



# Toward Malaria Preelimination in Rwanda: Reactive Case Investigation in a Low-Endemic District

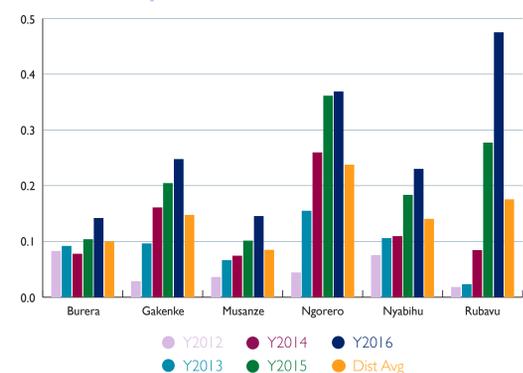
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## Introduction

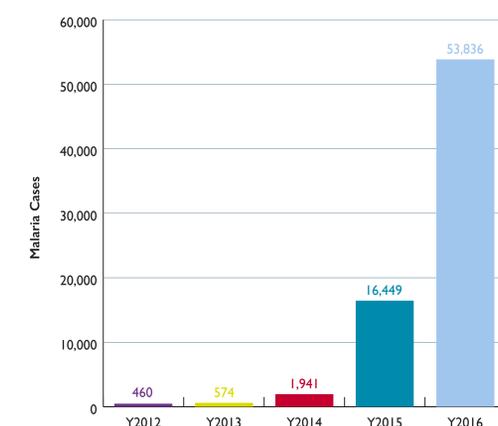
- Rwanda has been heralded as a success story in the fight against malaria. The country has reached near-universal coverage of long-lasting insecticidal nets, artemisinin-based combination therapy, rapid diagnostic tests, and targeted indoor residual spraying in three districts.
- However, between 2012 and 2014, Rwanda grappled with an unprecedented rise in malaria cases, even with optimal coverage of both preventive and curative key malaria control interventions.<sup>1</sup>
- This change can be attributed to an increase in temperature, rainfall, and resistance to insecticides in the country and in the region.<sup>1</sup>
- Despite this setback, Rwanda aims to reach the preelimination phase by 2018 (slide positivity rate < 5%).<sup>2</sup>
- In 2014, Rwanda initiated preelimination activities in six districts.
- In 2015, two low-endemic districts of Rubavu and Gakenke started implementing preelimination activities with a focus on reactive case detection.
- Reactive case detection involves screening and treating individuals living in close proximity to passively detected cases of malaria, also known as index cases.<sup>3</sup>
- In Rwanda, index case detection (investigation) involves testing individuals with a rapid diagnostic test and treating those who test positive according to government protocols.
- Reactive case detection is recommended by the World Health Organization because it is useful for capturing and treating asymptomatic infections, thereby further preventing the spread of the disease.<sup>3</sup>

## Test Positivity Rate in Six Preelimination Districts

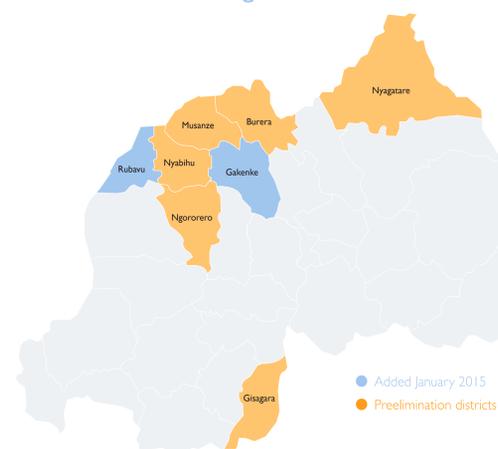


Investigation at Rubavu district at Gisenyi Health Center catchment area.

## Annual Trend in Malaria Cases in the Rubavu District



## Eight Districts Implementing Malaria Preelimination Strategies 2012–2015



## Study's Goals

- This study evaluated the Rubavu district's performance in investigating reactive cases.
- We analyzed the malaria cases that the Rubavu district was notified of and investigated from January to December 2015.

