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Our study showed an upward trend in diarrhoea cases among under-five children in the period of study as compared to previous years, coupled with low rotavirus vaccine coverage.

## BACKGROUND

Ninety percent of deaths among children under five in low- and lower-middle-income nations are related to diarrhoea, a global public health concern. An estimated 15,000 children under-five years in Zambia die from diarrhoea each year, making it the third leading cause of death. A rise in under-five fatalities was reported in Livingstone district during the month of June through July, 2023; the study investigated the reported increase in mortality among children under-five years to establish the existence of an outbreak and propose recommendations.

## METHODS

A retrospective descriptive study was employed. We gathered information from the line list, laboratory test results, patient files and electronic Integrated Disease Surveillance and Response (eIDSR) system. We included all under-five children who had a history of diarrhoea and were admitted to a health facility from June to July, 2023. Descriptive statistical analyses were conducted to characterize the demographic and clinical profiles of the under-five fatalities. Graphical methods were used to assess trends of under five diarrheal cases and rotavirus vaccine coverage.

## RESULTS

A total of 98 under-five children were included in the study, seven of which were mortalities, giving a case fatality rate (CFR) of 7.1%. The median age was 11 (IQR 7-14) months. The under-one children were 55(56%) and 33 (60%) were males. There was an upward trend in diarrhoea cases in 2023 from May to July as compared to the same period in 2021 and 2022. Rotavirus vaccination coverage for years 2021, 2022 and 2023 were 56%, 53% and 39%, respectively, against a target of 80%. Rotavirus pathogen prevalence was at 70% among the cases of diarrhoea in the district.

