DEPARTMENT OF HEALTH & HUMAN SERVICES

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

Memorandum

Date: April 7 2020

From: WHO Collaborating Center for Dracunculiasis Eradication, CDC

Subject: GUINEA WORM WRAP-UP #267

To: Addressees

Detect and Contain All Guinea Worm Infections Promptly!

CHAD: MINISTER OF HEALTH LAUNCHES PROACTIVE TETHERING OF DOGS

On March 6, 2020 Chad's Minister of Health, the Honorable Prof. Mahamoud Khayal, visited Aligarga village in Mandelia district of Chari Baguirmi Region to launch a new strategy of proactive tethering of dogs in villages at high risk of Guinea worm infections. Aligarga reported 39 infected animals (37 dogs, 2 cats) in 2018 and 32 infected animals (30 dogs, 2 cats) in 2019. The minister was accompanied by his technical team (deputy director-general, general inspector, health advisor, director of communication, and director of communicable diseases), the national coordinator of Chad's Guinea Worm Eradication Program (CGWEP) Dr. Tchindebet Ouakou, World Health Organization (WHO) representative Dr. Jean Bosco Ndihokubwayo, the governor of Chari Baguirmi Region Mr. Aboubakar Djibine Aboubakar, the *prefet* of Mandalia district Mr. Barh Hassane Guero, Carter Center Country Representative Dr. Hubert Zirimwabagabo, and other dignitaries.

Studies undertaken to date by the CGWEP and researchers from the University of Georgia/USA, the U.S. Centers for Disease Control and Prevention, the University of Exeter/UK, and The Carter Center suggest that dogs eating discarded raw fingerlings (small fish) and fish guts at lagoons or riversides during seasonal mass fishing are at highest risk for Guinea worm infection. Chad's new intervention of prolonged temporary tethering of dogs and cats at risk is adapted from the strategy of long-term proactive tethering of dogs to prevent their exposure to Guinea worm infection that Ethiopia's Dracunculiasis Eradication Program began in 2018 at the suggestion of Ethiopian villagers in an area at high risk for Guinea worm. It means tethering all dogs and cats in at risk villages temporarily. The program will continue to tether dogs and cats with emerging Guinea worms also, to prevent contamination of water sources. If implemented with high compliance the new strategy will *reduce exposure of all dogs* to infection, as well as *ensure tethering of additional infected dogs* whose emerging worms might otherwise have been missed during the peak transmission season. All dogs and cats in high risk villages of Chad will be tethered during the four month long period of peak Guinea worm incidence in their respective villages, beginning with the 118 villages that reported 5+ infected dogs in 2019. Those 118 villages reported a total of 1,389 infected dogs in 2019. Owners will be responsible for feeding and caring for their tethered

Table 1

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

Case #	Age	Sex	Ethnicity	Occupation	Village of Detection	Zone	District	Region	Date of Detection	Date of Emergence	Contained (yes / no)	Entered water
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	10	M	Hadjarai	Child	Marabodouya I	Marabe	Kyabe	Moyen Chari	9-Mar-20	24-Mar-20	Yes	No

animals, but the CGWEP will provide an allowance of *boule* (local grain-based food) and 3000 CFA (~US$4.80) per month for each household tethering their dog(s)/cat(s) and help ensure appropriate veterinary care. The CGWEP plans to reach 65 of the 118 priority villages by the end of March.

In public remarks during his visit to Aligarga, the minister promised his full support to stop Guinea worm transmission in Chad. He encouraged inhabitants of endemic villages to comply with the new strategy and warned that the government might consider more "aggressive" measures if they do not adhere to the new strategy. The Carter Center and WHO representatives promised their full support to the CGWEP for the new strategy. The governor of Chari Baguirmi asked the population to apply the health education about preventing Guinea worm that local health workers have provided them, and also warned residents who might try to cheat or make the strategy fail. These new measures are intended to complement the reward for reporting an infected dog. The minister visited a few compounds and leashed a dog with the help of Dr. Sidouin Metinou, a veterinarian and field technical advisor who is assisting Guinea worm research work in Chad.

