



Situation Report #29 on Cholera in South Sudan As at 23:59 Hours, 20 July 2015

Situation Update

As of 20 July 2015, a total of 1,244 cholera cases including 39 deaths (CFR 3.14%) have been reported in Juba and Bor Counties in Central Equatoria and Jonglei States respectively. In Juba County, 1,138 cases including 38 deaths (CFR 3.34%) have been reported from seven Payams (Table 1). In Bor, 106 cases including one death (CFR 0.94%) have been reported from Malou in Makuach Payam and other areas within the County.

The initial cases in Juba were traced back to 18 May 2015 in UN House PoC where the first cholera case was confirmed on 1 June 2015. Most affected Payams in Juba County are Rejaf, Kator, and Northern Bari that have registered attack rates (cases per 10,000) of 177, 169, and 125 respectively (Annex 1).

In Bor, the initial cases were reported from Malou in Makuach Payam. Makuach Payam is the most affected in Bor and has registered an attack rate (cases per 10,000) of 28 (Annex 1 and 2).

Table 1. Summary of cholera cases reported in Juba and Bor Counties, 18 May – 20 July 2015

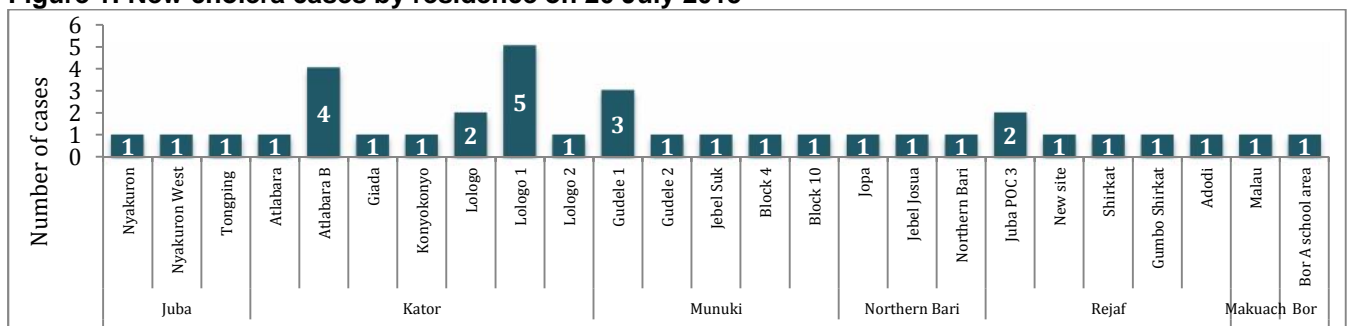
Reporting Sites	New admissions	New discharges	New deaths	Total cases currently admitted	LAMA*	Total facility deaths	Total community deaths	Total deaths	Total cases discharged	Total cases
CES – Juba County	34	47	0	56	196	22	16	39	848	1138
IMC UN House PoC clinic	2	0	0	8	0	0	1	1	60	69
Juba Teaching Hospital	22	37	0	46	193	19	7	26	598	863
MedAir Gumbo CTU	2	1	0	1	0	1	0	1	71	73
MedAir Gudele ORP	0	0	0	0	0	0	0	0	7	7
HLSS Nyakuron ORP	0	1	0	0	0	0	0	0	35	35
HLSS Kator ORP	2	2	0	0	0	0	0	0	6	6
HLSS Gurei ORP	2	2	0	0	0	0	0	0	19	19
HLSS Munuki ORP	0	0	0	0	0	0	0	0	1	1
HLSS Al Sabah ORP	0	0	0	0	0	0	0	0	5	5
HLSS Lologo ORP	3	3	0	0	0	0	0	0	6	6
MSF Munuki CTC	1	1	0	1	3	0	0	0	20	24
Other sites in Juba	0	0	0	0	0	2	8	10	20	30
Jonglei State – Bor	2	3	0	1	2	1	0	1	99	106
Bor State Hospital	2	3	0	1	2	1	0	1	99	106
Total	36	50	0	57	198	23	16	39	947	1244

*LAMA: LEAVE AGAINST MEDICAL ADVICE. CES: Central Equatoria State

A total of 36 new cholera cases were reported in Juba and Bor on 20 July 2015 (Table 1 and Figure 1).

