DEPARTMENT OF HEALTH & HUMAN SERVICES

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

Memorandum

Date: October 26, 2022

From: WHO Collaborating Center for Dracunculiasis Eradication, CDC

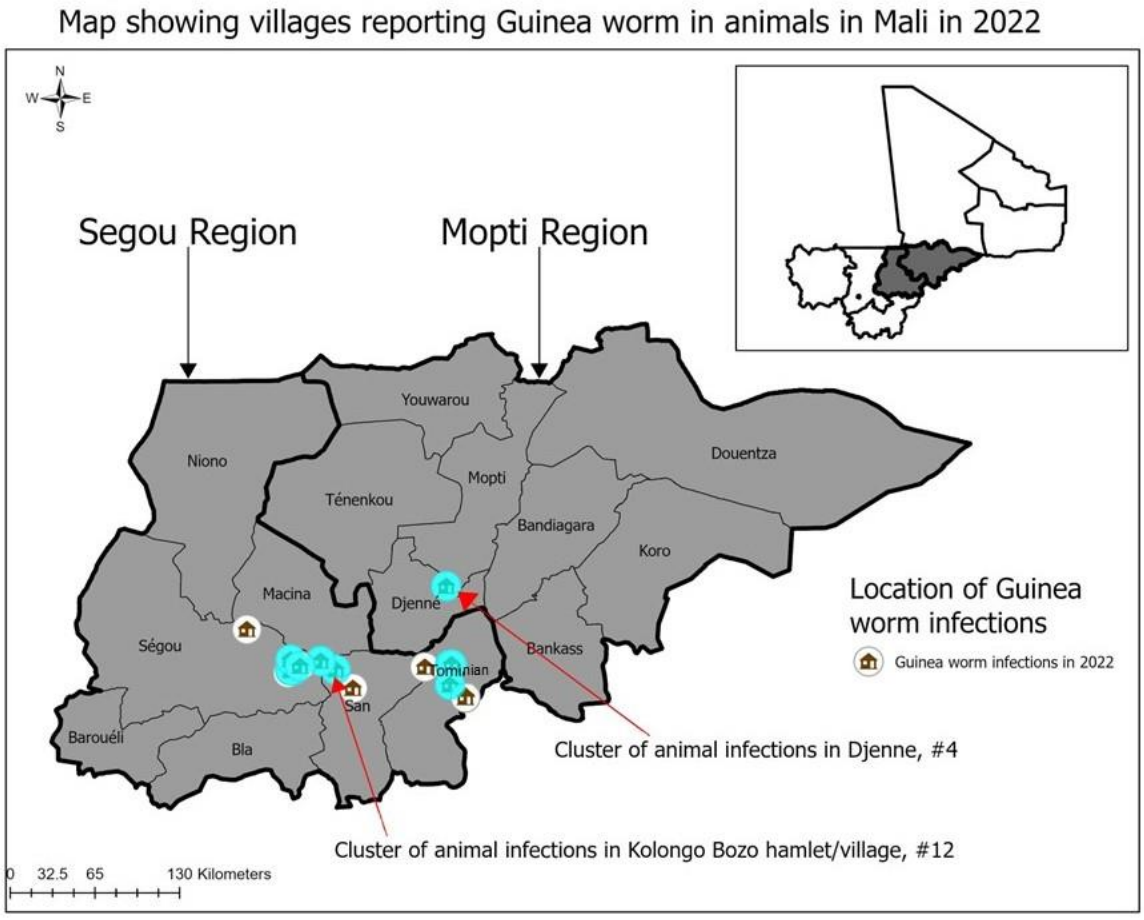
Subject: GUINEA WORM WRAP-UP #293

To: Addressees

Human Guinea worm cases are down 25% in January-September 2022.
Animal Guinea worm infections are down 25% in January-September 2022.

