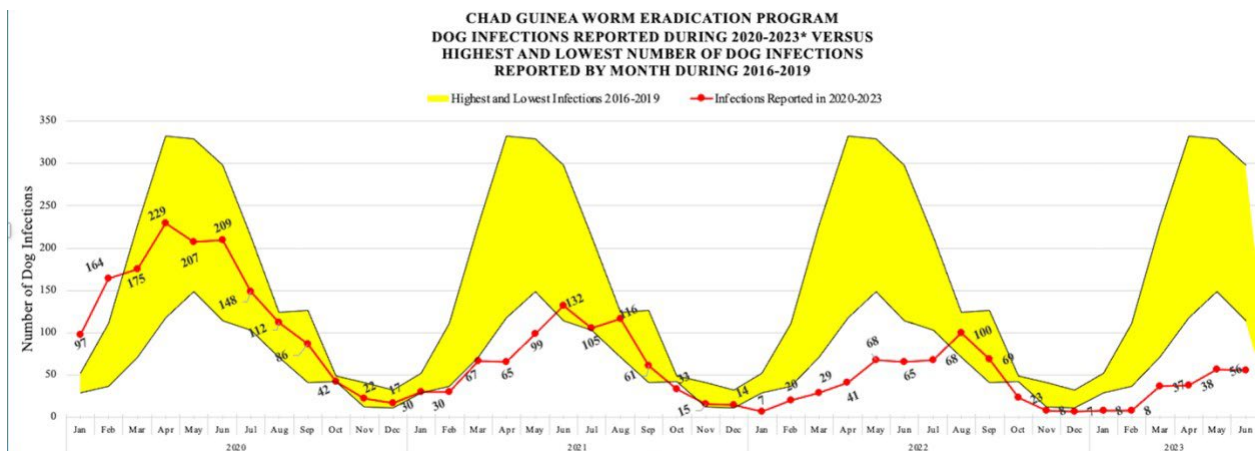


**Date:** July 31, 2023  
**From:** WHO Collaborating Center for Dracunculiasis Eradication, CDC  
**Subject:** GUINEA WORM WRAP-UP #300  
**To:** Addressees

*Detect every GW infection immediately. Contain every GW. Find the source of every GW infection.*

Figure 1:



**CHAD: TWO CONFIRMED GW CASES IN HUMANS**



Chad has provisionally reported 2 confirmed Guinea worm cases (100% contained) in humans, 202 infected dogs (74% contained), and 15 infected cats (80% contained) in January-June 2023. This represents provisional reductions of 33%, 17%, and 38% in human, dog, and cat infections, respectively, compared to the same period of 2022.

The 17% reduction in dogs with Guinea worm infections in the first half of this year is modest compared to the 43% reduction in dog infections between January-June of 2021 and 2022. The two confirmed human cases were reported from Korbol district

of Moyen Chari Province and are 9- and 14-year-old brothers living in the same household. *The source of their infections is unknown* (see previous issue for details of the first case). Reported containment rates of GW cases improved in January-June 2023 compared to 67% of human cases, 72% of dog infections, and 68% of infected cats contained in January-June 2022.

Emory University post-doctoral researcher Dr. Stephanie Gutierrez and Carter Center GWEP Program Associate Mindze Nkanga, were in Chad on July 2-22, 2023, to collect water samples and other environmental data to help understand the ecology of copepod hosts and their responses to predators and

Abate treatment. They also trained two research assistants appointed by the ministry of health who will continue data collection after the international team leaves.

## CAMEROON REPORTS MORE DOG INFECTIONS, PROVISIONAL HUMAN GW CASE



Cameroon has reported 56 confirmed dog infections (91% contained) and 126 provisional dog infections in January-June 2023 for which specimens are being prepared for shipment to CDC. Cameroon has also reported a provisional Guinea worm case in a 67-year-old farmer whose main residence is in Massa-Koutweita village near Nouldaina in Cameroon but who fishes almost year-round on a branch of the Logone River in Chad. His suspect Guinea worm emerged on July 12, 2023, and was contained. The infections in Cameroon are in Guere district which borders Bongor district in Chad. Those two districts, which are separated by the Logone River, form a single epidemiological cluster. Cameroon's peak GW transmission season is January-April. Improved surveillance has contributed to the increase in Cameroon's known GW infections in 2023.

