



Greater Kapoeta Cattle Migration and Cholera Transmission Brief

Greater Kapoeta, Eastern Equatoria State, South Sudan, March 2018

Introduction

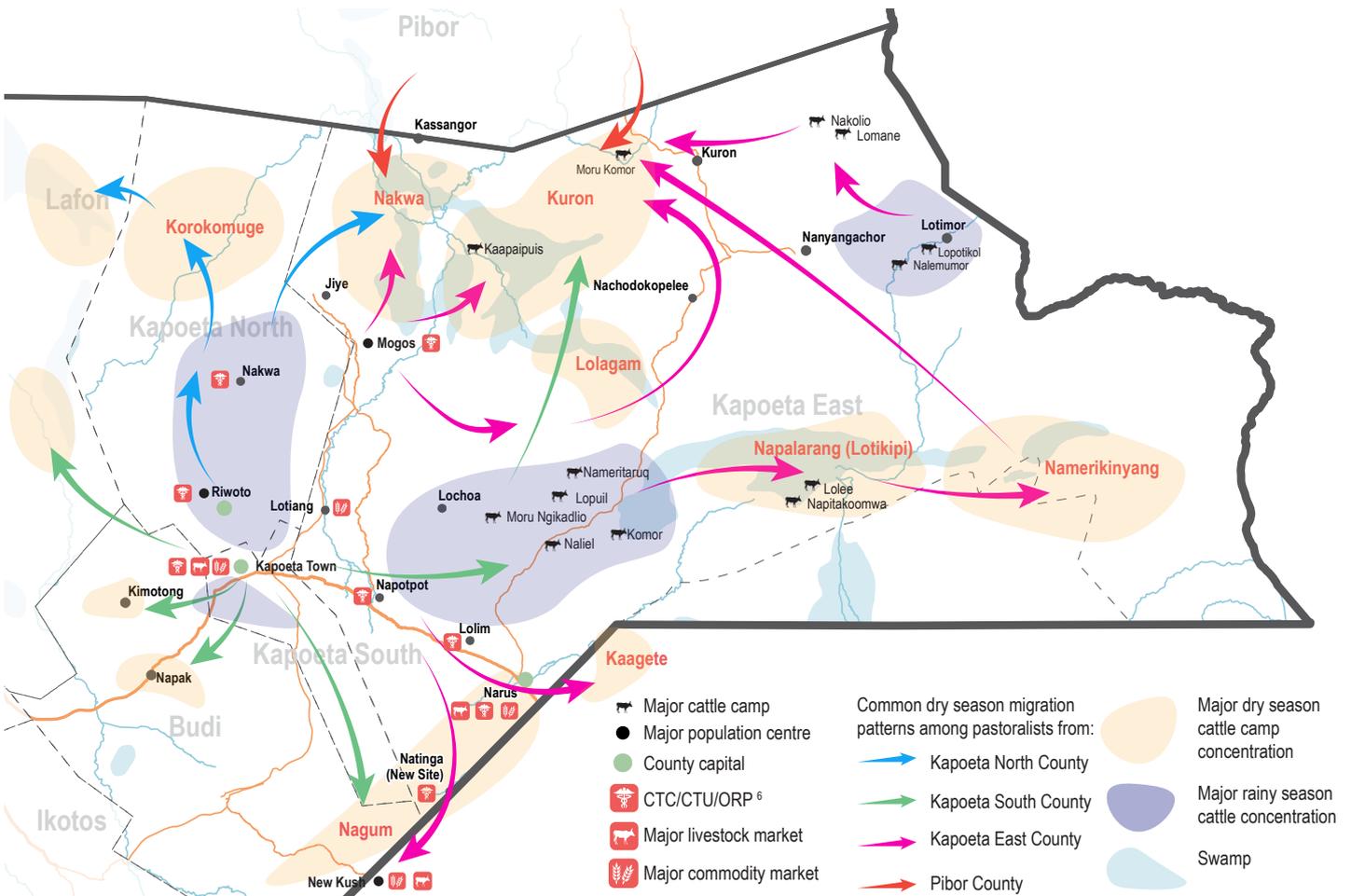
In April 2017, cases of cholera surfaced in Kapoeta North County, and rapidly spread to the rest of the Greater Kapoeta area (Kapoeta South, East and North Counties).¹ The spread of cholera across the area occurred in the late dry season (November-May), a time where the area's pastoralist communities are getting ready to leave seasonal grazing lands toward their home settlements. A lack of information on cattle migration patterns impeded access of lifesaving assistance to many cattle camps and pastoralist communities. To inform future humanitarian response to crisis affected populations in the Greater Kapoeta area, REACH conducted an assessment of cattle migration patterns and dynamics. REACH looked at whether or not these influenced the spread of the disease and the effectiveness of the response during the cholera outbreak in the Greater Kapoeta area in 2017.

