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Outbreak of cholera at Dutsen Abba Ward Zaria local government area, Kaduna state, Nigeria 2015: the importance of hygienic practices

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Background: Cholera is still a major health problem in Africa. On August 31, 2015, the Kaduna Ministry of Health received a notification of increase cases of vomiting and diarrhea at *Dutsen-Abba* in Zaria LGA. A response Team was sent to confirm the outbreak, describe the socio-demographic characteristics and identify possible risk factors for the outbreak.

Material/methods: We defined cases according to the World Health Organization criteria. We conducted an unmatched case-control study and descriptive study. We retrieved line-listed cases at the ward facility. We interviewed cases at the community and facility and recruited controls from the community. We analyzed data using Epi-Info-7 and Microsoft Excel-2016.

Results: A total of 50 case-patients were recorded, with a median age of 20yrs and age range of 1 – 50yrs. There were more females (68%) than males. Majority of case-patients (52%) are under 20yrs, while all case-patients are below 50yrs. Seven deaths were recorded giving a Case Fatality Rate (CFR) of 14%. The CFR is higher in females (14.7%) than in males (12.5%). Index case-patient was seen on August 29, 2015. The outbreak lasted five days. Highest number of cases seen in a day (23) was on third day of the outbreak. Only two cases (4%) had their samples tested using cholera RDT, and both tested positive

Drinking un-boiled water (OR:12.67, 95%CI: 2.33–68.93), regular hand washing (OR: 0.22, 95%CI: 0.06–0.90) and proper waste disposal practices (OR: 0.07, 95%CI: 0.02–0.36) are factors we found to affect cholera infection during the outbreak.

Conclusions: Our investigation confirmed a cholera outbreak with a high CFR, especially among females. Poor hygienic practices among the populace seem to be the drivers for the outbreak.

Table and Figure:**Table 1:** Gender, age group, case fatality rates, and associated risk factors for cholera cases at Dutsen Abba ward, Zaria LGA Kaduna State, 2015.

Sex	Cases	Deaths	Total (%)	CFR %
Male	14	2	16 (32)	12.5
Female	29	5	34 (68)	14.7
Total	43	7	50 (100)	14.0
Age Group (yrs)	Cases	Deaths	Total (%)	ASCFR %
<10	11	3	14 (28)	21.4
10 - 20	10	2	12 (24)	16.7
21 -50	22	2	24 (48)	8.3
>50	0	0	0 (0)	0.0
Total	43	7	50 (100)	14.0
Hygienic practices	Cases	Controls	OR (95% CI)	P-Value
Drinking unboiled water	12	9	12.67 (2.33 - 68.93)	0.001
	2	19		
Practice regular Hand washing	4	18	0.22 (0.06 - 0.9)	0.03
	10	10		
Proper Waste disposal	3	22	0.07 (0.02 - 0.36)	0.0004
	11	6		
Drinking from Central well	13	23	2.83 (0.30 - 26.87)	0.64
	1	5		

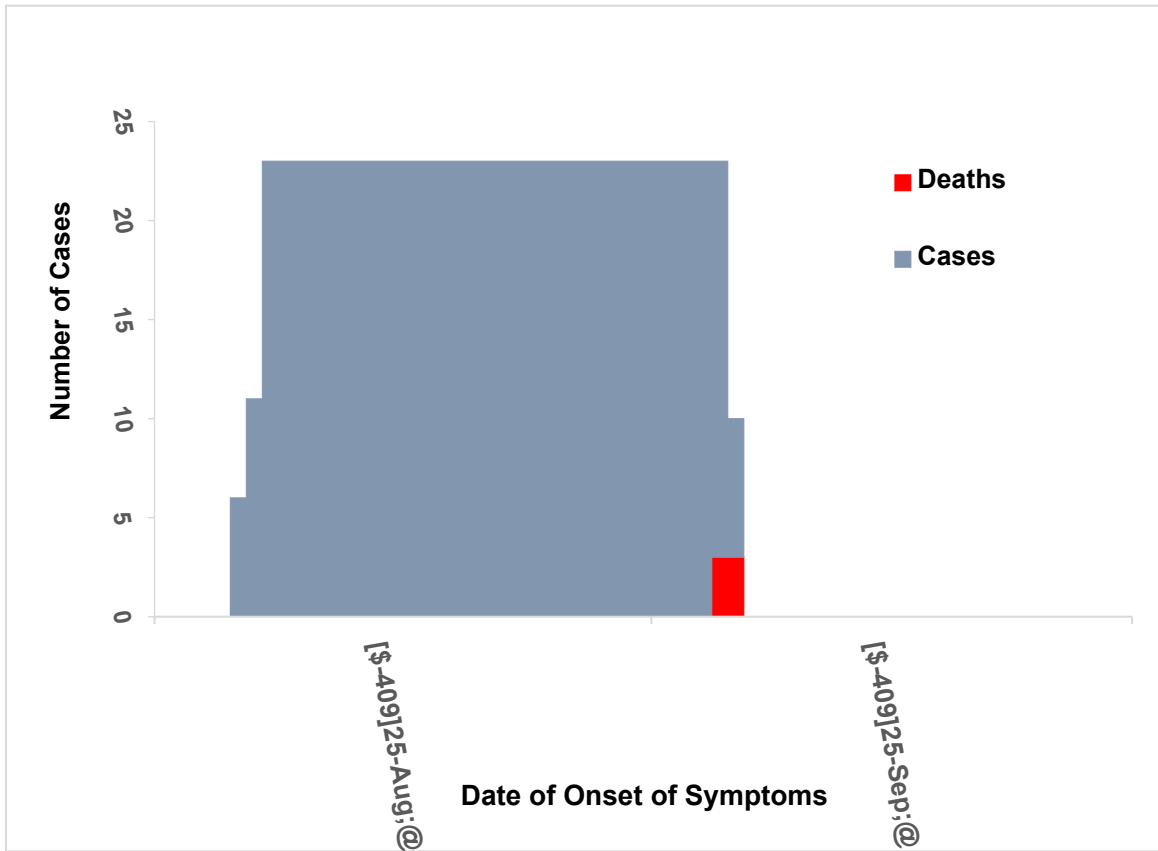


Figure 1: Epidemic curve for cholera cases at Dutsen Abba ward Zaria LGA, Kaduna State, 2015.