A joint WHO-Ministry of Health Team, consisting of Drs. Etienne N'nomzo'o of WHO country office, Andrew Seidu Korkor of WHO/AFRO and Dieudonne Sankara of WHO headquarters, and Dr. Georges Barthélémy Nko'ayissi and Mr. Benoit Mpele from the Ministry of Health, visited the Guere Health District in the Far North region of Cameroon from June 27 to July 8, 2023. The general objective of this mission was to assess the Guinea worm situation in the Guere Health district and others bordering Chad, as well as review data management and reporting practices.

It appeared that the increase in the number of animal infections reported so far this year at the Cameroon border area with Chad is primarily due to the improvement and expansion of active surveillance and the proactive tethering of dogs. The number of villages at risk and under active surveillance has increased from 15 in 2022 to 26 in 2023, including 15 villages in the Nouldania health area and 11 others located in other health areas in Guere Health district: Gobo (4 villages), Bangana (2 villages), and Polgue (3 villages), and in the Dana health area (2 villages) of the Yagoua Health district. All these at-risk villages border the health districts of Fianga, Guéné, and Bongor in Chad, which also reports animal infections. In the Nouldaina Health area, the team interacted with community volunteers (in charge of surveillance, abate application and proactive tethering of dogs), and had working sessions with the field supervisors to review and better understand Guinea Worm surveillance data management practices and challenges, including specimen handling and shipment. It was observed that the number of reported rumors in the area under active surveillance since the beginning of this year increased from 56 in January 2023 to 780 in June 2023, including 243 suspected infections in dogs and cats and a rumor of human case. Vector control and proactive tethering of dogs are being reinforced. As of May 2023, 2,322 out of 2,794 (83%) of eligible dogs and cats were under proactive tethering; however, no animal was seen roaming about in the villages visited during the mission. 97% of all infections (confirmed and pending confirmation) are reportedly contained. The program informed the mission that the cash reward scheme for voluntarily reporting animal infections is now aligned with that of Chad. Following frank discussions with the team of supervisors, in the presence of the chief medical officer of the Guere health district, critical action points were identified to accelerate the interruption of Guinea Worm transmission in this cross-border area. *There is a crucial and immediate need to further expand and strengthen the active surveillance areas to include more at-risk villages and health areas along and across Chad and Cameroon borders. Additional and adequate human, logistic and financial resources are required and should be put in place urgently by October-November 2023 before the beginning of the next transmission season.* To strengthen communities' buy-in of program interventions, the chief of Canton will be called upon to help mobilize community members.

The Carter Center GWEP Associate Director Karmen Unterwegner, MPH arrived in Cameroon in mid-July to support field work and meet with National Guinea Worm Eradication Program Coordinator Dr. Georges Nko'ayissi and other representatives from the ministry of health.

## ETHIOPIA

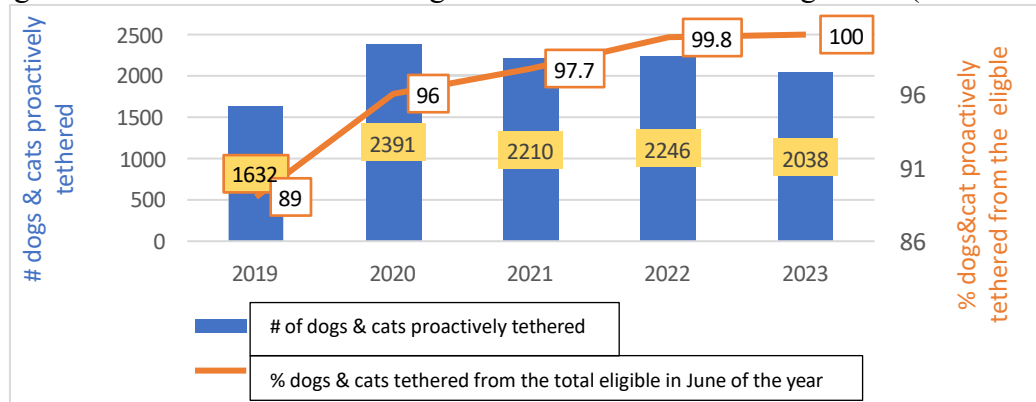


The Ethiopia Dracunculiasis Eradication Program (EDEP) has reported no confirmed Guinea worm infections in humans or animals in January-June 2023. Ethiopia reported 4 Guinea worm infections in 2 baboons, 1 human, and 1 dog in 2022 (all in August-September), of which the two infected baboons found in August were not contained. Ethiopia's peak transmission season is April-October.

