

Memorandum

**Date:** February 26, 2024**From:** WHO Collaborating Center for Dracunculiasis Eradication, CDC**Subject:** GUINEA WORM WRAP-UP #306**To:** Addressees

DETECT immediately! CONTAIN completely! SOURCE specifically!

WHAT'S NEW OR DIFFERENT IN 2024?

Provisional global overall numbers show slight increases in human Guinea worm cases (13→14) and animal Guinea worm infections (685→714) between 2022 and 2023, respectively. We don't yet know what the numbers will look like in 2024, but this year's numbers are already set by the effectiveness of interventions in 2023. What matters now, and what each Guinea Worm Eradication Program should focus on most urgently now is, "*What are we doing differently or for the first time now to reduce Guinea worm transmission faster?*" Continuing the same actions as before will give the same results, which must improve.

Angola. Bigger known challenge in 2024: 73 infected animals in 2023, none of them contained*, vs. 7 in 2022. Peak transmission season (typically January-May) is already underway. Is proactive tethering and/or Abate coverage being increased? *Additional Carter Center financial and technical assistance expected in 2024.*

Cameroon. Bigger known challenge in 2024: 97 infected animals (88% contained*) in 2023, vs. 28 in 2022. Peak transmission season (typically January-April) is already underway. Is/are proactive tethering and/or, Abate coverage being improved? *Engaging Field Epidemiology Training Program* (see In Brief below). *Additional Carter Center financial and technical assistance expected in 2024.*

Mali. Main challenges in 2024: insecurity, missed infections. Is surveillance being improved? *Increasing containment and proactive tethering:* contained 63% of 41 infected animals in 2022 (15 uncontained), 73% of 47 infected animals in 2023 (13 uncontained). Proactively tethered 434 animals in 2022, 1,884 animals in 2023. *Expanding Peace Through Health Initiative in parts of insecure endemic area.*

South Sudan. Main challenges in 2024: insecurity, uncontained Guinea worms, missed infections. Improved surveillance? Contained 67% of six GW infections (5 humans, 1 dog) and traced 67% of sources in 2022 vs. 0% containment of three GW infections (2 humans, 1 genet) with no known sources of infection in 2023. *Tracing genetic relatedness of GWs, which began here in 2023, and on-going epidemiological investigations, may help determine the sources of any GW infection(s) in 2024.*

Ethiopia. Main challenges in 2024: uncontained Guinea worms, unknown sources of infection, potential infected baboons. *Contained the only GW infection (dog, source of infection unknown) in 2023 vs. 50% of*

four infections (2 baboons, 1 human, 1 dog) in 2022 (see In Brief below). *Tracing genetic relatedness of GWs, which began here in 2023, and on-going epidemiological investigations, may help determine the sources of any GW infection(s) in 2024. The number of baboon troops under surveillance near areas with recent GW infections is increasing to 15 in 2024 from 10 in 2023, and the number of baboon trapping sessions is increasing to three sessions in 2024 from two sessions per year.*

Chad. Challenges in 2024: declining reductions in GW-infected animals for past two years; need to focus on villages with 2+ GW infections; cross-border transmission between Bongor/Chad and Guere/Cameroon, and from southern Chad to Central African Republic (see below); improve quality of GW case/infection investigations and accountability applied at all levels to ensure effective implementation of interventions.

*See definition of case containment on page 10 of this issue.

CHAD



Chad held its annual Program Review in N'Djamena on January 23-25, 2024. Ministry of Public Health Secretary-General Dabsou Guidaoussou opened and closed the meeting on behalf of the minister. The National Program Coordinator of Chad's Guinea Worm Eradication Program, Dr. Ouakou Tchindebet, reported on the program's progress and challenges in 2023. Carter Center participants included Guinea Worm Eradication Program Director Adam Weiss, MPH, Carter Center Country Representative Dr. Abdalla Meftuh, Sarah Yerian, MPH, Karmen Unterwegner, MPH, and others. Dr. Dieudonne Sankara, Team Leader of WHO's Guinea Worm Eradication Program, participated in the review on behalf of the World Health Organization. Mr. Weiss, Dr. Meftuh, and others accompanied National Program Coordinator Dr. Ouakou Tchindebet and Deputy National Program Coordinator Dr. Youssif Ali Haggat for a courtesy meeting with Minister of Public Health Dr. Abdoulmadjid Abderahim the day before the Program Review began.