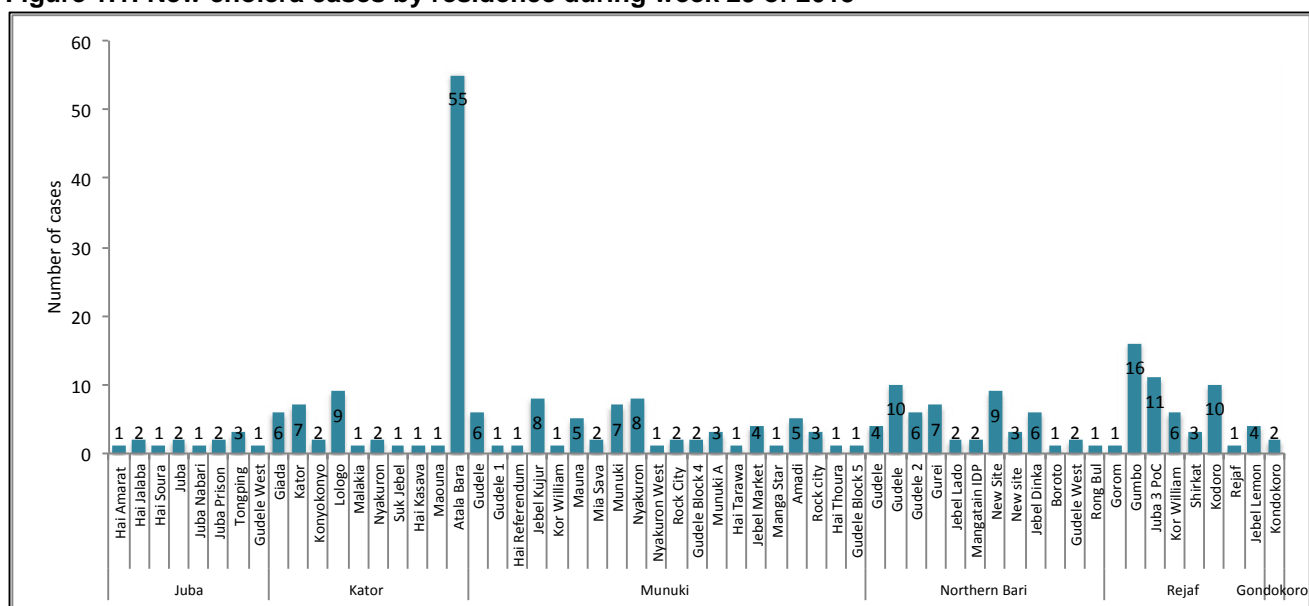
- o 34 new cases were reported from Juba County, with the majority of the cases reported from Lologo 1, Atlabara B, Gudele 1 and Juba 3 PoC.
- o Two new cases were reported from Bor and Makuach Payams in Bor County.

Figure 1: New cholera cases by residence on 20 July 2015



During week 29 of 2015 (week of 13 July 2015), most cholera cases originated from Atlabara, Gumbo, Juba 3 PoC, Gudele, Kodoro and New site (Figure 1.1).

Figure 1.1: New cholera cases by residence during week 29 of 2015



Cumulatively, 1,244 cholera cases including 39 deaths (23 facility and 16 community) have been reported in Juba and Bor Counties since the initial case was reported on 26 May 2015 in Juba (Tables 1 and 2). Of the 39 deaths, seven (18%) have occurred in children under five years. In Juba County, Juba Payam has registered the highest CFR followed by Northern Bari and Munuki (Annex1).

Table 2: New cholera cases by facility and week in Juba and Bor Counties, 18 May – 20 July 2015

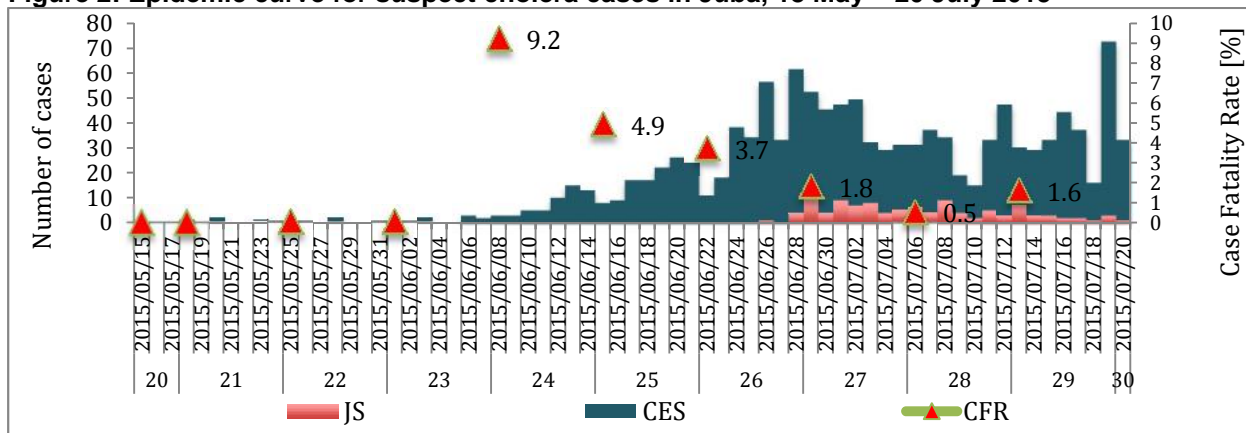
Reporting Facility	New cases by epidemiological week of 2015										Grand Total
	21	22	23	24	25	26	27	28	29	30	
CES – Juba County	4	2	7	56	131	238	238	160	268	34	1138
JTH	0	2	2	32	119	212	208	116	150	22	863
Juba 3 IMC clinic	4	0	4	9	6	13	10	10	11	2	69
HLSS Nyakuron ORP	0	0	0	0	0	0	2	3	30	0	35
HLSS Kator ORP	0	0	0	0	0	0	0	3	1	2	6
MedAir Gudele ORP	0	0	0	0	0	0	0	4	3	0	7
MedAir Gumbo CTU	0	0	0	0	0	9	17	19	26	2	73
HLSS Gurei ORP	0	0	0	0	0	0	0	1	16	2	19
HLSS Munuki ORP	0	0	0	0	0	0	0	1	0	0	1
HLSS Al Shabah ORP	0	0	0	0	0	0	0	0	5	0	5
HLSS Lologo ORP	0	0	0	0	0	0	0	0	3	3	6
MSF Munuki CTC	0	0	0	0	0	0	0	0	23	1	24
Other sites in Juba	0	0	1	15	6	4	1	3	0	0	30
Jonglei State – Bor County	0	0	0	0	0	5	46	33	21	1	106
Bor State Hospital	0	0	0	0	0	5	46	33	21	1	106
Grand Total	4	2	7	56	131	243	284	193	289	35	1244