Chad reported 1,935 infected dogs (77% contained) in 422 villages, 48 infected humans (54% contained) in 27 villages, and 47 infected cats (51% contained) in 39 villages in 2019, for an overall containment rate of 76% (vs. 74% overall containment in 2018). A line list of the 48 human cases (including one case detected just across the river in Cameroon) was included in the previous issue. Twenty-one of the human cases in 2019 occurred in or were linked to the village of Bogam (Lat. 11.093056N, Long. 19.437222E) in Salamat Region. Because of the exceptional circumstances, The Carter Center has agreed to fund a borehole well in Bogam. The status of coverage of modified intervention indices as of December 2019 is shown in Figure 1 The status of the indices as of December 2018 is shown in *Guinea Worm Wrap-Up* #260 (15 April 2019). During 2019 Chad's GWEP notably increased its reported coverage of eligible endemic villages with Abate from 24% in December 2018 to 68% in December 2019.

Dr. Elizabeth Thiele of Vassar College's analysis of specimens from Chad has recently shown evidence of likely dog-to-human transmission of Guinea worm infection from a dog in the Sarh area of Moyen Chari Region in 2017 to two human cases in 2018.

CGWEP Surveillance Snapshot 2019
Accessibility: 95% (see Figure 1)
Villages reporting 1+ GW infection: 422
Number of districts by surveillance level: 19 level 1; 6 level 2; 62 level 3
Villages under Active Surveillance (VAS): 2,211 (2,054 level 1, 157 level 2)
Monthly reporting rate for VAS: 97%
Number of rumors humans 61,154 (98% investigated in 24h), animals 46,288 (96% investigated in 24h)
Cash reward awareness: humans 1504/2815 (53%), animals 1263/2815 (45%)
Cash reward amount : USD$100 equivalent for reporting a human case, USD$20 for reporting infected animal
Integrated surveys: pending
Number and reporting rate for IDSR (Integrated Disease Surveillance and Reporting): pending

In January-March 2020, Chad has reported a provisional total of 3 confirmed Guinea worm cases in humans (1 contained) (Table 1) and 301 infected animals compared to 5 confirmed cases in humans (1 contained) and 390 infected dogs in the same three months of 2019.

ETHIOPIA

The Ethiopia Dracunculiasis Eradication Program (EDEP) reported zero human cases for the second consecutive year in 2019, and no human or animal Guinea worm cases in January-February 2020. It officially reported 2 infected dogs (both contained) and 6 infected baboons from 4 localities in 2019, which is a 53% reduction from the 17 infected animals (11 dogs, 5 cats, 1 baboon) reported from 9 localities in 2018. The program proactively tethered 92% of 1,937 dogs and 87% of 299 cats in Gog and Abobo districts of Gambella Region in 2019. The status of coverage of modified intervention indices as of December 2019 is shown in Figure 1. Ethiopia reported zero human and animal cases between January and February 2020.

Except for the well-documented water borne outbreak in Oromia Region in 2017 that originated from Gambella Region, Guinea worm infections in Ethiopia have only been detected in Gambella Region and SNNP Region (formerly South Omo) since the EDEP began in 1993. SNNPR detected its last indigenous case of Guinea worm disease in 2000. All Guinea worm infections in animals in Ethiopia, except for one dog in Abobo district in July 2016, have been detected in a small area of Gambella Region, mainly Gog district, where the EDEP is continuously improving the quality of Abating. Researchers who have studied baboons in some other parts of the country report they have seen no infections resembling Guinea worm in those animals.

The Goyi Investment Farm, source of the Guinea worm outbreak in 2017, has not yet drilled a borehole well to provide safe drinking water for its migrant workers.

EDEP Surveillance Snapshot 2019
Accessibility: 75% (see Figure 1)
Villages reporting 1+ GW infection: 4
Number of districts by surveillance level: 2 level 1; 15 level 2; 817 level 3
Villages under Active Surveillance (VAS): 1,090 (286 level 1, 804 level 2)
Monthly reporting rate for VAS: 100%
Number of rumors humans 17,463 (99% investigated in 24h), animals 4,393 (99% investigated in 24h)
Cash reward awareness: 74% humans, 96% animals
Cash reward amount: USD$345 equivalent for reporting a human case, USD$35 for reporting infected animal
Integrated surveys: 482,582 persons (polio, trachoma, +)
Number and reporting rate for IDSR (Integrated Disease Surveillance and Reporting): 20,578 units, 92%

MALI

Mali has reported no case of Guinea worm disease in a human for four consecutive years (2016-2019). The 8 infected dogs and 1 infected cat reported in 2019 (67% contained) were a 55% reduction in infected animals from the 18 infected dogs and 2 cats reported in 2018. A line list of the infected animals in Mali in 2019 was included in *Guinea Worm Wrap-Up #263*. Mali has reported no Guinea worm infection in a human or animal between January and February 2020. The status of coverage of modified intervention indices as of December 2019 is shown in Figure 1. During 2019, Mali's GWEP experienced increasing (but still incomplete) access to endemic areas of the country in parts of Mopti and Segou Regions (from 79% access in December 2018 to 95% access in December 2019).