Claim no easy victories.
Amilcar Cabral

Figure 1



MALI: 30 CONFIRMED ANIMAL INFECTIONS IN JANUARY-SEPTEMBER, 0 HUMAN CASES

Mali's Guinea Worm Eradication Program (MGWEP) has reported 30 confirmed animal infections (28 dogs, 2 cats) in January-September 2022 (Table 1), compared to 13 animal infections in the same period of 2021, which is an increase of 131%. This increase is probably due to proactive tethering of dogs in Kolongo Bozo village and the adjacent hamlet in Macina district/Segou Region, and in Djenne town in Djenne district/Mopti Region which began this year in June and includes greater aggressiveness in searching for Guinea worm infections by field teams practicing controlled immersion in all dogs with the slightest lesion. Both localities are in the Inland Delta of the Niger River (Figure 1). Kolongo Bozo and Djenne reported Mali's highest number of Guinea worm infections in 2021. Seventeen (57%) of the 30 infections were contained. Most of the uncontained infections were in six new endemic villages (Ke Bozo, Kayo Bozo, Lelegre, Ablobougou (Kolongo village), Kerere, and Yonga Bozo).

Mali has not reported a human case of Guinea worm disease in January-September 2022. For the same period of 2021, Mali reported two cases, in Sansanding village of Markala district/Segou Region.

Table 2 summarizes the presumed source and apparent exposure to Guinea worm for Mali's 30 infected animals so far in 2022, in Macina (20), Tominian (3), and Markala (2) districts of Segou Region and adjacent Djenne district (5) of Mopti Region, in eleven localities. Seventy percent (21/30) of these confirmed animal infections were *indigenous to the location where the animal lived*, 2 were imported, and the presumed source of 7 animals' infections are unknown. Nine animals were known to be *exposed by eating raw fish or fish entrails*, 18 *roamed freely during their period of infection* a year earlier and the apparent exposure of 3 animals is unclear. Dogs that roam freely can eat discarded fish entrails, thus putting themselves at risk for Guinea worm infection, while some villagers fatten dogs for market by feeding them fish entrails. MGWEP reports that some fish merchants dry fish entrails and sell them as food for chickens. Local MGWEP members surveyed management of fish entrails in Macina district in August 2022 and found that only 33% (18/55) of households and 36% (9/25) of fish sellers surveyed disposed of fish entrails safely. Local MGWEP staff visited Kolongo Bozo 25 times in July and 20 times in August.

Table 1

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									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	Macina 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
13.1	Segou	Tominian	Fangasso	Sokoura	Bobo	Nurse	Dog	Sokoura	22-Aug	23-Aug	No	No	Yes	Yes	2
13.2									13-Sept	13-Sept	No	No	Yes	Yes	

