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INTRODUCTION

Since the end of 2012, Rwanda has experienced an increase in malaria morbidity (1); while the number of monthly malaria deaths remained stable (2).

The country therefore implemented a malaria Contingency Plan and activities successfully achieved during the last quarter of 2016 include:

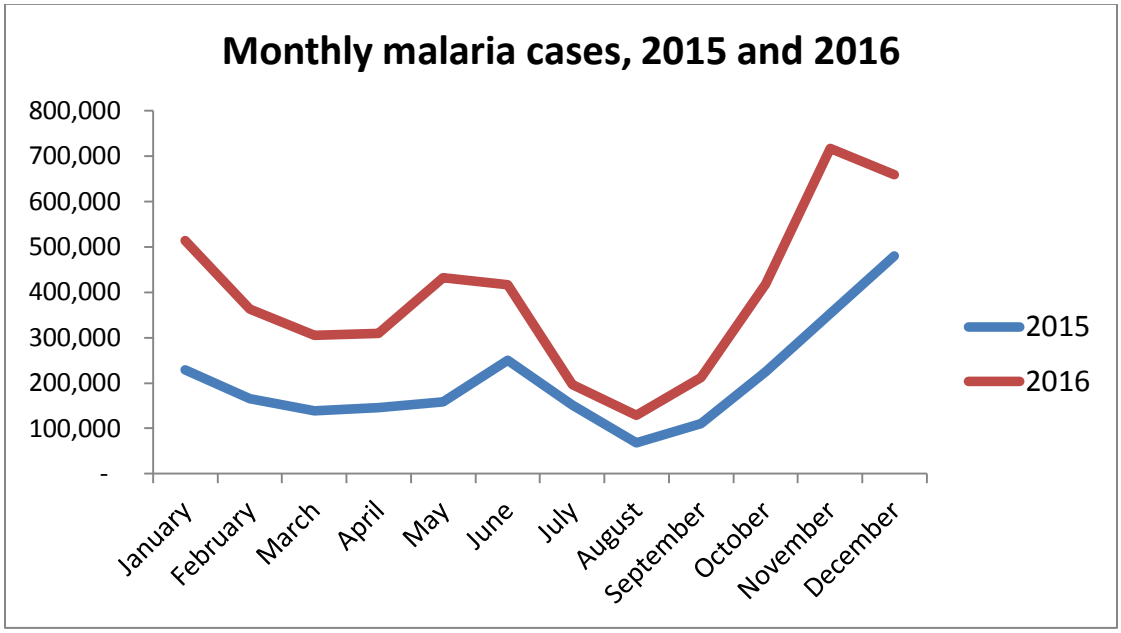
- The Mid Term Review of the Malaria strategic plan 2013-2018, with strong evidence-based recommendations for malaria control in Rwanda;
- The home-based malaria treatment of fever in adults, which implementation started in five districts in May 2016 and was expanded countrywide in October 2016;
- The mass distribution of more than 4million Long-Lasting Insecticide-treated bed Nets (LLIN), which started at distribution sites by end December 2016 and was followed by distribution to end users in January 2017;
- And indoor residual spraying (IRS) in three districts (Gatsibo, Kirehe, and Bugera) to support existing malaria control malaria interventions.

Also, health teams in collaboration with local leaders through community health workers continue to communicate key malaria prevention messages to the population, including the importance of LLIN use and early treatment seeking behavior.

OUTPATIENTS CONFIRMED MALARIA CASES

Figure 1 below shows the trend of malaria cases at health facility and community level. We can see that the number of malaria cases increased from 2,473,387 in 2015 to 4,669,687 in 2016. It should also be noted that data from October 2016 include malaria cases at the community level, which were not previously reported for all age groups. Treatment of adults at community level was indeed extended in all 30 districts in October 2016.

