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## **Malaria in Democratic Republic of Congo – Statistics report**

Africa Health Organization (AHO)

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Year	Reported deaths from malaria <sup>1</sup>	Estimated deaths <sup>2</sup>	Estimated total cases <sup>3</sup>	Indigenous confirmed cases <sup>4</sup>	Incidence (per 1000 pop) <sup>5</sup>
2000	3,856			897	475.68
2001	416			1,531	473.61
2002	2,152			1,735	470.37
2003	989			2,438	476.15
2004	13,613			2,684	483.43
2005	15,322			2,971	485.05
2006	12,970			2,050	484.55
2007	14,372			74,0858	481.93
2008	17,940			1,618,218	471.42
2009	21,752			1,878,705	452.18
2010	23,476	62,375	23,691,683	2,417,780	428.31
2011	24,476	53,765	22,535,174	4,561,981	399.59
2012	21,601	48,763	22,281,939	4,791,598	363.00
2013	30,918	46,747	22,488,362	6,715,223	327.62
2014	25,502	46,449	23,031,390	9,968,983	308.39
2015	39,054	46,276	24,159,871	11,627,473	308.83
2016	33,997	46,408	24,454,696	15,330,841	322.77
2017	27,458	46,007	25,021,891	15,176,927	329.13
2018					319.84

Table 1: Cases and deaths from Malaria. Where data is unavailable boxes have been left blank

<sup>1</sup> The sum of deaths reported from malaria and other probable causes. Data compiled by WHO submitted by National Malaria Control Programmes (NMCPs). Numbers are largely unadjusted. Period of 2000-2003 should not be taken as an accurate representation, in the likely case of underreporting.

<sup>2</sup> Estimated death inferred from child deaths. Using intensity of transmission in under 5's and malaria mortality in age groups. Under 5's deaths estimated using verbal autopsy and including 7 causes of post-neonatal death (pneumonia, diarrhoea, malaria, meningitis, injuries, pertussis and other disorders). Estimated parasite prevalence also used as a covariate of the model.

<sup>3</sup> Surveillance data ideally used to estimate total malaria cases but does not give a convincing estimate in a high transmission country such as DRC. Parasite prevalence obtained through household surveys in population clusters and used to estimate total cases.

<sup>4</sup> Combination of *P. falciparum* cases and mixed cases detected by microscopy or RDT. Data submitted by NMCPs. Statistics are unadjusted so period 2000-2006 should not be assumed as accurate data, rather a lack of testing.



<sup>5</sup> Data gathered by NMCPs and compiled by WHO with estimates of the extent of underreporting. Incidence rate, where possible, accounts for the extent of health service use, and lack of case confirmation.

**Table 2: Evolution of Key Malaria Indicators Reported Through Routine Surveillance Systems in the DRC, 2012-2017**

	2012	2013	2014	2015	2016	2017
<b>Total # Cases<sup>1</sup></b>	9,128,398	11,363,817	11,134,217	12,186,639	15,397,717	15,368,607
<b># Confirmed Cases<sup>2</sup></b>	4,791,598	6,715,223	9,823,673	11,627,473	15,330,841	15,272,767
<b># Presumed Cases<sup>3</sup></b>	4,336,800	4,648,594	1,384,848	559,166	66,876	95,840
<b>Total # &lt;5 Cases<sup>4</sup></b>	4,978,042	5,651,553	5,877,247	8,294,504	7,292,929	8,341,928
<b>Total # Malaria Deaths<sup>5</sup></b>	21,601	30,918	25,502	39,054	33,997	27,458
<b>Data Completeness<sup>6</sup></b>	87%	89%	82%	85%	93%	95%
<b>Test Positivity Rate<sup>7</sup></b>	63%	66%	68%	71%	72%	72%

<sup>1</sup> Total number of reported malaria cases. All ages, outpatient, inpatient, confirmed and unconfirmed cases.