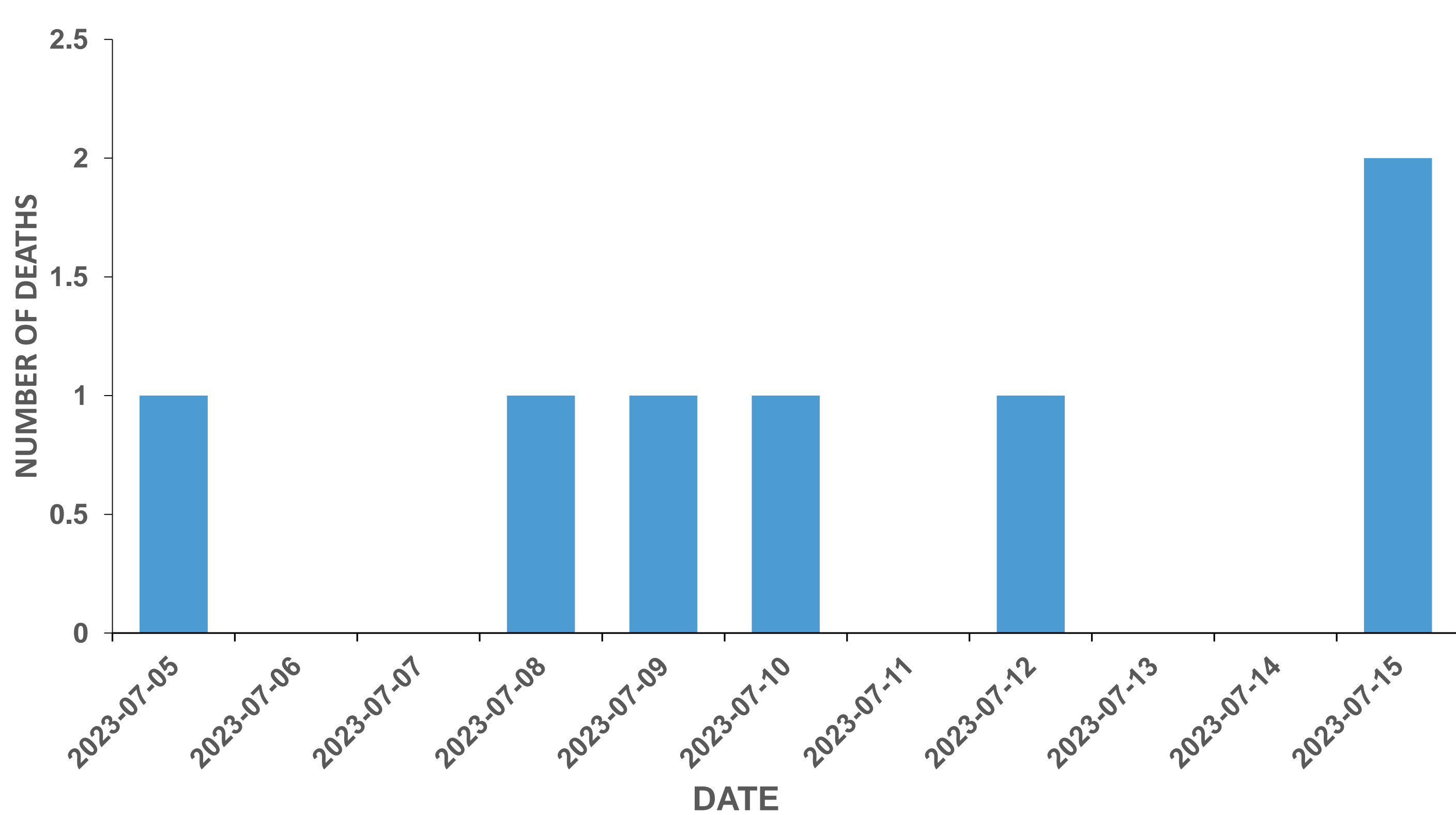


Figure 1. Presentation of facility diarrhoeal deaths recorded at Livingstone University Teaching Hospital, July, 2023

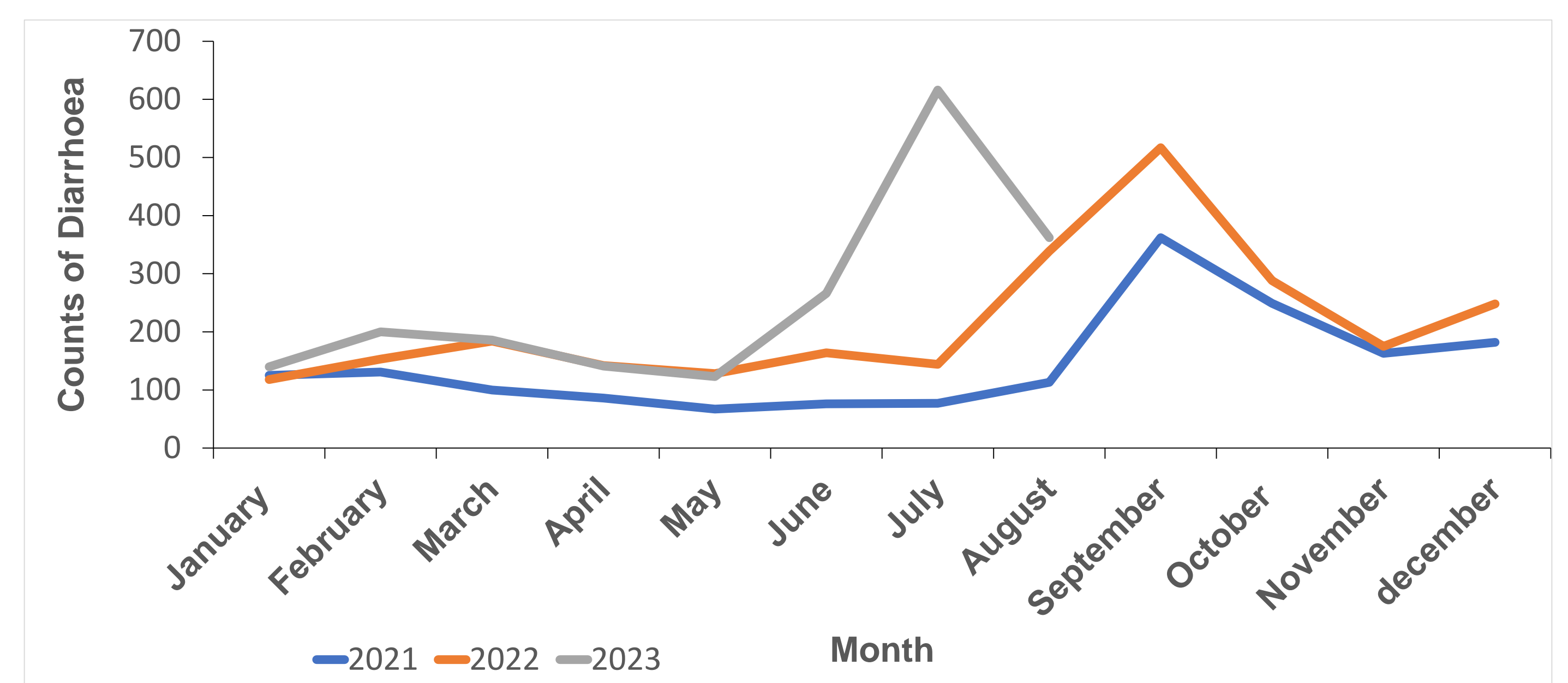


Figure 2: Diarrhoeal trends in under-five children in Livingstone District, 2021 - 2023

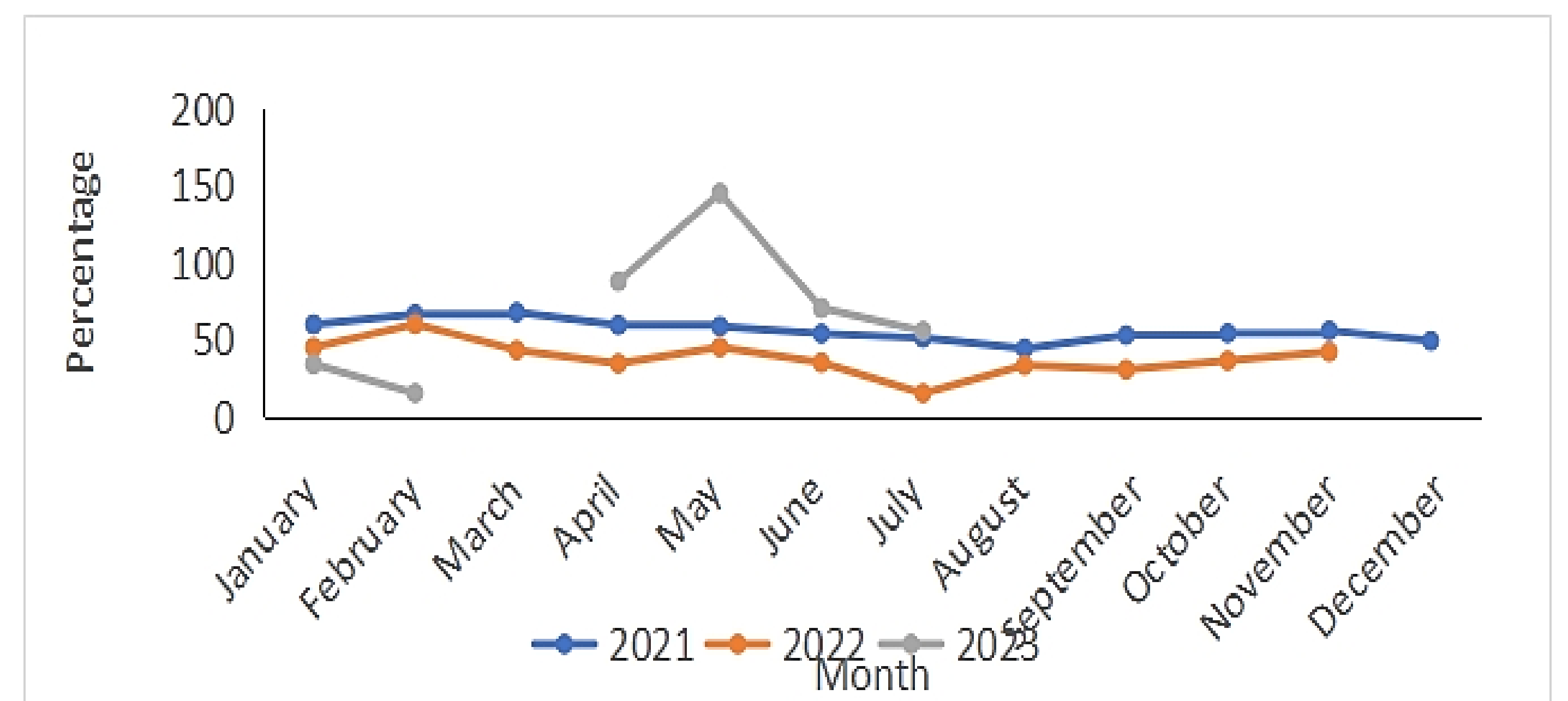


Figure 3: Rotavirus vaccination coverage, Livingstone District, 2021 - 2023

## CONCLUSION

The increase in under-five mortalities could not be confirmed as data on previous trends of diarrhoea related deaths were incomplete. However, there was an increase in diarrhoea cases among the under-five children during the review period. Low vaccination coverage may be associated with high incidence of rotavirus among cases with diarrhoea. We advocate for strong public health education, increased immunization and outreach services. In addition, data management in health facilities should be a priority as it reveals a better perspective and magnitude of the problem being investigated to guide public health intervention.

## ADDITIONAL KEY INFORMATION

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