Six focus group discussions (FGDs) involving participatory mapping were conducted with 48 pastoralists at the livestock market in Kapoeta Town between February 20th and March 8th. Participants were selected based on their areas of origin (near Kuron, Nanyangachor and Narus, in Kapoeta East, Riwoto and Nakwa in Kapoeta North and Machi in Kapoeta South). Nine key informant interviews (KIIs) were conducted with non-governmental organisations (NGOs) and with local authorities involved in the 2017 cholera response.² Findings are indicative only.

Key Findings

- The 2017 cholera outbreak affected the Greater Kapoeta area at the very end of the dry season when pastoralists were leaving swampy areas toward settlements all across the territory, creating the conditions for a rapid spread of cholera. Toward the late dry season, pastoralists tend to be highly concentrated around scarce water sources in camps where open defecation is widespread and WASH infrastructure is not available.³
- Humanitarian access to cholera-affected pastoralist communities of the Greater Kapoeta area was impeded by poor road infrastructure compounded by the rainy season onset, insecurity, mistrust as well as lack of information regarding cattle migration routes and areas of large seasonal cattle concentration.
- The number of cholera cases in cattle camps, especially in hard to reach areas of Kapoeta East, were likely underreported due to difficulty to access health centres, as well as misconceptions regarding the importance of seeking cholera treatment.

Map 1: Major dry season cattle migration routes in the Greater Kapoeta area ^{4 5}



Greater Kapoeta Cattle Displacement Brief

Cattle migration dynamics

Livestock rearing is the primary source of livelihood in the Greater Kapoeta area. Semi-nomadic pastoralists annually move with their cattle toward swamp areas through the dry season, following seasonally receding water and pasture, between November and May (Map 1).⁷

While pastoralists typically travel with fellow members of their own community, KIs reported that they also form more complex associations referred to locally as travel groups, where members of different communities come together for practical reasons (security, access to pasture). Many travel groups can share the same cattle camps. **When reporting on suspected cholera fatalities, camp leaders often keep record of the travel group of the deceased.**⁸

Cattle migration patterns

According to FGD participants, some cattle keepers who live along the Kapoeta-Narus road move their cattle from villages such as Napotpot and Lolim toward pasture at the border with Kenya (Kaagete) and along the border with Uganda (Nagum). Others choose a much longer path which takes them to a swampy area locally known as Napalarang, and then further east to an area of high cattle concentration known as Namerikiyang. Once water recedes and pasture becomes scarce as the dry season progresses, these groups often move north toward the Kuron cattle camp area.

Cattle keepers from the northwestern part of Kapoeta North move toward the swampy areas of Lopa/Lafon County when pasture and water become scarce in their area. Those on the south western portion of the county often consolidate in a swampy area of Kapoeta East, above Mogos, referred to locally as Nakwa.⁹

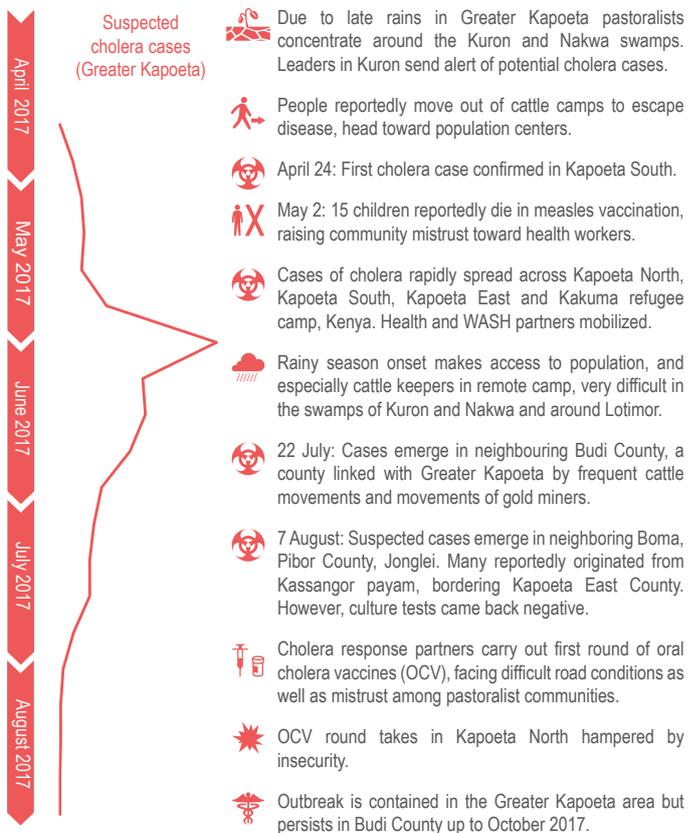
Cattle keepers from Kapoeta South move to various locations during the rainy season, including Muragippi, a hill range in Kapoeta East. Others move to Budi County (Kimotong and Napak areas), in traditional Boya community territory, often creating tensions over resources.

