DEPARTMENT OF HEALTH & HUMAN SERVICES

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

Memorandum

Date: June 29, 2020

From: WHO Collaborating Center for Dracunculiasis Eradication, CDC

Subject: GUINEA WORM WRAP-UP #269

To: Addressees

Detect and Contain All Guinea Worm Infections Promptly!

CHAD: NUMBERS OF INFECTED DOGS CONTINUE TO DECLINE

As of the end of May, Chad's Guinea Worm Eradication Program (CGWEP) has reported a provisional total of 699 infected dogs and 22 infected cats so far in 2020, which is a reduction of 33% from the 1,051 dogs with Guinea worm infections reported in January-May 2019 (Figure 1). Of special note, Chad reported a 59% reduction in infected dogs in May 2020 compared to May 2019. In total, 86% of the infected animals (599/699) in January-May 2020 were contained. Chad also reported 6 confirmed human cases of Guinea worm disease (2 contained) in January-May 2020; a 77% reduction from 26 human cases reported in the same period of 2019. A line-list of this year's cases is in Table 1. Only 1 of the cases in 2020 was from the village of Bogam (in Salamat Region) where 22 cases originated in April-August 2019 (11 cases in May). The number of villages with one or more Guinea worm infections (human and/or animal) has also declined so far in 2020 compared to the same period of 2019 (150 vs. 213).

FIGURE 1

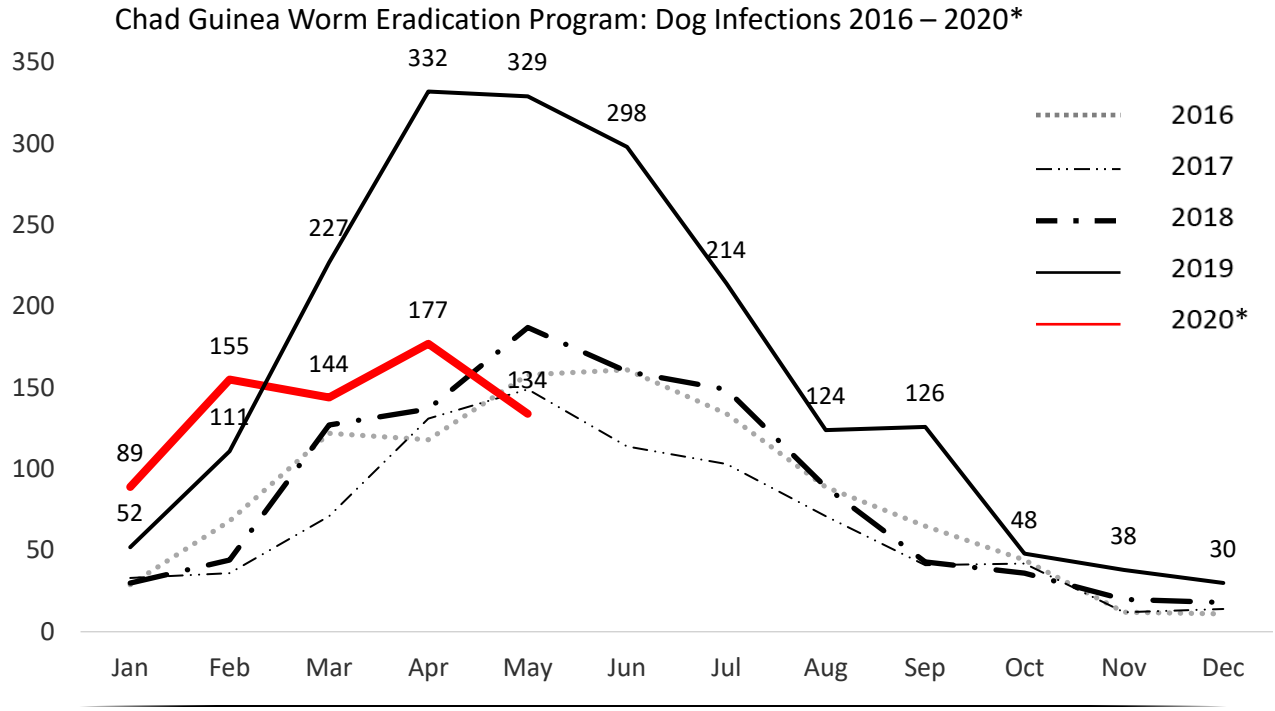

Table 1

Chad Guinea Worm Eradication Program: GWEP Line Listing of Confirmed Cases: Year 2020*