As seen from Figure 2, the initial and isolated cases were reported from UN House PoC in Juba starting on 26 May 2015. However, following epidemiological investigations on 27 May 2015, cases could be traced back to 18 May 2015. Cholera was eventually confirmed on 1 June 2015 in Juba after *Vibrio cholerae inaba* was isolated from the one of five samples tested in the National Public Health Laboratory.

Since 6 June 2015, sustained and consistently increasing community transmission was established in Juba with increasingly more suspect cases reported outside UN House PoC. There are three discernible transmission peaks with the initial peak of 15 cases occurring on 13 June 2015 while the subsequent and higher peaks occurred on 20 June, and 26 June before reaching the second highest peak on 28 June. Since then, successively shorter transmission peaks have been registered. This trend is largely driven by ongoing transmission in Juba, Northern Bari, Rejaf, and Munuki Payams (Annex 2). On 19 July 2015, a total of 55 new cases in Juba County were linked to a funeral in Atlabara B.

In Bor, the initial case occurred on 26 June 2015 with increasing cases from week 26 to week 27 when the highest transmission peak was registered. In the subsequent weeks, successively shorter transmission peaks have been registered, a trend that is consistent with declining community transmission.

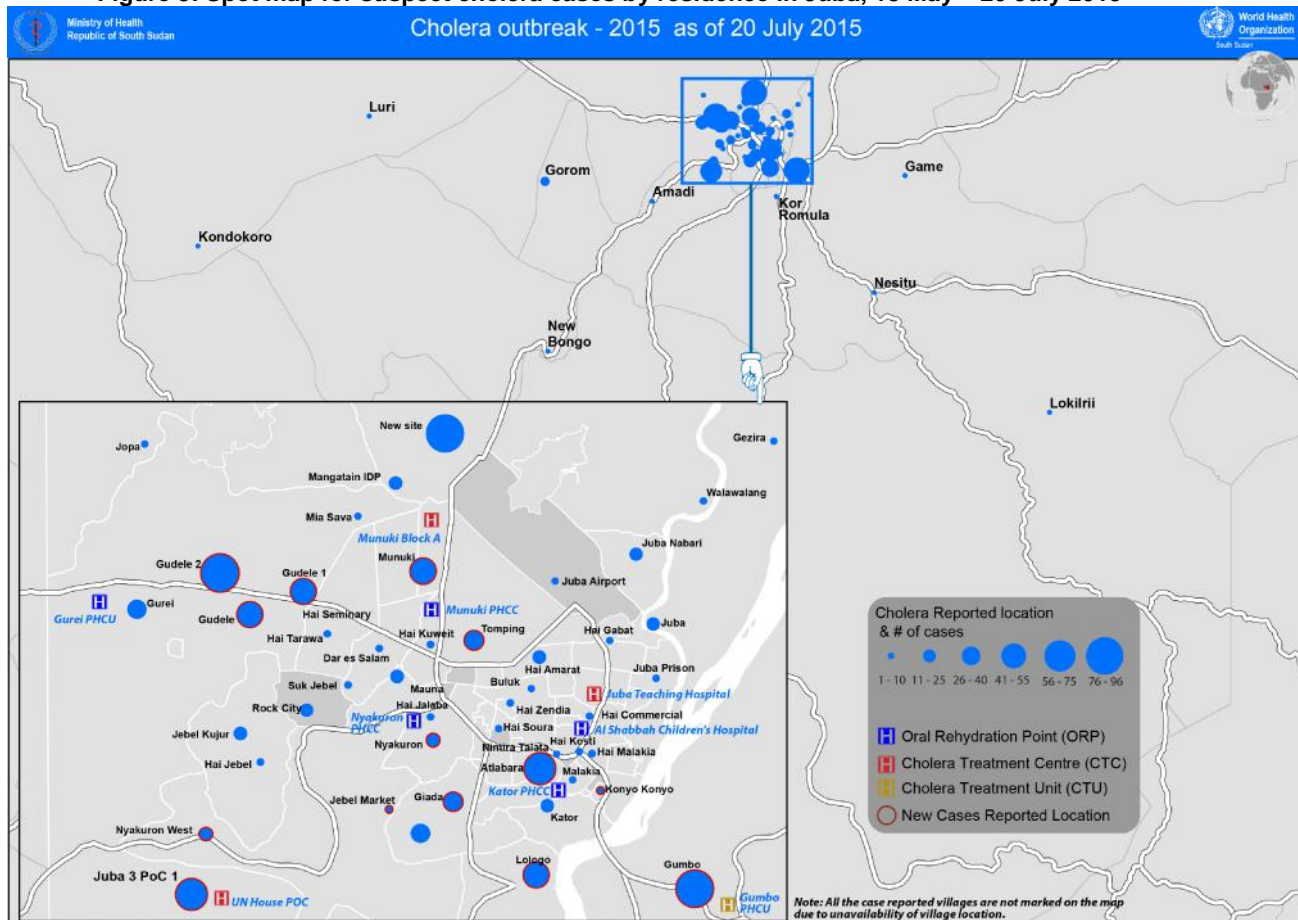
Figure 2: Epidemic curve for suspect cholera cases in Juba, 18 May – 20 July 2015



