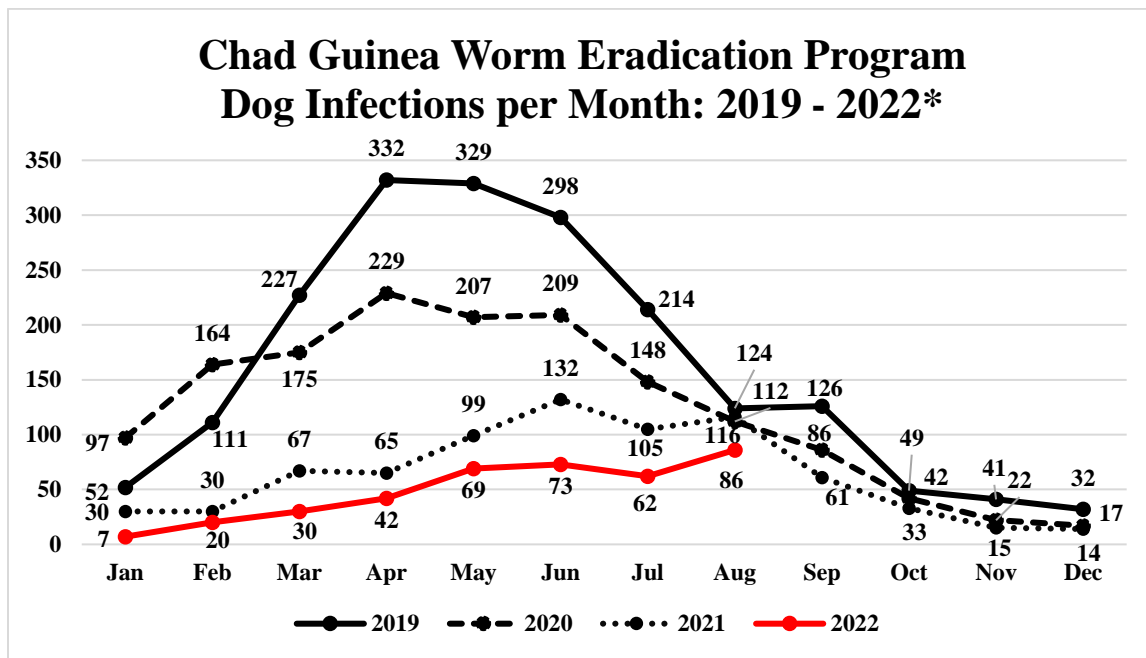




Date: September 26, 2022
From: WHO Collaborating Center for Dracunculiasis Eradication, CDC
Subject: GUINEA WORM WRAP-UP #292
To: Addressees

Detect, Contain, and Explain Every Guinea Worm!

Figure 1



**Provisional*

CHAD REPORTS 5 HUMAN CASES, 449 ANIMAL INFECTIONS IN JANUARY-AUGUST



Chad’s Guinea Worm Eradication Program (CGWEP) has reported 5 confirmed Guinea worm cases in humans (2 contained, 40%) and 449 animal infections (66% contained; 389 dogs, 58 cats, 2 other) in January-August 2022. This is a reduction of 17% from the 6 human cases, and 35% from the 696 animal infections reported in the same period of 2021. An updated line list of the human cases in 2022 is in Table 1. Regarding the presumed source of infection and apparent exposure of the two latest cases (see previous issue for notes on Cases #1-#3):

Case #4. 16-year-old boy; worm emerged July 20. Presumed source of infection: *indigenous* (uncontained infected dog in same village July 2021). Apparent exposure: *drinks unfiltered water from nearby ponds (village has safe drinking water) and eats poorly cooked fish.*

Case #5. 3-year-old boy; worm emerged August 1. Presumed source of infection: *indigenous* (5 known GW-infected animals in village in 2021). Apparent exposure: *drinks unfiltered water (village has safe drinking water) and eats undercooked fish with entrails.*

The CGWEP continues to stress proactive tethering of animals and use of Abate® to reduce Guinea worm transmission in at-risk villages. In January-June 2022 the program contained (tethered) 70% of infected dogs and treated 68% of 82 villages with Abate®. In areas under active surveillance, 70% of residents surveyed knew of the cash reward for reporting human or animal infections, and the program investigated 41,135 rumors of human or animal infections in January-June 2022.

The CDC laboratory has confirmed as *D. medinensis* a Guinea worm recovered from a small mammal (still being identified) about 9 kilometers (~3.6 miles) from the village of Goz Tougoula and 22 kilometers (~13 miles) from Haraze, in Haraze district of Chad's Salamat Region. A hunter killed the wild omnivore in the bush on June 19 and found the un-emerged worm when the animal was skinned. This apparently is the first known Guinea worm infection of this kind of mammal, which is similar to the otter host of *D. lutrae* in North America, in Africa. The nearest known Guinea worm infection in 2021 was a domestic cat about 5.4 miles (9 kilometers) from where the animal was killed. Villagers in Goz Tougoula discard waste on the ground from fish and other aquatic animals caught at a nearby water source, according to the investigation.