Chad has reported provisional totals of 9 human cases (67% contained) and 495 animal infections (76% contained; 407 dogs, 88 cats) in 277 villages in 2023 (vs. 69% containment of 606 infected animals in 344 villages in 2022). Of those villages in 2023, 185 had only 1 human case or animal GW infection each, while one-third (92) of all villages with GW infections had 2 or more human or animal GW infections (totaling 63% of all cases), including a village (Mecontie, in Massenya district/Chari Baguirmi Province) that had 16 GW infections. Table 1 is a line list of the nine human Guinea worm cases that Chad reported in 2023, four of which occurred in one family in Balwai 1 village of Korbol district/Moyen Chari Province. Four of the 6 villages with a human case in 2023 (Garwaye, Goudoum-Goudoum, Kidjimina 2, and Djengdra 1) had a known GW infection (human or animal) in 2022, which would be the presumed source of their respective infections. Table 2 shows the number of infected dogs reported by district in Chad in 2019-2023. Notably, Bongor district, which forms a single epidemiological cluster with Cameroon's adjacent Guere district, which has had numerous GW infections in humans and dogs since 2019, had the highest number of infected dogs of all districts in Chad last year, with even more infected dogs in 2023 than it had in 2022.

Chad's GWEP has 2,991 villages under active surveillance. It investigated 178,488 rumors of human cases and 104,989 rumored animal GW infections in 2023, when awareness of the reward for reporting GW cases or infections averaged 50% of those surveyed in Level 1 and Level 2 (endemic or at-risk) active surveillance areas and 25% in Level 3 minimal risk areas. Of the 432 villages that had a GW case or animal infection in 2022 and/or 2023 ("+1 villages"), all received health education about GW disease and its prevention, 79% had access to at least one source of safe drinking water, 72% had cloth filters, 59% had pipe filters, 53% (230/436) practiced proactive tethering of dogs and cats in 2023, and 92% of known contaminated water sources were treated with Abate within 14 days. About 84% of 40,962 eligible dogs and 81% of 26,018

eligible cats were tethered in 2023. N.B.: Chad reported 899 Guinea worms removed from 495 animal infections in 2023 for an average 1.8 Guinea worms per animal, while Mali reported 52 Guinea worms in 48 infected animals, or an average 1.1 worms per animal, perhaps indicating another difference between Guinea worm transmission in Chad and Mali (see *Guinea Worm Wrap-Up* #305).

Table 1. Chad Guinea Worm Eradication Program: Line List of confirmed human cases, Jan – Dec 2023

#	Age (Years)	Sex	Ethnicity	Occupation	Province	District	Zone	Village of Detection	Date of Detection	Date of Emergence	Contained? (Yes/No)	Entered Water?	Lab. Result	Total # of worms
1	9	M	Boua	Child not attending school	Moyen-Chari	Korbol	Korbol	Balwai 1	27-May	31-May	Yes	No	Confirmed	1
2	14	M	Boua	Fisherman, Hunter, Farmer	Moyen-Chari	Korbol	Korbol	Balwai 1	05-June	19-June	Yes	No	Confirmed	1
3	6	F	Gam	No Occupation	Chari-Baguirmi	Bailli	Kelengue	Goudoum Goudoum	07-July	07-July	No	Yes	Confirmed	1
4	25	F	Boua	Fisherwoman, Farmer	Moyen-Chari	Korbol	Korbol	Balwai 1	12-July	17-July	Yes	No	Confirmed	1
5	8	M	Massa	Student	Mayo-Kebbi Est	Guelendeng	Guelendeng 1	Garwaye	29-July	29-July	No	No	Confirmed	1
6	50	F	Sara Kaba	Housewife	Moyen-Chari	Kyabe	Marabe	Kousseri	07-July	15-Aug	Yes	No	Confirmed	1
7	42	F	Toumak	Housewife, Farmer	Moyen-Chari	Korbol	Korbol	Balwai 1	14-Aug	11-Sep	Yes	No	Confirmed	1
8	5	M	Nangtchere	Child not attending school	Tanjile	Bere	Kalme	Kidjimina 2	20-Sep	21-Sep	No	Yes	Confirmed	1
9	5	F	Nangtchere	Student	Tandjile	Bere	Tamio	Djengdra 1	16-Oct	26-Oct	Yes	No	Confirmed	1