JS: Jonglei State; CES: Central Equatoria State; CFR: Case Fatality Rate

The probable risk factors fueling transmission include: residing in a crowded IDP camp with poor sanitation and hygiene; using untreated water from the Water tankers; lack of household chlorination of drinking water; eating food from unregulated roadside food vendors or makeshift markets; open defecation/poor latrine use; and attending/eating food at a funeral.

Figure 3: Spot map for suspect cholera cases by residence in Juba, 18 May – 20 July 2015



As of 20 July 2015, the sites reporting the majority of cases in Juba include Gumbo, New site, Juba 3 PoC, Gudele 2, and Munuki with satellite cases distributed in seven Payams and 96 villages in Juba County (Figure 3). In Bor County, the majority 39 (41%) of the cases originated from Malou in Makuach Payam and later from areas like Arek, Block 8, Hai Salam, Achengdii and Langbar.

Out of the 1,122 suspect cholera cases with known age from Juba, 152 (14%) were children less than five years of age, while 970 (86%) were individuals aged five years and above. In Bor, 64 (60%) of the cases have occurred in children under five years of age, while 42 (40%) occurred in individuals aged five years and above (Table 3).

Table 3: Suspect case distribution by age in Juba and Bor Counties, 18 May – 20 July 2015

Case distribution by age	Cases (%)
CES – Juba	1122
<5yrs	152 (14)
5+yrs	970 (86)
Jonglei State – Bor County	106
<5yrs	64 (60)
5+yrs	42 (40)
Grand Total	1228

Out of the 1,125 cholera cases with known gender in Juba, 479 (43%) were female, while 646 (57%) were male while in Bor, 62 (58%) of the cases were females, while 44 (42%) were males (Table 4).

Table 4: Case distribution by gender and age in Juba and Bor Counties, 18 May – 20 July 2015

Case distribution by gender	N (%)
CES - Juba	1125
Female	479 (43)
Male	646 (57)
Jonglei state – Bor County	106
Female	62 (58)
Male	44 (42)
Grand Total	1231

Laboratory updates

Table 5: Cholera laboratory test results for Juba and Bor, 18 May – 20 July 2015

	Health Facility	Number of RDT tests	Number of cholera RDT positives	Number of stool cultures	Number of cholera Culture positives
	CES – Juba				
1	Al Sabah hospital	2	0	2	2
2	Juba Teaching Hospital	75	62	44	17
3	Juba 3 PoC clinic	54	51	27	11
4	Juba Military Hospital	3	2	3	2
5	Morobo 2 clinic	2	2	2	1
6	Gorom PHCC	7	7	5	0
7	MedAir Gumbo CTU	0	0	2	2
	Jonglei state – Bor				
1	Bor State Hospital	37	34	8	4
	Total	180	158	93	39

As seen from Table 5, 158 (88%) of the samples have been RDT positive while 39 (42%) have been confirmed by culture after the National Public Health Laboratory isolated *Vibrio cholerae inaba*. Most of the culture confirmed cases have been reported from Juba 3 PoC and New site (Figure 4). In Bor, four culture positive cases have been confirmed. Of the 21 samples submitted from Kajo Keji, 19 tested negative for cholera following microbiological culturing, while the test results for two samples are pending.

Seven stool samples were shipped to the Central Public Health Laboratory in Uganda for testing. *Vibrio cholerae inaba* serogroup, 01 serotype was isolated from one of the samples while six samples tested negative for cholera but were positive for nonpathogenic *Escherichia coli*. Three isolates were confirmed as positive and three negative samples tested negative on repeat testing in Uganda thus confirming earlier test results by the National Public Health Laboratory. The four isolates were sensitive to tetracycline and ciprofloxacin; intermediate for Ampicillin and chloramphenicol and resistant to Sulphamethoxazole.

Figure 4: Number of culture positives by residence in Juba, 18 May – 20 July 2015

