Malaria elimination, low malaria setting: Malaria contract tracing

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Description of condition and intervention

Malaria elimination needs the surveillance and response systems, like ensuring that the entire area targeted for the elimination with consideration to areas where there is recent transmission, quality assured diagnostic testing, testing of all suspected cases, reporting the confirmed cases, and recording of all tests of malaria infection, case detection, following the standard procedures of surveillance and monitoring in real time, and participation of all health care providers. The requirements to use this surveillance as an intervention of malaria elimination is there should be few cases with adequate staff to make follow-up of ach one per health center, cases should be clustered, the surveillance should be covering all the detected cases, and the malaria infection should be notifiable by the national legal requirements. The stratification of national maps of malaria distribution into discrete areas, ensuring and maintaining optimal coverage of ITNs/LLINs or IRS for the vulnerable to malaria transmission, and vector control interventions can be also used. The contact tracing of this infection can be done through the recent report of local travel or forest work. The things to be considered in this intervention are whether the individual has a fever or in risk group, 1-2 weeks of time period, radius of 1 km, if malaria test is able to detect low density, and treatment of positive asexual parasites, gametocytes, and hypnozoites. In this evidence brief, we present the effect and cost of the following intervention being analyzed in FairChoices: DCP Analytical tool:

Malaria elimination, low malaria setting: Malaria contract tracing

International guidelines

Organization	Indications/recommendations	Applicability in LIC & Lower MIC settings
World Health Organization 2021	WHO Guidelines for malaria	Yes

Intervention attributes

Type of interventions

Preventive

Delivery platform

This intervention may be delivered through the community platform.

Equity

In addition to considerations like cost-effectiveness and health systems factors, dimensions of equity can be relevant for priority setting. The opportunity for a long and healthy life varies according to the severity of a health condition that individuals might have, so there are inequities in individuals' opportunities for long and healthy lives based on the health conditions they face. Metrics used to estimate the severity of illness at an individual level can be used to help prioritize those with less opportunity for lifetime health. FairChoices: DCP Analytics Tool uses Health adjusted age of death (HAAD), which is a metric that estimates the number of years lived from birth to death, discounting years lived with disability. A high HAAD thus represents a disease less severe in terms of lifetime health loss, while a low HAAD represents a disease that is severe on average, causing early death or a long period of severe disability. It is also possible to estimate the distribution of HAAD across individuals with a health condition. FairChoices shows for each intervention an average HAAD value of the conditions that are affected by respective interventions that have health effects. Additionally, a plot shows HAAD values for around 290 conditions (Johansson KA et al 2020).

Time dependence

Low-level of urgency. Treatment outcomes may not be highly affected by some days of delay in low malaria settings.

Population in need of interventions

Treated population: All individuals irrespective of the age (0 to 99 years) and gender are eligible to receive the intervention in low malaria settings. The treated fraction is calculated by the coverage targets for malaria elimination in low malaria settings. We consider only costs for this intervention.

Disease states addressed

This intervention targets to treat malaria in the population under consideration residing in low malaria settings.

Model assumptions

Table 2: Summary of model parameters and values used in FairChoices – DCP Analytical Tool

Category	**Model parameter**	**Notes**
Intervention	**Malaria contract tracing**	
Cost calculation		
Treated population	Incidence	
Gender	Both	
Age	0 to 99 years	
Treated fraction	Malaria elimination	Country input file indicator
Effect calculation: No effects considered		

Intervention Cost

The total unit cost for malaria contract tracing per child screened, assuming 5 household contacts per index case of incident malaria (per GBD 2016) in low-transmission settings is estimated to be USD 23.35 (Year: 2010).

References

WHO 2021: WHO Guidelines for malaria, 13 July 2021. Geneva: World Health Organization; 2021 (WHO/UCN/GMP/2021.01Rev. 1).

Johansson KA et al 2020: Johansson KA, Coates MM, Økland JM, Tsuchiya A, Bukhman G, Norheim OF, Haaland Ø. Health by disease categories. Distributional Cost-Effectiveness Analysis: Quantifying Health Equity Impacts and Trade-Offs. 2020 Sep 30:105.

Appendix

Literature Review for effectiveness & safety

This literature search is an example of a structured, focused review of literature and guidelines. You can choose to do one of the following literature reviews for your Evidence Brief:

Level 1: intervention inputs taken from DCP3 or generated in an ad hoc manner (e.g., quick google search found one study of cervical cancer screening cost-effectiveness that was used to create an effectiveness parameter for that intervention).

Level of evidence of efficacy studies:

1. low (expert opinions, case series, reports, low-quality case control studies)
2. moderate (high quality case control studies, low quality cohort studies)
3. high (high quality cohort studies, individual RCTs)
4. very high (multiple RCTs, meta-analysis, systematic review, clinical practice guidelines)