**Surveillance:** The EDEP has 198 villages under active surveillance (VAS) and monitors 223 non-village areas (NVAs: farms, fishing, hunting, and gold mining areas) in Gog and Abobo districts of Gambella Region. In May 2023, the program conducted an integrated survey in cooperation with mass drug administration for trachoma which queried 15,240 persons from 3,377 households in 15 villages in Level II surveillance areas of Akobo district, while a house-to-house search for Guinea worm visited another 24,975 households and interviewed 91,392 persons in other Level II areas of Gambella Region. In January-June 2023, the EDEP responded to 16,697 rumors of GW infections in humans or animals, and inspected 227 baboons or monkeys, which discovered no GW infections. A cash reward awareness survey in May found an average 92% of 170 persons surveyed in Jor and Gambella Zuria districts of Gambella Region were aware of the cash reward for reporting GW in a human or animal.

**Interventions:** In May 2023, 29% of 198 VAS and 87% of 223 NVAs in Gog and Abobo districts had no source of safe drinking water. The program applied 3,102 Abate treatments in January-June 2023 to 100% of eligible water sources in Gog and Abobo districts and follow up spot checks reported 551 of 555 (99%) treatments were of good quality. In January-June 2023, a health education and pipe filter distribution center in Gambella Town provided health education to 2,956 daily laborers and distributed 2,256 pipe filters. Surveys of aquatic waste management in 128 VAS and NVAs in Gog and Abobo districts in May found that 77% (5247/6841) were managing aquatic animal waste adequately. The EDEP continues to work with communities at risk to proactively tether 1,807 domestic dogs and 231 cats in June 2023 (Figure 1). Recent conflict and insecurity which erupted in the region during the peak transmission season is feared to have an impact on GW interventions, especially in the endemic districts.

Figure 2: EDEP Domesticated Dogs & Cats Proactive Tethering Trend (2019-2023)



The EDEP National Program Coordinator Mr. Kassahun Demissie opened a workshop that was held in Bishoftu Town, Oromia Region on July 7-8, 2023, for media professionals on the social and behavior change communication campaign for Guinea worm eradication. Fifteen media professionals from national and subnational media attended. The EDEP convened the workshop to help build a long-term partnership with media and media professionals on nationwide awareness-raising and the cash reward scheme for Guinea worm eradication. In his opening remarks, Mr. Kassahun stressed that the media professionals' engagement and contributions will be paramount in advocacy and in dissemination of Guinea worm messages to achieve the cash reward awareness target and the provision of safe water sources to endemic communities, by using all possible media outlets.

The Senior Country Representative for The Carter Center Ethiopia, Dr. Zerihun Tadesse, welcomed participants to a workshop to review and validate Program Guideline (PG) and Standard Operating Procedures (SOP) of the EDEP that was held in Bishoftu Town, Oromia Region on July 14-17, 2023. Dr. Zerihun underlined the importance of EDEP staff and technical experts from relevant government sectors reviewing, revising, and validating the existing EDEP PG and SOPs each year. He said that since the GWEP is a flagship program for The Carter Center, he gives high priority to supporting the EDEP activities. Eighteen participants drawn from the Ethiopia Public Health Institute, Ministry of Agriculture, Ethiopian Wildlife Conservation Authority, and The Carter Center-Ethiopia attended the workshop.

#### **SOUTH SUDAN: TARGETING SAFE WATER SUPPLY**



The South Sudan Guinea Worm Eradication Program (SSGWEP) reported 6 confirmed Guinea worm infections in three locations in 2022. None of the presumed sources of these infections are known. The SSGWEP and partners are bringing safe water supply to bear in these three localities in 2023. So far this year, the effort has repaired 33 handpumps, completed 11 new drillings with handpumps installed, and completed 1 mechanized extension. Among these:

- 1 human case (uncontained) in Lafon Center of Lopa-Lafon County/Eastern Equatoria State on 27 July 2022. *1 mechanized extension completed and 2 handpumps repaired. Trained 173 water and sanitation workers.*
- 1 infected dog (contained) in Wunlac village of Tonj East County in Warrap State on August 8, 2022. *1 new borehole well, with handpump.*
- 4 human cases (3 contained) were linked to Jarweng village in Awerial County of Lakes State between August 31 and October 2, 2022. *1 new borehole well and handpump and 1 handpump repaired.*

SSGWEP Director Samuel Makoy-Yibi conducted supervisory visits in Awerial, Tonj East, and Rumbek North Counties during the first half of July. South Sudan has reported no confirmed human case or infected animal in January-June 2023. The SSGWEP has successfully prevented known forward transmission from confirmed Guinea worm infections in recent years. Adding targeted water and sanitation interventions reduces potential for forward transmission and future outbreaks. Insecurity and appearance of infections in new places with no known source of the infection are the SSGWEP's main on-going challenges.