The program tripled the number of villages under active surveillance from 903 villages at the beginning of 2019 to 2,802 villages by the end of the year.

MGWEP Surveillance Snapshot 2019
Accessibility: 95% (see Figure 1)
Villages reporting 1+ GW infection: 8
Number of districts by surveillance level: 4 level 1; 11 level 2; 55 level 3
Villages under Active Surveillance (VAS): 2,802 (927 level 1, 1,875 level 2)
Monthly reporting rate for VAS: 100%
Number of rumors humans 191 (99% investigated in 24h), animals 20 (100% investigated in 24h)
Cash reward awareness: 77% humans, 77% animals
Cash reward amount: USD$340 equivalent for reporting a human case, USD$17 for reporting infected animal
Integrated surveys: 3,343,790 persons (polio, trachoma)
Number and reporting rate for IDSR (Integrated Disease Surveillance and Reporting): 1,391 units, 96%

SOUTH SUDAN

The South Sudan Guinea Worm Eradication Program (SSGWEP) reported 4 cases of Guinea worm disease (50% contained) from 2 villages in 2019 (vs. 10 cases, 30% contained, reported from 10 villages in 2018), and no human or animal Guinea worm cases in January-March 2020. Three of the 2019 cases were in the same household. A line list of the cases reported in 2019 was included in *Guinea Worm Wrap-Up #*264. The SSGWEP investigated 4 cases thoroughly, but was unable to identify a source of infection for any of the cases, despite searching for missed local cases, infected travelers, or evidence of any infected animal. South Sudan has reported only one dog with a Guinea worm infection, which was in the same household as an infected person, in 2015. Among the 57 specimens submitted to CDC by the SSGWEP for laboratory testing in 2019, 4 were confirmed as *D. medinensis* and 20 were spargana. The status of coverage of modified intervention indices as of December 2019 is shown in Figure 1.

SSGWEP Surveillance Snapshot 2019
Accessibility: 75% (see Figure 1)
Villages reporting 1+ GW infection: 2
Number of bomas by risk level: 5 level 1; 15 level 2; 60 level 3
Villages under Active Surveillance (VAS): 2,675 (1,682 level 1, 993 level 2)
Monthly reporting rate for VAS: 88%
Number of rumors: humans 65,997 (98% investigated in 24h), animals 124 (98% investigated in 24h)
Cash reward awareness: 73% (level 3 only)
Cash reward amount: USD$300 equivalent for reporting a human case, USD$60 equivalent for reporting infected animal
Integrated surveys: 128,604 persons (trachoma, river blindness)
Number and reporting rate for IDSR (integrated Disease Surveillance and Reporting): 842 boma units, 75% reporting rate

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	1 / 1										2 / 3	67%
SOUTH SUDAN	0 / 0	0 / 0	0 / 0										0 / 0	
ANGOLA^	0 / 0	0 / 0	0 / 0										0 / 0	
ETHIOPIA	0 / 0	0 / 0	0 / 0										0 / 0	
MALI [§]	0 / 0	0 / 0	0 / 0										0 / 0	
TOTAL*	1 / 1	0 / 1	1 / 1										2 / 3	67%
% CONTAINED	100%	0%	100%										67%	

*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.