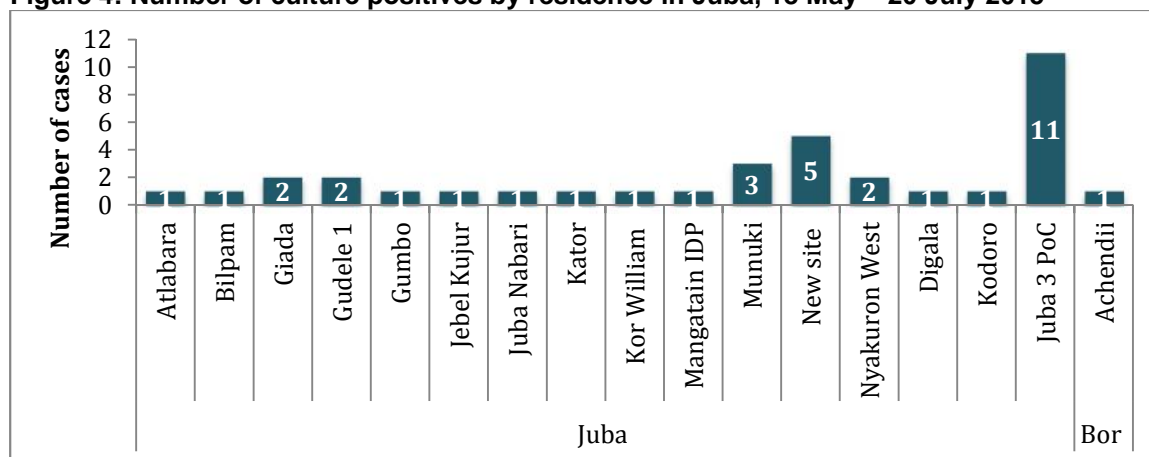


Table 6: Cholera Alerts – 23 to 20 July 2015

Date of notification	Details of the alert	Area	Action
19-July-15	A total of 55 acute watery diarrhoea cases reported on 19 July 2015 involving individuals who attended an overnight funeral in Atlabara B, Juba	Atlabara B, Juba	<ul style="list-style-type: none"> - Funeral visited by the state rapid response team for health education and case finding - At least 55 cases referred to Juba Teaching Hospital CTC for treatment - Premises disinfected by state rapid response team - Interviewed participants reported eating bread and roasted meat at the funeral before they developed vomiting and diarrhoea.
26-Jun-15	Nineteen suspect cholera cases were initially reported in Kajo Keji Civil hospital. The cases have now risen to a cumulative total of 62.	Kajo Keji, CES	<ul style="list-style-type: none"> - A total of 62 acute watery diarrhoea cases have been line listed with two cases on admission at the hospital - 21 samples submitted for microbiological culturing - 19 samples tested negative for cholera following microbiological culturing at the National Public Health Laboratory while two are pending - Two separate assessments are planned by MedAir and MoH/WHO.

Since 25 June 2015, at least nine alerts of suspect cholera cases have been reported outside Juba. The national and respective state cholera taskforce committees have initiated the recommended follow up actions as described in Table 6.

Surveillance, laboratory, case management update

To improve access to timely rehydration in the current cholera hotspots in Juba County, two cholera treatment centers (CTCs) are operational in Juba Teaching Hospital and Munuki; two cholera treatment units (CTUs) in Gumbo and Juba 3 PoC; and seven oral rehydration points (ORPs) in Nyakuron, Kator, Gudele, Gurei, Munuki, Al Sabah, and Lologo.

Plans are underway to conduct supportive supervision to all the CTCs, CTUs, and ORPs. Three facilities (MSF Munuki CTC, MedAir Gumbo CTU, and UN House PoC CTU) have been visited by the workgroup.

Four standby ambulances have been stationed in Gumbo PHCC, Gurei PHCC, Nyakuron PHCC, and Munuki PHCC. The drivers have been oriented on the referral procedures and all four vehicles have been fueled and can be accessed through the cholera hotline.

The state rapid response team responded to a cluster of 55 cases that were linked to a funeral in Atlabara B by identifying and referring symptomatic cases for treatment, providing health education, and disinfecting premises where cases were accommodated.

A total of 52 healthcare workers from Public and Private Health Facilities in Juba County were trained from 15-16 July 2015 on cholera case identification and management. The training was conducted by the national and state Ministries of health with support from UNICEF and WHO.

From 1 June to 18 July 2015, two rounds of oral cholera vaccination were conducted in Bentiu and Juba 3 PoCs. Of the 73,300 people targeted in Bentiu PoC, 71,200 (97%) were reached with two doses of oral cholera vaccine. Of the 33,565-targeted people in Juba 3 PoC, 27,340 (82%) were reached during the first round while 21,577 (64%) were reached during the second round. Vaccination in Juba 3 PoC extended to 21 and 22 July 2015 due to the low coverage during the second round. Additional vaccines have been ordered for displaced populations in Malakal PoC, Wau Shiluk, and Melut. There are plans to vaccinate select high-risk populations in the host communities in Juba County.

Water, Sanitation and Hygiene Update

Juba: WASH teams from ACF, Oxfam GB and UNICEF continue monitoring free residual chlorine (FRC) in the water supplied by water tankers around Juba. Water tankers were followed from the river side filling stations of Lologo, Mairo and Gumbo to their different destination points where the final FRC levels were tested. Results from the different residential areas registered FRC levels ranging from 0.0 – 0.7mg/L. Preferably, FRC levels should be between 0.5 – 1.0 mg/L at the point of water delivery.

Thirty six Public Health Officers from National Ministry of Health (10 persons), State Ministry of Health Eastern Equatoria (6 persons), State Ministry of Health Jonglei (5 persons), State Ministry of Health Central Equatoria (10 persons) and MEDIWR (5 persons) attended a ToT workshop on cholera prevention, control, surveillance/case management, IYCF Practices and social mobilization/ interpersonal skills. The trainers/facilitators were from UNICEF, NMoH/SMoH and WHO.