Spread of cholera during the 2017 outbreak

South Sudan's most recent cholera outbreak lasted from July 2016 to February 2018. Without an epidemiology study specific to the Greater Kapoeta area, the chain of events that led to the emergence of cholera cases in that area remains unclear (Figure 2). **While not indicative of a causality, the timeline and geographical spread of the transmission across the Greater Kapoeta area correlates with early rainy season cattle migration patterns.**

Various elements suggest that cases may have originated in cattle camps: both FGD participants and KIs reported that a number of pastoralists in the Kuron area had died toward the end of April from a disease characterized by high volumes of watery diarrhoea, most notably in Kaapaipuis cattle camp, north-east of Mogos.¹⁰ However, NGO KIs reported that teams went to verify the claims and were unable to confirm that the cases were cholera.¹¹ The first confirmed cholera cases were recorded on 24 April at Kapoeta Hospital, Kapoeta South County, and were reportedly traced back to cattle camps in Kapoeta North (see Figure 1). On 27 April, the

Figure 1: Timeline of the intersection between cattle migration and cholera outbreak, April-August 2017.



national-level Health Cluster received additional alerts emerging from cattle camps (area of Riwoto, Kapoeta North, and swamp area between Mogos and Kuron).¹² Among NGO KIs, many believe that cases in cattle camp areas north of Mogos may have caused panic among cattle keepers, leading many who may have been affected by the disease to flee to population centers. Following confirmation of cases in Kapoeta South, suspected cases started emerging in multiple areas of Kapoeta North and Kapoeta East Counties.

Seasonal cattle migration likely exacerbated the spread of the disease. Cases of cholera began to surface in Nakwa and Kuron at the end of the dry season, when other cattle camps had consolidated in the Nakwa/Kuron areas (Map 1). When the rain returned in late May, pastoralists moved back to their settlements or to rainy season cattle camps spread out across the territory, once again potentially carrying the disease. Lists of cholera cases obtained from partners suggest that cases peaked in late May/early June (Figure 1). Cases emerged in neighbouring Kenya (Kakuma refugee camp) in May 2018, likely originating from South Sudan.¹³ By August, reports of cholera cases were diminishing in Greater Kapoeta but new suspected cholera cases were reported in neighbouring Pibor and Budi Counties, respectively North and South of the Greater Kapoeta area.¹⁴ In Pibor, suspected cases in Boma reportedly originated from Kassangor payam, nearby Kuron and Nakwa. Culture tests on selected samples however came back negative.¹⁵ Fluid movements of cattle keepers and gold miners reportedly explains transmission of cholera from the Greater Kapoeta area to Budi County.¹⁶ The outbreak in Budi was contained by October.

Greater Kapoeta Cattle Displacement Brief

Challenges in access to pastoralist areas

Poor road conditions impeded humanitarian access to pastoralist communities across the Greater Kapoeta area. Access to many cattle camps was only possible by motorbike or following hours of walking in swampy or mountainous terrain. Access was especially challenging in the swamps northeast of Mogos, up to the towns of Kassangor and Kuron, and in the areas southeast of Kuron (Nanyangachor, Lotimor).

FGD participants reported more limited access of cholera response actors in these areas than participants from areas closer to population centers such as Napotpot, Narus, and Riwoto, all of which also had either a cholera treatment unit (CTU), cholera treatment centre (CTC) or an oral rehydration point (ORP) (see map 1). **Most health actors working in the area had limited access to data on the location of seasonal cattle camps** and lacked the resources to reach these areas, hence often had to focus their response on permanent population centres.

