Global **Malaria** Programme

Malaria Elimination Oversight Committee (MEOC) focused review meeting

FEBRUARY 2019

MEETING REPORT

SUMMARY

The third meeting of the Malaria Elimination Oversight Committee (MEOC) was held in Geneva on 12–14 February 2019. Seven countries (Belize, Bhutan, Cabo Verde, Costa Rica, Malaysia, Suriname and Timor-Leste) considered on track for elimination by 2020 were invited for focused review sessions to examine their programme's performance and achievements and to identify additional issues that could be addressed to improve effectiveness. All 10 full members of the MEOC attended the meeting, along with the national programme manager of Armenia as an adjunct member representing the certified countries. National malaria programme representatives from six of the seven invited countries attended, along with WHO country, regional and headquarters staff, and fund portfolio managers and monitoring and evaluation officers from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM).

Each eliminating country presented on their progress towards elimination and their programme's activities, successes and challenges. All countries except for Costa Rica reported a reduction in case numbers in 2018 compared to 2017, and two countries (Malaysia and Timor-Leste) reported zero indigenous malaria cases in 2018. The MEOC developed individual country recommendations in collaboration with the national programme managers, WHO and GFATM staff, as well as overarching recommendations to WHO and partners. The MEOC will meet next at the 2019 Global Forum of malaria-eliminating countries in Wuxi, China in June.

Overarching recommendations

1. The MEOC recognized the critical importance of GFATM resources in helping many countries to achieve elimination, and made the following observations:

    - It is vitally important to continue to support surveillance and response plans in countries on the verge of elimination, until certification (and beyond) while countries remain receptive and at risk of malaria importation.

World Health Organization

- Funds could be earmarked to higher burden countries that border eliminating countries in order to reduce transmission in cross-border foci. This would be very helpful to the eliminating country. Alternatively, these areas might be considered and funded as "special intervention zones".
- It would be helpful to encourage country coordinating mechanisms (CCMs) with shared borders to enter into formal dialogue.
- Creating opportunities for WHO to brief members of the Global Fund Technical Review Panel (TRP) and Technical Evaluation Reference Group (TERG) and fund portfolio managers (FPMs) on elimination strategies and the challenges of eliminating countries that could be better addressed in Global Fund grants would be helpful.
- Encouraging catalytic and contingency fund mechanisms available on an emergency basis to address outbreaks could support countries close to elimination that are prone to outbreaks.

2. WHO should advise countries when they are implementing strategies that are not recommended by WHO (e.g., using long-lasting insecticidal nets [LLINs] and indoor residual spraying [IRS] concurrently).

3. The MEOC should study regional initiatives such as the Regional Malaria Elimination Initiative in Mesoamerica to understand how they support elimination.

4. WHO should develop a structured approach to programme auditing.

5. WHO should develop clear and rational criteria for the classification of malaria cases (indigenous, imported, introduced, etc.) by personnel.

6. Through the Chair's annual presentation to the Malaria Policy Advisory Committee (MPAC), the MEOC will raise the issues around simian malaria cases and elimination.

BACKGROUND

The World Health Organization's (WHO) *Global Technical Strategy for Malaria 2016–2030* (GTS) was adopted by the World Health Assembly in May 2015. One of the three pillars of the GTS calls for all malaria-endemic countries to accelerate efforts towards elimination and attainment of malaria-free status. A number of countries have had remarkable success in controlling malaria. Although these achievements have been hard-won, elimination is not assured. Countries face considerable challenges in their efforts to control malaria, achieve zero indigenous cases and subsequently prevent resurgences of malaria.

