Cross-border collaboration on malaria between countries of the WHO Eastern Mediterranean and European regions

Report of the Biregional Coordination Meeting
Dushanbe, Tajikistan

World Health Organization
REGIONAL OFFICE FOR Europe

World Health Organization
REGIONAL OFFICE FOR Europe

Cross-border collaboration on malaria between countries of the WHO Eastern Mediterranean and European regions

Report of the Biregional Coordination Meeting
Dushanbe, Tajikistan

Abstract

The Biregional Coordination Meeting, held in Dushanbe, Tajikistan, on 27–28 November 2019, brought together countries of the WHO Eastern Mediterranean and European regions that share borders; the aims of the meeting were to report on their activities in eliminating malaria and preventing re-establishment of malaria transmission, to share lessons learned and discuss challenges, and to develop solutions, especially on cross-border issues. In addition to malaria, both the Eastern Mediterranean and the European regions have witnessed, in recent years, outbreaks of emerging and re-emerging vector-borne diseases (VBDs) – principally, the mosquito-borne arboviral diseases West Nile virus, dengue and chikungunya. The rapid expansion of the distribution of *Aedes aegypti* and *Aedes albopictus* – vectors of dengue, chikungunya and Zika virus – in these regions is alarming and poses a significant risk to public health. To tackle this issue, possible interregional collaboration on capacity strengthening for integrated vector surveillance and control was discussed at length.

Participants reaffirmed their commitment to make efforts to achieve malaria elimination and maintain malaria-free status, to strengthen capacity for integrated vector surveillance and vector control, and to improve their preparedness for emerging VBDs. The need for countries to be fully supported in these efforts was emphasized.

Keywords

MALARIA CONTROL
MALARIA ELIMINATION
MALARIA, PREVENTION OF RE-ESTABLISHMENT
CROSS-BORDER COLLABORATION
AEDES-BORNE DISEASES
INTEGRATED VECTOR SURVEILLANCE

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office website (http://www.euro.who.int/pubrequest).

Document number: WHO/EURO:2020-1030-40776-55007

Contents

Acknowledgments

The World Health Organization would like to thank country representatives participating at the meeting for providing in-depth analysis of malaria situation in their countries, formulating recommendations of the meeting and preparing this report.

Special thanks are extended to WHO expert Dr Morteza Zaim for his assistance and support in organizing and delivering sessions on *Aedes*-borne diseases in the WHO Eastern Mediterranean and European regions and interregional collaboration on capacity strengthening for integrated vector surveillance and control. Dr Zaim also provided invaluable input to formulating and finalizing recommendations of the meeting.

Abbreviations

GTS	Global Technical Strategy for Malaria 2016–2030
IRS	indoor residual spraying
LLIN	long-lasting insecticidal net
P.	*Plasmodium*
PCR	polymerase chain reaction
QA	quality assurance
RDT	rapid diagnostic test
VBD	vector-borne disease
WHO	World Health Organization

Executive summary

The World Health Organization (WHO) Regional Office for Europe, in conjunction with the WHO Regional Office for the Eastern Mediterranean and the WHO Global Malaria Programme, convened a coordination meeting in Dushanbe, Tajikistan, on 27–28 November 2019, to discuss cross-border collaboration on malaria elimination and prevention of malaria re-establishment in bordering countries of the WHO Eastern Mediterranean and European regions. Representatives of the national malaria programmes of nine countries and staff from the WHO Country Office in Tajikistan, the two regional offices and WHO headquarters attended the two-day meeting.

Dr Mirhomuddin Kamolzoda, Deputy Minister of the Ministry of Health and Social Protection of the Population, Tajikistan, and Dr Khadicha Boymatova, National Professional Officer of the WHO Country Office in Tajikistan, welcomed all participants. Dr Elkhan Gasimov, Technical Officer, Malaria, Neglected Tropical Diseases and Other Vector-borne Diseases, of the WHO Regional Office for Europe, explained the objectives of the meeting.