Figure 1 Number of outpatient confirmed malaria cases in 2015 and 2016

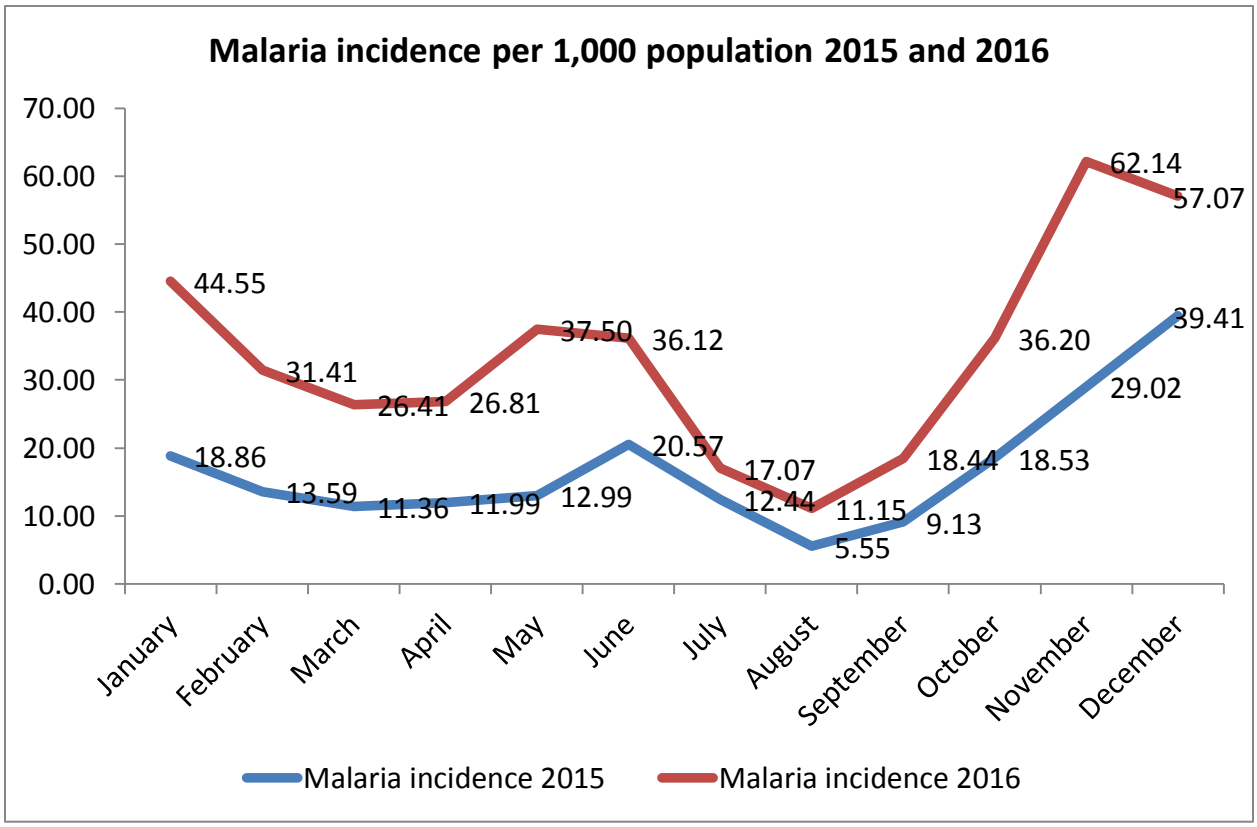


Source: HMIS, March 2017

MALARIA INCIDENCE

Figure 2 below shows the malaria incidence (number of confirmed malaria cases for 1,000 population) for 2015 and 2016 which is illustrating the seasonal variation around April-May-June and October-November-December, with an annual incidence of 203.44 per 1,000 in 2015 and 404.88 per 1,000 in 2016.

Figure 2 Malaria incidence per 1,000 population (2015 and 2016)