14	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Bozo	Fishing	Dog	Kolongo Bozo Hamlet	30-Aug	30-Aug	No	Yes	Yes	Yes	1
15	Mopti	Djenne	Djenne Central	Kanafa (Djenne)	Fulani	Trader	Dog	Djenne Town	26-Aug	29-Aug	No	Yes	Yes	Yes	1
16	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Fishing	Dog	Kolongo Bozo Village	04-Sept	04-Sept	No	No	Yes	Yes	1
17.1	Segou	Tominian	N'Dienso	Kerere	Bozo	Farming	Dog	Yonga Bozo/ Kouakourou/ Djenne	03-Sept	04-Sept	Likely	Yes	No	Yes	5
17.2									06-Sept	06-Sept		Yes	No	Yes	
17.3									06-Sept	06-Sept				Yes	
17.4									16-Sept	16-Sept				Yes	
17.5									16-Sept	16-Sept				Yes	
18.1	Segou	Markala	Babougou	Barakabougou Hamlet (Nawrena)	Bozo	Fishing	Dog	Barakabougou/ Kolongo Bozo	30-Aug	06-Sept	No	Yes	Yes	Yes	2
18.2									30-Aug	06-Sept	No	Yes	Yes	Yes	
19.1	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Bozo	Fishing	Dog	Kolongo Bozo Hamlet	02-Sept	06-Sept	Likely	Yes	No	Yes	3
19.2															
19.3															
20	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Bozo	Fishing	Dog	Kolongo Bozo Hamlet	07-Sept	07-Sept	No	Yes	Yes	Yes	1
21.1	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Sarakole	Mechanic	Dog	Kolongo Bozo Hamlet	09-Sept	09-Sept	No	Yes	Yes	Yes	2
21.2															
22	Segou	Macina	Kolongo	Kolongo Bozo Hamlet	Dogon	Farming	Dog	Kolongo Bozo Hamlet	11-Sept	11-Sept	No	Yes	Yes	Yes	1
23.1	Segou	Markala	Babougou	Barakabougou	Bozo	Fishing	Dog	Barakabougou	15-Sept	15-Sept	Likely	No	No	Yes	2
23.2															
24	Segou	Macina	Macina Central	Ke-Bozo	Bozo	Fishing	Dog	Ke-Bozo	14-Sept	15-Sept	Likely	Yes	No	Yes	1
25	Segou	Macina	Kolongo	Kolongo Bozo	Bozo	Farming/ Fishing	Dog	Kolongo Bozo	23-Sept	23-Sept	No	No	Yes	Yes	1
26.1	Segou	Macina	Kolongo	Kayo Bozo	Bambara	Farming/ Fishing	Dog	Unknown	24-Sept	24-Sept	Likely	Yes	No	Yes	2
26.2															
27.1	Segou	Macina	Kolongo	Lelegre	Bobo	Farming/ Fishing	Dog	Unknown	24-Sept	24-Sept	Likely	Yes	No	Yes	2
27.2															
28.1	Segou	Macina	Kolongo	Kayo Bozo	Bozo	Trading	Dog	Unknown	25-Sept	25-Sept	Likely	Yes	No	Yes	2
28.2															
29	Mopti	Djenne	Kouakourou	Yonga Bozo	Bozo	Fishing	Dog	Yonga Bozo	22-Sept	22-Sept	Likely	No	No	Yes	1
30	Segou	Macina	Kolongo	Kayo Bozo	Bozo	Fishing/ Farming	Dog	Unknown	29-Sept	29-Sept	No	No	Yes	Yes	1

**Provisional*

Table 2

PRESUMED SOURCE AND APPARENT EXPOSURE TO GUINEA WORM IN MALI: January-September 2022*		
INFECTION	PRESUMED SOURCE** (location, timing)	APPARENT EXPOSURE (history)
#1: Dog/Jun7/Togo	*dog never left village (?), but no known GW in 2021*	unknown
#2: Dog/Jun29/Kolongo Bozo hamlet	*indigenous;* **2 dogs 8/2021 in same village**	dog roamed freely in 2021
#3: Dog/Jul15/Kanafa Djenne	*indigenous;* **2 dogs 8/2021 in Djenne Central**	**discarded fish entrails**
#4: Cat/Jul25/KE-Bozo/Macina Central	only known GW Macina Central in 2021 was in January	**cat eats fish entrails**
#5: Cat/Jul28/KE-Bozo/Macina Central	ditto above	**cat eats fish entrails**
#6: Dog/Jul30/Kolongo Bozo hamlet	*indigenous:* **2 dogs 8/2021 in Kolongo Bozo hamlet**	dog roamed freely in 2021; sheep dog
#7: Dog/Jul31/Djenne Town	*indigenous:* **1 cat 9/2021 in Djenne town**	dog roamed freely in 2021
#8: Dog/Aug10/Tolober/Djenne	*indigenous*: **2 dogs 8/2021**	**discarded fish entrails**
#9: Dog/Aug18/Kolongo Bozo hamlet	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021
#10: Dog/Aug18/Kolongo Bozo hamlet	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021
#11: Dog/Aug18/Kolongo Bozo Ablobougou	*indigenous*: **same dog infected in 2021**	dog roamed freely in 2021
#12: Dog/Aug22/Kolongo Bozo hamlet	*indigenous*: **2 dogs 8/2021 in same hamlet**	**eats fish entrails**
#13: Dog/Aug23/Soukoura/Tominian	*imported*: fed imported fish	**eats fish & fish entrails**
#14: Dog/Aug30/Kolongo Bozo hamlet	*indigenous:* **2 dogs 8/2021**	dog roamed freely in 2021
#15: Dog/Aug29/Kanafa/Djenne	*indigenous:* **2 dogs 8/2021**	**discarded fish entrails**
#16: Dog/Sept4/Kolongo Bozo	*indigenous:* **5 dogs 8-11/2021**	**eats fish entrails**
#17: Dog/Sept4/Kerere/Tominian	*imported:* fed imported fish	**eats fish entrails**
#18: Dog/Sept6/Barakabougou/Markala	*indigenous:* **1 infection in 5/2021**	dog roamed freely in 2021
#19: Dog/Sept6/Kolongo Bozo hamlet/Macina	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021
#20: Dog/Sept7/Kolongo Bozo Hamlet/Macina	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021