School teachers from 64 schools (1 teacher per school) in Juba, received a ToT exercise on cholera prevention and control, as well as interpersonal skills among children. The action plan agreed upon by all teachers after the training included; formation of Hygiene Clubs and provide training/refresher training for the school children in all WASH related activities including awareness on cholera.

Bor: In Bor Town, with the State Ministry of Health and PAH, UNICEF distributed soap to over 905 households to enhance personal hygiene.

Support to the Bor Hospital CTC, with Ministry of Health, MSF and PAH, includes the provision of 12 diarrhoeal disease kits (DDK) and disinfection activities using 2% chlorination at Bor CTC, including foot spraying.

At Bor PoC, UNICEF and IAS are collecting garbage, while 28 hand washing facilities have been set up for use near key points such as the latrines, schools, clinic and at the entrance and exit gates. Cholera hygiene promotion exercises including Jerry can cleaning campaigns were carried out and benefited over 460 households.

Jonglei State: Cholera awareness activities have also been initiated in Duk County with SMOPI and Twic East County with Africa Arise International(AAI), benefiting over 230 people.

Social Mobilization Update

Twenty two radio stations continue to broadcast cholera prevention and control messages targeting high risk areas in Central Equatoria State, Eastern Equatoria State, as well as Malakal and Mingkaman IDP camps in Lakes State.

Radio jingles informing the public about the new Cholera Treatment Centers and Oral Rehydration Points, as well as the Toll free line are also being broadcast.

MOH and Central Equatoria State Ministry of Health, supported by UNICEF, trained 35 religious leaders from different areas such as Munuki, Gudele, New Site, Rock City, Gurei, Kator, Ghabat, Sirkirt, Gurei and Hai Neem. This bring to a total of 240 resource people from partners, teachers, Juba City Council and religious leaders who will cascade trainings and awareness in different areas of expertise.

Through 50 trained volunteers from South Sudan Red Cross (SSRC), a total of 3,855 households have been reached with cholera prevention and control key messages through door-to-door awareness campaign in hotspot suburbs of Mauna and New Site. The volunteers educate households through demonstration on critical practices such as hand washing with soap, preparation of sugar salt solution and water chlorination.

Information, education and communication (IEC) materials on cholera prevention displayed throughout the city continue to reach people in strategic locations such as Konyokonyo market, City roundabouts and schools and health facilities.

Basic Education for Development Network Organization (BEDN), also covered schools and markets in Munuki and Gudele with IEC materials on cholera prevention.

Bor: A total of 3,850 households have been reached with cholera prevention messages by 34 UNICEF supported trained social mobilizers in six villages within Bor town. A total of 15,400 caregivers both male and female received cholera messages through a mix of communication intervention approaches at household level.

Social mobilizers conducted 19 community meetings and reached 120 community leaders in Lenguet, Langbaar, Malou, Arek, Payueny and Achingdiir villages of Bor County.

Response Gaps

ORP sites need to be established in other transmission hotspots like New site and Mangatain in Juba County. In addition, a dedicated ambulance is required for these two locations.

Community surveillance needs to be strengthened alongside the ongoing house-to-house community sensitizations by the home hygiene promoters in all transmission hotspots in Juba County.

Planned and On-going Activities

1. The next national cholera taskforce meeting is scheduled for Monday 27 July 2015 at 10:00 am in the Ministry of Health Ministerial Boardroom.
2. The next cholera coordination meeting in UN House PoC is scheduled for 23 July 2015 at 11:30 am in the RRP Boardroom.

Many thanks to the staff at CTCs, MoH at national level and state levels, especially the Department of IDSR, who have helped to gather the information presented here. Situation Reports are posted on the WHO website: <http://www.who.int/hac/crises/ssd/en/> as well as on the Humanitarian Info webpage: <http://southsudan.humanitarianresponse.info/clusters/health>.

The MoH/WHO surveillance team welcomes feedback and data provided by individual agencies. Given the fast evolving nature of this epidemic, errors and omissions are inevitable: we will be grateful for any information that helps to rectify these. Send any comments and feedback to: E-mail: outbreak_ss_2007@yahoo.com, **The Toll free numbers for alerts** are: **Zain: 0912000098**.

Contacts

For more information please contact:

Dr. John Rumunu
Director General - Preventive Health Services
MoH, Republic of South Sudan
Tel: +211955668178

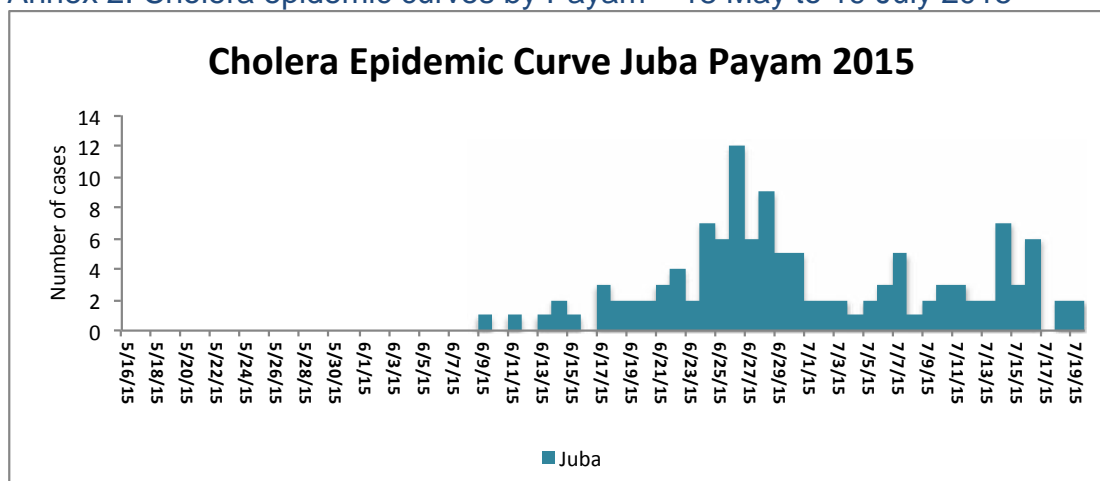
Dr. Thomas Akim Ujjiga
Director - IDSR
MoH, Republic of South Sudan
Tel: +211955150406

