DEPARTMENT OF HEALTH & HUMAN SERVICES

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

Memorandum

Date: June 30, 2023

From: WHO Collaborating Center for Dracunculiasis Eradication, CDC

Subject: GUINEA WORM WRAP-UP #299

To: Addressees

No Guinea worms in humans for almost 7 consecutive months, November 2022-May 30, 2023!!

CHAD: MINISTER OF HEALTH VISITS ENDEMIC AREA

Chad's Minister of Public Health and Prevention, Dr. Abdelmadjid Abderahim, visited Bongor, the capital of Mayo Kebbi East Province, on June 23, 2023, to advocate for Chad's Guinea Worm Eradication Program (CGWEP). Mayo Kebbi East, which reported 23% of Chad's Guinea worm infections in 2022 and 43% of infections in January-May 2023, includes Bongor district, the part of Chad that forms a single epidemiological zone with Guere district across the river in Cameroon's Extreme North Region, where Guinea worm infections have been reported in several dozen dogs, a few humans, and 1 cat since 2019.

The minister's mission included the Health Advisor to Prime Minister Dr. Tara Fatclossou, the Governor of Mayo Kebbi East Province Mr. Abdelkrim Seid Bauche, the National Program Coordinator of the CGWEP Dr. Tchindebet Ouakou, Carter Center Senior Representative in Chad Dr. Abdallah Bakri Meftuh, Carter Center GWEP Associate Director Karmen Unterwegner, MPH, and other representatives from the World Health Organization and UNICEF. The honorable minister stressed the commitment of all sectors of the government, including Transitional President, General Mahamat Idriss Deby Itno, and said the fight

against Guinea worm is multi-sectoral and requires combined efforts of actors from all sectors. He recommended that officials involve communities in all stages of the fight and emphasized the need to strengthen surveillance, and compliance with control measures, including vector control. The minister also held a press conference with local bodies to inform them about the eradication strategies, advocacy made at the international level, and the unfailing accompaniment of the highest authorities in the country in the fight against Guinea worm. A skit on modes of transmission of Guinea worm and preventive measures and a local dance launched the high-level advocacy visit. The CGWEP reported 2 cases in January-May 2022. Chad also has reported 147 dog GW infections (70% contained) and 10 infected cats (80% contained) in January-May 2023 compared to 167 infected dogs and 17 infected cats in the same period of 2022, for a 15% reduction in infected animals so far this year.

Chad has reported the first human case of Guinea worm disease anywhere in 2023, in a 9-year-old boy. The patient was detected in Balwai village of Korbol district in Moyen Chari Province. His worm emerged on May 31, 2023. This infection was *detected early* (during itching, four days before the worm emerged) and is *being contained* at a local clinic. The *source of infection* is unknown. This community reported no Guinea worm infection in 2022 or 2021 but had one infected dog in 2020; the patient resided in the village during the entire period of his probable infection. He and his family eat fish and other aquatic animals frequently. Balwai does not have a safe source of drinking water. Both unsafe sources of water in the village have been treated with Abate.

Detect early. Contain all. Find source.

MALI: 7 PROVISONAL DOG INFECTIONS

Mali's Guinea Worm Eradication Program (MGWEP) has reported seven provisional Guinea worm infections in dogs, all of which were contained, in Kolongo Bozo village and hamlet of Macina district/Segou Region between May 25 and June 27, 2023. All the dogs had been proactively tethered since August 2022. This village and hamlet have a source of safe drinking water. The infections are indigenous, since Kolongo Bozo had 13 Guinea worm infections, all in dogs, 4 of which were not contained, between June 29 and September 23, 2022. The MGWEP is keeping a close watch (active surveillance) on five other villages that had known uncontained GW infections in 2022. Regarding proactive tethering, Macina district has tethered 216 of 220 (98%) targeted dogs, and Markala district 76/84 (90%); both districts are still discussing tethering cats with the communities. Djenne district of Mopti Region, which was the other main endemic area in 2022, has tethered 493/516 (96%) dogs and 565/641 (88%) cats.

Seventy-Eight percent (78%) of villages in Macina district have at least one source of safe drinking water. A survey in Macina found 21 of 65 (32%) households surveyed applied proper management of fish guts, while 9 of 17 (53%) fish sellers managed fish guts properly. A GW technical advisor in Macina also participated in a workshop on non-violent conflict management for youth and women that was organized by the Peace-Health Initiative. GW workers in Macina district visited three dog traders and inspected 23 dogs in April 2023. GW workers in Tominian district/Segou Region met with 15 dog traders and inspected 93 dogs in April and found proper disposal of fish guts in 15/20 (75%) households and 8/10 (80%) of fish sellers surveyed in April 2023. No sign of guinea infection in dogs was found during the dog traders dogs' inspection in Macina and Tominian.

Mali has reported no Guinea worm infection in a human in January-May 2023. It reported no human case in January-December 2022, and one human case each in August and September 2021.

ETHIOPIA

The Ethiopia Dracunculiasis Eradication Program (EDEP) successfully completed the most recent baboon trapping, in mid-June 2023. Researchers from the Ethiopia Public Health Institute, Ethiopia Wildlife Conservation Authority, EDEP, and The Carter Center trapped, sedated, examined, bled, and released 71 baboons in Gog and Abobo districts of Gambella Region. None of the trapped baboons had signs of Guinea worm infection. This is the first baboon trapping conducted by the program since October 2021. Ethiopia has reported no human or animal with Guinea worm infection in January-May 2023.

Carter Center Associate GWEP Director Giovanna Steel, MA, made a supervisory field visit to Ethiopia in May, and epidemiologist Dr. Maryann Delea joined her to conduct training in investigation-related data entry and discuss recent genomics work with the EDEP. Data analyst Zujing Zhao, MPH arrived in Ethiopia in late May to work with the EDEP team on data infrastructure, workflow, and documentation, including electronic data collection.

The entire EDEP and GWEP is mourning the loss of Mr. Weka Akway Taro, one of the team members in Ethiopia, who served as a security guard at Abobo district Case Containment Center and was killed by assailants on the road between Gog and Abobo districts on June 22, 2023. We extend our deepest sympathy to his family.

IN BRIEF:

Angola. Angola's first shipment of Abate finally arrived in Cunene Province in mid-June 2023. The GWEP treated the first water source and is continuing to apply Abate to eligible water sources. It is also leading trainings of brigades that will conduct Abate application. The peak transmission season for Guinea worm infection in Angola is January-May. Angola has reported 32 confirmed Guinea worm infections in dogs, all uncontained, and 51 provisional dog infections, all uncontained, but no human Guinea worm infection, so far in 2023.

NEW GUINEA WORM WARRIOR

The Carter Center welcomed a new veterinary epidemiologist, Dr. Alexandra (Lexi) Sack, DVM, MPH, PhD, to its Team Guinea Worm in mid-May 2023. Dr. Slack will help shape elements of the research agenda, support national Guinea Worm Eradication Programs to apply One Health practices during day-to-day operations and in research, and work with epidemiologists to collect and analyze data with the goal of accelerating Guinea worm eradication. Dr. Sack received her PhD in Clinical and Translational Science from Tufts University, a Master of Public Health in Global Health from Harvard Chan School of Public Health, a Doctor of Veterinary Medicine from North Carolina State University, and her Bachelor of Science in Biology from Birmingham-Southern College. She received further postdoctoral training at Duke University, and most recently at Notre Dame University, where she worked on schistosomiasis, sustainable agricultural practices, and livestock feeding trials in Madagascar and Senegal. Welcome to the team, Lexi!!

ARYC W. MOSHER, GUINEA WORM WARRIOR, 1967-2023

It is with heavy hearts that we report the passing of Guinea Worm Warrior Aryc W. Mosher, MPH. Aryc spent nine years at The Carter Center in various management roles, including service as Resident Technical Advisor to the Ghana Guinea Worm Eradication Program in 2004-2005, and as Assistant Program Director at Atlanta headquarters in the Guinea Worm Eradication Program, as well as trachoma and malaria control. He earned his Master of Public Health degree at the University of Michigan. After leaving The Carter Center, Aryc held successive positions as a Program Officer at the Bill & Melinda Gates Foundation, Senior Technical Advisor for Neglected Tropical Diseases at the United States Agency for International Development (USAID) and was a participant observer to the International Coalition for Trachoma Control, the Trachoma Elimination Committee, and the Global Elimination of Trachoma by 2020 donor group. A skilled artist and professional photographer, Aryc had a ready smile and an easy sense of humor. We extend our profound condolences to his family.

DEFINITION OF A PRESUMED SOURCE OF GUINEA WORM INFECTION

A presumed source/location of a human dracunculiasis case is considered identified if:
The patient drank unsafe water from the same source/location (specify) as other human case(s) or an infected animal 10-14 months before infection, or

The patient lived in or visited the (specify) household, farm, village, or non-village area of a (specify) Guinea worm patient or infected domestic/peri-domestic animal 10-14 months before infection, or

The patient drank unsafe water from a (specify) known contaminated pond, lake, lagoon or cut stream 10-14 months before infection.

If none of the above is true, the presumed source/location of the infection is unknown. Whether the patient's residence is the same as the presumed source/locality of infection or not should also be stated in order to distinguish indigenous transmission from an imported case.

DEFINITION OF 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. A village volunteer or other health care provider 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 the source(s) of drinking water, or if a source of drinking water is known to have been contaminated.

***The criteria for defining a contained case of Guinea worm disease in a human should be applied also, as appropriate, to define containment for an animal with Guinea worm infection*

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									N / A
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0									N / A
ETHIOPIA	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									N / A
MALI	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0									N / A
TOTAL*	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1									N / A
% CONTAINED	N / A	N / A	N / A	N / A	100%	N / A	N / A	N / A	N / A	N / A	N / A	N / A	N / A	

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.

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(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.

RECENT PUBLICATIONS

Islam MR, Mir SA, Akash S, Dhama K, 2023. Dracunculiasis (Guinea worm disease), a parasitic infection: epidemiology, life cycle, prevention, treatment, and challenges—correspondence. Annals of Medicine & Surgery 85:2264-2265.

Simonetti O, Zerbato V, Di Bella S, Luzzati R, Cavalli F, 2023. Dracunculiasis over the centuries: the history of a parasite unfamiliar to the West. Le Infezioni in Medicina 2:257-264.

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. Dieudonné Sankara of WHO. Formatted by Jacqueline Mullen of the Carter Center.

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Back issues are also available on the Carter Center web site in English, French, and Portuguese and 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

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

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World Health Organization

CDC is the WHO Collaborating Center for Dracunculiasis Eradication.