#21: Dog/Sept9/Kolongo Bozo Hamlet/Macina	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021
#22: Dog/Sept11/Kolongo Bozo Hamlet/Macina	*indigenous:* **5 dogs 8-11/2021**	dog roamed freely in 2021
#23: Dog/Sept15/Barakabougou/Markala	*indigenous:* **1 infection in 5/2021**	dog roamed freely in 2021
#24: Dog/Sept15/Ke-Bozo/Macina	only known GW Macina Central in 2021 was in January	dog roamed freely in 2021
#25: Dog/Sept23/Kolongo Bozo Hamlet/Macina	*indigenous:* **2 dogs 8/2021 in same hamlet**	dog roamed freely in 2021
#26: Dog/Sept24/Kayo Bozo/Macina	*unknown:* no known infection in same hamlet in 2021	dog roamed freely in 2021
#27: Dog/Sept24/Lelege/Macina	*unknown:* no known infection in same hamlet in 2021	dog roamed freely in 2021
#28: Dog/Sept25/Kayo Bozo/Macina	*unknown:* no known infection in same hamlet in 2021	dog roamed freely in 2021
#29: Dog/Sept22/Yonga Bozo/Djenne	*indigenous:* **infection #17 imported from Yonga Bozo/Djenne**	unknown
#30: Dog/Sept29/Kayo Bozo/Macina	*unknown:* no known infection in same hamlet in 2021	dog roamed freely in 2021

** Provisional **See definition on page 10*

National, regional, and district officials from the MGWEP and veterinary services made a supervisory visit to Macina district/Segou Region and Djenne and Mopti districts/Mopti Region on August 11-18, 2022. In Macina district they noted good collaboration between medical and veterinary services and good community cooperation with proactive tethering, but ineffective burial of fish guts and weak involvement of women and girls in eradication activities in Kolongo Bozo. They recommended improvement of fish gut burial practices and female participation in eradication activities. MGWEP National Program Coordinator Dr. Cheick Oumar Coulibaly led a supervisory visit to Tominian and Markala endemic districts of Segou Region on August 14-21.

From 12 to 18 September, the program coordination conducted two supervisory missions in the endemic health districts of Segou and Mopti regions. National Program Coordinator Dr. Cheick Oumar Coulibaly and Guinea Worm Focal Point in the National Directorate of Veterinary Services Dr. Coulibaly Kadiatou Diarra made a supervisory visit to Macina (including Kolongo Bozo) and Markala districts together with regional and local veterinary health authorities. Another team led by MGWEP Data Manager Yacouba Traore and Carter Center consultant Dr. Gabriel Guindo visited the health districts of Djenne in Mopti Region and Tominian in Segou Region. The team discussed the epidemiological situation of Tominian with the district's deputy *prefect* and the role that the administration could play in mitigating importation of dogs from other districts to Tominian, which accounts for most of the Guinea worm infections detected in Tominian.