Annex: Cholera Data tables and Charts – 18 May 2015 to 19 July 2015

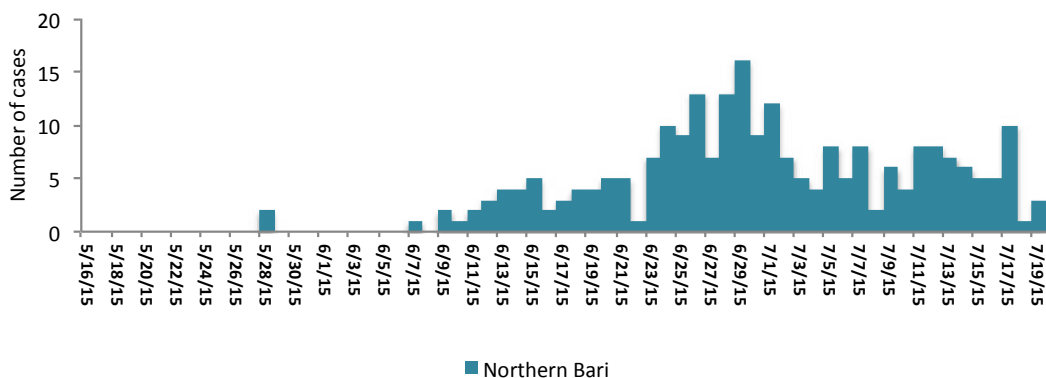
Annex 1: Cholera attack rates and case fatality rates by Payam, 18 May to 19 July 2015

Location	Total Cases	Total Deaths	Population	Case Fatality Rate [%]	Attack rate [cases per 10,000]
CES	1108	38	279871	3.4	39.6
Gondokoro	6		7115	-	8.4
Juba	118	11	91254	9.3	12.9
Kator	192	4	11395	2.1	168.5
Lokiliri	3		5995	-	5.0
Munuki	273	7	129133	2.6	21.1
Northern Bari	259	8	20753	3.1	124.8
Rejaf	252	6	14226	2.4	177.1
(Blank)	4	2		50.0	
JS	104	1	181708	1.0	5.7
Baidit	4		51042	-	0.8
Bor	2		61224	-	0.3
Kolnyang	1		40021	-	0.2
Makuach	82	1	29421	1.2	27.9
Grand Total	1124	39	461579	3.3	25.4

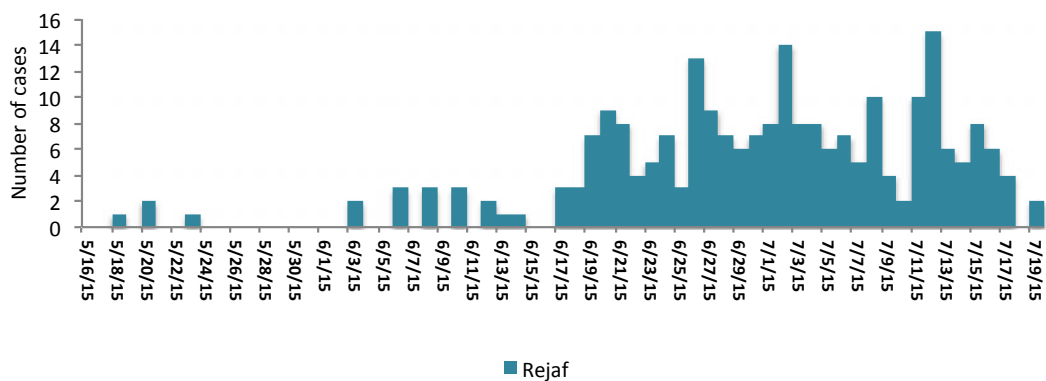
Annex 2: Cholera epidemic curves by Payam – 18 May to 19 July 2015



