

Memorandum



Date: March 25, 2016

From: WHO Collaborating Center for
Research, Training and Eradication of Dracunculiasis, CDC

Subject: GUINEA WORM WRAP-UP #239

To: Addressees

Detect and Contain Every Guinea Worm Infection Immediately!!!

PRESIDENT CARTER AND THREE HEALTH MINISTERS ATTEND PROGRAM MANAGERS MEETING

The 20th International Review Meeting of Guinea Worm Eradication Program Managers met at The Carter Center in Atlanta on March 9-11 to review progress achieved in 2015 and discuss plans to stop transmission of Guinea worm disease (GWD) worldwide in 2016. Former U.S. President Jimmy Carter, the Minister of Health of South Sudan Dr. Riek Gai Kok, the Minister of Health of Mali Dr. Marie Madeleine Togo, the State Minister of Health of Ethiopia Dr. Kebede Worku Admassu, Dr. Rohingalou Ndoundo (representing the Minister of Health of Chad), and Goodwill Ambassador for Guinea Worm Eradication in Ethiopia Dr. Tebebe Yemane Berhan led over seventy-five participants in the review, which comes at a critical point in the global campaign. The principal representatives also exchanged views about the programs during a private lunch with President Carter.

Data presented by the four endemic countries at the review confirmed that a total of only 22 cases of GWD were reported worldwide in four countries in 2015: Chad (9 cases), Mali (5), South Sudan (5) and Ethiopia (3). This is a reduction of 83% from the 126 cases reported in 2014, while the number of villages reporting cases was reduced by 63%, from 54 to 20, over the same period. Although only 36% of the cases were contained (Table 1), 20 (59%) of 34 Guinea worms extracted from the 22 patients were fully contained; Abate® Larvicide was applied to implicated sources of surface water within 14 days after possible contamination in several instances; and the presumed source was identified for 50% of the cases (Figure 1). For the first time, zero cases of GWD were reported worldwide for two consecutive months, December 2015-January 2016. In reference to Figure 2, the numbers of cases of GWD and extracted Guinea worms in all four countries combined has declined from 542 cases and 908 Guinea worms extracted in 2012 to only 22 cases and 34 Guinea worms in 2015, and the range in number of Guinea worms extracted has also declined from (1 – 21) in 2012 to (1 – 3) in 2015 (Figure 2).

During the discussions, participants made several suggestions intended to help strengthen activities in the respective countries. The significant numbers of dogs in Chad in 2015 that had emerging Guinea worms, which are indistinguishable from Guinea worms emerging from humans, are the main challenge remaining to complete interruption of transmission worldwide. Insecurity incidents during 2015 in several areas, especially in parts of South Sudan, Mali and Ethiopia constrained or temporarily prevented normal GWEP operations at this critical stage of the campaign. In 2016, each of the four remaining endemic countries needs to 1) intensify interventions in endemic areas even more and 2) strengthen surveillance and awareness of the cash reward for reporting cases of GWD in all their non-endemic areas (Table 2).

Table 1

Number of Reported Cases of Guinea Worm Disease Contained and Number Reported by Month during 2015*														
(Countries arranged in descending order of cases in 2015)														
COUNTRIES WITH ENDEMIC TRANSMISSION	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	100%
MALI §	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0	0%
SOUTH SUDAN	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0	0%
ETHIOPIA	0 / 0	0 / 0	/	/	/	/	/	/	/	/	/	/	0 / 0	0%
TOTAL*	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	0%
% CONTAINED	0%	100%											100%	

*Provisional

Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many imported cases were contained and reported that month.
 Cells shaded in yellow denote months when a case of GWD did not meet all case containment standards.

§Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Tinbuktu and Gao Regions; contingent on security conditions during 2016 the GWEP continued to deploy one technical advisor to Kidal Region to oversee the program.