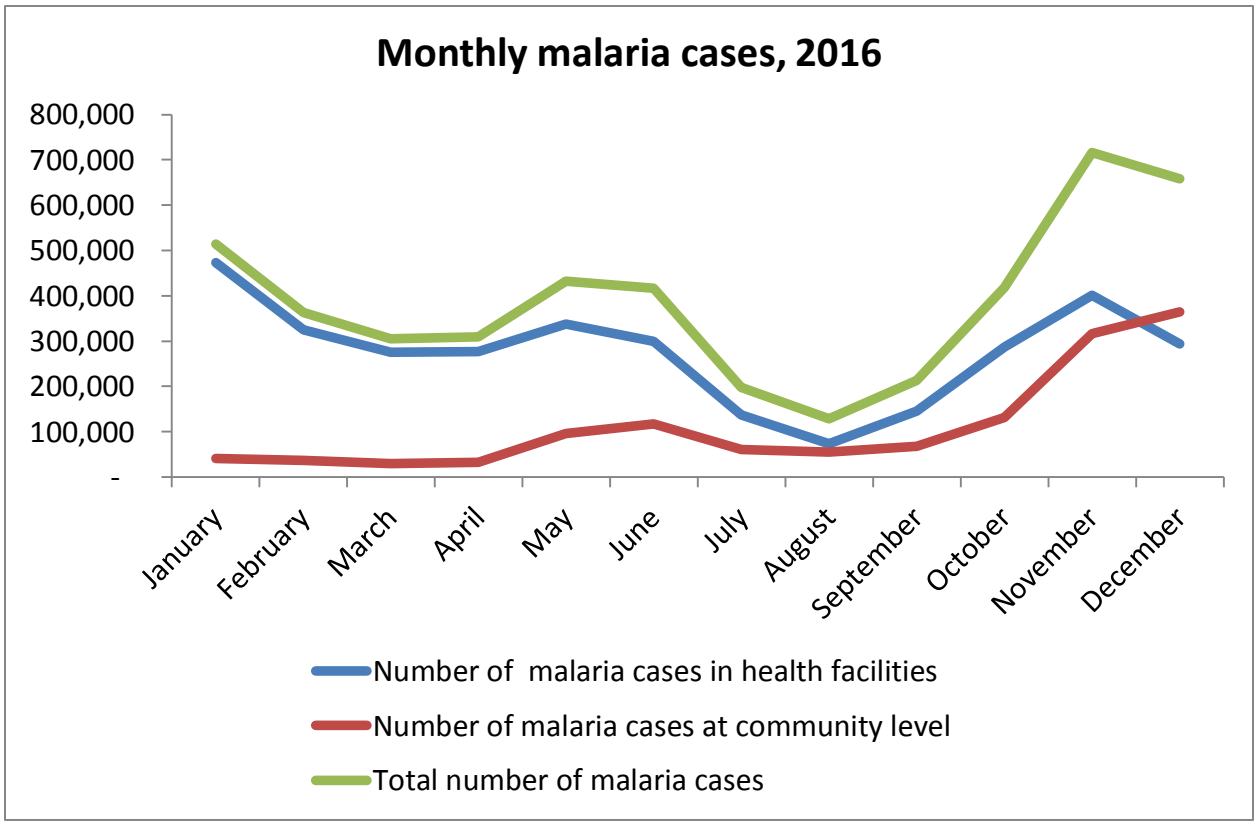


Source: HMIS, March 2017

MALARIA CASES PER LEVEL OF CARE

Figure 3 below shows the monthly malaria cases in 2016 per level of health care. This indicates that in 2016, 71% of malaria cases (3,324,678) were treated in health facilities, while 29% (1,345,009) were treated through home-based management by community health workers (CHWs) for all age groups as the treatment of adults at community level was extended in all 30 districts in October 2016.

Figure 3 Monthly malaria cases by level of health care, 2016

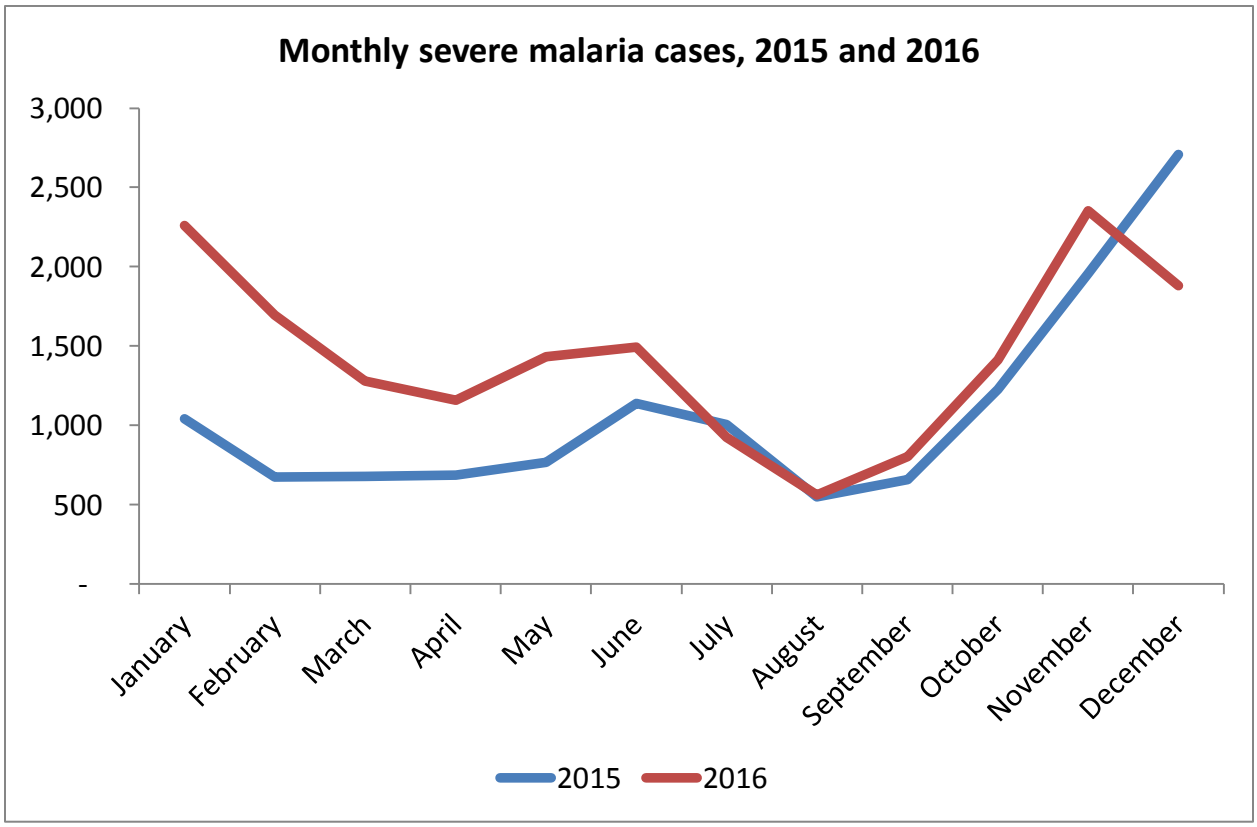


Source: HMIS, March 2017

SEVERE MALARIA CASES

Figure 4 below shows the monthly severe malaria cases in 2015 and 2016, with an increase from 13,092 in 2015 to 17,248 in 2016. We can see that the trend for severe cases is similar to the trend of simple cases.