The GTS sets the milestone of 10 countries to eliminate by 2020. According to an analysis presented in the *Eliminating malaria* report released by the Global Malaria Programme (GMP) on World Malaria Day 2016, 21 countries have been identified as having the potential to eliminate malaria by 2020, based on 1) the total number of indigenous malaria cases reported from 2000 to 2014; 2) the declared malaria objectives of the country; and 3) the informed opinions of WHO experts in the field. The countries identified were: Belize, Costa Rica, Ecuador, El Salvador, Mexico, Paraguay, Suriname, (PAHO); China, Malaysia, Republic of Korea (WPRO); Iran (Islamic Republic of), Saudi Arabia (EMRO); Algeria, Botswana, Cabo Verde, Comoros, Kingdom of Eswatini, South Africa (AFRO); and Bhutan, Nepal, Timor-Leste (SEARO). These 21 countries are the special focus of WHO endeavours to accelerate national elimination efforts and monitor progress towards malaria-free status. They are referred to as the Elimination-2020 (E-2020) countries.

The E-2020 countries are spread across five WHO regions. While the countries share some common challenges in eliminating malaria, they face different and unique challenges inherent to each region and country. As the E-2020 countries are at different points along the continuum of transmission, the approach to malaria elimination will differ from country to country, depending on the epidemiology of malaria in the country, strength of the surveillance systems, level of domestic and external funding, and political commitment. However, these countries also share some similarities, including vulnerability to the importation of malaria from migrants, visitors and mobile populations. One issue that is increasingly evident is the important effect that adjacent malarious countries have on their E-2020 neighbours.

In March 2017, the WHO Malaria Policy Advisory Committee (MPAC) endorsed the creation of a new committee to support malaria elimination: the Malaria Elimination Oversight Committee (MEOC).[1] The terms of reference for the MEOC include:

- evaluating national and regional progress towards malaria elimination according to established milestones and timelines;
- determining the need for corrective actions to address programmatic or operational bottlenecks, and evaluating plans developed to address such issues;
- identifying any risks to malaria elimination that need to be addressed by WHO, regional initiatives or national programmes;
- providing observations and/or draft recommendations to WHO/GMP with respect to policies or guidance related to malaria elimination, for MPAC consideration;
- questioning the status quo and confronting difficult issues.

The MEOC had met twice prior to this meeting: first to inaugurate the Committee in April 2018 in Geneva, Switzerland, and second in conjunction with the Global Forum of malaria-eliminating countries in June 2018 in Costa Rica to review the progress and challenges of the E-2020 countries.

General objective

The purpose of the meeting was to convene the MEOC and Ministry of Health (MoH) staff from countries that are on track for malaria elimination and where expert opinion suggests that the 2020 elimination target can be met. The objective of the meeting was to conduct a focused programme review with countries to identify programme components that need to be addressed in order to improve operational performance, and for the MEOC to identify overarching issues or lessons learned. The countries identified to participate in the focused review meeting were Belize, Bhutan, Cabo Verde, Costa Rica, Malaysia, Suriname and Timor-Leste. These seven countries experienced an 80% decrease in cases between 2017 and 2018, and two of them (Malaysia and Timor-Leste) reached zero indigenous human malaria cases in 2018.

The specific objectives of the meeting were to:

- review progress to determine whether the country is on track to achieve elimination by 2020;
- analyse audit reports from national elimination programmes to identify programme structures, organization, management and activities that are missing, inadequate or not in alignment with WHO guidance;
- jointly develop solutions to major challenges or barriers to elimination;

- identify needs for high-level advocacy to address problems requiring solution at high levels of government;
- share lessons learned and experiences among eliminating countries at similar stages.

Method of work

Before the meeting, national malaria programmes were asked to complete an annual progress report, which will also form the basis for their future national malaria certification report. On the first day of the meeting, each country gave a 30-minute presentation on the status of their programme, using a template based on the annual progress report, which was provided by the WHO Secretariat. Participants asked clarifying questions that could be answered briefly and immediately, and in-depth questions were noted down to be answered the next day.