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COUNTRIES WITH ENDEMIC TRANSMISSION	NUMBER OF CASES CONTAINED / NUMBER OF CASES REPORTED													% CONT.
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL*	
SOUTH SUDAN	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	1 / 2	0 / 1	0 / 0	0 / 0	0 / 1	0 / 0	2 / 5	40%
MALI §	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 1	0 / 0	3 / 3	0 / 1	0 / 0	3 / 5	60%
CHAD	0 / 0	0 / 1	0 / 2	0 / 1	0 / 0	0 / 2	0 / 1	0 / 1	0 / 0	0 / 1	0 / 0	0 / 0	0 / 9	0%
ETHIOPIA	0 / 0	0 / 0	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0	1 / 1	0 / 0	1 / 1	0 / 0	0 / 0	3 / 3	100%
TOTAL*	0 / 0	0 / 1	0 / 2	0 / 1	1 / 1	1 / 3	1 / 3	1 / 4	0 / 0	4 / 5	0 / 2	0 / 0	8 / 22	36%
% CONTAINED	0%	0%	0%	0%	100%	33%	33%	25%	0%	80%	0%	0%	36%	

Cells shaded in black denote months when zero indigenous cases were reported. Numbers indicate how many imported cases were contained and reported that month.
 Cells shaded in yellow denote months when transmission of GWD from one or more cases was not contained.

§Reports include Kayes, Koulikoro, Segou, Sikasso, and Mopti, Tinbuktu and Gao Regions; contingent on security conditions during 2015 the GWEP continued to deploy one technical advisor to Kidal Region to oversee the program.

Figure 1

Cases of Guinea Worm Disease in 2015: Containment Status and Source Detection

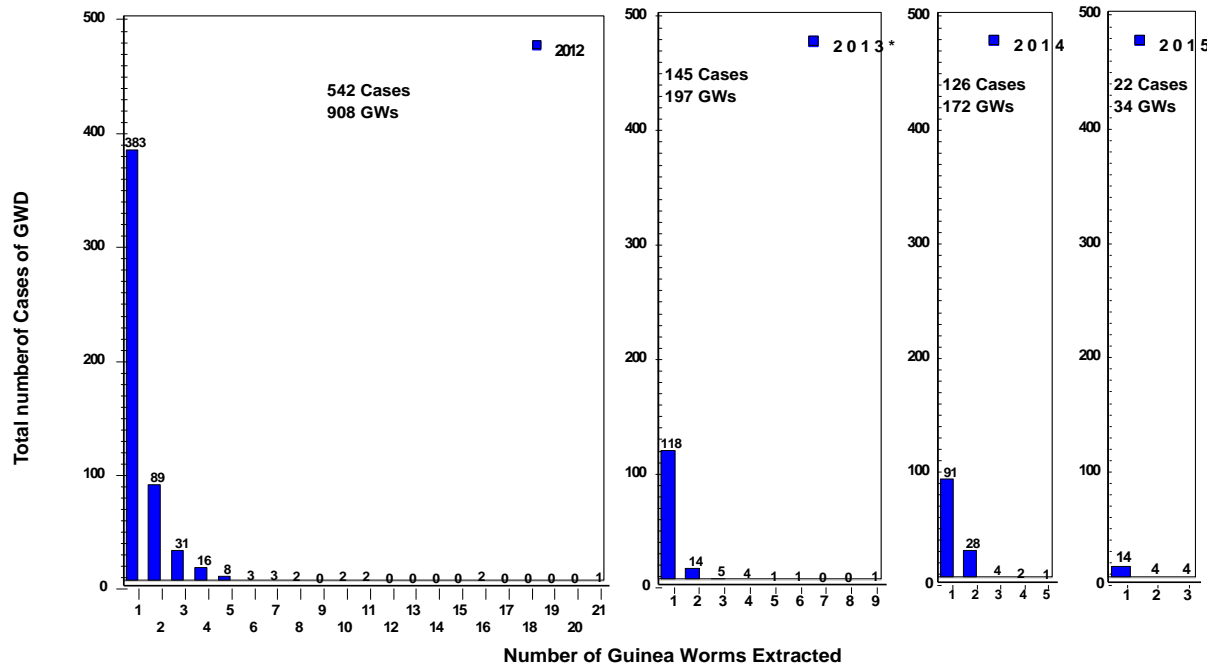
Case #	Date Guinea Worm Emerged	Village Where Detected / District (or County)	Case Contained?	Presumed Source of Infection Identified?
Chad #1	19 Feb 2015	Mourgoum/Dourbali	NO	NO
Chad #2	7 Mar 2015	Marabe I/Kyabe	NO	NO
Chad #3	28 Mar 2015	Diganaly/Guelendeng	NO	NO
Chad #4	28 Apr 2015	Maicomb/Danamaji	NO	NO
Chad #5	24 Jun 2015	Mourabat/Bailli	NO	Ngargue/Bailli
Chad #6	26 Jun 2015	Ferick Tchaguine/Lai	NO	Ngargue/Bailli
Chad #7	6 Jul 2015	Houa Ali/Am-Timan	NO	NO
Chad #8	17 Aug 2015	Mana Belegna/Massenya	NO	NO
Chad #9	14 Oct 2015	Kousseri/Kyabe	NO	NO
South Sudan #1	22 Jun 2015	Dakbuong/Awerial	YES	Dakbuong/Awerial
South Sudan #2	11 Jul 2015	Loriwo/Kapoeta East	YES	Kassingor Mountain village
South Sudan #3	26 Jul 2015	Angon/Jur River	NO	NO
South Sudan #4	25 Aug 2015	Rumchieth/Tonj East	NO	NO
South Sudan #5	10 Nov 2015	Awelpiny/Yirol West	NO	NO
Mali #1	22 Jul 2015	Parasilame/Tominian	NO	NO
Mali #2	1 Oct 2015	Tanzikratene/Ansongo	YES	Tanzikratene/Ansongo
Mali #3	20 Oct 2015	Tanzikratene/Ansongo	YES	Tanzikratene/Ansongo
Mali #4	25 Oct 2015	Tanzikratene/Ansongo	YES	Tanzikratene/Ansongo
Mali #5	17 Nov 2015	Ngariatane/Gourma Rharous	NO	Nanguaye/Gourma Rharous?
Ethiopia #1	27 Mar 2015	Gop Fishing Area/Abobo	YES	near Bathor village/Gog
Ethiopia #2	2 Aug 2015	PRC Agnuak/Gog	YES	near Bathor village/Gog
Ethiopia #3	26 Oct 2015	Akweramero Farm/Gog	YES	near Bathor village/Gog