Figure 4 Monthly severe malaria cases, 2015 and 2016

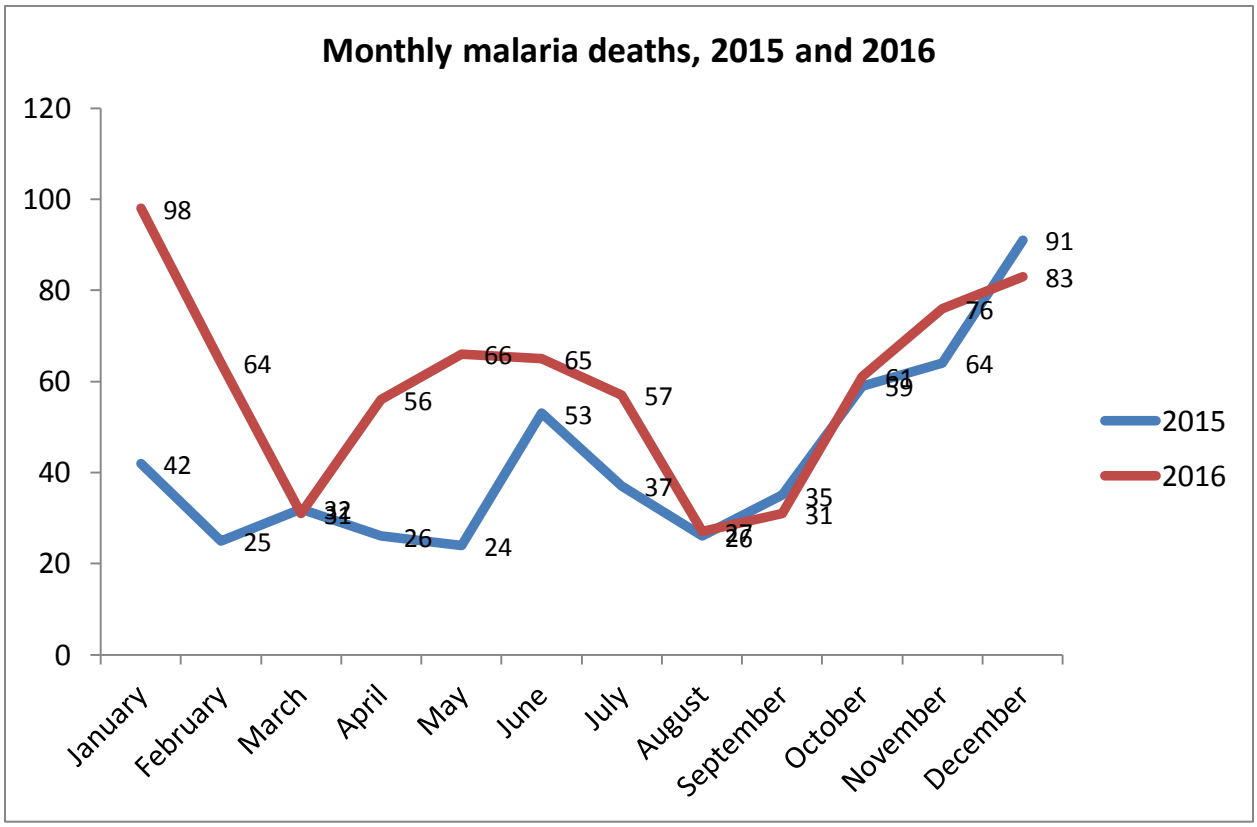


Source: **HMIS, March 2017**

MALARIA DEATHS

The figure 5 shows the monthly malaria deaths in 2015 and 2016. From 2015 to 2016, the total annual number of deaths increased from 514 to 715. This is augmentation is less pronounced than the increase of malaria cases, showing that a proper clinical management of malaria cases is implemented at health facility level.