The MGWEP continues to suffer from insecurity which limits access to some areas, including parts of Djenne, Tenenkou, Mopti, and Yowarou districts of Mopti Region and Macina, Markala, and Tominian districts of Segou Region. Given the current prominence of Macina, Djenne, and Tominian districts in confirmed Guinea worm infections, expansion of the Peace-Health Initiative to Macina, Tominian, and Yowarou districts this year is welcome news. This Initiative began in Tenenkou district of Mopti Region in 2020 and engages local, regional, and national political and health leaders to discuss local peace, health, and conflict issues.

Editorial note: *Kolongo Bozo and Djenne Town, both of which began proactive tethering late in 2021, were urged to proactively tether their dogs and cage their cats because they had so many Guinea worm infections last year. In 2023, the MGWEP should see substantial impact with reduced transmission of animal Guinea worm infections from improved surveillance, better containment, and proactive tethering, as Ethiopia and Chad are experiencing now, if Mali's tethered animals are not fed raw fish entrails. Mali has reduced Guinea worm transmission in humans already, with only 3 cases in the past seven years so far.*

SOUTH SUDAN: 3 CONFIRMED HUMAN CASES, 1 DOG IN 2022

South Sudan's Guinea Worm Eradication Program (SSGWEP) detected a dog with a contained Guinea worm infection in the home of a village Guinea worm volunteer in Wunlaac village of Mayen payam, Tonj East County of Warrap State. The dog was identified with potential signs and symptoms of Guinea worm infection on August 8 and was tethered the same day; his worm emerged on August 9 and was confirmed as *D. medinensis* by CDC laboratory on September 8. The program did an active case

search of 47 residents, screened three other dogs, applied Abate to seven water sources, and distributed cloth and pipe filters. Located near a perennial river, Wunlaac village was already under active surveillance because of an uncontained human case on August 28, 2021, in Apukdit village of Paweng payam in Tonj East County about 21 miles (35 kilometers) away. The infected dog often accompanied his owner during fishing, farming, and hunting, and ate leftovers of cooked fish and other animals.

Warrap/West Bahr Al-Ghazal States was one of four main Guinea worm foci in South Sudan when the SSGWEP began. Lakes/Central Equatoria, Northern Jonglei, and Eastern Equatoria are the others. Of the four foci, Warrap/WBAG has had the most known Guinea worm infections since 2015, when it reported South Sudan's only previously known dog Guinea worm infection, in a household with a human Guinea worm case. Warrap/WBAG reported 15 infections (14 human cases, 1 dog) in 2015-2021. During the same period Lakes/CE had 12 known cases (including an outbreak of 8 cases in 2018), Northern Jonglei had 2 cases, and Eastern Equatoria had 3 cases. The SSGWEP prevented forward transmission locally from all these scattered cases but could not trace the source of infection for any of them.

Lakes/CE recently reported two confirmed Guinea worm cases, a 29-year-old mother and her 13-year-old son, both of whose first worms emerged on September 25, 2022. The mother had four worms; the son had three worms. All seven worms were contained. These cases were detected in Jarweng village & boma of Alel payam in Awerial County/Lakes State. Laboratory results of specimens from two other persons who shared the same suspected water source as the two confirmed cases in Jarweng village are pending. According to preliminary investigation, the two confirmed cases in Jarweng village are not known to be linked epidemiologically to a single uncontained Guinea worm patient, a ten-year-old boy whose uncontained Guinea worm was detected in Tomrok village in Guolyar boma of Puluk payam in Awerial County on October 6, 2021. This year's infected 29-year-old mother's provisional travel history during her period of infection (July-November 2021) may have included travel to the Tomrok area of Puluk payam, about 20 miles (~33 kilometers) distance from Jarweng but her infected son reportedly did not travel with her. South Sudan's first case in 2022 was detected in Eastern Equatoria State in July (see *Guinea Worm Wrap-Up* #292).

Carter Center GWEP Associate Director Giovanna Steel, MA completed a two week-long support visit to the SSGWEP in early October, including a week in Awerial. The purpose of her visit was to help the program strengthen capacity to intensify activities in endemic areas. She also began escalated training for animal surveillance, which will be extended to others during the SSGWEP annual review meeting scheduled for December 6-7, 2022, in Juba. The SSGWEP Certification Committee will meet on December 8.