Table 2. Chad: Number of dogs with Guinea worm infections by district, 2019-2023

District/Region	2019	2020	2021	2022	2023
Bailli/CB	359	235	89	36	37
Kyabe/MC**	346	253	82	39	26
Fianga/MKE	0	0	0	0	22
Biliam-Oursi/MKE	0	0	0	0	1
Guelendeng/MKE	243	221	130	69	41
Sarh/MC (includes Balimba)	238	265	148	80	45
Mandelia/CB*	156	122	40	20	16
Danamadji/MC	138	101	44	27	27
Bouso/CB	112	44	33	14	5
Massenya/CB	72	76	19	13	26
Korbol/MC	71	33	15	3	6
Biobe /MC**	62	62	40	9	21
Kouno/CB	31	22	17	8	3
Dourbali/CB	29	9	11	2	1
Moissala/MDL	24	4	1	0	1
9e Arrondissement/NDJ*	15	11	11	2	2
Bere/Tandjile	10	12	52	70	19
Bedaya/MDL	5	8	2	2	3
Bongor/MKE*	5	1	14	46	50
Haraze/SLM**	5	4	8	4	10
Moulkou/MKE	4	6	4	0	3
Ndjamena Sud/NDJ	4	8	0	0	0
Aboudeia/SLM	4	1	0	0	2
Benoye/LOC	1	2	1	7	13
Kolon/Tandjile	1	1	0	1	1
Mangalme/Guera	0	1	0	0	1
Am Timan/SLM	0	2	1	0	1
Kelo/Tandjile	0	1	0	0	0
Lai/Tandjile	0	2	4	30	18
Bekourou/MDL **	0	0	1	0	1
Balimba/MC	0	0	0	34	5
TOTAL	1935	1507	767	516	407

*Borders Cameroon

**Borders Central African

Republic 1 CB-Chari

Baguirimi

2 MC-Moyen Chari

3 MKE-Mayo

Kebbi Est 4

MDL-Mandoul

5 NDJ-N'Djamena

6 SLM-Salamat

7 LOC-Logone Occidental

Korbol/CB is managed by Korbol/MC

Kouno/MC is managed by Kouno/CB

CENTRAL AFRICAN REPUBLIC

The Central African Republic has reported a confirmed case of Guinea worm disease in a 47-year-old female farmer from Takandja village in Vakaga district. Two worms emerged from the patient, on October 27 and October 30, 2023. Preliminary investigations show that she might have been contaminated in Tissifond Gord and/or Tissiramala hamlets located within 7 km (4.2 miles) of Takandja village. She was admitted to a local hospital on November 2. Her infection was not contained. This district is the northern-most part of C.A.R., bordering Salamat Province in Chad on the northwest and Sudan on the northeast. The patient has lived in the village for five years. No travel history or other details are available. This is the same district where a Guinea worm case, presumed to have been imported from Chad, was reported in a 45-year-old female farmer in Gordil village in July 2022 (see *Guinea Worm Wrap-Up* #295). The villages of Takandja and Gordil are about 75 miles (120 km) apart, and each is about half that distance from the border with Chad. With support from WHO, the MoH sent a GWE investigation team to the area for an in-depth investigation and response; however, due to a serious increase in security concern, the investigation mission has been disrupted. It will resume as soon as the security situation allows it.

IN BRIEF

Cameroon. In January 2024 Carter Center GWEPP Associate Director Karmen Unterwegner, MPH and Program Associate Mindze Nkanga helped Cameroonian Ministry of Health staff train 24 participants in the U.S. Centers for Disease Control and Prevention-sponsored Field Epidemiology Training Program in Cameroon. This part of the training is to equip ministry participants in the program with the tools necessary to properly investigate Guinea worm cases and animal infections.

Mali. After detecting an infected donkey in Djenne district of Mopti Region in December 2023, Mali's GWEPP did a case search of 580 donkeys in Djenne town. A line list of Mali's human and animal Guinea worm infections for 2023 is in Table 3. Also in December, Mali's Peace Through Health Initiative conducted a mobilization campaign in Macina and Tominian districts of Segou Region to expand dialogue, build trust, and raise awareness for Guinea worm eradication work of the initiative beyond its established network of community stakeholders and leaders where the initiative has worked in those districts for two years. In January 2024 the team discussed a mental health and psychosocial baseline study and training workshops with regional health authorities in Mopti Region (see Recent Publications below).

Ethiopia. The Ethiopia Dracunculiasis Eradication Program inspected 385 dead or trapped baboons in endemic areas in January-December 2023 compared to 253 dead or trapped baboons in 2022. It reported a Guinea worm infection in 1 dog and no human or baboon in 2023, vs. Guinea worm infections in 1 dog, 1 human, and 2 baboons in 2022.