Figure 5 Monthly malaria deaths, in 2015 and 2016

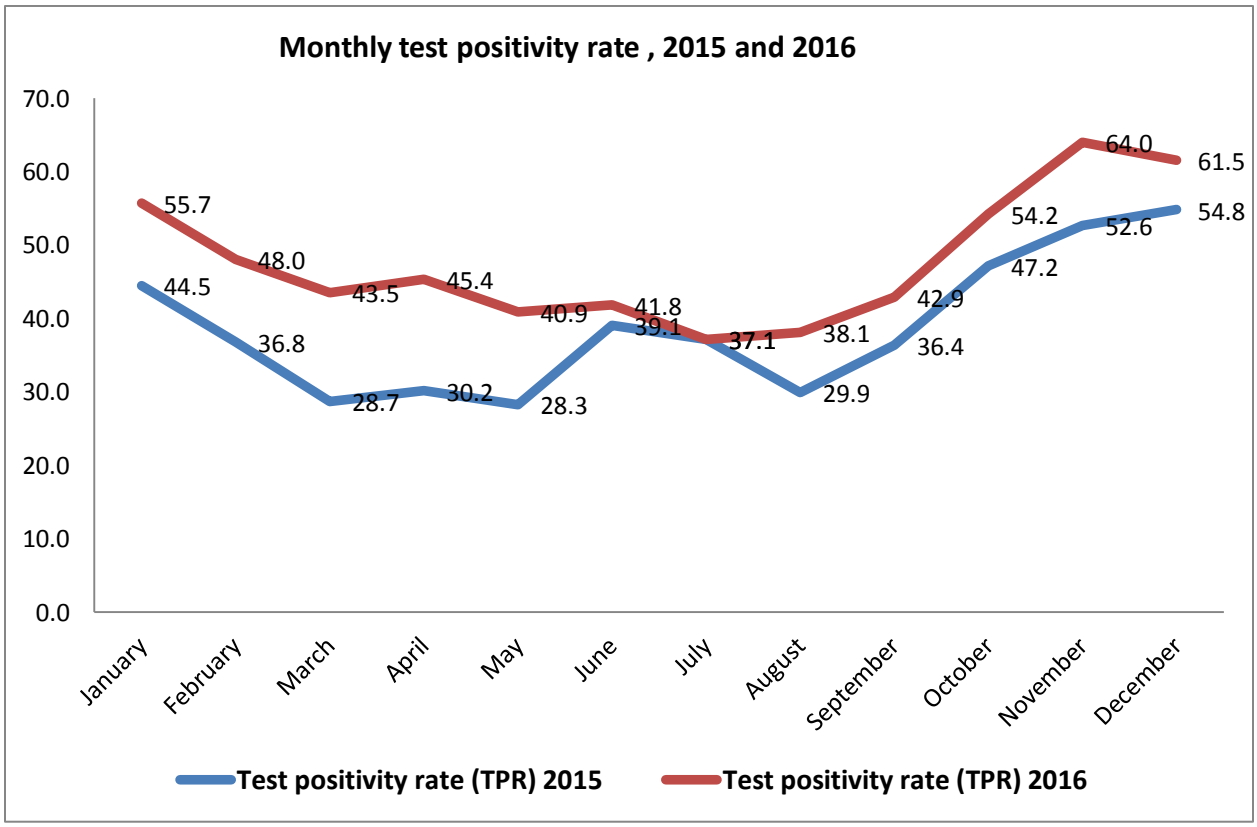


Source: HMIS, March 2017

TEST POSITIVITY RATE

Figure 6 below shows the monthly trend of the test positivity rate (TPR) in 2015 and 2016, which was 40.6% and 49.5% for the entire year, respectively.

Figure 6 Monthly test positivity rate in 2015 and 2016



MALARIA BURDEN

Figure 7 below shows the districts with the highest malaria morbidity burden, ranked according to their malaria incidence, in 2015 and 2016. Together, they account for 61% of all malaria cases in the country.

