UCSF Global Health Sciences
Global Health Group

Tackling imported malaria: The elimination endgame

KEY MESSAGES

- Importation is the final challenge in elimination settings.
- Tailoring interventions requires knowing how, where, when and which people move.
- Malaria programs must target interventions at both sides of a border and during travel.
- Regional collaboration is essential to target sources of imported infections.

WHY IS IMPORTATION CRITICAL FOR MALARIA ELIMINATION?

To achieve malaria elimination countries must address imported malaria infections. Imported cases tend to comprise the majority of recorded cases in elimination settings.[1] Importation has led to resurgences of malaria in several countries in recent history.[2–5] In Swaziland, research suggests that imported cases sustain local transmission.[6] **With global human movement increasing, better strategies to tackle the risk of imported malaria are essential**.

While many malaria elimination programs attempt to address importation, we know little about what interventions they use and how effective they are. Further complicating these efforts, many countries and international organizations define and classifying imported cases differently, limiting comparisons across countries.

How, when and why people travel must inform malaria importation control strategies. The length of time of travel varies, some groups travel seasonally, while others travel weekly or monthly. The travel distance also varies. Individuals may move short or long distances, across or within national borders. Knowing these patterns of movement and understanding the groups that travel helps malaria programs target interventions more effectively.

TACKLING IMPORTATION

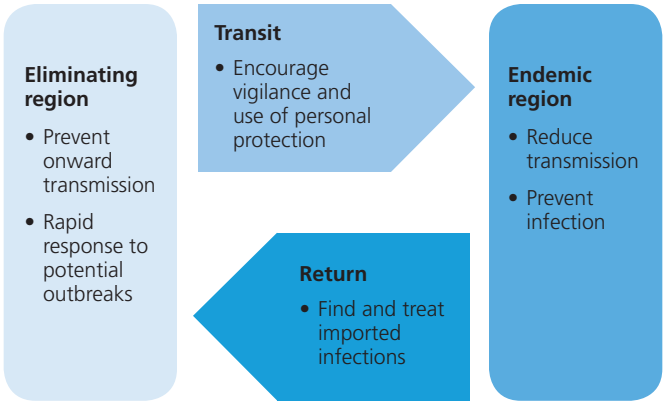
Malaria programs can address importation during any or all of the four general stages of movement: in the eliminating region, during transit, in the endemic region and upon return to the eliminating country (Figure 1). Each stage presents an opportunity to confront imported parasites.

STRATEGIES TO ADDRESS IMPORTATION

- Increasing free access to healthcare to high-risk groups increases the likelihood of screening, prompt diagnosis and treatment.
- Enhancing active surveillance, including focusing border screening on well-defined high-risk populations and peak importation periods, allows targeting of interventions.

Full length background papers can be found at globalhealthsciences.ucsf.edu/news-events/malaria-elimination-background-paper-series

Figure 1: Stages of movement and corresponding interventions



- Providing information and education that advocate for the use of personal protective measures, identification of malaria symptoms and health-seeking behaviors improves health outcomes.
- Reducing receptivity through housing improvements, economic development, and environmental engineering limits mosquito contact and risk of reestablishment of malaria transmission.
- Facilitating cross-border partnerships and regional funding pools to support malaria control in endemic countries that are the source of infections benefits both the endemic country and their neighbors.
- Introducing Public Private Partnerships that support targeting of malaria control to populations at high-risk of importing parasites, such as employees of large-scale plantations or mining enterprises, improves healthcare access to high-risk groups.
- Employing at-source testing and treatment for high-risk travelers prior to travel reduces the number of parasites moving across borders.
- Exploring incentives to encourage high-risk groups to get tested for malaria could bring more patients to health facilities.
- Targeting networks is an efficient method to access and better understand the demographics and movement patterns of easy- and hard-to-reach populations at high risk of importing malaria.
- Using targeted mobile alerts and reminders for disease surveillance increases the population that receives malaria education and prevention messaging.

RECOMMENDATIONS

- Develop standardized methods to classify imported and local cases to allow accurate comparison between settings and support the evaluation of interventions.
- Improve methods for identifying and targeting groups most at risk for importing parasites by using case-control studies, exploring the social networks of proven cases, and evaluating routine surveillance data. Researchers should use data on human movement and parasite genotyping to identify infectious sources and travel routes of high-risk groups.
- Increase the use of personal protective measures to address importation, such as mosquito nets and chemoprophylaxis, for well-defined populations, such as military personnel or employees of private companies.
- Minimize receptivity where individuals at high-risk of importing infections stay or live by spraying insecticides, distributing bed nets, removing mosquito breeding sites, improving houses, and supporting economic development.
- Support the development and growth of regional and cross-border initiatives, which are particularly effective when malaria control is part of a regional development program.
- Support the measurement of strategy impact including costs, acceptability, and feasibility.

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