



# Ensuring accurate data informs the Democratic Republic of the Congo's strategic response to malaria

## Background

Malaria is a major public health problem in the Democratic Republic of the Congo (DRC). In 2022, DRC reported 24,880 malaria-related deaths—an increase of 9.5 percent from 2021, when the country reported 22,729 deaths.<sup>1</sup> The National Malaria Control Program (NMCP) suggested several hypotheses to explain this increase. Some of the hypotheses include:

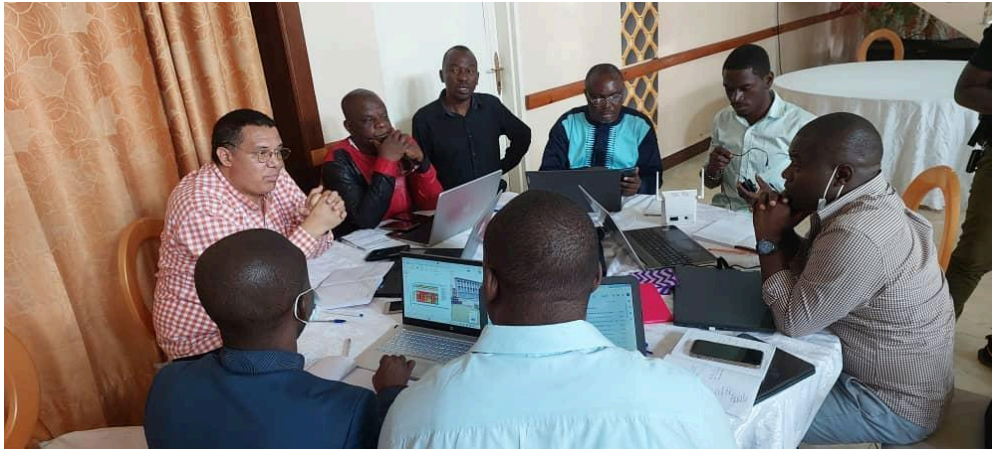
- Population growth
- An increase in the number of health facilities reporting malaria-related data to the national District Health Information System 2 (DHIS2) platform from 2022 onward
- Improved health coverage at community health facilities
- Possible outlier data reported by health facilities in DHIS2, resulting in over-reporting (i.e., poor data quality)

To test the low-quality data hypothesis, the NMCP and U.S. President's Malaria Initiative (PMI) asked USAID's Country Health Information Systems and Data Use (CHISU) program to conduct an analysis of malaria-related deaths reported by health facilities between January and December 2023. The analysis identified erroneously reported malaria-related deaths and, in coordination with the NMCP, CHISU guided the processes

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<sup>1</sup> "Rapport annuel paludisme 2022 de la RDC," 2022.

to correct these data before the release of the DRC's 2023 national annual malaria report. CHISU proposed the following criteria to quickly identify outliers requiring rapid verification and correction:



Health zones discuss malaria data management best practices in Haut Katanga, March 2024. Photo credit: CHISU

1. Malaria-related deaths reported by the health facility with no reported case of severe malaria in the same report and reporting period.
2. The number of malaria-related deaths that were more than or equal to the number of severe malaria cases reported by the health facility in the same report and reporting period.

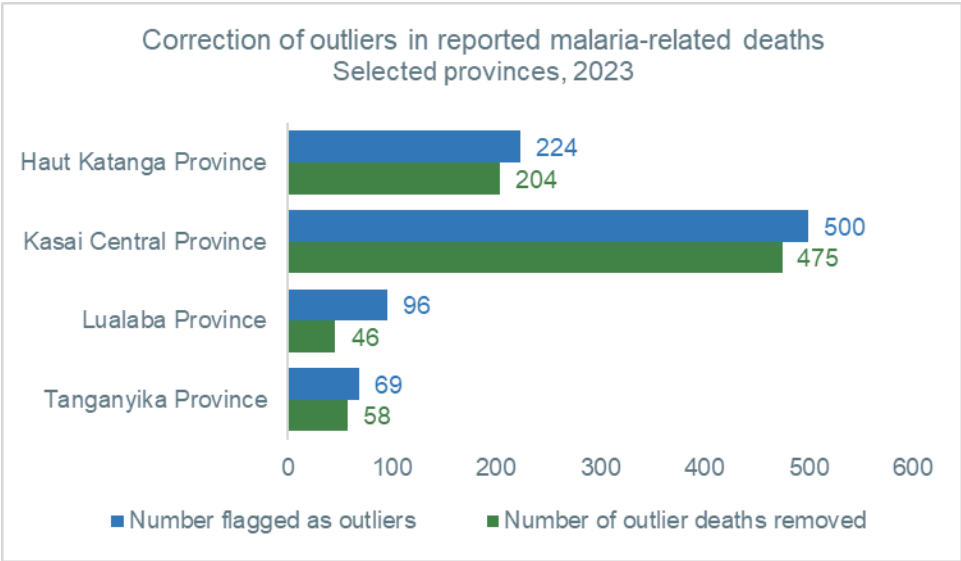
## Steps Taken

Validated by the NMCP and PMI, CHISU's data analysis revealed that in 2023 (and including January 2024), 822 health facilities nationwide had reported malaria-related deaths that exceeded the number of reported severe malaria cases. Our analysis also found that health facilities had reported 2,653 malaria-related deaths without reporting severe malaria cases in the same reports. CHISU supported the NMCP to organize a workshop with all NMCP stakeholders and PMI and Global Fund implementing partners to share the results as well as the verification and correction process in the identified health facilities. In addition, CHISU supported the NMCP to develop new data validation rules in the national DHIS2 platform to ensure consistency between the number of malaria deaths and severe malaria cases. This enabled health facilities to identify outlier deaths, verify them in primary data sources (registers and forms), and correct them directly.