Chad also reported 508 infected animals (336 contained) in 2015.

South Sudan and Mali reported 1 infected animal each in 2015; the infected dog in Mali was contained.

Ethiopia reported 14 infected animals (4 contained) in 2015.

**Figure 2 Guinea Worm Eradication Programs: Chad, Ethiopia, Mali and South Sudan
Frequency Distribution of Cases of Guinea Worm Disease Versus Number of Guinea Worms
Extracted in 2012, 2013*, 2014, and 2015**



* Excludes one GW each from threes cases of GWD reported from Sudan

Table 2

2015	Cash Reward Awareness			Rumors of Guinea Worm Disease Reported in Level 1 & 3
	Levels 1 & 3		Level 1 Only	
	# surveyed	% Aware	Number Aware/% Aware	
Chad	1,431	64%	719/81%	1,955
Ethiopia	12,872	54%	1,815/95%	8,321
Mali	18,945	93%	1,313/85%	610
South Sudan	4,684	72%	4,125/80%	10,050
Level 1 = endemic districts; Level 2 = non-endemic districts adjacent to level 1 areas and at risk of importations; Level 3 = all other non-endemic districts.				

In addition to the necessary technical expertise, strong political support by the four governments is vital. In 2015, the ministers of health of Chad and South Sudan each visited an endemic area of their country; in Ethiopia and Mali, the Ministries of Health were represented more strongly at the most recent in-country annual reviews of their Guinea Worm Eradication Programs.