On the second day, the MEOC members conducted focused review sessions with each country team. Two MEOC members were chosen as the focal points for each country, responsible for leading the discussion, taking notes and proposing recommendations. The meetings were also attended by WHO Secretariat staff and regional malaria elimination focal points, as well as by portfolio managers and monitoring and evaluation specialists from the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM) if the country was a GFATM recipient. Programme weaknesses and areas for improvement were identified jointly by the programmes, WHO staff and MEOC members; GFATM staff also engaged in the discussions to identify possible opportunities to reprogramme grants based on identified needs. Key recommendations were shared with the national programmes during a plenary session at the end of the second day.

On the third day, the MEOC members, WHO Secretariat and regional malaria elimination focal points met for a half-day session to finalize country and overarching recommendations. Additionally, WHO briefed the MEOC members on upcoming certification requests and other elimination-related activities.

MEETING OPENING

The Director of GMP, Dr Pedro Alonso, opened the MEOC meeting by welcoming the MEOC members and representatives from the national malaria programmes. Dr Alonso provided a brief update on the global malaria situation and urged the seven countries present to help achieve the elimination milestones set out in the *Global Technical Strategy for Malaria 2016–2030* (GTS). The Chair of the MEOC, Dr Frank Richards, said a few words of welcome and declared the MEOC to be the "committee of good news", as the countries reaching zero malaria cases and certification were helping to keep positive reports on malaria in the news.

SUMMARY OF THE PRESENTATIONS AND MEOC RECOMMENDATIONS TO COUNTRIES

Presentations from each country will be briefly summarized below in the order they were given to the committee.

Timor-Leste

Timor-Leste reported zero indigenous malaria cases in 2018, 17 in 2017 and 91 in 2016. Timor-Leste is a new country, having declared independence in 2000. It shares the island of Timor with West Timor, Indonesia. In the past, malaria was a leading cause of morbidity, but the malaria burden has since declined substantially. The country reported seven imported cases in 2018: one female aged 0–4 years old, and five males and one female 15–59 years old. Most imported cases have been among Timorese returning from travel to Indonesia. The municipality and special administrative region of Oecusse is physically separated from the rest of Timor-Leste and surrounded by Indonesia. Three of the imported cases in 2018 came from this municipality. The primary and secondary malaria vectors in Timor-Leste are *Anopheles barbirostris* and *An. subpictus*. Both species can be found throughout the country, except at altitudes above 1500 m above sea level (asl). The country has prioritized providing universal, free access to malaria diagnosis and treatment throughout the country in order to ensure that all infections are detected and treated early. Active case detection is undertaken in border areas and among migrants and fishermen. Vector control includes distribution of long-lasting insecticidal nets (LLINs) to all households within 2 km of the border with West Timor, as well as on Atauro Island. These mass distributions are held every three years and supplemented through continuous distributions to pregnant women, migrants, fisherman and other high-risk groups in the border areas, Oecusse and Atauro Island. In addition to LLINs, the country conducts indoor residual spraying (IRS) campaigns annually before the malaria transmission season in all households within 2 km of the border and throughout Oecusse and Atauro Island. The class of insecticide used for IRS is rotated annually to prevent development of insecticide resistance.

Malaria cases are notified to authorities within 24 hours to allow for a rapid response. Within five days, case investigations are conducted to determine the case classification and likely location of infection, and response activities are initiated within 10 days. Reactive case detection is conducted as part of focus investigations within a 1.5 km radius of the index case. This process is repeated twice at 14-day intervals and once per year for three years to ensure there is no ongoing transmission. Entomological surveys are also conducted within a 1.5 km radius to determine availability of vector, vector bionomics, potential breeding sites and insecticide susceptibility. As part of the response activities, IRS is conducted in all residences within 1.5 km of the index case, and LLINs are either provided, if the area was not covered under a mass campaign, or topped up.

The country's challenges to achieving and maintaining elimination are related to the potential for cases imported from West Timor. The country first held a cross-border meeting with Indonesia in February 2017. A high-level meeting will be held with policy-makers and technical officers from both countries in February 2019 to develop a cross-border action plan. This will be followed by another technical meeting in March 2019 to agree on how the action plan will be implemented. In future, technical meetings will be held quarterly.

