

# Risk factors for mortality among patients with suspected cholera treated in MSF-supported cholera treatment facilities in Bauchi State, Nigeria



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## Introduction

Cholera outbreaks are increasing in frequency and size in recent years. Although case fatality ratio (CFR) can be reduced below 1% with appropriate rehydration, this standard is often unmet.

In 2021, Nigeria experienced its worst cholera outbreak ever: 111,062 cases and 3,604 deaths; CFR 3.2%. MSF Switzerland supported two Ministry of Health (MoH) cholera treatment facilities in Bauchi State.

## Aim

Describe characteristics and risk factors for mortality among cholera patients to identify patients at higher risk, and propose, if useful, differentiated monitoring and care.

## Methodology

- A retrospective observational cross-sectional analysis, using routinely collected data of MOH line list.
- Descriptive, univariate and multivariate analysis were used to define the risk factors associated to mortality.

## Results

Between May and September 2021, 9927 suspect cholera cases and 53 deaths (CFR 0.53%) – see figure 1 - were recorded in 2 cholera treatment centers in Bauchi, Nigeria.

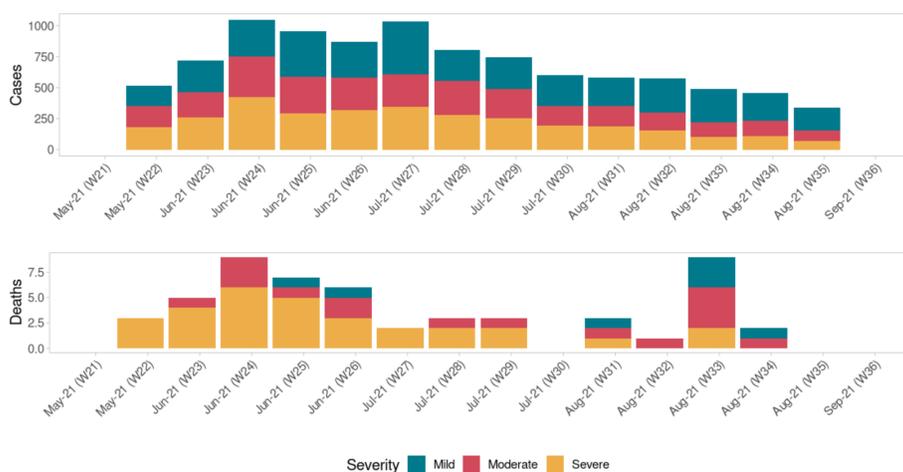


Figure 1: weekly number of cases (top chart) and deaths (bottom)

**Male gender, older than 60 years and presenting with signs of severe dehydration were identified as risk factors for a cholera-related death**

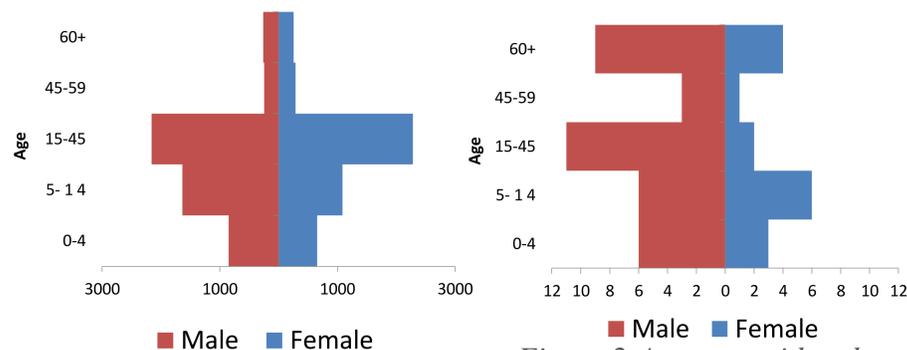


Figure 1: Age pyramid and gender of cholera cases

Figure 2: Age pyramid and gender of deceased cholera patients

36 deaths (68%) were male with median age of 18 years [IQ range 5.5-56.5]. 25.5% were over 60 years old.

	Adjusted OR	95% CI
Age >60 years	3.15	1.35-7.36
Male gender	1.92	1.05- 3.48
Severe dehydration	4.4	1.91-10.15

Table 1: multivariate analysis risk factors for cholera death

## Discussion & conclusions

- Reasons for men having higher risk of death in cholera are unclear.
- Elderly patients, possibly with co-morbidities, could benefit from closer monitoring and patient-centred care.
- In this cohort, patients died even if not severely dehydrated at admission.
- In Nigeria where cholera is endemic, there is a dearth of evidence about context-specific factors associated with the trends of cholera death.

## Limitations

- Use of basic MOH line list data, with limited information available
- Cholera diagnosis was mainly based on clinical suspicion

## Acknowledgements

Thanks to the Ministry of Health of Nigeria and to the epidemiology department of Bauchi State for the access to data and to the population of Bauchi for working together with MSF.

## Ethics

This research has approval from the Ethics Review Board (ERB) in Bauchi state and fulfilled the exemption criteria set by the MSF ERB for a posteriori analyses of routinely collected data. It was conducted with permission from Monica Rull, Medical Director, MSF OCG.



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