Three of the four countries in the pre-certification phase, Democratic Republic of Congo, Kenya and Sudan also participated in the review meeting; missing only Angola. Other participants included representatives of The Carter Center, World Health Organization, UNICEF, Centers for Disease Control and Prevention, Bill & Melinda Gates Foundation, Conrad N. Hilton Foundation, KYNE Communications Inc., three members of the International Commission for the Certification of Dracunculiasis Eradication (ICCDE): Drs. Joel Breman, Mark Eberhard, and David Molyneux, Dr. William (Bill) Foege and others.

CHAD

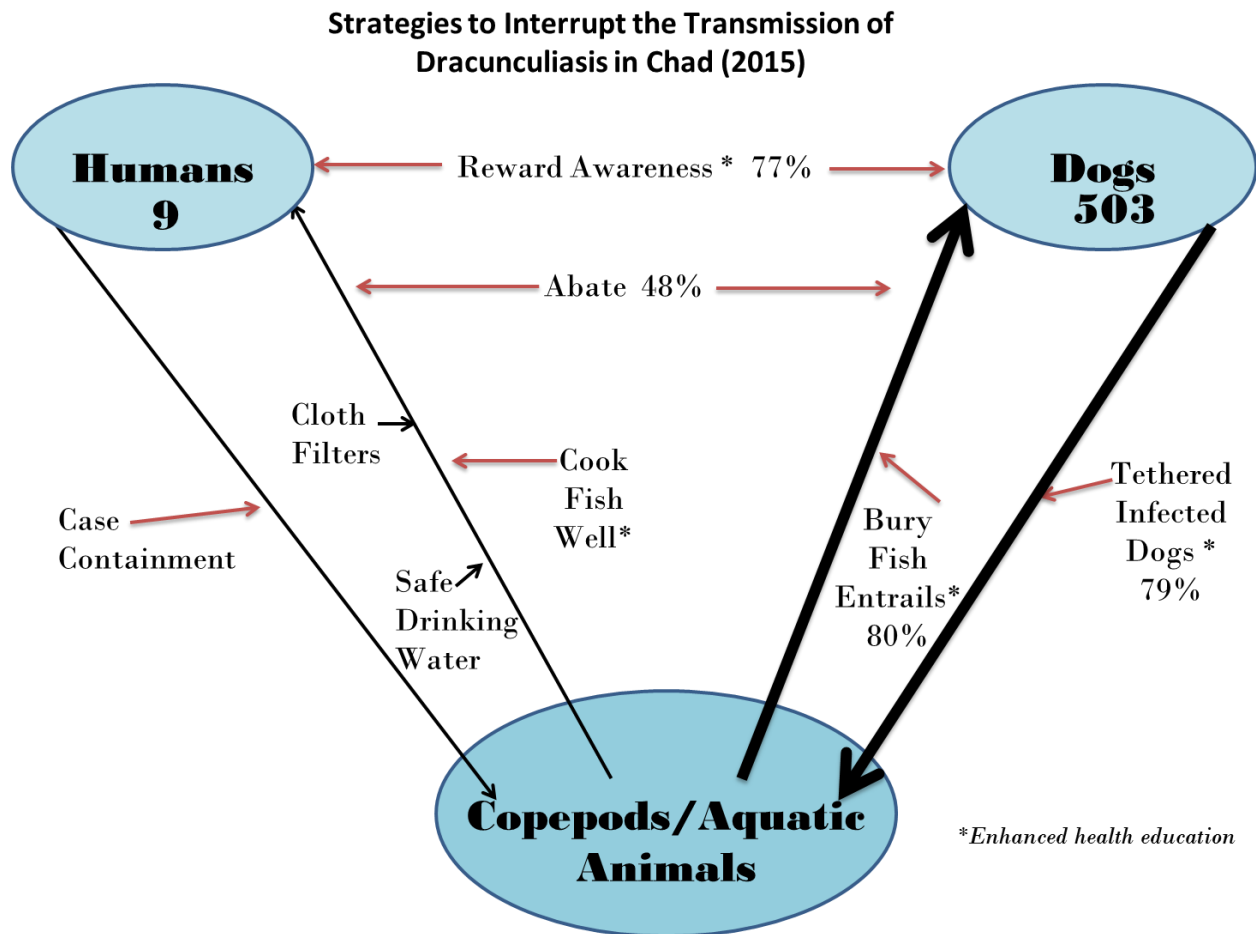
Chad's Guinea Worm Eradication Program reported 503 infected domestic dogs, 9 cases of Guinea worm disease in humans, and 5 infected domestic cats in 2015. The 508 infected animals produced 992 worms, of which 710 (72%) were contained; the human cases produced 17 worms, of which 8 (47%) were contained, although none of the human cases met all of the standards of containment. Chad has 1,015 villages under active surveillance as of the end of 2015. As illustrated in Figure 3, enhanced health education to prevent infection of dogs and contamination of water sources by infected dogs reached significant levels of 80% and 79%, respectively, in 2015. In villages under active surveillance throughout 2015, the number of infected dogs was reduced by 18% from 14 in January-February 2015 to 9 in January-February 2016. However, an outbreak among dogs in Moissala district during November and December 2015 accelerated the need to declare this a Level 1 surveillance area then. Moissala District is near the southern border with Central African Republic. The recent increase in infected dogs in Moissala follows a human case detected in this area during 2014.