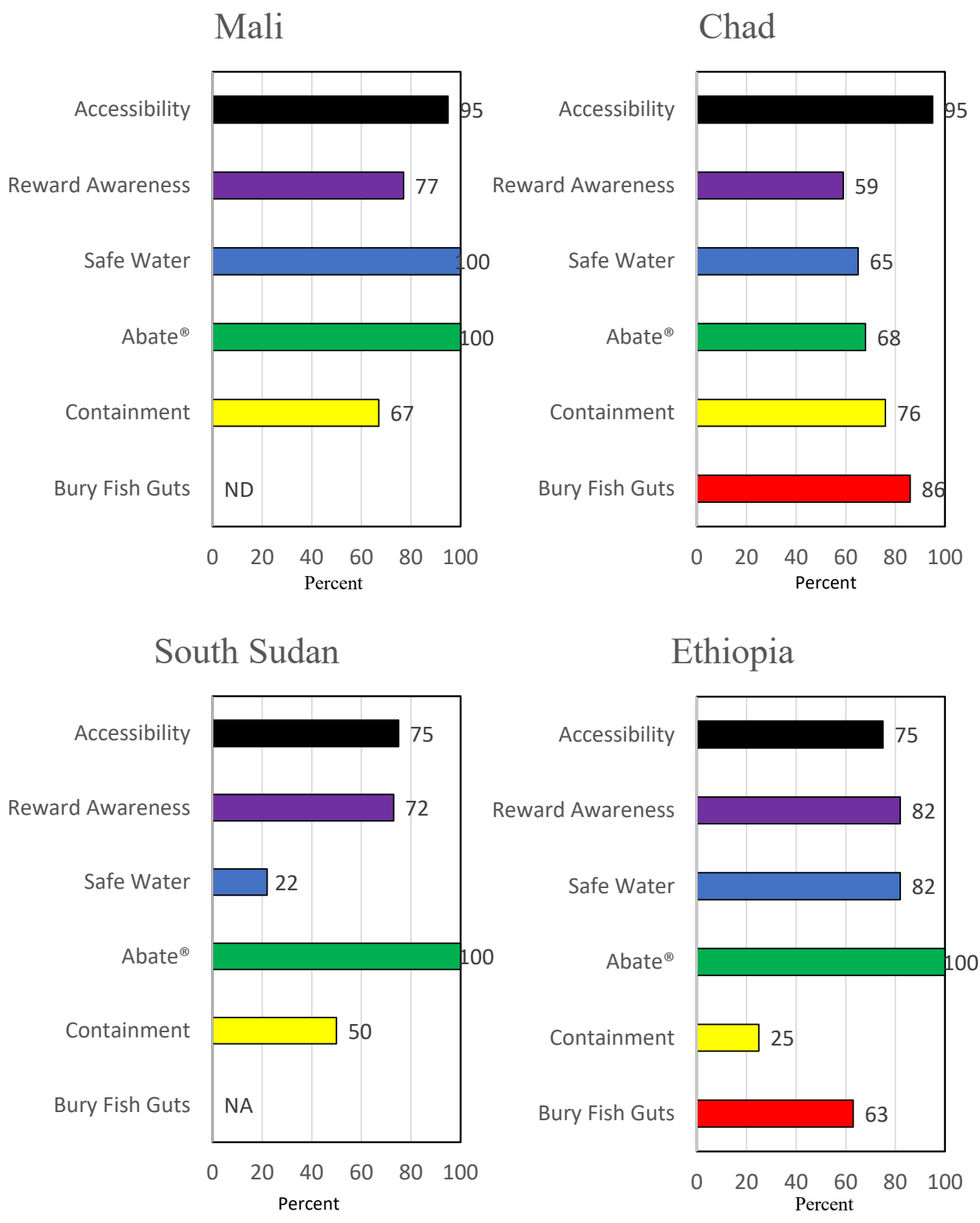
Shaded cells denote months when one or more cases of GWD did not meet all case containment standards.

[§]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.

Figure 1

Guinea Worm Eradication Program Indices Coverage*



* See criteria for each indicator in text ND = No Data NA = Not Applicable

* December 2019

MODIFIED INTERVENTION INDICES TO REFLECT VARIABLE MODES OF TRANSMISSION

With D. *medinensis* infections occurring in animals in three of the final four endemic countries (South Sudan. is the exception) and evidence mounting to suggest that the infection is being transmitted to humans and animals not just by drinking water, as before, but likely also by people and animals eating raw or undercooked transport hosts such as small fish (up to 2-3.inches/5-7.5 cm long) and/or raw fish guts, as well as perhaps by eating undercooked aquatic paratenic hosts such as frogs and larger fish, Guinea Worm Eradication Programs have adopted new interventions to counter the new challenges. Given this new situation we suggest that national GWEPs monitor a modified set of operational indicators. Among the former indicators, trained village volunteers, regular health education, and reporting by villages under active surveillance, including endemic villages, can be assumed as at or near 100%. Coverage with cloth filters protects against contaminated drinking water, such as in Ethiopia in 2017, but not against eating an infected transport or paratenic host which may now be the most common mode of infection for humans and animals in Chad and Mali. The suggested indicators now are:

- **Reward awareness**. Combined results for VAS levels I & II (endemic and high-risk villages) for reporting human and dog infections: % aware of persons surveyed. *Detect infections quickly.*
- **Containment of infected humans and animals**. % of infected humans and animals contained or tethered. *Prevent contamination.*
- **Abate coverage**. % cumulative villages where Abate applied this year in villages with infections in current or previous year. Water bodies may be ineligible for Abate treatment from time to time when they become too large (>1000mx3) or dry up. *Prevent infection and contamination.*
- **Bury fish guts**. % of people surveyed In VAS level I with demonstrated fish gut burial practice. *Prevent Infection.*
- **Safe water source**. %·of VAS· level I villages with at least one functioning source of safe drinking water. *Prevent large point source outbreaks.*
- **Accessibility**. % of VAS level I (endemic villages+) that are safely accessible by the program.

The latter indicator, as first reported on in GW wrap up #257, is intended to estimate GW programs' safe access to areas of greatest concern now for supervision and interventions. After transmission is interrupted nationwide, the entire country will need to be accessible for adequate surveillance and certification. Our first concern now, however, is to stop transmission, which requires safe access. The four main considerations for the new indicator are: 1) the denominator = surveillance level 1 (known or suspected endemic) plus option to include other areas if judged. appropriate; 2) scores are 0 = not accessible for supervision and interventions, 1 = partly accessible; 2 = fully accessible; 3) administrative level= district or county; 4) all GW infections count, whether human or animal. Total score is sum of scores for all districts/counties of concern divided by maximal score (2x total number of districts/counties of concern) times 100 = percentage. A country's score may change with changes in security situations on the ground.

MEETINGS OF GWEP PROGRAM MANAGERS AND GW RESEARCHERS

Because of the global COVID-19 crisis, the Twenty-fourth International Meeting of GWEP Program Managers and a separate meeting of GW researchers that was to follow could not be convened at The Carter Center in Atlanta on March 16-18 as planned. Instead Mr. Adam Weiss, director of The Carter Center's Guinea Worm Eradication Program, hosted virtual meetings by telephone and computer with leaders of the national GWEPs of Chad and Ethiopia on March 16, South Sudan and Angola on March 19, and Mali on March 23. The powerpoint presentation and discussion for each country lasted one to two hours; the meeting platform allowed for simultaneous interpretation into English, French and Portuguese for those who needed it. Other participants included representatives of the World Health Organization (WHO; headquarters and Regional Office for Africa), the U.S. Centers for Disease Control and Prevention (CDC), the International Commission for the Certification of Dracunculiasis Eradication, the Bill & Melinda Gates Foundation, the Department for International Development/UK (DFID), and the Children's Investment Fund Foundation (CIFF). The countries presented their official data for 2019, which is summarized elsewhere in this issue. The meetings allowed for meaningful discussion about progress achieved in 2019 and key recommendations for 2020.

To the surprise of many participants, Angola announced a suspect case of Guinea worm disease in a 9 year old girl who lives in Angola and Namibia, but whose infection allegedly was diagnosed in a border area of Namibia in May 2019. They said this patient was discussed during a border meeting between Namibian and Angolan health workers in November 2019. A worm specimen was reportedly sent to the Namibian capital, Windhoek, but no one knew why the specimen had not been sent to the laboratory at CDC for examination or where the specimen is now. WHO is investigating. Angola had one confirmed case of Guinea worm disease in a human in April 2018 and another confirmed human case (January) and a single confirmed GW infection in a dog (April) in 2019.

An all-day research meeting was held virtually on March 18 using the same platform. Presenters and participants discussed an evaluation of Chad's GW surveillance system; studies of Flubendazole to prevent and/or treat GW infections in dogs and ferrets; the baboon and dog ecology project in Ethiopia; *D. medinensis* transmission studies, genetic studies, and immunology; disease modeling; and an update on activities of the WHO Collaborating Center for the Eradication of Dracunculiasis at CDC. The presentations on genetic studies of worm specimens, on a serologic test for GW infection, and on Flubendazole as a potential treatment for GW infection in dogs all showed promising provisional results.