CHAD

Chad's Guinea Worm Eradication Program (CGWEP) has reported 453 dogs (78%contained) with Guinea worm infections in January-September 2022, which is a reduction of 36% from the 705 infected dogs it reported during the same period of 2021. It has reported 6 cases in humans (50% contained) in January-September 2022, vs. 6 cases in January-September 2021, for a reduction in cases of 0%. Of villages with 25 or more dogs with GW infections in 2019, Kemkian in Sarh district of Moyen-Chari Region reported 31 infected dogs in 2019, 26 in 2020, 4 in 2021, and 0 so far in 2022, while Mayami in Danamadji district of Moyen-Chari reported 33 infected dogs in 2019, 10 in 2020, 4 in 2021, and 0 so far in 2022. Kemanga village in Kyabe district of Moyen-Chari reported 24 infected dogs in 2019, 14 in 2020, 1 in 2021, and 0 so far in 2022. In 2022, Kemkian has 740 resident uninfected dogs, Mayami has 344 resident uninfected dogs, and Kemanga has 62 resident uninfected dogs.

Carter Center veterinarian Dr. Fernando Torres-Velez returned in early October from a month-long visit to Chad during which he helped complete a follow-up round in the trial of flubendazole treatment of dogs to prevent Guinea worm infection. Karmen Unterwegner, MPH returned in mid-October from supporting the CGWEP as the Acting Deputy Country Representative of The Carter Center. Sadi Moussa, MPH, The Carter Center Country Representative in Mali, arrived in mid-October to serve temporarily as Acting Country Representative in Chad.

DR. GAUTAM BISWAS RETIRES FROM WHO

Dr. Gautam Biswas, MD retired from the World Health Organization at the end of September 2022. Leader of the Guinea worm eradication team in the Department of Control of Neglected Tropical Diseases (NTD) at WHO headquarters from 2008, he was appointed Coordinator of the Preventive Chemotherapy and Transmission unit within the NTD Department in October 2014, and Head of the Strategic Information and Analytics Unit since January 2020. He was also appointed as the Interim Director for NTD from October 2017 to November 2018 and more recently since February 2022 until his retirement. A 1979 graduate from the University College of Medical Sciences in Delhi, Dr. Biswas joined WHO in 1999 as Medical Officer for lymphatic filariasis after working for ten years at India's National Institute for Communicable Diseases (NICD) in New Delhi. As Chief of the Division of Helminthology at NICD, he supervised the last stages of India's Guinea Worm Eradication Program which recorded its final case in 1996. Thank you, Dr. Biswas! Enjoy your retirement!!

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.*

MEETING

World Health Organization

The next meeting of the International Commission for the Certification of Dracunculiasis Eradication (ICCDE) will be held on November 22, 2022. It will review a request from the Democratic Republic of Congo to be certified free of Guinea worm disease.

Video: Abu Dhabi Guinea Worm Summit 2022

GUINEA WORM SUMMIT 2022
MISSION→ZERO

Abu Dhabi Declaration on the Eradication of Guinea Worm Disease

We, the [representatives/Ministers of Health] of Angola, Chad, Ethiopia, Mali, and South Sudan, the only countries still endemic for dracunculiasis (Guinea worm disease); Sudan and the Democratic Republic of the Congo, the two pre-certification countries; and Cameroon, a country impacted by cross-border dracunculiasis infection; meeting on 22 March, 2022 in Abu Dhabi, United Arab Emirates;

Recalling World Health Assembly Resolutions WHA34.25, WHA39.21, WHA42.29, WHA44.5, WHA50.35, WHA57.9, AND WHA64.16;

Noting the more than 99.9% reduction in human dracunculiasis cases from an estimated 3.5 million in 1986 to 15 in 2021, an all-time low in the campaign to eradicate the second human disease in history;