Figure 7 Top 10 high malaria morbidity districts, in 2015 and 2016

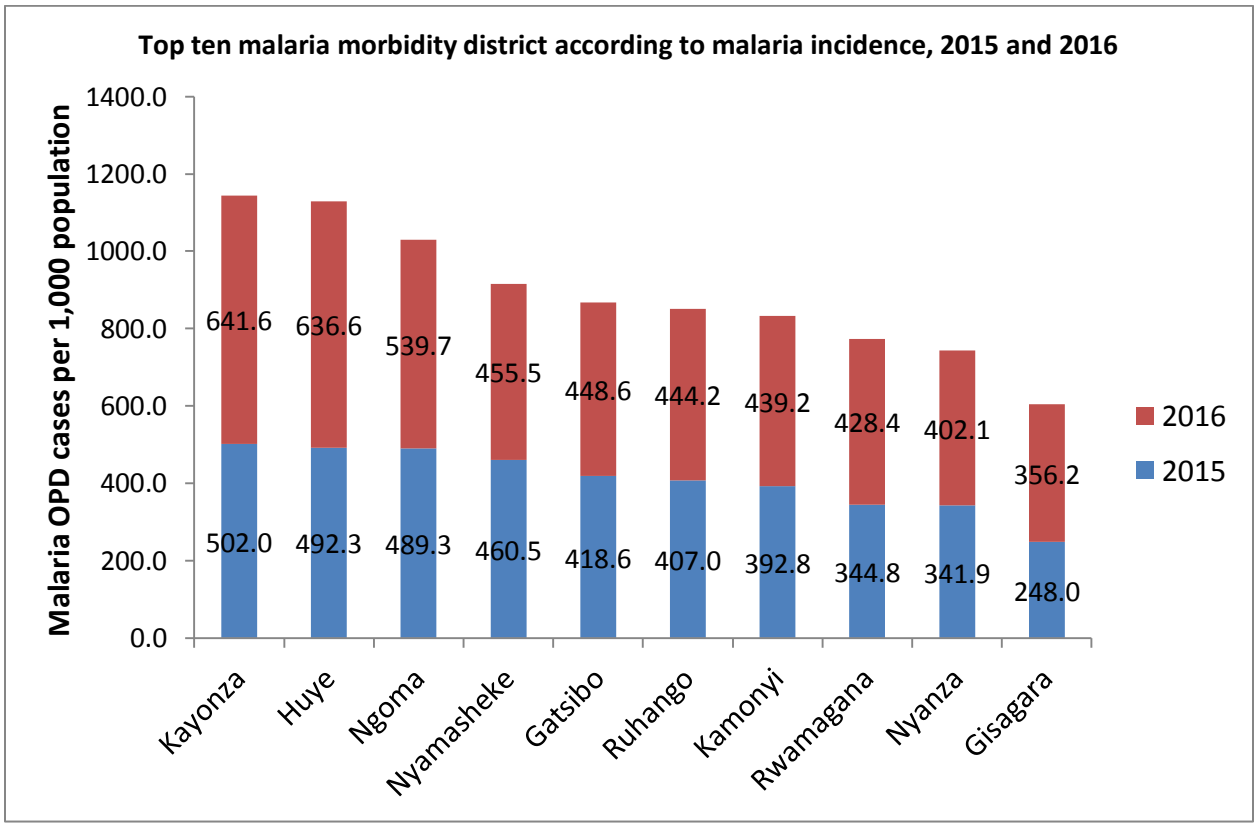


Figure 8 below shows the districts ranked according to their percentage change in number of malaria cases from 2015 to 2016. During the reporting period, we noticed an increase in number of malaria cases in all districts, ranging from 22% for Gatsibo district to 75% for Rubavu district. Kirehe was the only district that was able to reduce its number of malaria cases in a quite dramatic manner (172%).