The number of human cases in Chad was reduced by 31%, from 13 cases in 2014 to 9 in 2015. As of 14 March, Chad has reported 143 infected dogs, 76% contained, (mostly from new areas in southern Chad

brought under active surveillance during November and December 2015), and 1 infected human in 2016. The patient is a 12 year old boy, resident in Sarh town, whose first worm emerged on 28 February and a second worm on 1 March (Table 3). Both worms were fully contained and laboratory-confirmed. He reports drinking from the Chari River and from local ponds when he goes fishing, as well as eating fish. Laboratory confirmation is pending.

Chad's GWEP held its annual National Review Meeting in N'Djamena on January 25-26, 2016 under the leadership of national coordinator Dr. Mahamat Tahir ALI. The meeting was chaired by Ministry of Health Secretary-General Mr. Hamid Djabar. Participants included representatives from The Carter Center, the World Health Organization, UNICEF, KYNE Communications Inc., and Lions Clubs (N'Djamena). Retired CDC parasitologist Dr. Mark Eberhard presented an update on the status of operational research to help understand better the unusual epidemiology and transmission of Guinea worm infections in Chad.

Figure 3



ETHIOPIA

The Ethiopian Dracunculiasis Eradication Program reported 13 infected dogs, 1 infected baboon and 3 cases of Guinea worm disease in humans in 2015. All three human cases were contained, as were 69% of the 48 Guinea worms from the infected animals. All human cases and animal infections occurred in a

Table 3

CHAD GUINEA WORM ERADICATION PROGRAM
LINE LISTING OF CASES OF GWD DURING 2016

Case #	Village or Locality of detection			District	Region	Patient			Case Contained?		1 = imported 2 = indigenous	Home Village or Locality			Presumed Source of infection identified?		Presumed Source of infection is a known VAS?	
	Name	1 or 2 = VAS	3 = VNAS			Age	Sex	Date GW emerged (D/M/Y)	(Yes, No, or Pending)	If no, date of Abate Rx		Name	1 = VAS	3 = VNAS	(Yes or No)	Name	(Yes or No)	Actions/Comments?
1.1	Sarh (quartier Kassai)		3	Sarh	Moyen Chari	12	M	28-Feb-16	Yes	-	2	Sarh (quartier Kassai)		3	No	-	-	Patient visits the health center during the day and returns to the house each evening with his grandmother.
1.2								1-Mar-16	Yes	-	2							

VAS = village under active surveillance
VNAS = village not under active surveillance

small area of Gog district of Gambella Region where all known at-risk surface water sources were treated with Abate throughout 2015. The Head of Gambella's Regional Health Bureau Dr. Lou Obup participated in the review meeting in Atlanta.