Case	Age	Sex	Ethnicity	Occupation	Village of Detectio	Zone	District	Region	Date of Detecti	Date of Emerger	Contained (yes / no)	Entered wate
1	32	M	Marba	Farmer	Bouar Baguirmi	Gambarou	Mandelia	Chari Baguirmi	3-Jan-20	3-Jan-20	yes	No
2	11	F	Sara Kaba	Child	Kyabe	Kyabe	Kyabe	Moyen Chari	16-Feb-20	16-Feb-20	No	No
3.1	10	M	Daye	Child	Kemkian	Kemkian	Sarh	Moyen Chari	1-Mar-20	1-Mar-20	No	Yes
3.2	10	M	Daye	Child	Kemkian	Kemkian	Sarh	Moyen Chari	1-Mar-20	1-Mar-20	No	Yes
4.1	10	M	Hadjarai	Child	Marabodokouya I	Marabe	Kyabe	Moyen Chari	9-Mar-20	9-Mar-20	No	No
4.2	10	M	Hadjarai	Child	Marabodokouya I	Marabe	Kyabe	Moyen Chari	2-May-20	21-May-20	No	-
5.1	8	M	Hadjarai	Child	Marabodokouya 1	Marabe	Kyabe	Moyen Chari	19-Mar-20	6-Apr-20	No	No
5.2	8	M	Hadjarai	Child	Marabodokouya 1	Marabe	Kyabe	Moyen Chari	6-Apr-20	6-Apr-20	No	No
5.3	8	M	Hadjarai	Child	Marabodokouya 1	Marabe	Kyabe	Moyen Chari	21-Apr-20	24-Apr-20	No	No
5.4	8	M	Hadjarai	Child	Marabodokouya 1	Marabe	Kyabe	Moyen Chari	21-Apr-20	24-Apr-20	No	No
6	6	M	Arabe	Child	Bogam	Liwi	Aboudeia	Salamat	9-May-20	9-May-20	Yes	No

In January-April 2020, the CGWEP treated an average of 73% of villages under active surveillance that were targeted to receive Abate treatments monthly, with a 144% increase in the number of water sources treated so far in 2020 compared to the same period of 2019. At the end of May the program had reached 111 (94%) of the 118 villages with 5+ infections that were targeted for proactive tethering of dogs during the peak transmission season (see *Guinea Worm Wrap-Up #267*). Proactive tethering is receiving good support from local authorities.

National Program Coordinator Dr. TCHINDEBET Ouakou supervised Guinea worm activities (focusing mainly on GW surveillance and response in settled and nomadic communities) in Aboudeia, Haraze and Amtiman districts of Salamat Region during April 10-30. Deputy NPC TCHONFIENET Moundai supervised Guinea worm activities (focusing on prolonged dog tethering and preventive Abate treatment) in Kyabe, Biobe and Korbol districts of Moyen Chari Region during April 10-30.

The drug Flubendazole arrived in Chad on June 15 and was taken to Sarh immediately for use in the third (final) round of treatment to determine if it can treat and/or prevent Guinea worm infections effectively in dogs. *Correction: Chad treated 92% (408/444) villages that had at least one Guinea worm infection in 2019 with Abate; not 68% as reported Figure 1 of Guinea Worm Wrap-Up #267.*

MALI: FOLLOW-UP OF HUMAN CASE

Mali's Guinea Worm Eradication Program (MGWEP) continues to investigate and implement control measures in follow up to the human case of Guinea worm disease whose worm emerged on March 23, 2020 after Mali had found no human case for four consecutive years. The MGWEP did however, detect 1, 11, 9, 18 and 8 infected dogs in 2015-2019, plus 1, 2, 1 infected cats in 2017-2019. The 15-year-old girl's worm emerged at her home in Konobougou town in Baraoueli district of Segou Region. Her only travel near the period when she most likely became infected was a visit to the village of Komara in Macina district of Segou Region from June to September 2019 (see map in *Guinea Worm Wrap-Up* #268). A timeline of investigations is:

- 3/23/2020 health staff collected worm specimen from patient at her home in Konobougou.
- 3/23/2020 district and regional teams conducted case investigation at Konobougou.
- 3/25/2020 the GWEP in Bamako received the worm specimen.
- 3/26/2020 national coordinator and team conducted investigation at Konobougou. The district health team joined the national team in Konobougou.
- 4/16/2020 national coordinator and team investigated at Konobougou after diagnosis confirmed. Team went to Macina on 4/17/2020 to discuss the case with the district medical officer.
- 4/17/2020 GWEP team made telephone call: the technical director of the health center of Soumani came to Macina district. The GWEP team met with the *Prefet* of Macina to brief him on the case.
- 4/23/2020 GWEP technical assistant and others conducted investigation in Komara.
- 4/27/2020 GWEP technical assistant, health district and regional focal point visited Konobougou after 2nd worm emerged from patient.
- 5/19/2020 the MGWEP held a ceremony at Konobougou to award the cash reward to the informant and the patient for reporting the human case of Guinea worm disease. The amount was 200,000 Fcfa (about US$345) for each recipient. The ceremony was attended by the *Prefet* of Baraoueli, the *Sous Prefet* and the mayor of Konobougou, the chief of Konobougou village,

the director of disease control and prevention at the ministry of health, the national program coordinator of the MGWEP, representatives of the Segou regional office of health, the Carter Center Country Representative, and others. The ceremony was covered on national television and by local radio stations.

Containment measures. This case was not contained, because the worm began emerging before she was hospitalized at the local health center, but she reportedly did not enter a source of water with the worm. All villages in Baraoueli district were placed under active surveillance soon after her first worm emerged. The program is distributing cloth and pipe filters in Komara and as of June 15 it began applying Abate in and around the village of Komara and nearby farms (Komara received the first rain around June 8). The technical director of the health center, the community health agent, and *relais communautaire* in Soumani health area and Komara village were trained in 2019. All the technical directors of health centers, community health agents, *relais*, and veterinary agents (about 325 persons in all) were trained on Guinea worm in Baraoueli district on June 1-8, 2020 in response to the Guinea worm case.

Source of infection. Where and how this patient became infected is not clear. There is a protected well in the compound where she stayed in Komara and her home town of Konobougou has a safe system of drinking water. The patient claims to carry safe drinking water when she goes to the field. Komara is a village of fishermen and rice cultivators in the inland delta of the Niger River. The patient says she eats cooked fish but no other aquatic animals.

Contact tracing. Program staff have conducted contact tracing in order to identify and monitor any person(s) who may have shared drinking water and/or food, especially aquatic animals, with the patient during the period when she likely became infected. So far this has included family members; it is being expanded to include peers, friends and other community members in Konobougou and Komara.

SOUTH SUDAN

The Government of South Sudan appointed a new Minister of Health, Hon. Elizabeth Acuei Yol, in March 2020. Her predecessor Dr. Riek Gai Kok, had been Minister of Health since 2013 and was a passionate supporter of South Sudan's extraordinary Guinea Worm Eradication Program. Welcome, Minister Acuei! Thank you Minister Kok! The SSGWEP also warmly welcomes the new Undersecretary of Health, Professor Mayen Machut Achiek, former Dean of the College of Medicine at the University of Juba. Welcome, Undersecretary Dr. Achiek!

As the program enters transmission season, it currently maintains active surveillance in 2,157 villages and cattle camps and it responded to 24,126 rumors from January to May. Of those rumors, 98.6% were investigated within 24 hours, and 37.6% of all rumors became suspects. From January to May, the program reported that 2,655,170 people were reached in 32 counties through cash reward activities.

Even before the first COVID-19 cases were reported in early April, the SSGWEP adopted significant precautions to ensure the safety of program staff and community members and adapt surveillance activities accordingly. As of May, the program has distributed 8,000 COVID-19

posters to health facilities and villages while also providing 1,000 COVID-19 health worker flipcharts to workers in over 20 counties throughout the country. In addition, the SSGWEP developed a customized GW/COVID-19 brief for health workers conducting routine surveillance activities, integrated activities like Mass Drug Administration (MDA), and case sweeps in areas not under active surveillance. The handout briefly details the basics of Guinea Worm Disease and specifically outlines the reporting mechanisms for anyone who finds suspected cases of GWD while also offering specifics on basic prevention strategies related to COVID-19. Over 1,300 briefs have been distributed to SSGWEP technical supervisors, Ministry of Health surveillance officers, and program volunteers.