Figure 8 Percentage of change in number of malaria cases from 2015 to 2016

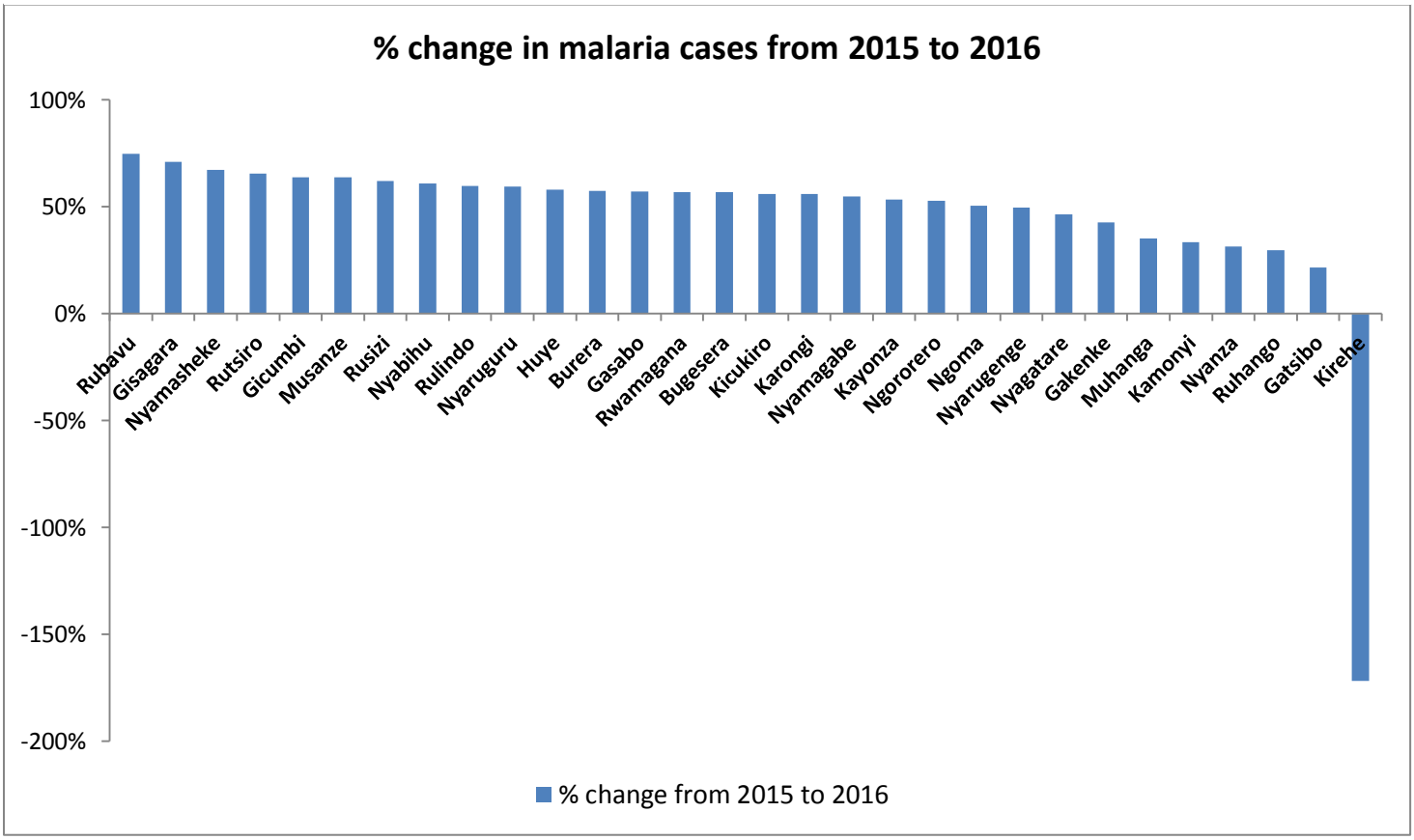


Figure 9 below shows the districts with the highest mortality burden, in 2015 and 2016. Together, they represent 56% of all malaria deaths countrywide.

Figure 9 Top ten high mortality districts, in 2015 and 2016

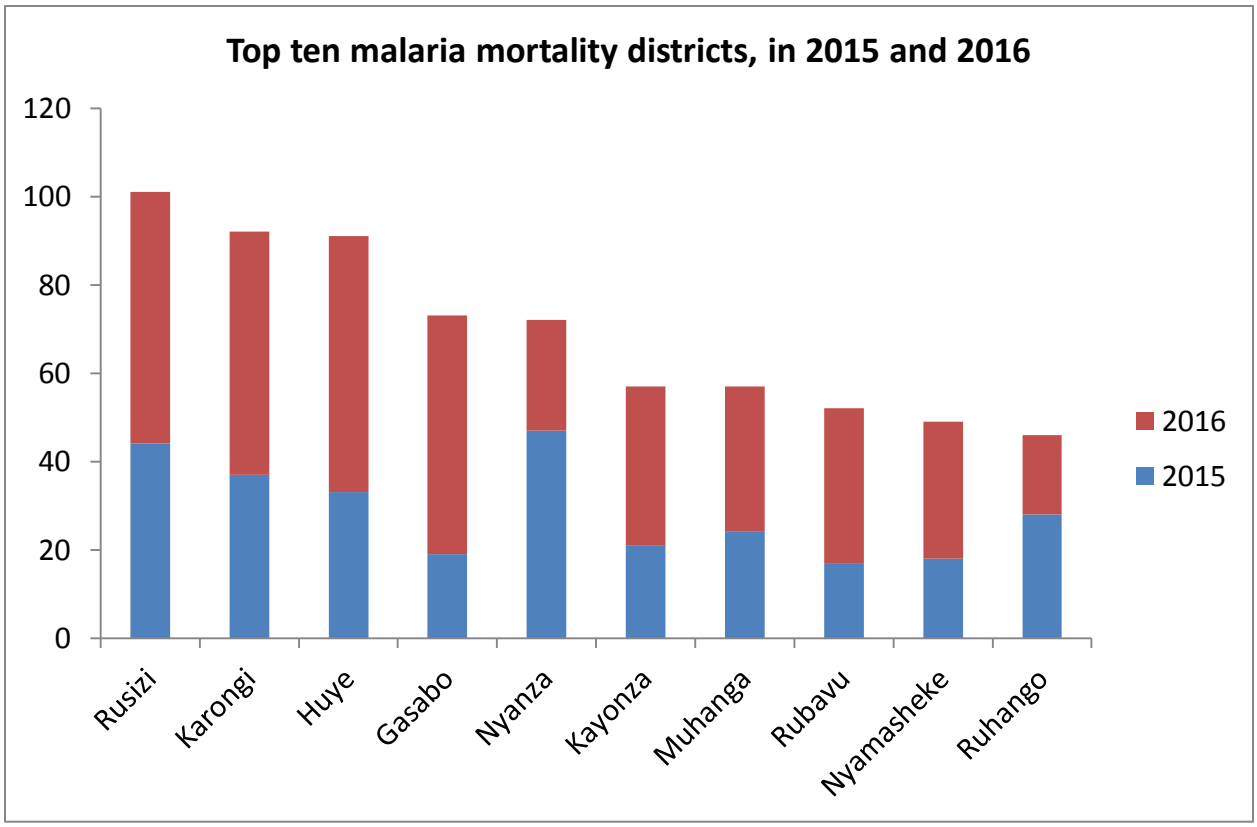
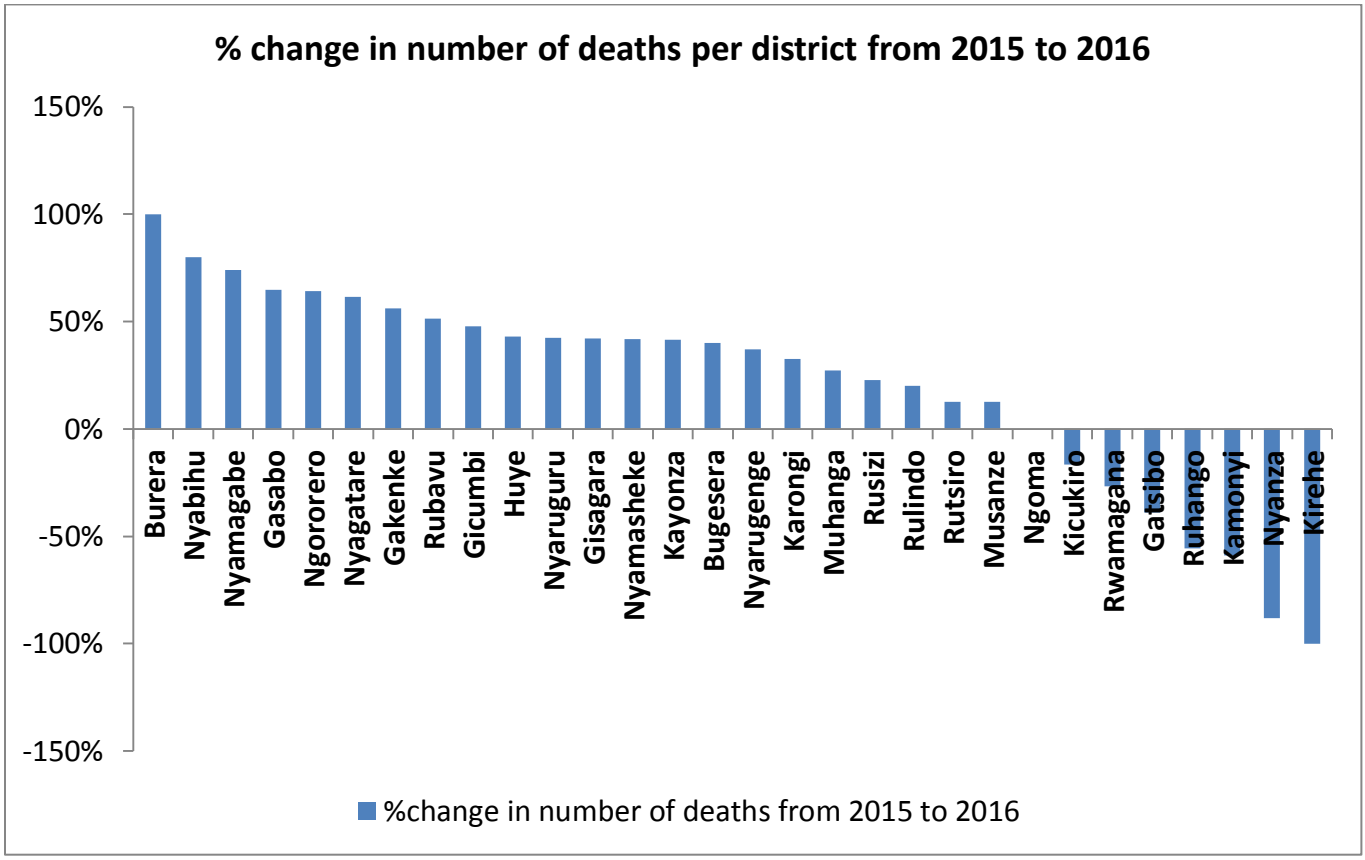