The EDEP has established a secretariat at the Ethiopia Public Health Institute and is assisting expansion of surveillance for Guinea worm disease in the vast Level 2 and Level 3 (non-endemic) areas of the country. The national coordinator Mr. Amanu SHIFARA reported that 172 villages were under active surveillance in Itang, Abobo, and Gog Woredas, the Level I areas, all of which are in Gambella Region. The program conducted active case searches in cooperation with the Polio vaccination campaign in December 2015 which reached 93,275 persons in Gambella Region and 4,795 persons in formerly endemic SNNP Region. An additional 14,883 persons were reached through case searches in 63 schools; 21,105 in 29 churches; and 1,881 in 11 market places. No cases of GWD were confirmed during the vaccination campaigns nor during the case searches in schools, churches, and markets. The program has also established a national hotline for reporting rumors and suspected cases of Guinea worm disease.

The absence of cases of GWD in Itang Woreda since April 2013 (19 consecutive months), led the EDEP to transition it to surveillance level 2, as of 1 January 2016. Because of insecurity, routine operations of the EDEP in Level I districts and some Level 2 districts were interrupted in January 2016.

MALI

Mali's GWEP held its annual National Review Meeting in Bamako on January 18-19, 2016, led by the national coordinator, Dr. Mohamed BERTHE. Participants at the review meeting included ICCDE member Prof. Ogobara Doumbo, representatives from The Carter Center and WHO. The meeting was chaired by Prof. Abdel Kadel Traore, lecturer at School of Medicine and Odontology, Mali, and it was well covered in the national media. The program reported 5 cases in humans and 1 infected dog in 2015. Four of the cases were fully contained or transmission prevented by treatment of implicated surface water sources with Abate within 14 days after potential contamination. This is a dramatic reduction of 88% in cases since 2014. A total of 698 villages are under active surveillance. The new National Commission for Certification of Eradication of Dracunculiasis, which was appointed in May 2015, has already met twice, as has the new national Task Force, which held its first meeting in February 2016. The new Minister of Health Dr. Marie Madeleine Togo is taking a keen interest in the GWEP, and asked Dr. Berthe to brief the regional health directors about GWD as part of a three day meeting in January 2016.

SOUTH SUDAN

The South Sudan GWEP reported a total of 5 cases of Guinea worm disease in humans and one infected dog, its first since the GWEP was launched in 2006. The infected dog belonged to the household of one of the cases. Three of the five cases were contained or implicated water sources treated with Abate within 14 days of possible contamination. The SSGWEP continues to have strong political support from the highest levels of government, but is challenged by significant insecurity and high population mobility. National coordinator Mr. Samuel MAKROY Yibi reported that a total of 2,610 villages are under active surveillance. This program is successfully collaborating with several other programs such as polio eradication and mass drug administration, mainly to strengthen surveillance in Level 2 and Level 3 areas, as well as to incorporate selected village volunteers into the Ministry of Health staff. Insecurity in Kapoeta East County and Juba during December 2015, and in Juba during early January 2016 constrained program operations.

LIONS CLUBS INTERNATIONAL ADVOCATE FOR ERADICATION OF GWD



In January 2015 the Honorable Dr. Med. World Laureate Tebebe Yemane Berhan, Lions Clubs International Board of Trustees, accepted becoming goodwill Ambassador for the eradication of Guinea worm disease in the remaining endemic countries. Dr. Tebebe urged the Lions Clubs in Chad and Mali, in particular, to advocate with their respective governments to raise their commitment and participation in the national campaigns. In response, the Lions Clubs representatives in Chad and Mali contacted the national GWEP coordinators and Carter Center Country Representatives and asked them to brief their clubs about GWD and the status of the national eradication efforts.

In Chad, Mr. Ranodjal Mbaideti, President of Lions Clubs in N'Djamena, invited the National Coordinator Dr. Mahamat Tahir Ali and the Carter Center Representative in Chad, Ms. Melinda Denson to brief the club regarding the status of the Chad GWEP. In addition members from Lions Clubs in N'Djamena attended the meeting including Mr. Kebbe Wouado Evariste, Governor of District 403 B1. Following the presentation, the Lions Club reaffirmed their commitment to support the Guinea worm program in Chad.