Timor-Leste has challenges related to G6PD testing of the population to provide primaquine treatment in the case of *Plasmodium vivax* or mixed infections. They are working towards including prophylaxis for Timorese travelling to Indonesia or other risk areas in their national treatment protocol. While the country has made significant strides in facilitating the reporting of malaria cases from the private sector, including ensuring that only the public sector is able to import antimalarial medications, currently 23 (66%) of 35 private facilities report to the MoH. The MoH is working to strengthen the legislation around private sector reporting. A significant challenge for malaria elimination and prevention of re-establishment in Timor-Leste is the degree to which the National Malaria Control Programme (NMCP) is financed through their grant from the GFATM. Currently 80% of the officers serving in the NMCP are funded by GFATM.

Timor-Leste has a national malaria elimination committee (a technical working group) as well as an independent malaria advisory committee. Both committees assist with confirmation of case classification. The technical working group meets routinely to discuss progress and update activities. While a special elimination committee was planned for Oecusse, the change in government has delayed implementation, which is now expected for 2019.

Recommendations from MEOC

1. Given the achievement of zero indigenous malaria cases in 2018 and the fact that the country has now exceeded 17 months without an indigenous malaria case, Timor-Leste should start preparing the documentation and planning required for WHO certification.

2. Timor-Leste needs to achieve and maintain a balance between current elimination efforts (including vector control, active surveillance along the border, etc.) and enhancing the overall surveillance and response system, with a view to eventually sustaining elimination status.

3. Timor-Leste should develop a financial and human resources plan for sustaining interruption of transmission after cessation of the GFATM grant by improving efficiencies and planning for increased domestic financing.

4. Promising measures are underway for greater cooperation with West Timor to control malaria across the border. Continued improvements in collaboration and cooperation in border areas with West Timor should be actively pursued in order to sustain malaria elimination in Timor-Leste.

5. There is a need to clearly determine the origin of cases along the porous border with West Timor in order to differentiate introduced cases from indigenous cases.

6. The NMCP should continue to support the private sector both in the diagnosis of malaria and in increasing the proportion of private clinics reporting malaria cases.

Malaysia

Malaysia reported zero indigenous human malaria cases in 2018, 85 in 2017 and 282 in 2016. Malaysia borders Thailand to the north on the Malay Peninsula, and Brunei Darussalam and Indonesia on the island of Borneo. In addition, frequent travel between Palawan in Philippines opens an 'ocean border' with the Philippines in the Sabah province.

Malaysia's specific elimination strategies have been developed in accordance with WHO guidelines. Emphasis is placed on surveillance through development of a web-based focus registration system that classifies focus status as active, residual non-active, or cleared. The country has also made a concerted effort to prevent re-establishment in its malaria-free territory through innovative approaches to indices for receptivity and vulnerability. Foci with high indices for these factors have a set of interventions implemented to prevent reintroduction of malaria transmission. Equity issues are addressed by the national programme, ensuring that the segments of the population that are impoverished, marginalized or vulnerable are equally protected.

The country registered 478 imported and 21 introduced human malaria cases in 2018. The country had only one active and one residual non-active focus remaining in 2018. The majority of imported and introduced human malaria cases were *P. vivax* (between

51% and 58% since 2015). Most imported cases (475/478, or 99%) were over the age of 15, and most (98%) were male. The age and sex distribution of introduced cases was similar to that of imported cases. Most (72%) of the imported cases were Malaysian nationals who acquired the infection largely from Papua New Guinea (40% of imported cases whose origin could be determined). Despite sharing borders with Thailand, Indonesia and Philippines, those countries were responsible for only three (0.7%), 23 (5%) and zero (0%) imported cases, respectively, in 2018.

The vector profile is complex, with unique sets of vectors on peninsular Malaysia, Sabah and Sarawak. All vectors tested remain susceptible to pyrethroids. Sentinel sites for entomological surveillance have been established at representative sites across both the Malaysian Peninsula and Sarawak and Sabah.

