

An assessment of chemoprophylaxis effectiveness in the prevention of cholera among exposed prisoners Namseche Correctional Facility, Chipata, Zambia, 2024

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Introduction

Namseche is the largest correctional facility in Eastern Province accommodating over 1500 inmates. Correctional facilities are high risk settings for transmission of disease due to overcrowding and poor sanitation. On 25th January Namseche correctional facility recorded a culture confirmed case of cholera from an inmate. An outbreak response was conducted to identify the exposed, administer and measure the effectiveness of chemoprophylaxis.

Methods

We conducted an ambispective cohort. Symptomatic cases that tested positive for cholera were enrolled and retrospectively followed up to establish exposure. A semi structured questionnaire was administered to close contacts to assess exposure. Exposure was defined as any inmate who directly came into contact with the suspected source or contact with excreta from a cholera patient. All exposed non symptomatic inmates were given chemoprophylaxis and prospectively followed up for 14 days to observe for outcome. The chemoprophylaxis was considered effective if less

than 20% of enrolled persons developed the disease. Environmental samples were collected for laboratory analysis to confirm source of exposure.

Results

A total of 17 confirmed cases were identified and followed up retrospectively. All cases were male coming from the same cell with median age of 38 (IQR 29-40) years. They all reported being in the same team and having accessed water from a nearby stream during a field assignment. The stream drained from an area that had active cholera cases. Water samples from the stream tested positive for fecal contamination. Two hundred-thirty-three non-symptomatic exposed inmates were provided with chemoprophylaxis. After the 14 days follow-up none developed the disease.

Conclusion

The investigation established that the most likely source of exposure was the contaminated stream. The prophylaxis intervention was effective limited the manifestation of disease in 100% of exposed contacts. Systematic and timely administration of prophylaxis in defined populations combined with

other environmental interventions are effective in controlling cholera outbreaks in high-risk settings. We recommend a case-by-case systematic use of chemoprophylaxis for cholera control in well-defined exposed populations.