Figure 10 below shows the districts ranked according to their percentage of change in number of deaths from 2015 to 2016. We can notice a 100% increase in Burera district, while Kirehe reduced its malaria deaths by 100%.

Figure 10 Percentage of change in number of deaths per district from 2015 to 2016



CONCLUSIONS AND RECOMMENDATIONS

Our *conclusions* are as below:

- The number of malaria cases has been increasing by almost twice from 2015 to 2016. This trend is similar to the augmentation of severe malaria cases;
- The number of malaria deaths also increased, but this was less pronounced, which indicates a good performance of the health system in general and especially in the malaria case management at health facility level;
- Kirehe district, which was among the top ten high malaria morbidity burden districts, is the only one that showed a reduction in number of cases from 2015 to 2016;
- Again, Kirehe district showed a high reduction in number of deaths from 2015 to 2016.

As *recommendations*, one could suggest:

1. To investigate the probable causes of malaria increase/reduction in both morbidity and mortality in districts using secondary data analysis;
2. More particularly, to assess the factors potentially associated with the reduction in number of malaria cases and deaths in the Kirehe district and to sustain this decrease;
3. To conduct a Malaria Indicator Survey (MIS) to assess the malaria prevalence in all age groups in order to have the general picture of malaria prevalence and to asses the level of attainment of LLINs universal coverage.

REFERENCES

1. Rwanda Ministry of Health. 2015 Annual Health Statistics Booklet [Internet]. 2017 [cited 2017 Jan 12]. Available from: http://moh.gov.rw/fileadmin/templates/hmis_reports/2015_20Annual_20Statistical_20booklets_20V13_20Signed.pdf

2. World Health Organization (WHO). World Malaria Report 2016 [Internet]. 2016. Available from: http://www.who.int/malaria/publications/world-malaria-report-2016/report/en/