<sup>2</sup> Total diagnostically confirmed cases. All ages, outpatient, inpatient.

<sup>3</sup> Total clinical/presumed/unconfirmed cases. All ages, outpatient, inpatient.

<sup>4</sup> Total number of under 5 cases. Outpatient, inpatient, confirmed, and unconfirmed.

<sup>5</sup> All ages, outpatient, inpatient, confirmed, and unconfirmed.

<sup>6</sup> Number of monthly reports received from health facilities/number of health facility reports expected (i.e., number of facilities expected to report multiplied by the number of months considered).

<sup>7</sup> Number of confirmed cases/number patients receiving a diagnostic test (rapid diagnostic or microscopy).

Table 2: Obtained from Presidents Malaria Initiative (Source: <https://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy19/fy-2019-democratic-republic-of-the-congo-abbreviated-malaria-operational-plan.pdf?sfvrsn=5>)

Note that data for total cases differ between Table 1 and Table 2. They are different sources of data, but both sources reliable and trustworthy. Variation could be explained by difference in data collection or classification. Confirmed cases and total/reported malaria deaths in most years are identical.

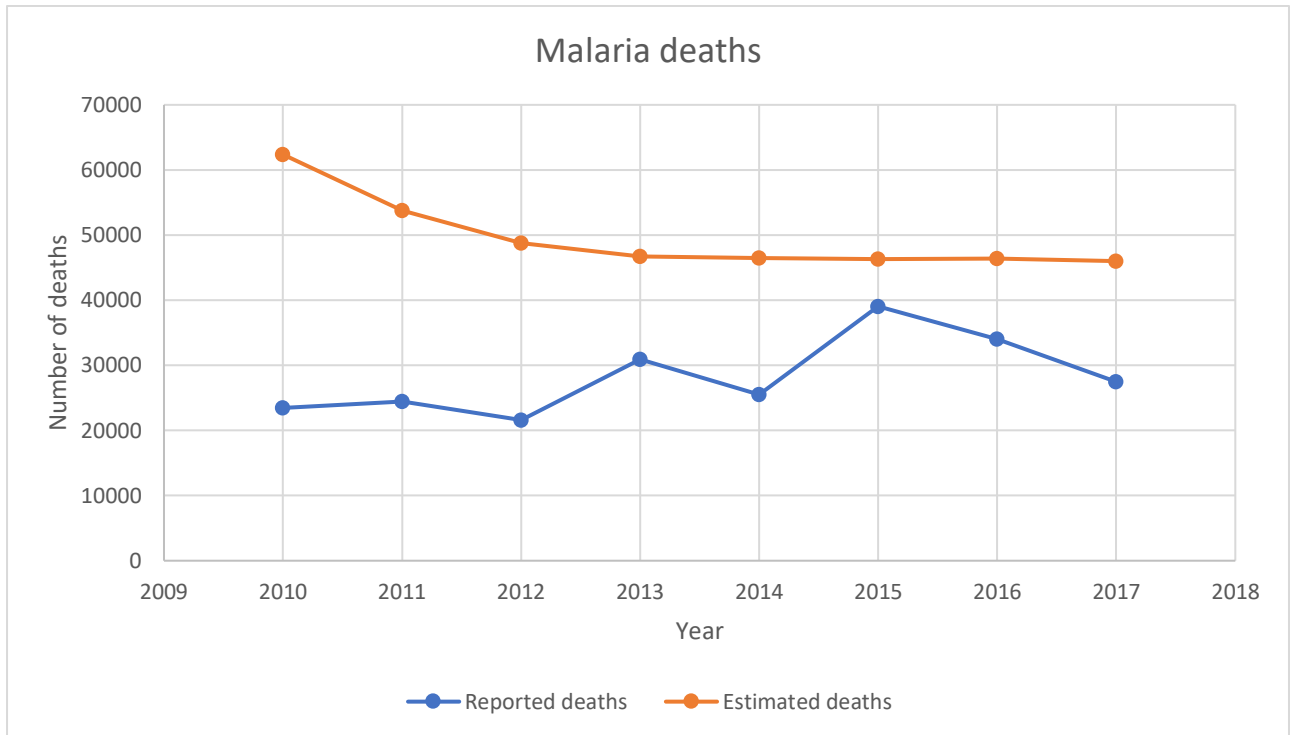


Figure 1: Reported and estimated deaths caused by malaria based on data from Table 1 (Original source: WHO). For accuracy, only data from 2010 onwards has been included. Reliable data for estimated deaths is unavailable before this period.

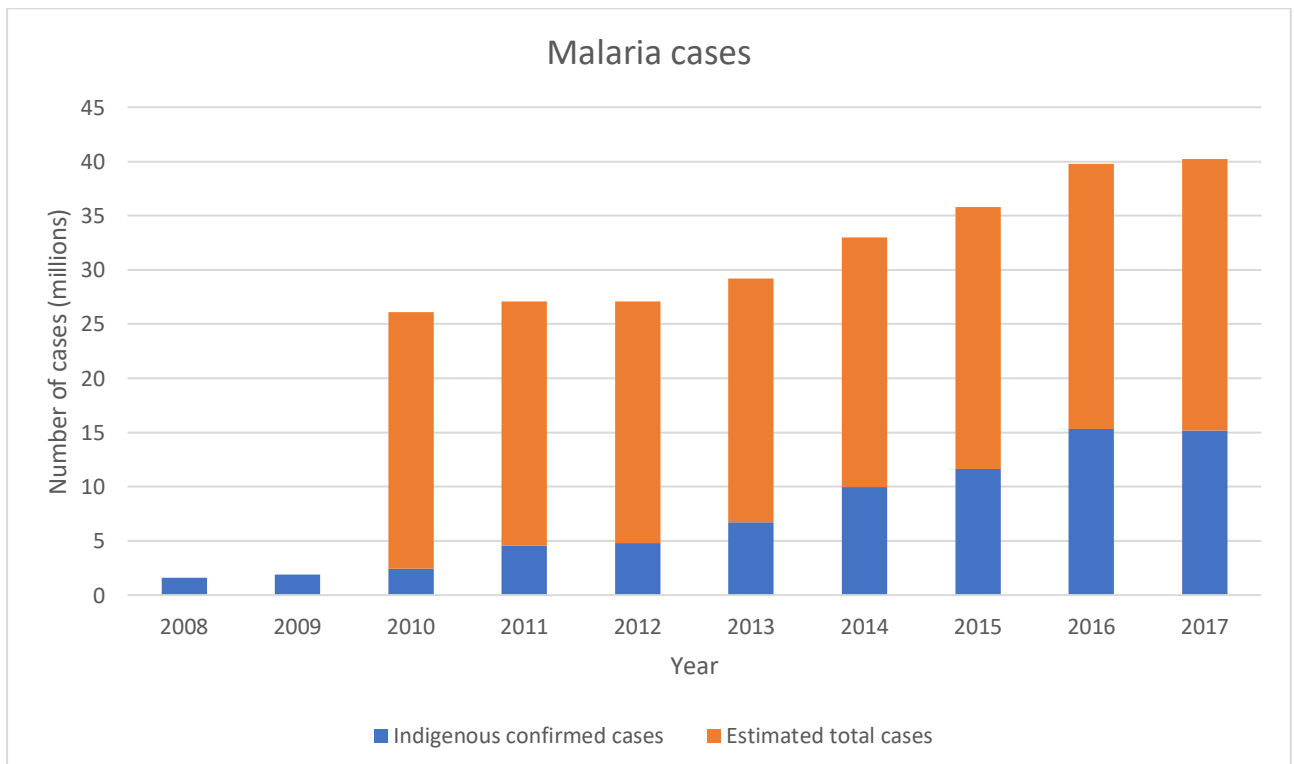


Figure 2: Confirmed and estimated cases caused by malaria from data in Table 1 (Original source: WHO). Data for estimated cases unavailable from 2008-09.