IN BRIEF:

Ethiopia. The 7 suspect cases reported from Ethiopia in April 2020 have been confirmed as human cases of Guinea worm disease and the two infected baboons have been confirmed also (see *Guinea Worm Wrap-Up* #268). Ethiopia has not reported any other human cases or animal infections since. *Correction: Ethiopia examined 1,078,645 people for Guinea worm disease in 2019 (in polio, HIV/AIDS, immunization, trachoma mass drug administration, and other surveys); not 482,582 persons in integrated surveys as reported in Guinea worm Wrap-Up #267.*

Angola. WHO received a report on June 17, 2020 on a specimen from the suspected case of Guinea worm disease whose infection was allegedly diagnosed in a border area of Namibia in "May 2019" (see *Guinea Worm Wrap-Up* #267, p.9). The specimen was examined macroscopically and microscopically at the Namibia Institute of Pathology in April 2019 and determined not to be from a Guinea worm.

Due to travel restrictions amid the corona virus pandemic, CDC has not yet received the specimen from the 15-year-old boy whose worm emerged in the village of Ofenda in Namacunde municipality of Angola's Cunene Province on March 29, 2020. The investigation around the alleged case, delayed because the area of concern was flooded and inaccessible, was carried out by a joint provincial team, MOH and WHO, from 11-12 May 2020. The same mission conducted sensitization sessions in the communities and training of the health workers. The Carter Center is still seeking the Government of Angola's approval before it can begin providing in-country assistance. The Carter Center and WHO are working together to provide training materials through virtual communications in the meantime. Meanwhile WHO has this month recruited a Focal Point for GWE to be based in Cunene, to support operationalization of community-based surveillance and activities for GWE in the province. He joins the program with immense professional experience in public health, including more than 5 years working with WHO to support the operationalization of integrated delivery of interventions aimed at controlling or eliminating NTDs in Angola, specifically onchocerciasis, lymphatic filariasis, trachoma, dracunculiasis or Guinea worm, schistosomiasis, loaisis, and helminthiasis transmitted by soil. Dr. Mavitidi has been a member of the National Technical Committee for the Certification of Eradication of Guinea Worm Disease (Dracunculiasis) in Angola since 2018; he has been involved in all pre-certification activities in Angola to date; he has participated as a member of the Angolan delegation, in the Annual Global Review meetings of Program Managers since 2018. He is fluent in Portuguese and French, with very good working knowledge of English. Welcome, Dr. Mavitidi!

Table 2

Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2020*

(Countries arranged in descending order of cases in 2019)

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	0 / 1	0 / 2	0 / 1	1 / 1								2 / 6	33%
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0								0 / 0	
ANGOLA^	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0								0 / 0	
ETHIOPIA	0 / 0	0 / 0	0 / 0	7 / 7	0 / 0								7 / 7	100%
MALI [§]	0 / 0	0 / 0	0 / 1	0 / 0	0 / 0								0 / 1	0%
TOTAL*	1 / 1	0 / 1	0 / 3	7 / 8	1 / 1								9 / 14	64%
% CONTAINED	100%	0%	0%	88%	100%								64%	

*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.

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	1 / 3	2 / 3	11 / 17	4 / 6	4 / 6	2 / 7	1 / 2	0 / 1	0 / 1	0 / 0	26 / 49	53%
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	1 / 3	2 / 3	11 / 17	4 / 6	4 / 7	3 / 8	2 / 4	0 / 1	0 / 1	0 / 0	28 / 54	52%
% CONTAINED	0%	100%	33%	67%	65%	67%	57%	38%	50%	0%	0%		52%	

*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.

DONATION

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The Carter Center is grateful for the support of Starr International Foundation, which recently granted $100,000 to the Guinea Worm Eradication Program through 2021. This support is matched by The Carter Center's Challenge Fund for Guinea Worm Eradication.

RECENT PUBLICATIONS

Cleveland CA, Garrett KB, Box EK, Eure Z, Majewska AA, Wilson JA, Yabsley MJ, 2020. Cooking copepods: The survival of cyclopoid copepods (Crustacea: Copepoda) in simulated provisioned water containers and implications for the Guinea Worm Eradication Program in Chad, Africa. Int J Infect Dis 95:216-220. doi: https://doi.org/10.1016/j.ijid.2020.03.016

Guagliardo SAJ, Roy SL, Ruiz-Tiben E, Zirimwabagabo H, Romero M, Chop E, Tchindebet PO, Hopkins DR, Weiss AJ, 2020. Guinea worm in domestic dogs in Chad: A description and analysis of surveillance data. PLoS Negl Trop Dis 14:e0008207.
doi: https://doi.org/10.1371/journal.pntd.0008207

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.

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