“Every time we have a worm, we have to learn from it, and do better.”
Samuel Yibi MAKROY

Table 3: Mali GWEP listing of human case and animal infections: Year 2023

#	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)	Total # of GW
1	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Housewife	dog	Kolongo Bozo	24-05-23	25-05-23	No	No	Yes	1
2	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/fishing	dog	Kolongo Bozo	24-05-23	25-05-23	No	No	Yes	1
3	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Housewife	dog	Kolongo Bozo	24-05-23	25-05-23	No	No	Yes	1
4	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/fishing	dog	Kolongo Bozo/Barakabougou	06-05-23	06-05-23	No	No	Yes	1
5	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/fishing	dog	Kolongo Bozo	11-06-23	11-06-23	No	No	Yes	1
6	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Bozo	Farming/fishing	dog	Barakabougou	11-06-23	11-06-23	No	No	Yes	1
7	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/fishing	dog	Kolongo Bozo	27-06-23	27-06-23	No	No	Yes	1
8	Segou	Macina	Macina Central	Nemabougou/Macina town	Bozo	Farming/fishing	dog	Nemabougou	16-06-23	20-06-23	Yes	Yes	No	1
9	Segou	Macina	Macina Central	Ke Bozo	Bozo	Farming/fishing	dog	Ke Bozo	25-07-23	03-08-23	Yes	No	Yes	1
10	Segou	Macina	Macina Central	Nemabougou/Macina town	Bozo	Farming/fishing	dog	Nemabougou	08-08-23	08-08-23	Likely	Yes	No	1
11	Segou	Macina	Macina Central	Guenda	Minianka	Farming	dog	Unknown	08-08-23	08-09-23	Likely	Yes	No	1
12	Mopti	Djenne	Djenne Central	Tolober/Djenne town	Bozo	Fishing	dog	Djenne	08-08-23	08-10-23	No	Yes	Yes	1
	Mopti	Djenne	Djenne Central	Tolober/Djenne town	Bozo	Fishing	dog	Djenne	08-08-23	20-08-23	No	Yes	Yes	1
13	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/fishing	Cat	Kolongo Bozo	13-08-23	13-08-23	No	No	Yes	1
14	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Household	Dog	Kolongo Bozo	17-08-23	17-08-23	No	No	Yes	1
15	Segou	Macina	Macina Central	Guenda	Bozo	Fishing/Farming	Dog	Unknown	17-08-23	18-08-23	Likely	Yes	No	1
16	Segou	Macina	Macina Central	Ke Bozo	Bozo	housewife	Cat	Ke-Bozo	22-08-23	22-08-23	No	No	Yes	1
17	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Fishing/Farming	Dog	Kolongo Bozo	08-09-23	22-08-23	No	No	Yes	1
18	Segou	San	Lafiabougou	Lafiabougou	Bomou	Housewife	Cat	Unknown	24-08-23	24-08-23	Likely	Yes	No	1
19	Mopti	Djenne	Gomitogo	Gomitogo	Soninke	fishing	human	Unknown	26-08-23	27-08-23	Likely	No	No	1
20	Segou	Macina	Macina Central	Ke-Bozo	Bozo	Housewife	Cat	Ke-Bozo	28-08-23	28-08-23	No	No	Yes	1
21	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Fishing/Farming	Dog	Kolongo Bozo	18-08-23	02-9-23	No	No	Yes	1
22	Segou	Tominian	Fangasso	Sokoura	Bobo	dog trader	Dog	Medina Coura, quartier of Mopti town	04-09-23	04-09-23	No	No	Yes	3
23	Segou	Macina	Soumouni	Kama	Bozo	Fishing/farming	Dog	Unknown	09-05-23	09-05-23	Likely	Yes	No	1
24	Segou	Macina	Kolongo	Kayo(Bozo)	Bambara	Fishing/farming	Cat	Kayo Bozo	09-11-23	09-11-23	No	No	Yes	1