In Mali, Mr. Mama Tapo former Lions Clubs Governor of District 403-A1, who is the manager of a Lions Project on control of blinding trachoma in Mali, and the spokesperson for Lions in Mali contacted the GWEP secretariat to discuss collaboration between the Mali GWEP and Lions. Mr. Mama Tapo invited the Mali GWEP to brief the Lions membership during one of their meetings, and those arrangements are underway.

Thank you Dr. Tebebe and Lions Clubs!!

PRESIDENT CARTER LECTURES ON GUINEA WORM AT BRITAIN'S HOUSE OF LORDS

THE
CARTER CENTER



Waging Peace. Fighting Disease. Building Hope.

During a visit to London on February 3, 2016, Former U.S. President Jimmy Carter delivered a warmly received lecture on the eradication of Guinea worm disease to members of the British Parliament at the House of Lords in the Palace of Westminster as part of the Lord Speaker's global lecture series. In focusing on The Carter Center's health efforts, President Carter also helped launch an international display of the updated exhibition "Countdown to Zero: Defeating Disease" that was created by the American Museum of Natural History (AMNH) in collaboration with The Carter Center. The official opening of the exhibit, which is on display at the London School of Hygiene and Tropical Medicine from February 4 until May 6, 2016, was co-hosted by Carter Center CEO Ambassador Mary Ann Peters and Carter Center Board of Trustees member Dame Marjorie Scardino. The original exhibit premiered in January 2015 at the AMNH in New York City, where it remains on display until January 2017. President Carter's lecture and question and answer session at the House of Lords was streamed live and may be viewed at: <http://www.cartercenter.org/resources/pdfs/news/editorials-speeches/President-Carter-House-of-Lords-Presentation.pdf> The lecture was attended by almost 250 persons and received massive coverage in the mass media and on social media.

WORLD HEALTH ORGANIZATION



- During November – December 2015, WHO provided technical assistance to the three countries in pre-certification in AFRO, namely Angola, Democratic Republic of Congo (DRC) and Kenya, to support their preparations towards certification. A consultant each was sent to Angola, DRC and Kenya for one month from 22nd November – 22nd December 2015 to support them to plan and identify the information required to prepare their national reports as well as help them begin writing their respective country reports. The consultants, among others, conducted field visits to apprise themselves of surveillance systems and data management practices, supported planning for integrated case searches using NIDs and MDAs, advocated with National Authorities, National Certification Committees or Task Forces for support in preparing the country reports, and recommended appropriate actions and activities to accelerate preparations towards certification.
- In November, WHO organized an Advocacy and Technical Support mission to Kenya. The team was comprised of Dr. Mark Eberhard an ICCDE member, Ms. Junerlyn Agua Agum from WHO/HQ and Dr. Andrew Seidu Korkor from WHO/AFRO. They reviewed the status of Kenya's preparations for certification and supported the programme to conduct a field survey to assess the level of preparations at the sub-national levels. They visited households, communities and health facilities in Turkana, Kilifi and Kisumu Counties to assess the level of awareness of community members and health staff of the cash reward as well as to examine data management practices in the health facilities. Although the National Surveillance system and awareness of the cash reward among health staff was satisfactory, the level of awareness among community members was sub-optimal and needs to be further increased. WHO had earlier sent a communication expert to help Kenya implement their COMBI plan for raising awareness; the launch was successfully done in October 2015 and was being rolled out nationwide at the time of the mission. Kenya has a cash reward of KSh100,000 (approximately US\$1,000) for reporting a case of GWD. Follow-up assessments will be conducted prior to finalization of the country report.

DONATIONS



The Carter Center welcomes the **United Kingdom's** recent contribution of £4.5 million to support the Guinea Worm Eradication Program.