Next, CHISU worked with the NMCP and PMI-supported provincial health divisions (nine out of DRC's 26 total provincial health divisions, also known as DPS) to verify outlier data at health facilities and correct them in DHIS2.

# Results + Next Steps

In total, 1,079 malaria-related deaths reported in 2023 in nine PMI-supported provinces were flagged as outliers. These outliers represented 17 percent of the total 6,304 deaths reported. NMCP and CHISU staff helped to verify and correct errors found among the flagged outliers.



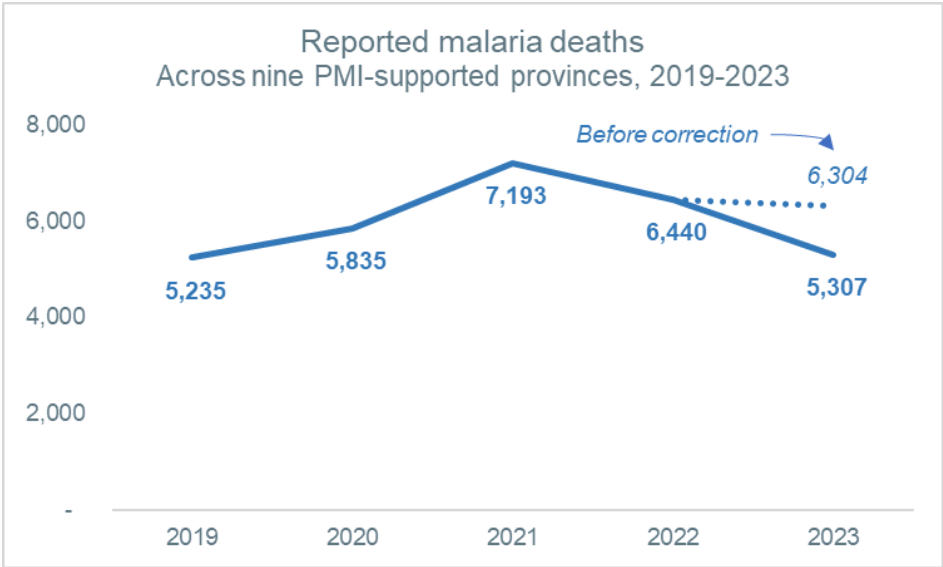
**Figure 1.** Correction of malaria deaths in the four provinces with the highest percentage of reported outliers.

In 2023, Haut Katanga, Kasai Central, Lualaba, and Tanganyika provinces had the highest percentage of reported deaths flagged as outliers (82 percent) of all nine supported provinces with 88 percent (783/889) of the flagged outliers confirmed as incorrectly reported and removed (Figure 1). The outlier analysis showed variation from province to province, from a low of 45 percent (46/96) of flagged outliers corrected in Lualaba to a high of 95 percent (475/500) corrected in Kasai Central.<sup>2</sup>

<sup>2</sup> DHIS2, Democratic Republic of the Congo, April 8, 2024.

Across all nine PMI-supported provinces, the outlier analysis led to the confirmation and correction of 817 incorrectly reported deaths, representing 76 percent of the flagged outliers. The other 262 reported deaths originally flagged as outliers were confirmed to be accurate. Additional verification of the 5,225 deaths not considered to be outliers led to the removal of another 180 incorrectly reported deaths. As a result, of the 6,304 deaths originally reported in 2023, 997 (16 percent) were removed and 5,307 (84 percent) remained.<sup>3</sup> By analyzing the evolution of reported deaths in the nine PMI-supported provinces over five years (Figure 2), this exercise showed a significant decrease in the reported number of deaths in 2023 and confirmed that data quality problems were contributing to the observed increase. Over-reporting of malaria deaths can negatively influence the evaluation of interventions and decision making in disease control in DRC.

CHISU is supporting NMCP to expand data review and validation efforts to produce quality data to guide decision making and improve the quality of malaria interventions for disease control in DRC. Based on these encouraging results, CHISU will continue supporting the NMCP, DPS, and health zones to conduct more frequent data analysis and validation using standard operating procedures at the facility level (developed by the



**Figure 2.** This graph shows the number of deaths linked to malaria since 2019. In 2023, 6,304 deaths were originally reported and this was corrected to 5,307, a 16 percent decline.

NMCP with CHISU support); strengthen monthly malaria data review and validation meetings in health zones; and conduct more coaching sessions on the use of existing malaria dashboards in-country to improve routine malaria data at every level. Future work will also investigate why malaria deaths were being over-reported in the first place—whether it be a health worker capacity issue, an indicator definition issue, or something else entirely—to prevent it from happening in the future.

<sup>3</sup> DHIS2, Democratic Republic of the Congo, April 8, 2024.



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