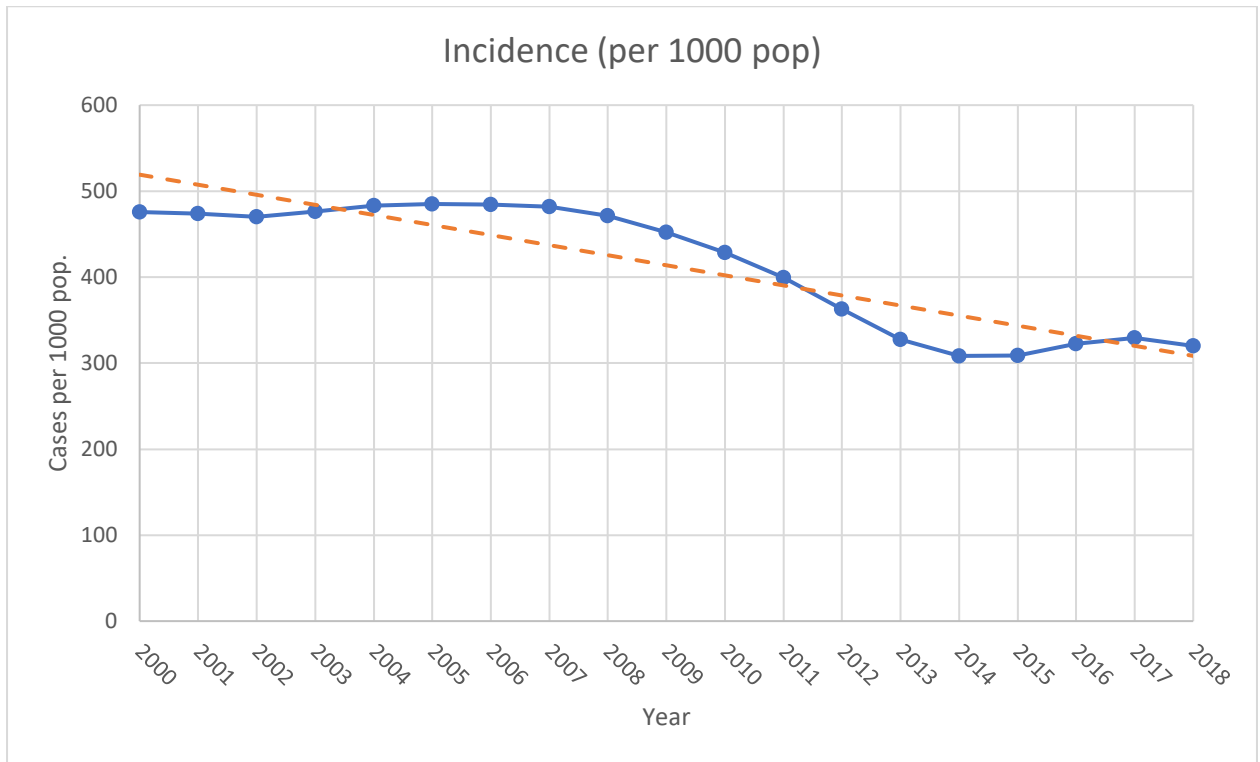


Figure 3: Incidence rates for malaria for every 1000 people at risk. Orange trendline shows linear decrease from 2000-2018