## Methods

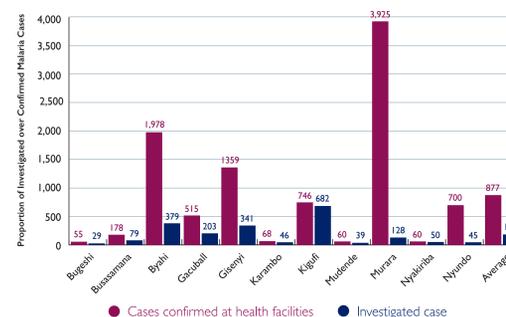
- We retrieved Health Management Information System data from Rubavu health centers conducting malaria preelimination activities from January–December 2015
- We retrieved from Rwanda preelimination data base the numbers of confirmed and investigated cases in Rubavu district from January–December 2015
- Data were aggregated by health facility
- Data were analysed using Excel 2013 and STATA Version 13

## Results

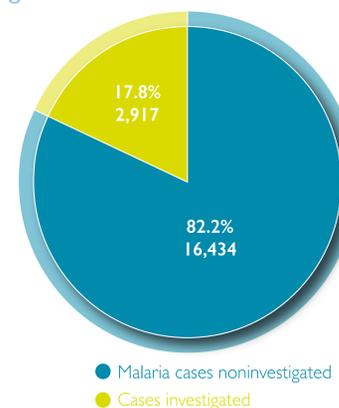
Between January and December 2015:

- A total of 66 health care providers out of 165 clinical staff in the 11 health facilities of Rubavu District were trained on preelimination interventions.
- 16,434 cases of malaria were detected and treated.
- 2,917 (17.8%) index cases were investigated, and 4,943 individuals (1–2 contacts for each index case) living in proximity to index cases were tested using rapid diagnostic tests.
- 508 (10.3%) individuals tested positive for malaria and were treated according to national guidelines.

## Proportion of Confirmed Malaria Cases at the Rubavu District Health Centers in 2015



## Malaria Cases Investigated and Not Investigated in the Rubavu District in 2015



Byihl Health Center staff in Rubavu testing a child during a reactive case detection.

## Discussion

- Data show that the number of investigated cases is still lower than what is recommended in the national guidelines (to screen five individuals residing between 100–500 meters of every confirmed case).
- Screening 75% of investigated cases is the national target; the 17.8% found in the Rubavu district falls significantly below this target.
- The low rate could be due to the increase in malaria cases in Rwanda, which has placed a burden on health care providers and health facilities in areas like Rubavu that used to be low-endemic for malaria.
- Data indicate a need to provide additional training to health care providers on screening investigations, so they adhere to national guidelines and conduct investigations more efficiently.
- To reduce the national slide positivity rate to < 5% by 2018 will require a more aggressive strategy in low-transmission districts, which may include linking the vector control component to active case detection and treatment.

## Conclusions and Recommendations

- In 2015, Rubavu District had a slide positivity rate > 5%.
- Only 17% of malaria cases were investigated, which is a low performance.
- Critical challenges to the ambitious goal of malaria preelimination exist in the Rubavu district and other preelimination districts in Rwanda.
- Reactive case investigation alone is not enough to stop the spread of malaria transmission and maintain a slide positivity rate < 5%.
- Malaria control interventions need to be strengthened to decrease cases in Rubavu and Rwanda.
- The preelimination activities and approach need to be restructured.
- To achieve malaria preelimination, link vector control component to reactive case detection and treatment.
- Preelimination activities should be scaled to other low-transmission districts only when case-based surveillance response is optimized in Rubavu and the other four current preelimination districts.
- Active case investigation could be improved by training and involving more health care providers such as community health workers who could reduce the burden on health center staff.
- Additional support for case investigation activities and improved training can help achieve a higher coverage of individuals located near index cases.
- Use evidence generated in Rubavu and other preelimination districts to inform policy development to transition from malaria control surveillance to malaria elimination surveillance.

## References

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