United Arab Emirates-Abu Dhabi: The Carter Center is grateful for the continued support of the United Arab Emirates and the recent gift of \$5 million from HH Sheikh Mohamed Bin Zayed Al Nahyan for Guinea Worm Eradication efforts in Mali.



The Al Ansari Exchange of Dubai, United Arab Emirates has become a Guinea Worm Eradication supporter thanks to a gift of \$250,000 presented personally to President Carter.

TRANSITIONS

On February 12, 2016 Emory University accepted the nomination of Carter Center Technical Advisor Ms. Ariane Sonia Ngo Bea Hob and declared her as a recipient of the Foege Fellowship for study at the Rollins School of Public Health in Atlanta beginning in August 2016. Ariane has been a Carter Center Technical Advisor in Chad since March 2014. Congratulations. Ariane!!

Dr. James A. Zingeser joined The Carter Center on March 7, 2016 as Senior Project Advisor, Health Programs, The Carter Center. Dr. Zingeser brings 19 years of experience in veterinary medicine, public health, and as an Epidemic Intelligence Officer and staff with the Centers for Disease Control and Prevention. He was resident advisor to Niger's GWEP from 1995 to 1997, and directed the Carter Center Trachoma Control Program from its Atlanta headquarters after that. Welcome back to the Guinea Worm Wars Jim!!

OBITUARY

MR. ZILKIFLY AG MOUSLEM

We are saddened by the death of Zonal GW Agent, Mr. Zilkifly Ag Mouslem, age 43, who worked with the Mali GWEP since 2003. Mr. Zilkifly was married and had 3 children. He suffered from liver cancer and passed away in January 2016. He was a very honest and dedicated Guinea worm warrior. We extend our condolences to his family.

OBITUARY



DR. MYRON SCHULTZ

We regret with sadness the passing of Dr. Myron (Mike) Schultz, MD, DVM, DCMT, FACP, on February 19, 2016. A Guinea worm disease eradication warrior since the early 1980s, he chaired the International Workshop on Opportunities for Control of Dracunculiasis held in Washington D.C. in June 1982, sponsored by the Board on Science and Technology for International Development, Office of International Affairs, National Research Council, USA. He graduated from Cornell Veterinary Medical College, Albany Medical College (Union University, Albany, New York) The London School of Tropical Medicine and Hygiene. He was a Fellow of the American College of Physicians. A distinguished scientist with a stellar career as CDC epidemiologist and director of parasitic diseases in CDC's Division of Epidemiology, was most recently with CDC's Global Disease Detection Operating Center. We extend our condolences to his family.

RECENT PUBLICATIONS

Farrington, K 2016. 'Goodbye guinea worm, New Internationalist, 491: 11.

Going, going...; 2016. The Economist, 418.8975: 76.

Guinea-worm disease near eradication 2016. Bulletin of the World Health Organization, 94 (3): 162.

Quick Hits. 2016. Scientific American, Vol. 314, (3): 21.

World Health Organization, 2016. Monthly report on dracunculiasis cases, January-December 2015. Weekly Epidemiological Record, 91 (7): 87-89.

The Lancet Infectious, 2016. 'Guinea worm disease nears eradication', The Lancet. Infectious Diseases, Vol.16, (2): p. 131.

GUINEA WORM DISEASE IN THE NEWS AND CYBERSPACE

A link to the video about Guinea worm disease produced by Fernbank elementary school students is at <https://youtu.be/WChd9iYNK2E>

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 Dr. Ernesto Ruiz-Tiben (eruziti@emory.edu), 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, Drs. Donald R. Hopkins and Ernesto Ruiz-Tiben of The Carter Center, Drs. Sharon Roy and Mark Eberhard of CDC and Dr. Dieudonné Sankara of WHO.

WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, Center for Global Health, Centers for Disease Control and Prevention, Mailstop C-09, 1600 Clifton Road NE, Atlanta, GA 30333, USA, email: gwwrapup@cdc.gov, fax: 404-728-8040. The GW Wrap-Up web location is

<http://www.cdc.gov/parasites/guineaworm/publications.html#gwwp>

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



CDC is the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis