea Worm Eradication Program Director Mr. Adam Weiss, among others. The new National Program Coordinator, Mr. Kassahun Demissie, presented an overview of the program. As of October 2019, the EDEP assessed 7,328 persons in Level 1, 2, and 3 surveillance areas and among refugees and found that overall 5,615 (77%) were aware of the cash reward for reporting a case of Guinea worm disease. A total of 14,705 rumors of Guinea worm cases were reported to the program in January-October 2019, 99.5% of which were investigated within 24 hours. The EDEP began conducting assessments of fish disposal practices in Abobo district of Gambella Region in October 2019.

CHAD

Chad has reported 1,927 dogs, 46 cats and 48 humans with Guinea worm infections in January-December 2019 (provisional). This is an increase of 85% in infected animals and 176% in human cases compared to the same period of 2018. A total of 76% of the infected animals and 49% of the 47 confirmed human cases were contained. Table 1 is a line list of the confirmed human cases. Chad's GWEP recently hired Mr. Serge Seiba as consultant for Monitoring and Evaluation. The program held a WHO/Chad GW Task Force meeting on December 5, 2019.

Carter Center GWEP Director Mr. Adam Weiss and Dr. Frank Richards, Mr. Curtis Kohlhaas and Mr. Terry Adamson (Trustee) of The Carter Center attended the annual Reaching the Last Mile forum in Abu Dhabi on November 18-20, 2019 and participated in panel discussions. While attending the Forum, Mr. Weiss and The Carter Center delegation met with Chad's Minister of Health, Prof. Mahmoud Yousouf Khayal and discussed the status of Guinea worm infections of animals and humans in Chad as well as measures underway to eliminate transmission of the infections. The team also met with Prince Alwaleed bin Talal Al Saud and Princess Lamia Al Saud from Alwaleed Philanthropies. Acting as President Carter's personal representative, Mr. Adamson met with Crown Prince Mohammed bin Zayed Al Nahyan of Abu Dhabi to thank him for his ongoing leadership in the campaign to eradicate Guinea worm disease.

SOUTH SUDAN

The South Sudan Guinea Worm Eradication Program (SSGWEP) held its 14th Annual Review at the Palm Africa Hotel in Juba on December 12-13, 2019. National Minister of Health the Honorable Dr. Riek Gai Kok gave an opening speech to more than 120 participants, including State Ministers of Health, Directors General, and State Surveillance Officers from over 15 states. He stated that "those who have survived the [civil] war have a mission to make people's lives better". He also called on the State Ministers of Health to update their parliamentarians on outcomes of the review meeting. SSGWEP Director Mr. Samuel Makoy noted that South Sudan had detected 4 confirmed cases (2 contained) of Guinea worm disease in January-November 2019 in two localities, compared to 10 cases in the same period of 2018. Mr. Adam Weiss, Mr. Craig Withers, Ms. Sarah Yerian and Mr. Jake Wheeler of The Carter Center also attended the Review.

The Annual Review Meeting provided an opportunity for stakeholders to discuss the program's accomplishments in 2019 and critically examine surveillance to break transmission in 2020. The program investigated over 63,000 rumors in 2019 and investigated over 98% of these rumors within 24 hours. Additionally, from September through December, the SSGWEP screened 128,604 people and 3,715 animals through Onchocerciasis and Trachoma MDA integrated activities and case sweeps throughout 11 former counties. Finally, the recent knowledge assessment conducted East of the Nile, historically the most endemic region in South Sudan, found that of 2,559 of 3,488 (73%) were aware of the cash reward for reporting a case of Guinea worm disease even though the last reported case was in 2015. While there was a 60% reduction in cases from 2018 to 2019, the program will continue its strong surveillance of recently former endemic areas due to at-risk migratory populations while also strengthening animal surveillance to explore any other potential sources of transmission.

In addition, the South Sudan National Certification Committee for the Documentation of Dracunculiasis Elimination (SSNCDDE) held its third meeting on December 11, 2019. Deputy Governor of Torit State and SSNCDDE Deputy Chairperson Dr. Margaret Itto chaired the meeting, which was also attended by Special Advisor to the Minister of Health Dr. Samson Baba. In addition to reviewing its Terms of Reference and 2019 workplan, the SSNCDDE facilitated discussions about transitioning surveillance from SSGWEP to the County Health Departments in areas that have not reported indigenous cases in 3 or more years and areas that have not reported imported cases in a year or more.

ANGOLA

Ms. Giovanna Steel, Associate Director of The Carter Center's GWEP visited Luanda on December 14-21, 2019 for meetings and discussions in follow up to the consultation by Senior Associate Director Ms. Sarah Yerian in early November, including follow up on The Carter Center's registration as an NGO in Angola. In Luanda Ms. Steel met with the World Health Organization surveillance and NTD officer for Angola, Dr. Nzuzi Katondi to review establishment of community-based surveillance and appropriate interventions to prevent Guinea worm transmission in the known affected areas of Cunene Province. She also met with staff of the Mentor Initiative NGO to discuss their public health programming in Angola and exchanged written communications with the Coordinator of Angola's NTD Control Program, Dr. Cecelia Almeida, but the holidays prevented in-person meetings with other government officials. Ms. Steel also discussed the procedure for registering The Carter Center with an attorney during her visit.

CAMEROON

In late November 2019, Drs. Dieudonne Sankara and Andrew Seidu Korkor of the World Health Organization (WHO) visited Cameroon to continue investigations around the case of Guinea worm disease that was detected in a woman from the Kokaina neighborhood of Dabana village in Guere health district of Cameroon's Far North Region in March 2019 (see *Guinea Worm Wrap-Up* #263). This village in Cameroon shares the same Massa ethnic group, farms, and fishing practices with relatives in Zigul and Maina endemic villages in Mayo Kebbi East Region of Chad, only 3-4 kilometers (2-2.5 miles) apart across the Chari River that is the border between the two countries. Drs. Sankara and Seidu Korkor found unconfirmed rumors of 4 infected dogs in 4 villages during 2019 in Cameroon, including in Kokaina. They began working with Cameroonian health authorities to establish active surveillance in all villages in the area, including training for proper application of Abate, which Dr. Tchindebet Ouakou, director of Chad's Guinea Worm Eradication Program has agreed to provide, facilitated by WHO. Cameroon offers a cash reward equivalent to US\$200 for reporting a confirmed case of Guinea worm disease. The WHO investigators reported that knowledge of the reward exceeded 80% in villages they visited, undoubtedly due to increased attention and visits from Cameroonian health staff in the past few months. Cameroon intends to increase publicizing the reward and prevention of Guinea worm disease nationwide, with emphasis on the areas known to be at highest risk.

Table 1

Chad Guinea Worm Eradication Program: GWEP Line Listing of Confirmed Cases: Year 2019*

Case #	Age	Sex	Ethnicity	Occupation	Village of Detection	Zone	District	Region	Date of Detection	Date of Emergence	Contained (yes / no)	Entered water
1	33	M	Mbao	Fisher/ Farmer	Ngargue (Quartier Kormada)	Bailli 1	Bailli	CB	01-Jan.-19	01-Jan.-19	No	Probable (Abate applied)
2	11	M	Sara Kaba	Child-shepard	Dangala Kanya (Quartier Kibita)	Marabe	Kyabe	MC	05-Jan.-19	05-Jan.-19	No	Probable (Abate applied)
3	13	M	Sara Kaba	Child	Marabe 2 (Quartier Dilibi)	Marabe	Kyabe	MC	11-Feb.-19	15-Feb.-19	Yes	0
4	64	F	Sara Kaba	Housewife	Kyabe (Hors-zone)	Kyabe	Kyabe	MC	24-Mar-19	24-Mar-19	No	1 (Abate applied)
5	4	M	Ngambaye	Child	Mourkou	Gonori	Dourbali	CB	13-Apr.-19	16-Apr.-19	Yes	0
6.1	19	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	12-Apr.-19	19-Apr.-19	No	0
6.2	19	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	10-Jun-19	23-Jun-19	No	0
7.1	58	M	Sara-Goulaye	Farmer	Gassaou/Ndjourou	Kiao	Bouso	CB	23-Apr.-19	23-Apr.-19	Yes	0
7.2	58	M	Sara-Goulaye	Farmer	Gassaou/Ndjourou	Kiao	Bouso	CB	23-Apr.-19	23-Apr.-19	Yes	0
7.3	58	M	Sara-Goulaye	Farmer	Gassaou/Ndjourou	Kiao	Bouso	CB	23-Apr.-19	23-Apr.-19	Yes	0
7.4	58	M	Sara-Goulaye	Farmer	Gassaou/Ndjourou	Kiao	Bouso	CB	23-Apr.-19	23-Apr.-19	Yes	0
8	24	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	1-May-19	7-May-19	No	0
9	50	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	01-mars-19	9-May-19	Yes	0
10	18	M	Rachid	Farmer	Residentiel	Hors Zone	Sarh	MC	10-May-19	10-May-19	No	Probable
11	22	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	4-May-19	12-May-19	Yes	0
12	9	F	Torom	Child	Bogam	Liwi	Aboudeia	SLM	3-May-19	15-May-19	Yes	0
13	55	M	Torom	Farmer	Liwi	Liwi	Aboudeia	SLM	18-May-19	18-May-19	No	0
14	30	M	Torom	Farmer	Bogam	Liwi	Aboudeia	SLM	17-May-19	23-May-19	Yes	0
15	8	F	Torom	Child	Bogam	Liwi	Aboudeia	SLM	23-May-19	23-May-19	Yes	0
16	53	M	Torom	Farmer	Tarh	Liwi	Aboudeia	SLM	25-May-19	25-May-19	Yes	0
17	5	F	Torom	Child	Bogam	Liwi	Aboudeia	SLM	17-May-19	25-May-19	Yes	0
18	50	M	Rachid	Farmer	Amhabile	Am-habile	Aboudeia	SLM	26-May-19	31-May-19	Yes	0
19	15	M	Torom	Farmer	Bogam	Liwi	Aboudeia	SLM	5-Jun-19	5-Jun-19	Yes	0
20	44	M	Boua	Farmer	Mama	Korbol	Korbol	MC	6-Jun-19	7-Jun-19	No	Probable (Abate applied)
21	6	F	Torom	Child	Bogam	Liwi	Aboudeia	SLM	17-May-19	10-Jun-19	Yes	0

Table 1 continued

Case #	Age	Sex	Ethnicity	Occupation	Village of Detection	Zone	District	Region	Date of Detection	Date of Emergence	Contained (yes / no)	Entered water
22	30	M	Torom	Farmer	Bogam	Liwi	Aboudeia	SLM	21-May-19	10-Jun-19	Non	Probable (Abate applied)
23	6	F	Sara Kaba /Koulfa	Child	Bemadjirodjo	Kemata	Sarh	MC	11-Jun-19	11-Jun-19	Non	1
24.1	35	M	Zahawa Arabe	Farmer	Amhabile	Am-habile	Aboudeia	SLM	6-Jun-19	12-Jun-19	Yes	0
24.2	35	M	Zahawa Arabe	Farmer	Amhabile	Am-habile	Aboudeia	SLM	22-Sept.-19	26-Sept.-19	Non	1
25	23	F	Torom	Housewife	Bogam	Liwi	Aboudeia	SLM	9-May-19	19-Jun-19	Yes	0
26.1	11	F	Sara Kaba	Child	Ngondei Centre	Ngondei	Kyabe	MC	15-May-19	date unknown (may 2019)	No	1 (Abate applied)
26.2	11	F	Sara Kaba	Child	Ngondei Centre	Ngondei	Kyabe	MC	21-Jun-19	21-Jun-19	No	1 (Abate applied)
35	11	F	Sara Kaba	Child	Tarangara	Maymana	Danamadji	MC	21-Aug-19	21-Aug-19	Yes	0
36	21 months	M	Sara kaba	Child	Bebita	Kemata	Sarh	MC	23-Aug-19	23-Aug-19	No	Possible
37	20	F	Arabe	Housewife	Amdabri	Gozdjarat	Am Timan	SLM	30-Jul.-19	28-Aug-19	Yes	0
38	14	F	Torom	Child	Bogam	Liwi	Aboudeia	SLM	15-Aug-19	28-Aug-19	Yes	0
39	14	F	Sara Kaba	Student	Bombi	Boussa	Kyabe	MC	30-Aug-19	30-Aug-19	No	
40.1	50	F	Sara Kaba	Housewife	Bombi	Boussa	Kyabe	MC	30-Aug-19	02-Sept.-19	No	
40.2	50	F	Sara Kaba	Housewife	Bombi	Boussa	Kyabe	MC	30-Aug-19	17-Sept.-19	Yes	
41	20	F	Rachid	Housewife	Amhabile	Am-habile	Aboudeia	SLM	30-Jul.-19	03-Sept.-19	Yes	
42	23	M	Sara kaba	Farmer	Kassai	Kassai	Sarh	MC	04-Sept.-19	04-Sept.-19	No	1
43	55	M	Massa	Farmer	Mossio Massa	Bogomoro	Bailli	CB	08-Sept.-19	08-Sept.-19	Yes	0
44	23	M	M	cultivateur	Kassai	Kassai	Sarh	MC	04-sept.-19	04-sept.-19	No	1
45	55	M	M	cultivateur	Mossio Massa	Bogomoro	Bailli	CB	08-sept.-19	08-sept.-19	Yes	0
46	45	M	M	Cultivateur/Pecher	Walia Miltou	Miltou	Kouno	CB	27-oct.-19	03-nov.-19	No	1
47	27	M	M	Cultivateur	Ambissirigne	Ambissirigne	Haraze	SLM	21-nov.-19	21-nov.-19	No	0

Table 2

Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2019* †
(Countries arranged in descending order of cases in 2018)