## IN BRIEF

Mali has reported 7 confirmed dog infections (all contained) in January-June 2023, compared to 2 dog infections (1 contained) in January-June 2022. These infections all occurred in Kolongo Bozo village or hamlet of Macina district/Segou Region in May-June, and each dog had one Guinea worm. *The presumed source(s) of these 7 infections are known, since Kolongo Bozo Village and hamlet each had a known uncontained dog infection in June-July 2022.* Mali's peak Guinea worm transmission season is June-September. Mali's most recent human GW case was in September 2021. The final public health and development activities for the "Health Package" negotiated by government and community representatives in Tenenkou district of Segou Region under the Peace Health Initiative were being completed in early July 2023. Health packages for Macina, Tominian, and Youwarou districts are expected to be completed by the end of August.

Angola reported 132 rumors, in 51 villages, all in Cunene province, including 20 rumors of cases and 112 rumors of animal infections between January and July 2023—all in dogs. Of these, 32 dog infections were confirmed, none of them was contained. Fifty-two (52) provisional dog infections are pending laboratory confirmation. All sample specimens are kept at the central level (National Institute of health investigation, in Luanda), awaiting shipment to CDC Atlanta.

The total of 84 dogs (32 confirmed and 52 provisional infections) with emergence of a worm were reported in 29 villages, of which 23 have been under active surveillance in 2022 and 2023. Should worms from the 52 dogs be confirmed as GW, then 57% (48/84) of total infections would have been reported before the worm emergence, but only 5% (4/84) would meet the containment criteria (including observance of tethering and control of the dogs' mobility by their advised owners). Angola started treating surface water bodies with Abate®. The country has treated 16 unsafe water sources in endemic villages. Angola GWEP provided training and refresher training to a total of 97 staff on Abate® application in view of the expansion and consolidation of the strategy to reach 100% of eligible water bodies by the next transmission season in January-May 2024. Maintaining autonomous Abate teams appears to be a major challenge to the program amid a high turnover rate. WHO and MOH local teams are working on updating the number of villages under active surveillance (VAS) and the number of persons per village, the number of dogs and cats per village, and the number and location of unsafe surface water sources.

**Table 1**  
**Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2023\***  
 (Countries arranged in descending order of cases in 2022)

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	0/0	0/0	0/0	0/0	1/1	1/1							2/2	100%
SOUTH SUDAN	0/0	0/0	0/0	0/0	0/0	0/0								N/A
ETHIOPIA	0/0	0/0	0/0	0/0	0/0	0/0								N/A
CENTRAL AFRICAN REPUBLIC	0/0	0/0	0/0	0/0	0/0	0/0								N/A
MALI	0/0	0/0	0/0	0/0	0/0	0/0								N/A
TOTAL*	0/0	0/0	0/0	0/0	1/1	1/1							2/2	100%
% CONTAINED	N/A	N/A	N/A	N/A	100%	100%	N/A	N/A	N/A	N/A	N/A	N/A	100%	

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

**Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2022**  
 (Countries arranged in descending order of cases in 2021)

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	0/0	1/2	0/0	0/0	0/0	0/1	0/1	1/2	0/0	0/0	0/0	0/0	2/6	33%
SOUTH SUDAN	0/0	0/0	0/0	0/0	0/0	0/0	0/1	0/0	2/3	1/1	0/0	0/0	3/5	60%
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	N/A
ETHIOPIA	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	1/1	0/0	0/0	0/0	1/1	100%
CENTRAL AFRICAN REPUBLIC	0/0	0/0	0/0	0/0	0/0	0/0	1/1	0/0	0/0	0/0	0/0	0/0	1/1	100%
TOTAL	0/0	1/2	0/0	0/0	0/0	0/1	1/3	1/2	3/4	1/1	0/0	0/0	7/13	54%
% CONTAINED	N/A	50%	N/A	N/A	N/A	0%	33%	50%	75%	100%	N/A	N/A	54%	

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

Note to contributors: Submit your contributions via email to Dr. Sharon Roy ([gwwrapup@cdc.gov](mailto:gwwrapup@cdc.gov)) or to Adam Weiss ([adam.weiss@cartercenter.org](mailto: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. Dieudonné Sankara of WHO. Formatted by Jacqueline Mullen.

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