Insecurity also limited access to pastoralist communities. The Greater Kapoeta area is characterized by a high potential for insecurity due to cattle raiding and reported presence of armed actors. The OCV campaigns had to be interrupted in parts of the Greater Kapoeta area in August due to insecurity.¹⁷

Low community buy-in also impacted access to pastoralist communities. Low buy-in is partly explained by a flawed vaccination campaign that led to the death of 15 children in nearby Nachodokopele shortly before OCV reached Nanyangachor.¹⁸ FGD participants from Kapoeta East County reported that the OCV campaign reached areas accessible from their camps such as Nanyangachor, but that members of their community did not go to seek OCV due to mistrust of health workers, especially those performing vaccinations.

Instead, communities treated the cases themselves, reportedly administering siko (local brew), mixes of soil and water, crushed wild fruits and even cattle drugs to the patients. FGDs revealed a **lack of awareness on cholera transmission routes among pastoralists, especially those residing away from health centres**. A prevalent belief among interviewed pastoralists was that cholera is caused by hunger rather than by contaminated water, likely because cholera cases occurred in the late dry season, when cattle keepers were hungrier, weaker and more dehydrated than usual following months of searching for ever-shrinking pasture and water sources.

Lack of awareness regarding fecal-oral transmission of cholera had significant consequences: FGD participants reported that open defecation near water sources remained common through the outbreak. While FGD participants residing closer to population centers were aware of the importance of treating water, some from Kuron swamps and Nanyangachor reported not treating water, insisting that if swamp water is good enough for their animals it is good enough for them.

Conclusion

By the end of the cholera outbreak in the Greater Kapoeta area, 993 suspected cases had been recorded in Kapoeta North, 1,017 in Kapoeta South and 2,015 in Kapoeta East.¹⁹ The 2017 cholera outbreak deteriorated at a time when consolidated cattle camps were breaking up and spreading out across the Greater Kapoeta area, with the onset of the rainy season. This likely accelerated transmission across the area and worsened already severe access issues, preventing response partners from reaching populations with both preventive and curative activities. Without an epidemiology study, theories about transmission routes remain purely hypothetical, however the combination of these factors created favourable conditions for a devastating outbreak. Understanding migration patterns is likely to assist in future response.

Endnotes

1. [UNICEF. Mobilizing communities to fight a severe cholera outbreak in South Sudan. 17 August 2017.](#)
2. KIs were conducted with representatives of UNICEF, International Organization for Migrations (IOM) (2), American Refugee Council (ARC) (2), Carter Center, Kapoeta East County Health Department, Kapoeta State Ministry of Health, Kapoeta Town Municipality.
3. [REACH. Greater Kapoeta Rapid Assessment Brief. December 2017.](#)
4. Cattle migration routes were drawn based on six participatory mapping exercises with cattle keepers of Greater Kapoeta held as part of Focus Group Discussions.
5. This map uses names of areas commonly used locally among Toposa speakers and features cattle camp/agglomeration areas that are often not included in conventional maps relied on by humanitarian actors as these are by nature temporary and moving over time depending on factors such as rain patterns and pasture condition.
6. [REACH. Greater Kapoeta Rapid Assessment Brief. December 2017.](#)
7. Cholera Treatment Unit (CTU), Cholera Treatment Center (CTC), Oral Rehydration Point (ORP)
8. [FEWNSET. South Sudan Livelihood Zones. 2013.](#)
9. Kapoeta East County Health Department. A brief report on Cholera outbreak in May-July 2017.
10. To be distinguished from Nakwa Payam or Nakwa Town in Kapoeta North County.
11. Kapoeta East County Health Department. A brief report on Cholera outbreak in May-July 2017.
12. Ibid.
13. Health Cluster. Cholera Update. 2 May 2017.
14. [UNHCR Kenya. Cholera Outbreak Response Updates Kakuma. 9 June 2017.](#)
15. [Republic of South Sudan. Cholera Update. 21 September 2017.](#)
16. Ibid.
17. [Republic of South Sudan: Cholera Situation and Response Updates. 24 November 2017](#)
18. [WHO. Oral Cholera Vaccination campaign to combat cholera in South Sudan concludes despite security and access challenges. 16 August 2017.](#)
19. [WHO. Statement regarding findings of joint investigation of 15 deaths of children in Nachodokopele village. Kapoeta East County in South Sudan. 1 June 2017.](#)
20. [WHO. South Sudan Integrated Disease Surveillance and Response. Epidemiological Update W45 2017. November 2017.](#)