Table 1

Chad Guinea Worm Eradication Program
Cases of Dracunculiasis: January – August 2022*

Case #	Age	Sex	Ethnicity	Occupation	Village of Detection	Zone	District	Region	Date					Isolated (Y/N)	Imported (Y/N)	Localization of Worm	Presence of safe water in village	Village Under Active Surveillance
									Detection	Emergence	Confirmation	Admitted to Health Center	Discharged from Health Center					
1.1	32	M	Sarakaba	Fisherman	Marabodoukoya 1	Marabe	Kyabe	Moyen Chari	Feb. 4	Feb. 4	Feb. 4	Feb. 4	Mar. 23	No	No	Left leg	No	Yes
2.1	2	F	Tounia	N/A	Madjyam	Marabe	Kyabe	Moyen Chari	Feb. 27	Feb. 27	Feb. 27	Feb. 27	Mar. 18	Yes	No	Right thigh	No	Yes
3.1	29	M	Ngambaye	Fisherman/ Farmer	Ngama Sara	Malo	Mandelia	Chari Baguirimi	June 18	June 21	June 22	June 21		No	Yes	Lower abdomen	Yes	No
4.1	16	M	Borno	Student	M'Baranga	M'Baranga	Bouso	Chari Baguirimi	June 30	July 20	July 20	July 20		No	No	Lower abdomen	Yes	Yes
5.1	3	M	Ngambaye	N/A	Goudoum Goudoum Massa	Kelengue	Bailli	Chari Baguirimi	Aug. 1	Aug. 1	Aug. 1	Aug. 1	Aug. 6	Yes	No	Right testicle	Yes	Yes

*Provisional

CAMEROON



Cameroon eliminated Guinea worm disease in 1997 and was certified as Guinea worm-free by WHO in 2007. It reported no Guinea worm infections in 2008-2018 but reported a total of 2 human cases, 15 infected dogs, and 1 infected cat in 2019-2021. The latter 18 Guinea worm infections all occurred in Guere health district of Cameroon's Extreme North Region, where the villages reporting Guinea worm infections are part of an epidemiological cluster of villages comprising families living on both sides of the Logone River which forms the international border between Cameroon's Guere district and Bongor district in Chad's Mayo Kebbi Est Region (see *Guinea Worm Wrap-Up* #285). Health teams from Cameroon and Chad have agreed to collaborate for case investigations and surveillance in this area, supported by WHO and The Carter Center, respectively. Cameroon began proactive tethering of dogs in the affected area late in 2021 and expanded active surveillance in January 2022. Investigations so far have found no evidence to conclude that the animals and humans detected with Guinea worm in Cameroon recently were indigenous infections.

The latest Guinea worm infections in Cameroon began appearing in dogs in Guere district in January 2022. Rumors of those infections were not reported to The Carter Center until late April. Worm specimens were shipped to CDC in June and CDC confirmed they were *D. medinensis* in July. After Cameroon's minister of health requested The Carter Center's technical assistance and support in June, GWEP Associate Director Karmen Unterwegner and Program Associate Mindze Nkanga visited Cameroon August 2-15, 2022, to support strengthening surveillance and interventions for preventing Guinea worm transmission. They reviewed endemic areas near the Logone River in Nouldaina health area of Guere district in Cameroon's Extreme North Region. This health area reported 24 dogs with Guinea worm infections in nine villages in January-April 2022, which confirms the peak Guinea worm transmission season of December-April reported by Cameroon 2019-2021. In 2022, 88% of community members in this area have access to safe drinking water. The infected dogs in 2022 are distributed by village as follows: Nouldaina (5), Bastebe (5), Dabana (4), Yakrao (3), Karam 2 (2), Massa Koutweita (2), Gadambe (1), Karam 1 (1), and Naiguissia (1). Eight of the infections were not contained. All nine villages are under active surveillance; since December 2021, use of proactive tethering of dogs was added to the Abate® application in Nouldaina, Bastebe, and Dabana; the program plans to expand proactive tethering into Karam 2, Naiguissai, Yakrao, and Massa Koutweita. Dog ownership is very common in this area, and many fish vendors discard fish entrails on the ground. Whether all the infected dogs in Cameroon in 2022 visited the Chad side of the border during their period of infection in 2021 is not yet known.

