



Malaria morbidity and mortality trends in central Uganda



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KEY MESSAGES

- Effective malaria control involves a package of interventions which are deployed at scale.
- Continuous distribution of long lasting insecticidal nets (LLINs) combined with training and regular mentoring of health workers to improve data collection and reporting are crucial for reducing malaria morbidity and mortality.

Introduction

Malaria is one of the leading causes of morbidity and mortality in Uganda, contributing 30–50% of outpatient department (OPD) attendance and over 20% of inpatient hospital admissions.^[1]

In the last quarter of 2016, the PMI-supported MAPD project instituted several interventions to prevent and control malaria in nine high burden districts in Uganda. These included: distributing LLINs through schools and health facilities; improving data reporting and use; and training and mentoring health workers in malaria diagnostics and case management.

Methods

- This observational study sought to assess the effect of these interventions by comparing trends in malaria morbidity and mortality before (Oct–Dec 2016: baseline) and during the intervention (Oct–Dec 2017: year one and Oct–Dec 2018: year two).
- It used malaria morbidity and mortality data that had been collected from 400 health facilities located in these districts and reported into the District Health Information System 2 (DHIS2).
- Data for the above time points were downloaded, cleaned and validated.
- Indicators assessed include:
 - the proportion of reported malaria cases that were confirmed
 - the proportion of OPD attendance that was due to confirmed malaria
 - the proportion of inpatient admissions that were due to malaria
 - the number of reported malaria deaths per 100,000 people.

Results

- Although the proportion of confirmed malaria cases remained stable between baseline and year one (76% and 75% respectively), improvements were noted at year two (89 percent) (p value = 0.297) — see Table 1.
- The proportion of OPD attendance that was due to malaria fell from 41% at baseline to 15% at year two (p value = 0.003) — see Figure 1.
- The proportion of inpatient admissions that were due to malaria also fell, from 31% at baseline to 15% at year two (p value = 0.001).
- The number of reported malaria-attributable deaths per 100,000 people in the region fell too, from 4 at baseline to 2 at year two — see Figure 2.

Table 1: Proportion of reported malaria cases that were confirmed

District	Baseline (n= 185,174)	Year one (n= 100,118)	Year two (n= 62,233)	p value
Bukomansimbi	83%	92%	99%	0.01
Kalangala	39%	57%	80%	0.21
Kalungu	81%	83%	87%	0.65
Kyotera	98%	72%	86%	0.69
Lwengo	73%	75%	81%	0.44
Lyantodde	78%	80%	97%	0.00
Masaka	77%	82%	98%	0.00
Rakai	66%	78%	97%	0.56
Sembabule	48%	59%	90%	0.00
Total	77%	75%	89%	0.29

Figure 1: Proportion of OPD attendance that was due to malaria

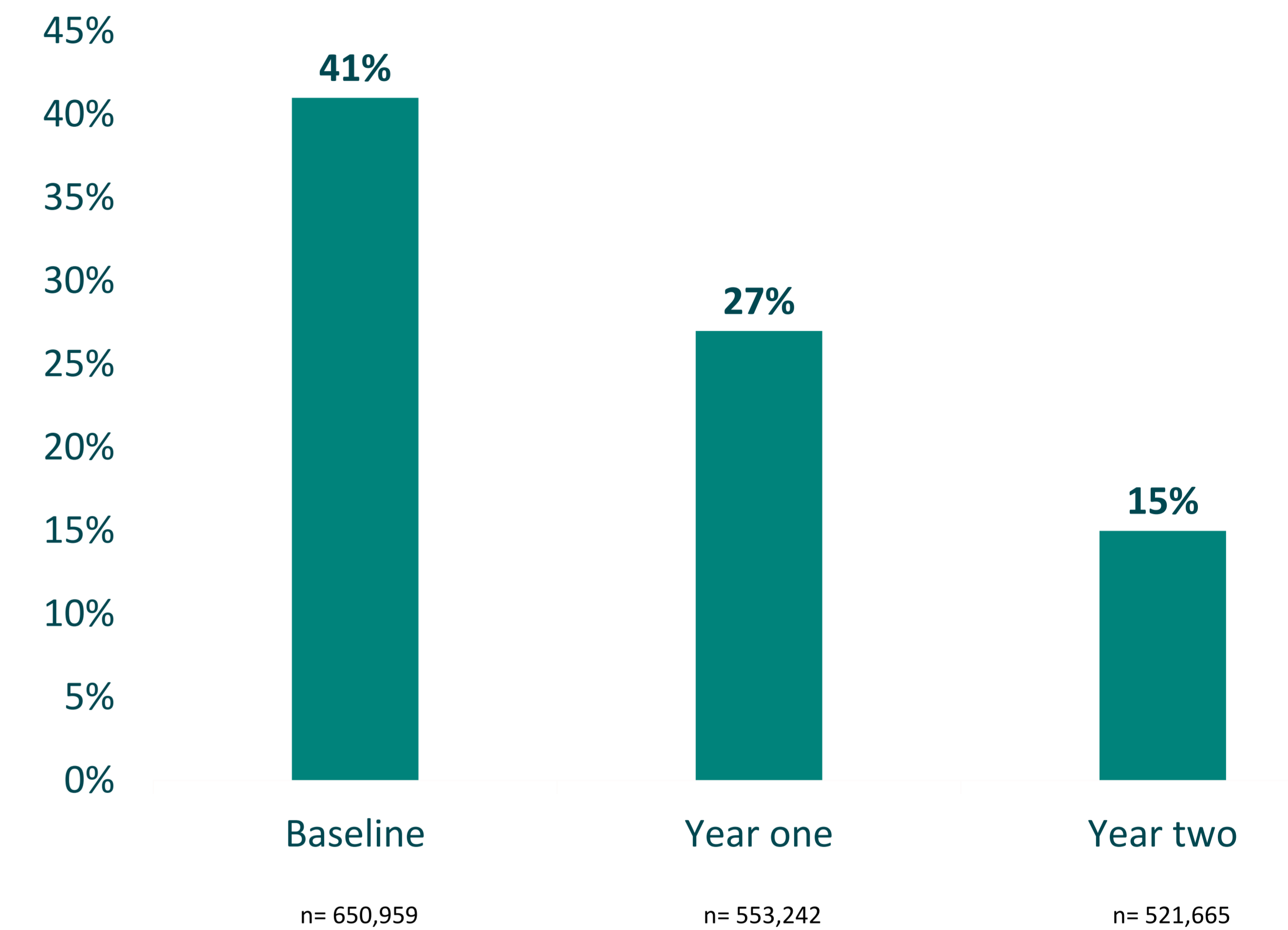
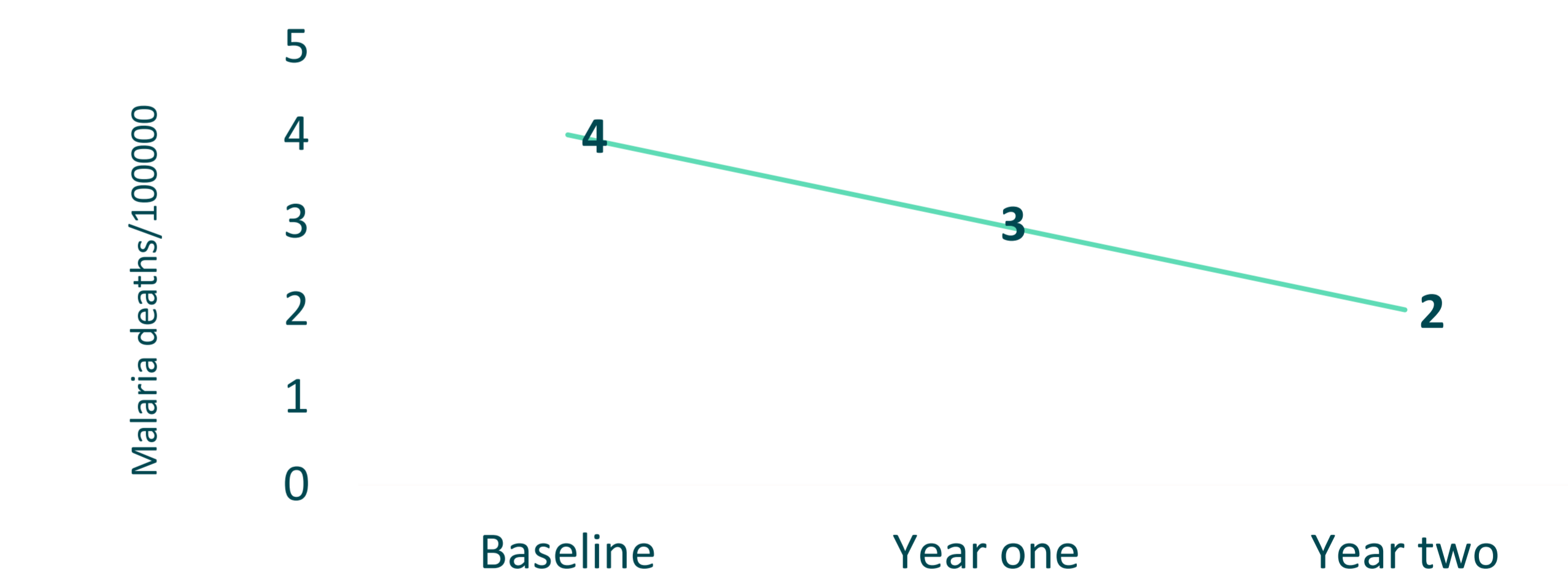


Figure 2: Reported malaria-attributable deaths per 100,000 people



Conclusion

A set of complex malaria control and prevention interventions — in this case continuous LLIN distribution, training and regular mentoring of health workers — can reduce malaria morbidity and mortality. Globally, in the past few years there has been a stalling in the decline in the malaria burden, which makes it essential to identify ways to enhance the operational effectiveness of existing interventions when deployed at scale.