25	Segou	Macina	Macina Central	Nemabougou/Macina town	Sonrhai	Farming	Dog	Nemabougou	09-12-23	09-12-23	Likely	Yes	No	1
26	Segou	Macina	Kolongo	Kolongo Bozo	Soninke	Farming/fishing	Dog	Kolongo Bozo	09-12-23	09-12-23	No	No	Yes	1
27	Segou	Markala	Konou	Konou	Bozo	Farming	Dog	Unknown	09-12-23	13-09-23	Yes	Yes	No	1
28	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Fishing/farming	Dog	Kolongo Bozo	09-02-23	14-09-23	No	No	Yes	1
29	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Fishing/farming	Dog	Kolongo Bozo	31-08-23	14-09-23	No	No	Yes	1
30	Segou	Markala	Babougou	Barakabougou	Bozo	Fishing	Dog	Barakabougou	18-09-23	18-09-23	No	No	Yes	1
31	Segou	Markala	Gomakoro	Gomakoro	Bambara	Farming	Dog	Unknown	17-09-23	18-09-23	No	Yes	Yes	1
32	Segou	Tominian	Fangasso	Sokoura	Bobo	Teacher	Dog	Nataga(Mopti)	20-09-23	20-09-23	No	Yes	Yes	4
33	Mopti	Mopti	Komoguel	Nataka	Tamashek	teacher	Dog	Unknown	23-09-23	23-09-23	Yes	Yes	No	1
34	Segou	Markala	Konou	Konou	Bambara	Farming	Dog	Unknown	24-09-23	25-09-23	No	Yes	Yes	2
35	Segou	Markala	Babougou	Barakabougou	Bozo	Fishing	Dog	Barakabougou	26-09-23	26-09-23	No	Yes	Yes	1
36	Segou	Macina	Kolongo	Kayo (Bozo)	Bozo	Fishing/Farming	Dog	Kayo Bozo	26-09-23	29-09-23	No	No	Yes	1
37	Segou	Macina	Macina Central	Macina/Oulofobougou	Bambara	Teacher	Dog	Macina	29-09-23	29-09-23	Likely	Yes	No	2
38	Segou	Macina	Macina Central	Ke-Bozo	Bozo	Fishing/farming	Dog	Ke Bozo	02-10-23	02-10-23	No	Yes	yes	1
39	Segou	Macina	Macina Central	Ke-Bozo	Malinke	Housewife	Dog	Ke Bozo	02-10-23	02-10-23	No	No	yes	1
40	Segou	Markala	Sibila	Nakry	Bozo	Fishing/Farming	Dog	Unknown	05-10-23	06-10-23	No	Yes	yes	2
41	Segou	Markala	Diamarabougou	Diamarabougou	Bozo	Fishing/Farming	Dog	Unknown	08-10-23	08-10-23	No	Yes	yes	1
42	Segou	Markala	Babougou	Barakabougou	Bozo	Fishing/Farming	Dog	Barakabougou	14-10-23	14-10-23	No	Yes	yes	1
43	Segou	Markala	Babougou	Barakabougou	Bozo	Fishing/Farming	Dog	Barakabougou	12-10-23	13-10-23	No	Yes	yes	1
44	Segou	Macina	Macina Central	Oulofobougou	Minianka	Fishing/Farming	Dog	Macina town	21-10-23	22-10-23	Likely	Yes	No	1
45	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Bozo	Fishing/Farming	Dog	Kolongo Bozo	29-10-23	31-10-23	No	Yes	Yes	1
46	Segou	Macina	Kolongo	Kayo Bozo	Bozo	Fishing/Farming	Dog	Kayo Bozo	30-10-23	31-10-23	No	No	Yes	1
47	Segou	Macina	Macina Central	Ke- Bozo	Bozo	trader	Dog	Ke- Bozo	23-11-23	26-11-23	No	No	Yes	1
48	Mopti	Djenne	Djenne Central: Youboukaina	Djenne	Bozo	Fishing	Donkey	Unknown	13-12-23	10-12-23	Likely	No	No	1

GUINEA WORM ON THE AIRWAVES

Bill Gates's Heroes in the Field: Makoy Samuel Yibi

On February 6, 2024, GatesNotes, the personal blog of Bill Gates, philanthropist, featured the Director of South Sudan's Guinea Worm Eradication Program, Samuel Yibi Makoy, in a video and article based on an interview Gates had with Makoy when they both attended the Reaching the Last Mile Forum. The forum took place on the side lines of the United Nations COP28 Climate Change Conference in Dubai, United Arab Emirates, in December 2023. Links to the article and video "Bill Gates's Heroes in the Field: Samuel Makoy Yibi" are provided below. Congratulations, Makoy!

[Makoy Samuel Yibi won't stop until the world eradicates its next disease | Bill Gates \(gatesnotes.com\)](#)

Video: https://www.youtube.com/watch?v=h_u-K5vlbQw&t=4s

BBC World Service Podcast features Adam Weiss

In early February 2024 the British Broadcasting Corporation's World Service broadcast and released a podcast, "Is Guinea Worm About to be Eradicated?" This is the latest in its *What in the World* podcast series. The 15-minute-long podcast episode features The Carter Center's Guinea Worm Eradication Program Director, Mr. Adam Weiss, MPH. A link to that podcast is below.