COUNTRIES WITH TRANSMISSION OF GUINEA WORMS	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													% CONT.
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
CHAD †	0 / 2	1 / 1	0 / 2	2 / 3	8 / 13	6 / 10	3 / 6	1 / 5	2 / 4	0 / 0	0 / 2	0 / 0	23 / 48	48%
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	1 / 1	1 / 2	0 / 0	0 / 0	0 / 0	2 / 4	50%
ANGOLA	0 / 1	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0%
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0%
MALI §	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0%
TOTAL*	0 / 3	1 / 1	0 / 2	2 / 3	8 / 13	6 / 10	3 / 7	2 / 6	3 / 6	0 / 0	0 / 2	0 / 0	25 / 53	47%
% CONTAINED	0%	100%	0%	67%	62%	60%	0%	33%	50%	100%	0%	100%	47%	

*Provisional

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

Shaded cells denote months when one or more cases of GWD did not meet all case containment standards.

§Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Timbuktu and Gao Regions; contingent on security conditions during 2018, the GWEP continued to deploy one technical advisor to Kidal Region to oversee the program.

†Cameroon reported one case in March that was likely infected in Chad.

Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2018*
(Countries arranged in descending order of cases in 2017)

COUNTRIES WITH TRANSMISSION OF GUINEA WORMS	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													% CONT.
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
CHAD	1 / 1	1 / 1	1 / 1	0 / 0	1 / 1	0 / 0	1 / 5	1 / 4	0 / 0	0 / 1	0 / 0	1 / 3	7 / 17	41%
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0%
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 2	0 / 2	1 / 3	1 / 2	1 / 1	0 / 0	0 / 0	0 / 0	3 / 10	30%
MALI §	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0%
ANGOLA^	/	/	/	0 / 1	/	/	/	/	/	/	/	/	0 / 1	0%
TOTAL*	1 / 1	1 / 1	1 / 1	0 / 1	1 / 3	0 / 2	2 / 8	2 / 6	1 / 1	0 / 1	0 / 0	1 / 3	10 / 28	36%
% CONTAINED	100%	100%	100%	0%	33%	0%	25%	33%	100%	0%	100%	33%	36%	

*Provisional

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

Shaded cells denote months when one or more cases of GWD did not meet all case containment standards.

§Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Timbuktu and Gao Regions; contingent on security conditions during 2018, the GWEP continued to deploy one technical advisor to Kidal Region to oversee the program.

^ Investigation of the origin of this case is ongoing. Preliminary outcomes indicate there is no current or historical evidence of human or animal infections in the district of residence.

AWARD

International Commission for the Certification of Dracunculiasis Eradication member Prof. David Molyneux was appointed as Companion to the Most Distinguished Order of Saint Michael and Saint George (CMG) in Queen Elizabeth II's recent New Year's Honors list, for his services to "Controlling Neglected Tropical Diseases". A well-deserved honor! Congratulations Prof. Molyneux!!

MEETINGS

Chad's Guinea Worm Eradication Program will hold its annual Program Review in N'Djamena on January 22-23, 2020.

Mali's Guinea Worm Eradication Program will hold its annual Program Review in Bamako on January 29-30, 2020.

The 24th International Review Meeting of Guinea Worm Eradication Program Managers will be convened at The Carter Center in Atlanta, USA on March 16-17, 2020.

The 14th Meeting of the International Commission for the Certification of Dracunculiasis Eradication will be held at WHO headquarters in Geneva, Switzerland on April 15-16, 2020.

RECENT PUBLICATIONS

Pichakacheri SK, 2019. Guinea worm (*Dracunculus medinensis*) infection presenting as a diabetic foot abscess: A case from Kerala. Natl Med J India 32:22-23. doi:10.4103/0970-258X.272111

World Health Organization, 2019. Monthly report on dracunculiasis cases, January-September, 2019. Wkly Epidemiol Rec 94:510-511.

World Health Organization, 2019. Monthly report on dracunculiasis cases, January-October, 2019. Wkly Epidemiol Rec 94:626-627.

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 Adam Weiss (adam.weiss@cartercenter.org), 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, Dr. Donald Hopkins and Adam Weiss of The Carter Center, Dr. Sharon Roy of CDC, and Dr. Dieudonne Sankara of WHO.

WHO Collaborating Center for Dracunculiasis Eradication, Center for Global Health, Centers for Disease Control and Prevention, Mailstop A-06, 1600 Clifton Road NE, Atlanta, GA 30329, USA, email: gwwrapup@cdc.gov, fax: 404-728-8040. The GW Wrap-Up web location is

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

Back issues are also available on the Carter Center web site English and French are located at

http://www.cartercenter.org/news/publications/health/guinea_worm_wrapup_english.html,

http://www.cartercenter.org/news/publications/health/guinea_worm_wrapup_francais.html



World Health
Organization

CDC is the WHO Collaborating Center for Dracunculiasis Eradication