N.B.: The outbreaks of Guinea worm cases from a shared source of contaminated drinking water among migrant workers in Ethiopia in 2017 and at Bogam village in Chad in 2019 both show the on-going threat of Guinea worm transmission to people as long as *D. medinensis* persists in an area, and the urgent need to provide clean drinking water for inhabitants of endemic areas.

MEETINGS

The 14th Meeting of the International Commission for the Certification of Dracunculiasis Eradication that was scheduled to be held at WHO headquarters in Geneva, Switzerland on April 15-16, 2020 has been postponed. New dates are being considered.

RECENT PUBLICATIONS

Cleveland CA, Garrett KB, Box EK, et al. 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. International journal of infectious diseases : IJID : official publication of the International Society for Infectious Diseases. March 2020.

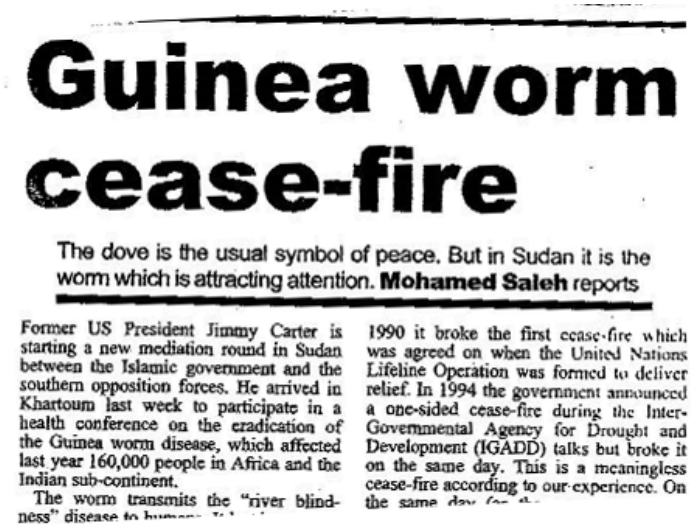
Galán-Puchades MT. Dracunculiasis: water-borne anthroponosis vs. food-borne zoonosis. Journal of helminthology. 2019;94:e76.

Garrett KB, Box EK, Cleveland CA, Majewska AA, Yabsley MJ. Dogs and the classic route of Guinea Worm transmission: an evaluation of copepod ingestion. Scientific reports. 2020;10(1):1430. https://www.nature.com/articles/s41598-020-58191-4

World Health Organization, 2020. Monthly report on dracunculiasis cases, January 2020. Wkly Epidemiol Rec 95:94-95.

25TH ANNIVERSARY OF THE "GUINEA WORM CEASE-FIRE" IN SUDAN

Friday, March 27, 2020 marked twenty-five years since Former U.S. President Jimmy Carter and Sudanese President Omar Al-Bashir announced the momentous "Guinea Worm Cease-Fire" between the Government of Sudan and the Sudanese People's Liberation Movement (SPLM), then led by Dr. John Garang, at a hastily-arranged press conference near midnight in Khartoum, Sudan. Initially agreed for two months, with two extensions the cease-fire lasted almost six months. With support of health workers on both sides of the civil war, The Carter Center, WHO, UNICEF, CDC and numerous Non-Governmental Organizations working in southern Sudan, the cease-fire kick-started Sudan's Guinea Worm Eradication Program throughout the country, began mass drug administration for Sudan's Onchocerciasis Control Program, and allowed mass immunizations, including for polio. The headline reproduced below is from the weekly English language newspaper *Al-Ahram* in Cairo, Egypt dated 6-12 April 1995.



Guinea worm cease-fire

The dove is the usual symbol of peace. But in Sudan it is the worm which is attracting attention. **Mohamed Saleh** reports

Former US President Jimmy Carter is starting a new mediation round in Sudan between the Islamic government and the southern opposition forces. He arrived in Khartoum last week to participate in a health conference on the eradication of the Guinea worm disease, which affected last year 160,000 people in Africa and the Indian sub-continent.

The worm transmits the "river blind-ness" disease to human[illegible]

1990 it broke the first cease-fire which was agreed on when the United Nations Lifeline Operation was formed to deliver relief. In 1994 the government announced a one-sided cease-fire during the Inter-Governmental Agency for Drought and Development (IGADD) talks but broke it on the same day. This is a meaningless cease-fire according to our experience. On the same day [illegible]

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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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.
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