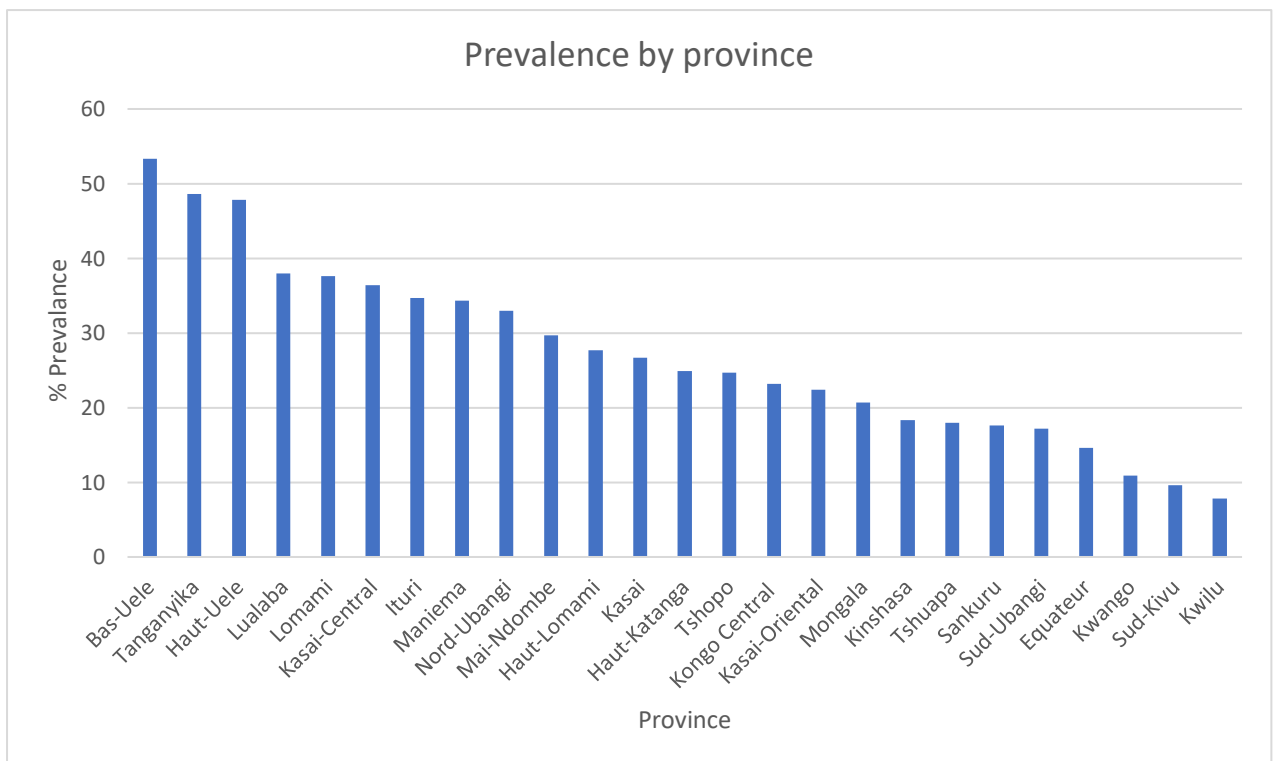


Figure 4: Percentage parasite prevalence for malaria in each of the 25 provinces of the DRC



Strata	Parasite Prevalence	Main Determinant	Provinces	Percent of Population
I.	≤5%	Mountain zone – hypo-endemic	Nord Kivu	8%
II.	6-30%	Equatorial and tropical zones – meso-endemic	Kwango, Kwilu, Sud Kivu, Mongala, Sud Ubangi, Mai Ndombe, Equateur, Tshuapa, Kongo Central, Tshopo, Haut Katanga, Haut Lomami, Kasai, Kasai Orientale, and Sankuru	55%
III.	> 30%	Tropical zone – hyper-endemic	Nord Ubangi, Bas Uele, Haut Uele, Ituri, Maniema, Lualaba, Kasai Central, Tanganyika, and Lomami	27%
IV.	8.1%	Urban context, with variations from city center to the periphery	Kinshasa	10%