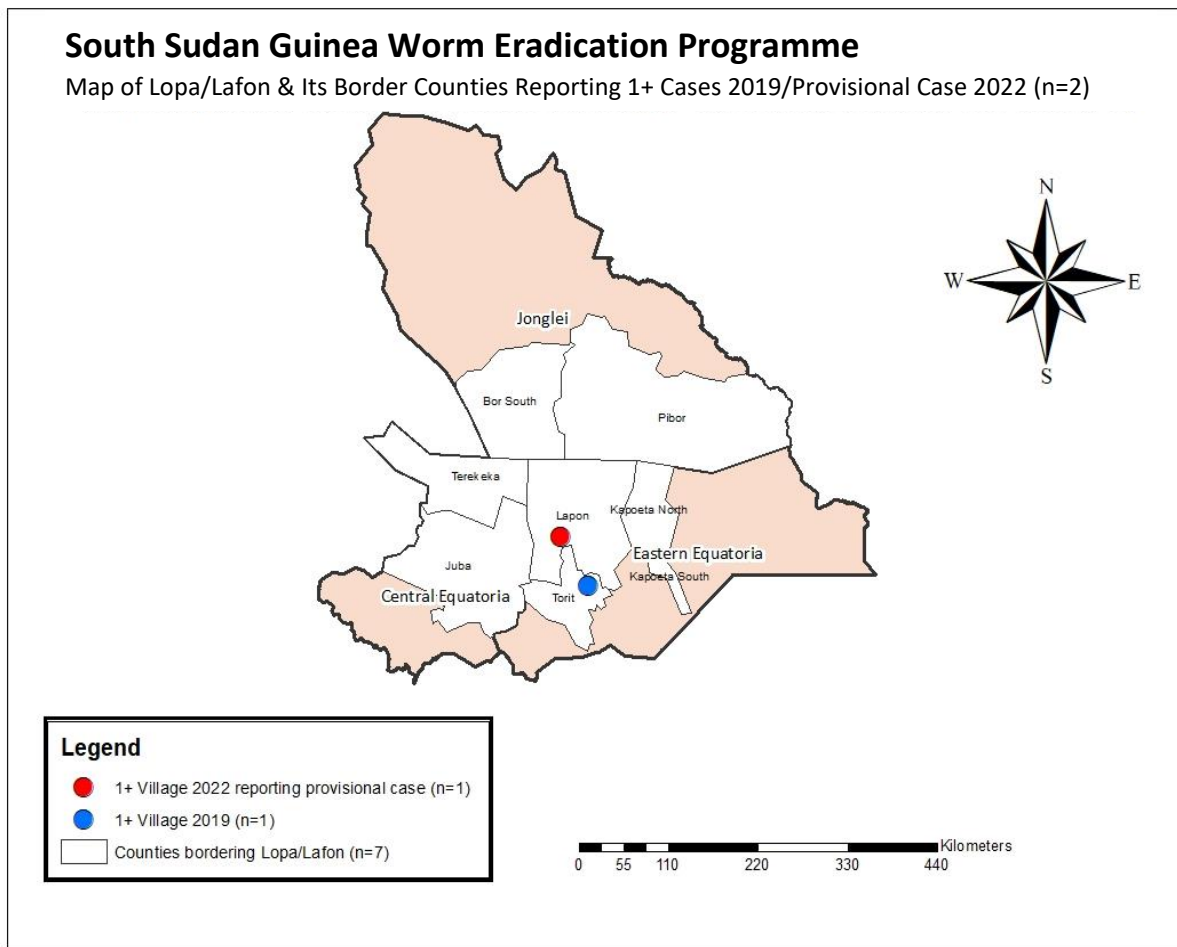
SOUTH SUDAN REPORTS ONE CASE



South Sudan's Guinea Worm Eradication Program (SSGWEP) has discovered one confirmed case of Guinea worm disease in an 18-year-old man from Adeba village in Lopa/Lafon County of Eastern Equatoria State whose worm emerged on July 27, 2022. The patient, whose single worm was *uncontained* and who was first

reported through the Integrated Disease Surveillance and Reporting (IDSR) system, is an ethnic Peri/Lafon. His home village has two working handpumps, but during the likely period of infection he drank unfiltered water from unsafe sources, some of which are shared by wild animals, while traveling to and visiting other villages, hunting in a forest, fishing, farming, and herding cattle. He also cooked and consumed mudfish, tilapia, and other aquatic animals. This patient contaminated at least two water sources while his worm was hanging, before he was admitted and treated at the Lafon Primary Health Care Center; the SSGWEP treated those and 38 other potentially contaminated water sources with Abate. The SSGWEP followed up the patient’s family members and companions and conducted active case searches, health education, promoted reward awareness, and distributed cloth and pipe filters; none of his family members or companions were found to have signs or symptoms of Guinea worm infection.