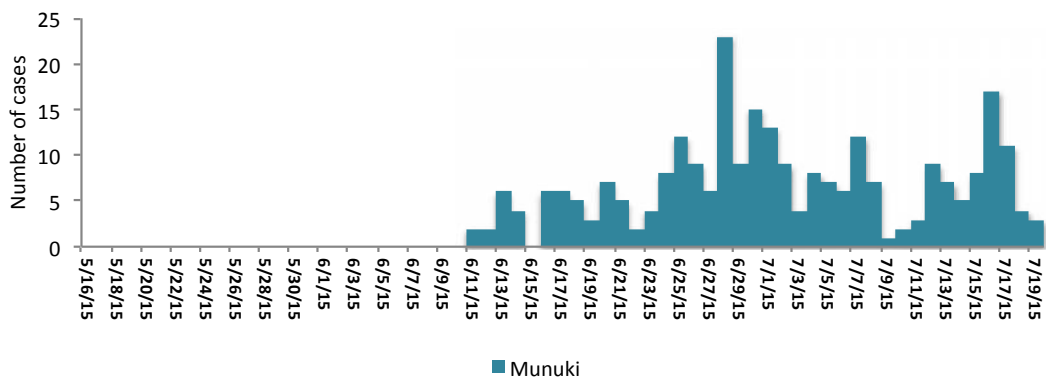
Cholera Epidemic curve Northern Bari Payam 2015



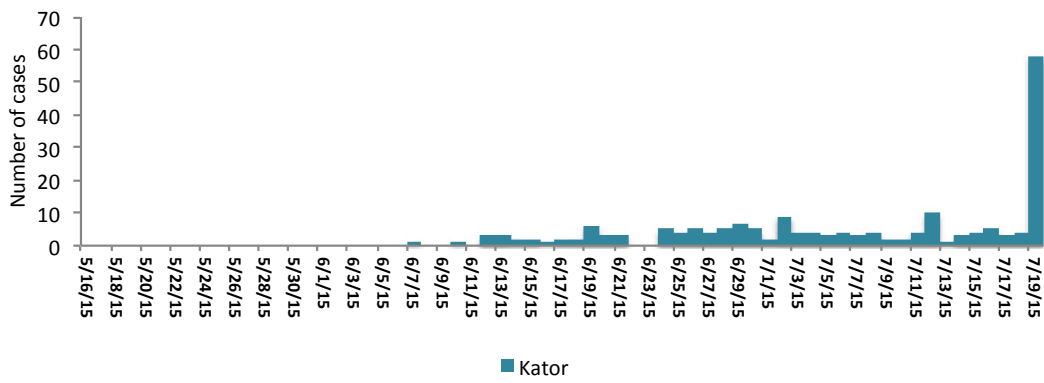
Cholera Epidemic Curve Rejaf Payam 2015



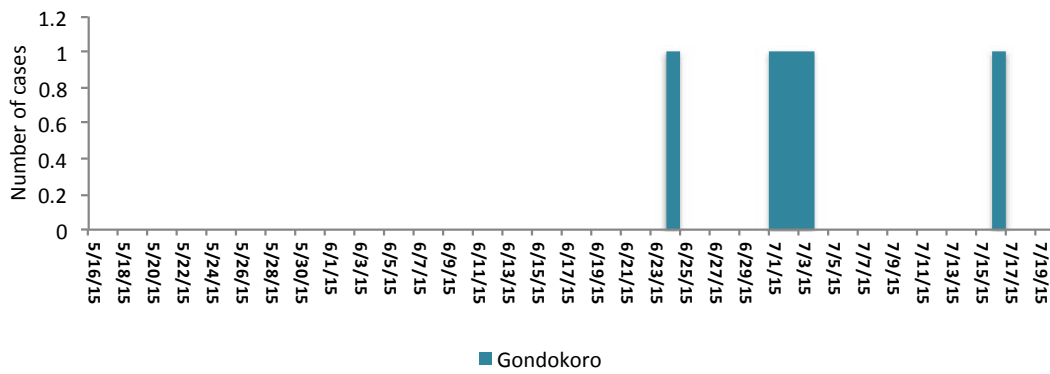
Cholera Epidemic Curve Munuki Payam 2015



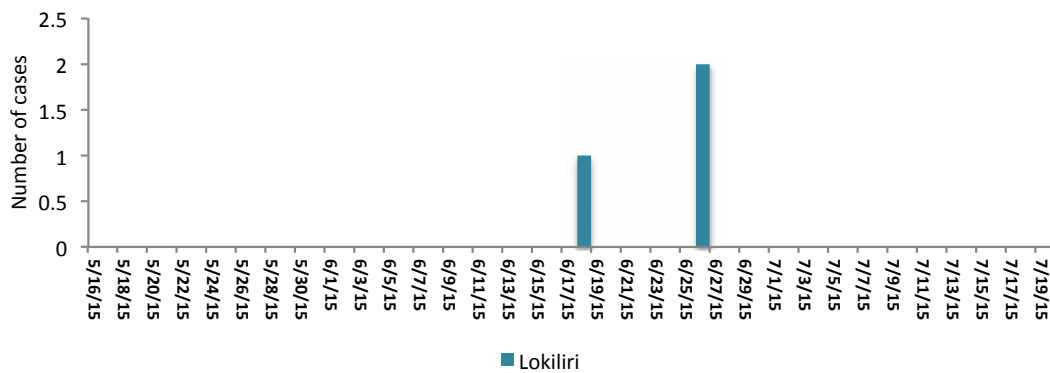
Cholera Epidemic Curve Kator Payam 2015



Cholera Epidemic Curve Gondokoro Payam 2015



Cholera Epidemic Curve Lokiliri Payam 2015



Cholera Epidemic Curve Makuach Payam, Bor 2015