Malaysia's elimination strategy includes vector control, case management and surveillance and response. The majority of cases are identified through passive surveillance. In areas with risk groups, a proactive approach is taken to screen high-risk groups for malaria symptoms and then test those who are positive. Active case detection targets military, indigenous people in West Malaysia, mobile ethnic groups in Sarawak, and isolated, forest communities in Sabah. Mass testing and treatment are conducted proactively every six months in high-risk areas, in conjunction with IRS and re-treatment of insecticide-treated nets (ITNs). Mass testing and treatment may also be conducted during outbreaks. Reactive case detection is conducted around local cases. Potential 'contacts' of cases are grouped into four categories, tested and treated:

- Category 1: household residents
- Category 2: contacts with exposure at the same place of infection (i.e., friends and coworkers)
- Category 3: contacts with exposure at the same place of infection but who live elsewhere
- Category 4: household contacts of those in Category 3.

Malaysia has adapted the China 1-3-7 model into a 1-3-7-42 approach wherein every case is considered an outbreak. Case notification is mandatory within 24 hours; case investigations take place within 1–3 days after case notification; focus investigation, classification and registration, and the first cycle of vector control occur within 7 days; and the community is followed up for 42 days, after which the outbreak is considered to have ended. All case classifications are reviewed internally by a MoH national review committee, as well as by independent reviewers from universities and public health research institutions within Malaysia.

Vector control is directed at the population at risk, defined as: those living within active or residual non-active foci; people living in cleared foci with a medium to high receptivity/vulnerability index; and special populations including aboriginal people and foreign workers. In 2016, Malaysia began a switch from re-treating ITNs to purchasing LLINs. In 2018, the country distributed more than 100 000 LLINs across the country. IRS was used in more than 82 000 households in 2018. Insecticide resistance surveillance is conducted at five sentinel sites, representing the three main regions in Malaysia.

Although Malaysia reported zero indigenous human malaria cases in 2018 within its territory, the number of zoonotic malaria cases due to *P. knowlesi* continues to increase, as do the number of deaths due to *P. knowlesi*. In 2018, there were 4131 cases of zoonotic malaria. As it currently stands, there is no evidence-based strategy to control *P. knowlesi*. The eventual certification of the country as free of human malaria will present a communications challenge given the large number of zoonotic malaria cases.

Malaysia uses several platforms to collaborate with its neighbours. These include exchange of information, notification about outbreaks and harmonization of activities. Malaysia's National Malaria Programme is fully funded by the government.

Recommendations from MEOC

1. WHO should liaise with senior officials in Malaysia to support the programme, emphasizing three key areas:
    - the need to reduce staff turnover for key technical support staff: currently many move after one year, but staff retention for at least three years would be more sustainable;
    - the need to maintain financial support for the programme;
    - the need to upgrade the surveillance system software to make it fit for the elimination phase rather than the control phase for which it was developed.
2. It is important to increase the awareness of the need for prophylaxis for Malaysians travelling to malaria-endemic areas outside of the country.
3. Cross-border collaboration at the local and technical level is adequate though somewhat informal. There would be a benefit from increased strategic and coordinated collaboration. This might include areas such as cross-audits of programmes by neighbouring country programmes and development of a more formal mechanism for border surveillance and information exchange.
4. There needs to be a major focus on the *P. knowlesi* challenge. Two areas for attention are:
    - development of a communications strategy for (a) target groups, (b) the general public and (c) an international audience in order to explain how it is both possible and beneficial to undertake the elimination of human malaria while still having zoonotic malaria;
    - development of a specific evidence-based strategy for *P. knowlesi* control. It may be helpful to convene a series of meetings to bring the programme, Malaysian universities and international researchers together to review the evidence base and develop a research programme around control of *P. knowlesi*.
5. A structured audit of the malaria programme and its components could be helpful to ensure all aspects are functioning as expected.

Cabo Verde