Figure 2



The only two other known Guinea worm cases in Lofa/Lafon County occurred in 2006 and 2007. The nearest recent Guinea worm case was about 52 miles (~87 kilometers) away: a 24-year-old woman in Idongi Ifura village of adjacent Torit County whose worm emerged in September 2019 (Figure 2) but there is no known link between these two cases, so *the source of transmission of the*

2022 patient's infection is unknown. South Sudan has reported only 30 human cases in 2015-2021 (average 4.3 cases/year; range: 0-10 cases/year), with only one known infected animal ever--a domestic dog in a household with two human cases in 2015--and the SSGWEP has prevented local transmission from each known case in those seven years. This suggests South Sudan is close to interrupting Guinea worm transmission, but *South Sudan's puzzling dynamic of a few apparently unconnected Guinea worm cases in humans annually, with only a single known animal infection, continues. It reflects undetected GW infections in humans, in animals, or both. Genetic analysis and comparison of recent worms should help connect the dots.*

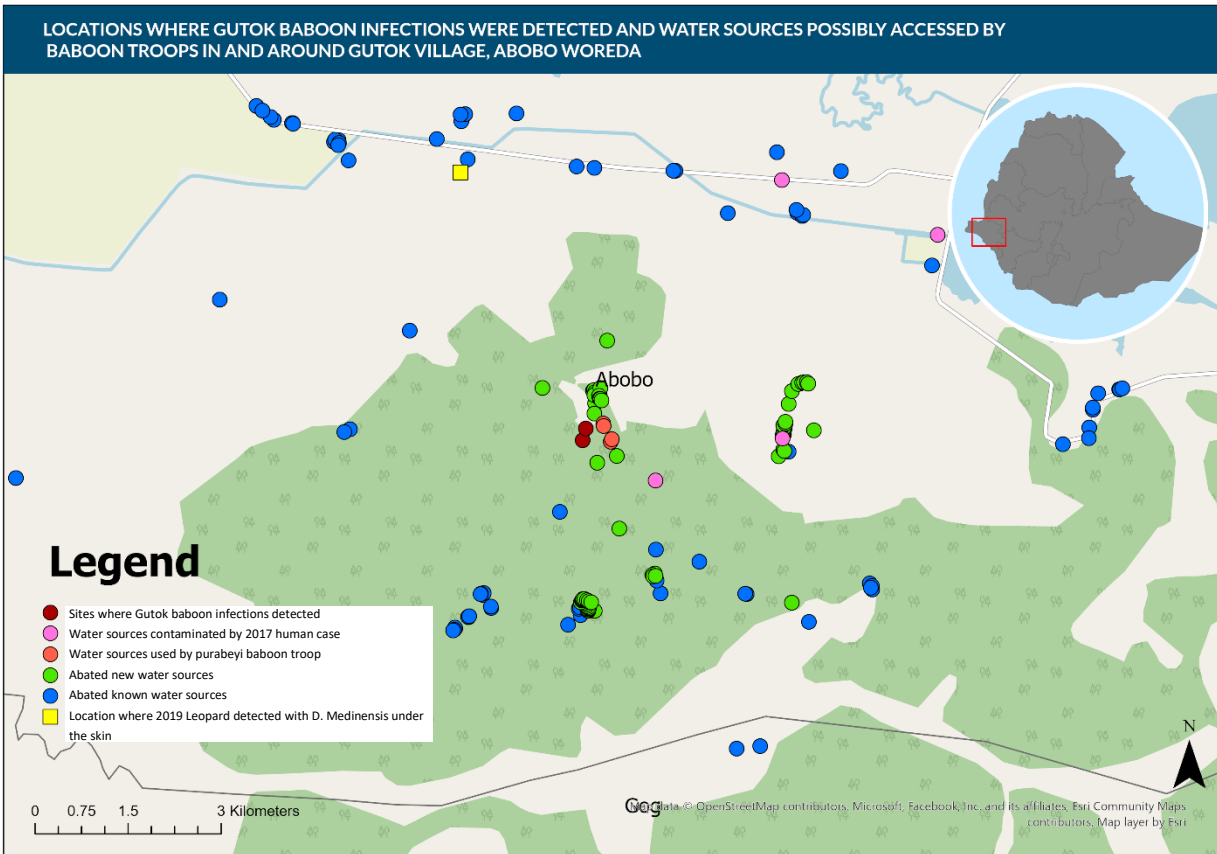
ETHIOPIA FINDS TWO INFECTED BABOONS



The Ethiopia Dracunculiasis Eradication Program (EDEP) has reported confirmed Guinea worm infections (*D. medinensis*) in two adult baboons that were trapped and killed on August 11 and August 16, 2022, respectively, by a 16-year-old boy (baboon #1) and his father (baboon #2) who were guarding their maize crop in Gutok village of Abobo district, Gambella Region. These are the first infected baboons to be detected in Abobo district, which is adjacent to Gog district where all other known infected baboons have been found. The first baboon had 8 Guinea worms, some of which were hanging; the second baboon had one hanging worm when it was killed. Following detection of the first baboon infection, a team comprising representatives from the district health, livestock, fishery, and education offices, Gambella regional health bureau, national program coordinator, attending veterinarian, and field and central staff of The Carter Center/Ethiopia office went to Gutok village the next day to begin outbreak investigation and response activities. Ethiopia has found no Guinea worm infections in humans, dogs, or cats in January-August 2022.

While the EDEP/Ethiopian Public Health Institute/Ethiopian Wildlife Conservation Authority Baboon Study Project has tracked six baboon troops in endemic areas of Gog district for a few years, it began tracking three troops in Gutok, Elagni, and Mender Areas of Abobo district in January 2022. Both infected baboons are believed to be members of the Purabeyi Troop that resides near the forest around Purabong sub-village of Gutok village, that has only one functioning borehole well, which is located about 1.5 kilometers (0.9 mile) away from Purabong sub-village. People of the sub-village and baboons of the Purabeyi Troop both share Purabong 1&2 and Purabeyi 1&2 ponds for drinking water and other uses. (Figure 3 with locations of the ponds, Gutok village, and Aregawi Farm where GW which didn't emerge was found in the dead body of a leopard in 2019). The response team informed 1,073 community members in 193 households of the baboon infections, searched for other Guinea worm infections in villagers and 330 domestic animals, conducted health education, distributed cloth and pipe filters, mapped water sources, and treated 60 water sources with Abate (including Purabong 1&2 and Purabeyi 1&2 ponds, and other water sources in Gutok village and forest areas). The team also assigned pond guards for the four known local water sources shared by villagers and baboons.

Figure 3: *Baboon infections detection sites and water sources possibly accessed by baboon troop in Gutok Village, Abobo District*



One of the most recent known Guinea worm infections in this area was a seasonal laborer in the outbreak at Goyi commercial farm in Abobo district in September-October 2017, who was from Gutok village (see *Guinea Worm Wrap-Up* #251). His infection was uncontained, and he is known to have entered water sources near his village before he was admitted to a containment center. An un-emerged Guinea worm was found in the dead body of a leopard at Aregawi Farm in 2019. The investigations of the current outbreak and associated baboon troops are on-going. Live trapping, examination, and bleeding of baboons by the Study Project is scheduled to resume late in 2022. Other wildlife surveillance so far this year included inspection of 79 baboons and monkeys found dead or killed by villagers in January-July 2022, none of which had evidence of Guinea worm infection. Drilling of a borehole well commenced in July 2022 at Duli Farm, the site of a small common source outbreak in April 2020.

MALI HAS 11 CONFIRMED DOG AND 2 CAT INFECTIONS IN JANUARY-AUGUST



Mali has detected 11 dogs (8 contained), 2 cats (both uncontained), and no humans with confirmed Guinea worm infections in January-August 2022 (Table 2). Below is also a summary of the presumed source and apparent exposure to Guinea worm infection for animals #8-#13 (Table 3). A similar list for infected animals #1-#7 was included in the previous issue. The purpose is to seek potential links between Guinea worm infections in 2022 with known infections in 2021. Nine of the 13 confirmed infections (69%) were indigenous to the animal's home village, one dog was fed fish imported from another village, and the presumed sources of infection for three animals, including the two cats, are unknown. This shows the importance of Mali's GWEP and other health authorities engaging inhabitants in communities with known Guinea worm-infected animals for health education, awareness of the reward for reporting Guinea worm infections, proactive tethering, filtering unsafe water, and Abate application. Owners stated that 6 of the 13 animals (46%) ate fish entrails or scraps, while 6 other dogs roamed widely during the period when they became infected.

The latter observation fits with data from the similar riverine endemic area of Chad, where dogs that are allowed to roam freely or accompany their owners to mass fishing events where they can consume discarded fish and fish entrails, are at increased risk of Guinea worm infection. All of these 13 animals' seven residence villages have at least one source of safe drinking water. Kolongo Bozo village and adjacent Kolongo Bozo hamlet committed to practicing proactive tethering in September 2021 and have been doing so in 2022.

From 12 to 24 July 2022, the National Commission for the Certification of Guinea Worm Eradication carried out field supportive supervision at the internally displaced populations (IDP) in the regions of Mopti [IDP camps of Sokoura and Medina Coura] and Koulikoro [IDP camp of Zantiguila]. The quality of Guinea worm disease surveillance and the level of community awareness were assessed. The Commission assessed the quality of Guinea worm surveillance and level of community awareness, and raised awareness about Guinea worm disease and the cash reward for reporting cases of Guinea worm disease.

Table 2

MALI GWEP LISTING OF CONFIRMED ANIMAL INFECTIONS: January - September 2022*															
#	Region	District	Health Zone	Village	Ethnicity	Profession	Host	Probable origin	Date of detection	Date of emergence	Entered water?	Abate Applied? (Y/N)	Contained ?* (Y/N)	Confirmed Y/N	Total # of GW
1	Segou	Tominian	Togo	Togo	Bozo	Teacher	Dog	Togo	4-Jun	7-Jun	No	Yes	Yes	Yes	1
2.1	Segou	Macina	Kolongo Bozo	Kolongo Bozo Hamlet	Bozo	Fisherman	Dog	Kolongo Bozo Hamlet	17-Jun	29-Jun	No	Yes	Yes	Yes	3
2.2								Kolongo Bozo Hamlet	17-Jun	15-Aug	Likely	Yes	No		
2.3								Kolongo Bozo Hamlet	17-Jun	15-Aug	Likely	Yes	No		
3.1	Mopti	Djenne	Djenne Central	Kanafa (Djenne)	Bozo	Household	Dog	Djenne	15-Jul	17-Jul	No	Yes	Yes	Yes	2
3.2								Djenne	15-Jul	22-Jul	No	Yes	Yes		
4	Segou	Macina	Macina Central	KE-BOZO	Bozo	Fisherman	Cat	Unknown	24-Jul	25-Jul	Likely	Yes	No	Yes	1
5	Segou	Macina	Macin Central	KE-BOZO	Bozo	Fisherman	Cat	Unknown	28-Jul	28-Jul	Likely	Yes	No	Yes	1
6.1	Segou	Macina	Kolongo Bozo	Kolongo Bozo Hamlet	Bozo	Farming	Dog	Kolongo Bozo Hamlet	30-Jul	30-Jul	No	Yes	Yes	Yes	2
6.2								Kolongo Bozo village	30-Jul	9-Aug	Likely	Yes	No		
7	Mopti	Djenne	Djenne Central	Sankore/Djenne Town	Bozo	Housewife	Dog	Djenne	4-Jul	31-Jul	No	No	Yes	Yes	2

8	Mopti	Djenne	Djenne Central	Tolober/Djenne	Dogon	Farming	Dog	Djenne	8-Aug	10-Aug	No	No	Yes	Yes	1
9	Segou	Macina	Kolongo Bozo	Kolongo Bozo Hamlet	Bozo	Farming	Dog	Kolongo Bozo Hamlet	11-Aug	18-Aug	No	Yes	Yes	Yes	1
10	Segou	Macina	Kolongo Bozo	Kolongo Bozo Hamlet	Bozo	Fishing	Dog	Kolongo Bozo Hamlet	18-Aug	18-Aug	No	No	Yes	Yes	1
11	Segou	Macina	Kolongo Bozo	Kolongo Bozo/Ablobougou	Bozo	Fishing	Dog	Kolongo Bozo Hamlet	20-Aug	18-Aug	Likely	Yes	No	Yes	1
12	Segou	Macina	Kolongo Bozo	Kolongo Bozo Hamlet	Sarakole	Farming/Fishing	Dog	Kolongo Bozo Hamlet	22-Aug	22-Aug	No	Yes	Yes	Yes	1
13	Segou	Tominian	Fangasso	Sokoura	Bobo	Nurse	Dog	Sokoura	22-Aug	23-Aug	No	No	Yes	Yes	1

**Provisional*

Table 3

<u>INFECTION</u>	<u>PRESUMED SOURCE</u> (location, timing)	<u>APPARENT EXPOSURE</u> (history)
#8 - Dog/Aug10/Tolober/Djenne	<i>indigenous: 2 dogs 8/2021</i>	discarded fish entrails
#9 - Dog/Aug18/Kolongo Bozo hamlet	<i>indigenous: 2 dogs 8/2021 in same hamlet</i>	dog roamed freely in 2021
#10 - Dog/Aug18/Kolongo Bozo hamlet	<i>indigenous: 2 dogs 8/2021 in same hamlet</i>	dog roamed freely in 2021
#11 - Dog/Aug18/Kolongo Bozo Ablobougou	<i>indigenous: same dog infected in 2021</i>	dog roamed freely in 2021
#12 - Dog/Aug22/Kolongo Bozo hamlet	<i>indigenous: 2 dogs 8/2021 in same hamlet</i>	eats fish entrails
# 13 - Dog/Aug23/Soukoura/Tominian	<i>imported: fed imported fish</i>	eats fish & fish entrails

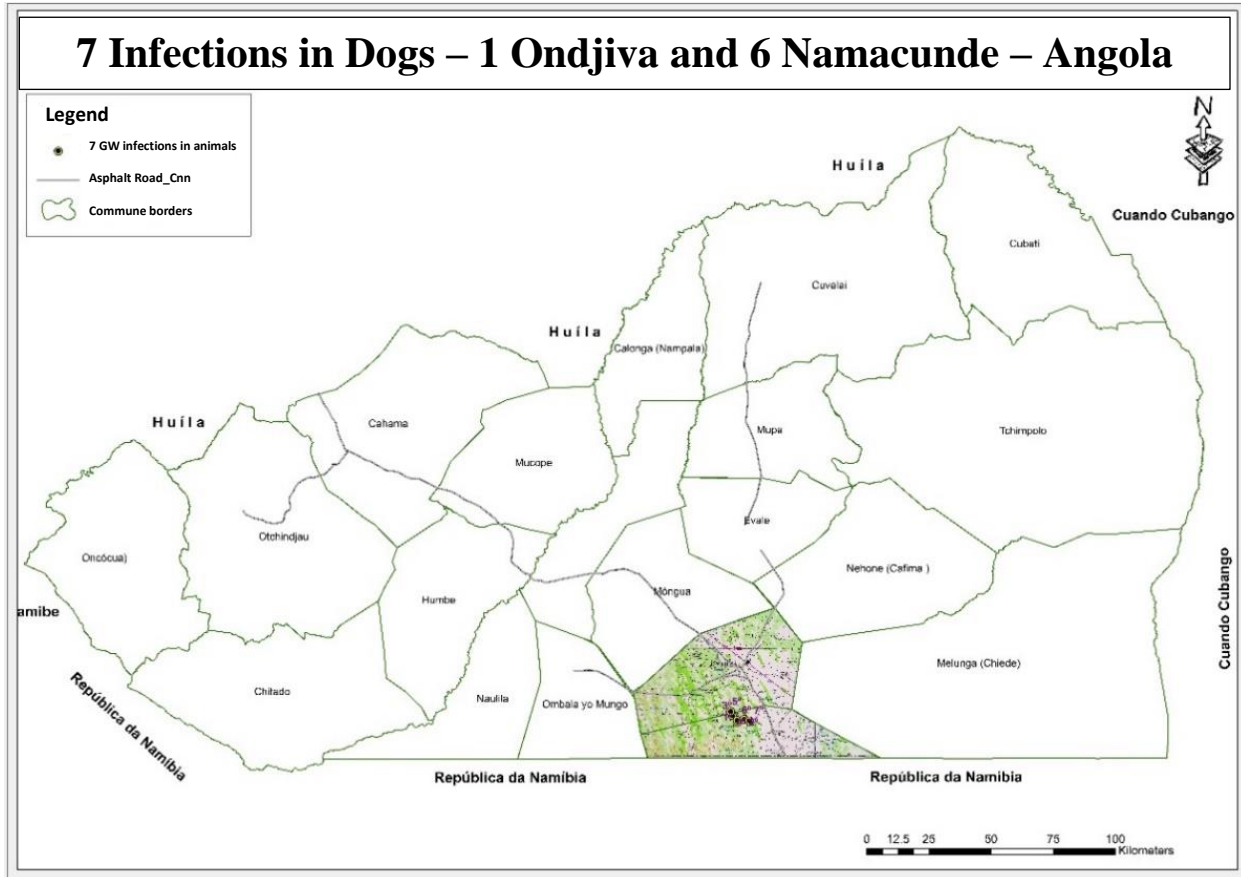
ANGOLA



Angola has reported 7 dogs with confirmed Guinea worm infections in March-May 2022. A line list of the first six dogs was included in *Guinea Worm Wrap-Up* #289. The seventh dog's single worm emerged in Onanime village of Namacunde municipality in Cunene Province on May 19. None of the 7 dogs' infections were contained. Six of the infected dogs were reported in Onanime village of Namacunde municipality, and one in Ohemeke village of Cuanhama municipality; all in Cunene Province (Figure 4). Health authorities also investigated 39 rumors of Guinea worm infections in humans and 14 rumors of dog infections in January-August 2022, including the 7 dogs with confirmed infections. For the same period in 2021, Angola reported no animal rumors or confirmed infections and no human cases of Guinea worm disease.

Six of the infected dogs were reported in Onanime village of Namacunde municipality, and one in Ohemeke village of Cuanhama municipality; all in Cunene Province (Figure 4). Health authorities also investigated 39 rumors of Guinea worm infections in humans and 14 rumors of dog infections in January-August 2022, including the 7 dogs with confirmed infections. For the same period in 2021, Angola reported no animal rumors or confirmed infections and no human cases of Guinea worm disease.

Figure 4



Angola's Guinea Worm Eradication Program (AGWEP) continues consolidating and expanding Community-Based Surveillance for the disease and advocating for institutional and community self-ownership. The program trained 321 professionals and community surveillance volunteers on dracunculiasis and community-based surveillance and distributed 2,709 water filters in 201 households of 92 communities or villages, as well as 27 health facilities in five of the six

municipalities in Cunene Province and two neighboring provinces (Namibe, Huila). The AGWEP also informed professional health workers about the disease and the eradication program.

From May 28 to June 23, 2022, active searches for Guinea worm disease were integrated in a Knowledge-Attitudes-Practices (KAP) malaria Cunene survey that covered 1,690 households in Namacunde and Ombadja municipalities, led by the Trans Kunene Malaria Initiative under the coordination of Igreja Anglicana and supported by the JC Flowers Foundation. The integrated activities also included trachoma prevalence surveys in three provinces, beginning with Namibe and Cunene from May 5 to June 28, and COVID-19 vaccination campaigns. A team from the Ministry of Health, The Carter Center, and the World Health Organization visited the GWEP in Cunene on June 30-July 9 to support the GW investigation, professional training, and supervision of at-risk areas.

