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Reporting of deaths during cholera outbreaks: case fatality ratio and community deaths

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Reducing cholera deaths is one of the principal goals of the Ending Cholera: A Global Roadmap to 2030 strategy.[1] To direct interventions towards areas with highest needs and to monitor outbreak evolution, accurate and harmonised reporting of cholera-related deaths over time and across regions is crucial. The Global Task Force on Cholera Control recommends that two indicators related to cholera deaths are monitored: the case fatality ratio (CFR) and the number of community deaths.[2]

The CFR expresses the proportion of deaths among cases and is used as an indicator of the quality of care among those seeking care at health facilities. High CFR reflects an urgent issue in clinical care requiring investigation and supportive interventions. During outbreaks, a CFR lower than 1% is commonly considered the minimum standard, but with appropriate access and quality of care, almost all cholera deaths can be avoided,

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and a lower CFR reached. Examples of issues could include poor knowledge of treatment protocols, insufficient staff or supplies, or late presentation of patients. Supportive measures include trainings and materials on proper treatment, increasing access to supplies, and improving risk communication and community engagement to encourage seeking care when symptomatic.

Community deaths are deaths attributed to cholera that occur outside health facilities, including bodies brought to health facilities, and should be reported separately. The occurrence of any community death indicates insufficient access to care or challenges with care seeking, which should be addressed immediately. Supportive measures include establishing new locations for cholera treatment closer to affected communities and improving risk communications and community engagement to encourage seeking care early. During an outbreak, the number of community deaths should be monitored and interpreted alongside other indicators (eg, CFR, number of facility deaths) to prioritise interventions.

CFR is defined as the “Proportion of institutional cholera deaths among (suspected and confirmed) cholera cases reported at health facilities during a specified time interval.”[2] To avoid bias, the numerator and the denominator are derived from the same population—ie, all patients with (suspected or confirmed) cholera, which during a cholera outbreak, is defined as anyone with acute watery diarrhoea.

A common pitfall leading to overestimation of the CFR arises when community deaths are included in the numerator. Community deaths and community cases should not be included in the CFR calculation because community deaths are more likely to be reported than community cases, biasing the estimate (panel).

Patients seeking treatment at oral rehydration points should be included in the CFR calculation, while putting particular attention to rigorous application of case definition and to avoiding double-counting of patients referred from oral rehydration points to other health facilities. Because the CFR is calculated with the deaths and cases detected at facilities to provide more granular information for public health action, it reflects a subset of the cholera cases and deaths occurring in a country.

Deaths from cholera are preventable. Monitoring cholera deaths through these two distinct indicators maximises the use of surveillance data to best guide interventions where they are most needed.

References

1. Global Task Force on Cholera Control. Ending cholera a global roadmap to 2030. 2017. https://www.gtfcc.org/wp-content/uploads/2019/10/gtfcc-ending-cholera-a-global-roadmap-to-2030.pdf (accessed April 22, 2024).
2. Global Task Force on Cholera Control Surveillance Working Group. Public health surveillance for cholera. 2024. https://www.gtfcc.org/wp-content/uploads/2024/04/public-health-surveillance-for-cholera-guidance-document-2024.pdf (accessed April 22, 2024).

Panel: **Key messages**

- Community deaths should not be included in the calculation of the case fatality ratio (CFR)
- Community deaths should be reported and interpreted separately
- Patients seeking treatment at oral rehydration points should be included in the CFR calculation