Appreciating the more than three decades of leadership from former U.S. President Jimmy Carter and former First Lady Rosalynn Carter and since 1990 from the United Arab Emirates, which began under the UAE's late founder, Sheikh Zayed bin Sultan Al Nahyan, and has continued under President His Highness Sheikh Khalifa bin Zayed Al Nahyan and His Highness Crown Prince Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi;

Noting that the World Health Organization (WHO) has certified 199 countries and territories free of dracunculiasis transmission and that five endemic and two non-endemic countries remain to be certified;

Acknowledging with deep concern the potential threat to sustaining progress and completing eradication posed by the challenges of animal infections in Chad, Ethiopia, and Mali and insecurity in many affected areas;

Recognizing that intensive efforts and further resources are required to interrupt human and animal transmission in all countries by 2026 and to achieve certification of global eradication by 2030, as globally endorsed in the WHO Neglected Tropical Disease Road Map;

Appreciating the importance of evaluation and measurable impact by reconvening at least annually to evaluate country progress, in partnership with implementing partners,

Hereby commit to lead urgent technical, political, and financial efforts toward the elimination of Guinea worm disease in endemic countries by endeavoring to ensure:

1. Bold involvement of political leaders, including heads of state, to lead community-targeted advocacy visits at least annually;
2. Strengthen capacity of local leaders and frontline health workers to reinforce and improve prevention activities, elevate morale, and accelerate interruption of transmission;
3. Maintenance of sufficient funds for national dracunculiasis elimination programs;
4. Intensified surveillance for dracunculiasis in endemic, at-risk and non-endemic areas;
5. Expansion and execution of all appropriate interventions, which could include health education, proactive tethering of dogs and cats at risk of infection, containment of cases, responsible application of larvicide, proper use of filters, and raising awareness of the cash reward;
6. Rapid provision of safe water to all dracunculiasis-endemic villages by 2024 and advocacy for increased provision of safe drinking water, prioritizing populations at risk of transmission and strengthening local health systems;
7. Vigorous efforts to ensure safe passage and working conditions for all health workers in areas of conflict; and
8. Encouragement of all country programs to maintain immediate and transparent communications in cross-border zones and organize routine meetings regarding dracunculiasis.

Adopted in Abu Dhabi, United Arab Emirates
22 March, 2022

REPUBLIC OF ANGOLA

REPUBLIC OF CAMEROON

REPUBLIC OF CHAD

DEMOCRATIC REPUBLIC OF THE CONGO

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

REPUBLIC OF MALI

REPUBLIC OF THE SUDAN

REPUBLIC OF SOUTH SUDAN

TOGETHER IN SOLIDARITY

JASON CARTER
BOARD CHAIR
THE CARTER CENTER

SHEIKH SHAKHBOOT NAHYAN AL NAHYAN
MINISTER OF STATE, MINISTRY OF FOREIGN AFFAIRS
AND INTERNATIONAL COOPERATION

DR TEDROS ADHANOM GHEBREYESUS
DIRECTOR-GENERAL
WORLD HEALTH ORGANIZATION

ABU DHABI, UNITED ARAB EMIRATES ON MARCH 22, 2022

Table 3

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				2 / 6	33 %
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0 / 0	2 / 2				2 / 3	67 %
MALI	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	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				0 / 0	N / A
TOTAL*	0 / 0	1 / 2	0 / 0	0 / 0	0 / 0	0 / 1	0 / 2	1 / 2	2 / 2				4 / 9	44 %
% CONTAINED	N / A	50 %	N / A	N / A	N / A	0 %	0 %	50 %	100 %				44 %	

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 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.

Numbers indicate how many cases were contained and reported that month.

RECENT PUBLICATIONS

Coker SM, Box EK, Stilwell N, Thiele EA, Cotton JA, Haynes E, Yabsley MJ, Cleveland CA, 2022. Development and validation of a quantitative PCR for the detection of Guinea worm (*Dracunculus medinensis)*.
https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0010830

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.

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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

World Health Organization

CDC is the WHO Collaborating Center for Dracunculiasis Eradication