<https://open.spotify.com/episode/2tyTXF6k7AzUAzVnBH93?si=eEvBRvz7RRGk73M8gP29Iw&nd=1&dlsi=6b5404c3382b47ed>

Voice of America features Adam Weiss

In early February 2024, Mr. Adam Weiss, MPH, the Carter Center's Guinea Worm Eradication Program Director, spoke with Voice of America's (VOA) Linord Moudou. He discussed the progress made toward Guinea worm eradication in 2023, the challenges the program is currently facing, and expectations for 2024. A link to that interview is below.

[Health Report: 'Guinea Worm' on Verge of Eradication \(voafrica.com\)](#)

MEETINGS

International Guinea Worm Eradication Program Review Meeting: April 17-19.

DONATIONS



The Carter Center is grateful for the continued support of the Children's Investment Fund Foundation, particularly its current grant of USD\$7.5 million for Guinea worm disease eradication efforts through December 2025. With this support, the foundation has generously provided over \$34 million to the eradication campaign since 2012, helping contribute to the completion of Guinea Worm eradication in six countries (Cote D'Ivoire, Nigeria, Niger, Ghana, Kenya, and the Democratic Republic of the Congo).

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 4

Number of Laboratory-Confirmed Human 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	1 / 3	1 / 1	1 / 2	1 / 1	0 / 0	0 / 0	6 / 9	63%
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0 / 1	0 / 0	0 / 0	0 / 0	0 / 2	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	N / A
CENTRAL AFRICAN REPUBLIC	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0 / 0	0 / 0	0 / 1	0%
MALI	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0%
CAMEROON	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	100%
TOTAL*	0 / 0	0 / 0	0 / 0	0 / 0	2 / 2	1 / 1	1 / 3	1 / 3	1 / 3	1 / 2	0 / 0	0 / 0	7 / 14	50%
% CONTAINED	N / A	N / A	N / A	N / A	100%	100%	33%	33%	33%	50%	N / A	N / A	50%	
*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 Human 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	1 / 1	1 / 2	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 %
CAMEROON	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
TOTAL	0 / 0	1 / 2	0 / 0	0 / 0	0 / 0	0 / 1	1 / 3	2 / 3	2 / 3	1 / 1	0 / 0	0 / 0	7 / 13	54 %
% CONTAINED	N / A	50 %	N / A	N / A	N / A	0 %	33 %	67 %	67 %	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

Sanders AM, Warman M, Deycard F, Goodman J, Klein A, Unterwegner K, Sangare B, Moussa S, George S, Chica IP, Coulibaly CO, Saye M, Jensen KA, Weiss AJ, Ijaz K, 2024. Advancing health security and disease eradication through peace and health: A Mali case study. *Health Security*. 22(2). DOI: <https://doi.org/10.1089/hs.2023.0091>

Boisson-Walsh A, 2024. Guinea worm disease inches closer to eradication in 2023. *The Lancet* DOI: [https://doi.org/10.1016/S1473-3099\(24\)00138-5](https://doi.org/10.1016/S1473-3099(24)00138-5)

Roberts JD, 2023. Participating in eradication: how Guinea worm redefined eradication, and eradication redefined Guinea worm, 1985-2022. *Med Hist* 67(2):148-171. <https://doi.org/10.1017/mdh.2023.18>

Are the right people receiving the *Guinea Worm Wrap-Up*?

We remind leaders of National Guinea Worm Eradication Programs to make sure all appropriate persons are receiving the *Guinea Worm Wrap-Up* directly, by email. With frequent turnover of government officials, representatives of partner organizations, and recruitment of new Guinea worm program staff, keeping desired recipients up to date is challenging. Frequent review of who is receiving the newsletter directly is advised. To add an addressee, please send their name, title, email address, and preferred language (English, French, or Portuguese) to Dr. Sharon Roy at CDC (gwwrapup@cdc.gov).

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 Mindze Nkanga. Translation support by Valerie Mendes.

WHO Collaborating Center for Dracunculiasis Eradication, Center for Global Health, Centers for Disease Control and Prevention, Mailstop H21-10, 1600 Clifton Road NE, Atlanta, GA 30333, USA, email: gwwrapup@cdc.gov, fax: 404- 728- 8040. The GW Wrap-Up web location is <https://www.cdc.gov/parasites/guineaworm/wrap-up>

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