Angola is awaiting the arrival of a shipment of Abate larvicide, which is scheduled for October 17, 2022. It has already trained 40 technicians in vector control, management and application of Abate and mapped 121 water sources at risk, including 83 sources, 48 of which are eligible for Abate treatment, in villages under active surveillance for Guinea worm. The program plans to review the amounts and methods of its cash reward system in accordance with guidance of the National Technical Committee for the Certification of Dracunculiasis.

Editorial note: The 8 dogs and 3 humans found with Guinea worm infections in Angola in 2018-2022 occurred in January (1), March (2), April (6), and May (2), coincident with Angola's rainy season (December-June). Abate will be available for vigorous vector control in response to any infections that occur in the 2023 Guinea worm season. The AGWEP should also discuss now proactive tethering of dogs in the few communities known to be at risk and begin that effective intervention also in the 2023 transmission season.

TRANSITIONS

Dr. Hubert Zirimwabagabo, the Carter Center Country Representative to the Guinea Worm Eradication Program in Chad, departed that position in early September. A graduate of the National University of Rwanda, Dr. Zirimwabagabo distinguished himself as a technical advisor to the GWEP in Chad in 2014-2015 and served as Associate Director of the Guinea worm program at Carter Center headquarters under Dr. Ernesto Ruiz-Tiben before becoming the Center's representative in Chad in June 2017. Working with the National Program Coordinator of Chad's GWEP, Dr. Ouakou Tchindebet, for the past five years, they led a steady reduction of Guinea worm infections in Chad from a high of 1,982 animal infections (mostly dogs) and 48 human cases in 2019 to 832 animal infections and 8 human cases in 2021, and the reductions continue in 2022, as noted above. Dr. Zirimwabagabo presided over a >2-fold increase in Carter Center assistance to Chad's GWEP. THANK YOU, HUBERT!! Carter Center Associate Program Director Ms. Karmen Unterwegner, MPH, is the Acting Country Representative.

Ms. Zuzanna Kucharski, the Deputy Carter Center Country Representative to the GWEP in Chad since February 2021, left the program in August this year.

Table 4 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	1/1					2/5	40 %
SOUTH SUDAN	0/0	0/0	0/0	0/0	0/0	0/0	0/1	0/0					0/1	0 %
MALI	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					0/0	N/A
ANGOLA	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0					0/0	N/A
TOTAL*	0/0	1/2	0/0	0/0	0/0	0/1	0/2	1/1					2/6	33 %
% CONTAINED	N/A	50 %	N/A	N/A	N/A	0 %	0 %	100 %					33 %	
<i>*Provisional</i>														
Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many cases were contained and reported that month.														
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Number of Laboratory-Confirmed Cases of Guinea Worm Disease, and Number Reported Contained by Month during 2021 (Countries arranged in descending order of cases in 2020)														
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	1/1	1/1	1/2	0/0	0/0	1/2	0/0	0/0	1/1	1/1	0/0	6/8	75 %
ETHIOPIA	0/0	1/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	1/1	100 %
SOUTH SUDAN	0/0	0/0	0/0	0/0	0/0	0/0	1/2	0/1	0/0	0/1	0/0	0/0	1/4	25 %
ANGOLA	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
MALI	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/1	1/1	0/0	0/0	0/0	1/2	50 %
TOTAL	0/0	2/2	1/1	1/2	0/0	0/0	2/4	0/2	1/1	1/2	1/1	0/0	9/15	60 %
% CONTAINED	N/A	100 %	100 %	50 %	N/A	N/A	50 %	0 %	100%	50 %	100 %	N/A	60 %	
Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many cases were contained and reported that month.														
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RECENT PUBLICATIONS

Engelhaupt E, 2022. Why we should spare parasites. National Geographic 242(1):15-18. ... “that said, scientists aren’t eager to save all parasites. The Guinea worm, for instance, gets a hard pass from even hard-core preservationists. It grows to adulthood inside a person’s abdomen, often reaching several feet long, then travels to the leg and emerges painfully through the foot. Former President Jimmy Carter’s foundation has set out to drive the worm to extinction, and few will miss it.”

World Health Organization, 2022. Monthly report on dracunculiasis cases, January-July 2022. Wkly Epidemiol Rec 97(36):450-451.

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. Dieudonné Sankara of WHO.

WHO Collaborating Center for Dracunculiasis Eradication, Center for Global Health, Centers for Disease Control and Prevention, Mailstop H24-3, 1600 Clifton Road NE, Atlanta, GA 30329, USA, email: gwwrapup@cdc.gov, fax: 404-728-8040. The GW Wrap-Up web location is <https://www.cdc.gov/parasites/guineaworm/wrap-up>
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



**World Health
Organization**

CDC is the WHO Collaborating Center for Dracunculiasis Eradication