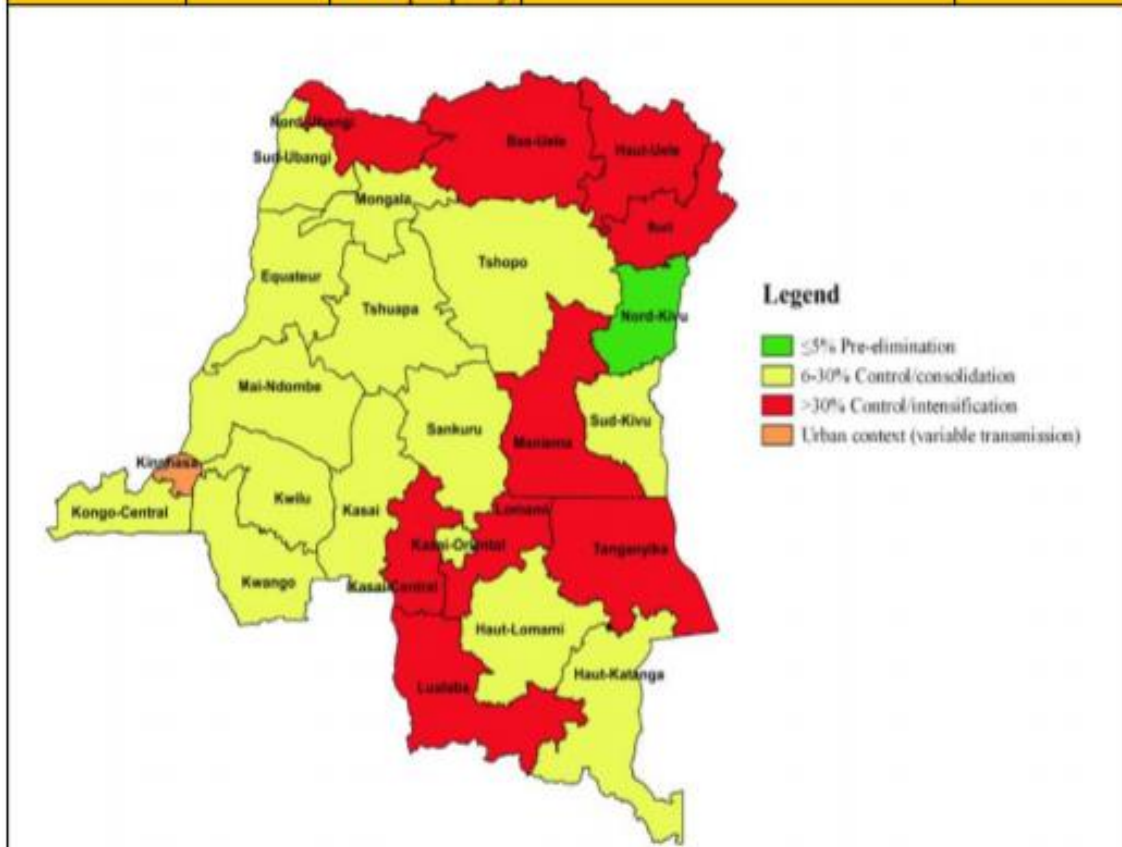


Figure 5: Colour coded map of provinces of DRC showing prevalence by region classified into 4 strata based on parasite prevalence and main determinant (Image from: <https://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy19/fy-2019-democratic-republic-of-the-congo-abbreviated-malaria-operational-plan.pdf?sfvrsn=5>)



Year	% Households with one ITN	% <5 years slept under ITN previous night	% pregnant slept under ITN previous night
2001		1	
2007	9	5.7 (4.3-rural, 7.9-urban)	7
2008			
2009			
2010	51	38.1	43
2011			
2012			
2013			
2014	70	55.8	60

Table 3: Where data is available, indicators for malaria prevention and protection. Data gathered from demographic health surveys (DHS), multiple indicator cluster surveys (MICS), malaria indicator surveys (MIS) and population-based surveys. Compiled by WHO.





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