On Day 1, country representatives gave presentations on the malaria situation in their countries and shared progress and challenges they face in eliminating malaria and maintaining malaria-free status in countries where the disease has already been eliminated. WHO staff gave updates on the malaria situation globally and in the WHO European and Eastern Mediterranean regions. Presentations were also given on technical requirements for prevention of re-establishment of malaria transmission, the latest progress on border malaria, and interregional capacity building in integrated vector surveillance and control.

On Day 2, participants were divided into two groups to discuss current modalities of information sharing, border malaria issues, and the way forward to improve information exchange, with a focus on border malaria and vector control and surveillance.

The meeting concluded by formulating technical recommendations for consideration and implementation to improve cross-border collaboration on malaria and other vector-borne diseases and to strengthen the programme on prevention of re-establishment of malaria transmission.

1. Background

The Global Technical Strategy for Malaria 2016–2030 (GTS), adopted by the World Health Assembly in May 2015, reiterates the ultimate vision of achieving a malaria-free world.[1] It includes two specific goals related to elimination: eliminating malaria in at least 35 countries by 2030 and preventing re-establishment of malaria in all countries that are malaria-free.

In 2015, the World Health Organization (WHO) European Region reported no indigenous malaria cases, thereby reaching the regional malaria goal set in the 2006 Tashkent Declaration.[2] In 2017, 10 countries that had been the last strongholds of malaria in the Region – Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkey, Turkmenistan and Uzbekistan – signed the Ashgabat Statement and reconfirmed their commitment to maintain malaria-free status in the WHO European Region.[3]

The WHO Eastern Mediterranean Region is on track to achieve the 2020 elimination target set by the regional action plan. As of 2019, 14 countries of the Region are malaria-free and another two are very close to elimination.

While countries may face a variety of challenges in maintaining their malaria-free status, the border malaria issue is recognized as one of the most common challenges, as is shown by past experiences both in the WHO European Region and in other areas in the world.

The purpose of the meeting held in Dushanbe, Tajikistan, in November 2019 was to bring together countries of the WHO Eastern Mediterranean and European regions that share borders in order to report on their activities in eliminating malaria and preventing re-establishment of malaria transmission, to share lessons learned and discuss challenges, and to develop solutions, especially with respect to cross-border issues.

The specific objectives of the meeting included the following:

- to review progress and to share experiences of malaria elimination/prevention of malaria re-establishment;
- to review existing practical modalities on malaria elimination/prevention of transmission re-establishment and to identify problems encountered in border areas of participating countries;
- to discuss and agree a strategy and implementation mechanisms for increased coordination of malaria elimination/prevention of transmission re-establishment in participating countries, with special emphasis on border areas; and
- to review the challenge of *Aedes*-borne diseases in the WHO Eastern Mediterranean and European regions and to discuss interregional collaboration on capacity strengthening for integrated vector surveillance and control.

2. Summary of presentations

2.1 Global update on malaria situation

Based on key data from the 2018 and 2019 *World malaria reports*,[4] the fight against malaria has stalled globally after a decade of significant progress. In terms of malaria elimination, the world is increasingly divided into two distinct groups. We are not on track to achieve the GTS target of

reducing morbidity and mortality due to malaria by 40% globally by 2020, compared with 2015. WHO has launched "high burden to high impact" initiatives to help 11 countries,[*] where approximately 70% of the world's malaria burden is concentrated, to get back on track. At the same time, a growing number of countries are moving closer and closer to elimination. The 2020 elimination target, which is to achieve malaria elimination in at least 10 countries compared with 2015, is likely to be met.

Prevention of re-establishment of malaria transmission in all countries that are malaria-free is also one of the GTS targets. Dr Xiao Hong Li of the WHO Global Malaria Programme explained the important elements that have to be in place and be functional in order to prevent re-establishment of malaria transmission.

2.2 Overview of malaria situation in the WHO European Region

The WHO European Region achieved its malaria elimination goal in 2015. Through the Ashgabat Statement, the Region has made a political commitment to maintain its malaria-free status. Currently, there are 19 countries in the Region that have been certified malaria-free. In addition, 30 countries are in the supplementary list of countries where malaria has never existed or disappeared without specific measures. Four countries – Azerbaijan, Georgia, Tajikistan and Turkey – are neither certified malaria-free nor listed in the supplementary list. Azerbaijan has formally reached out to WHO to request support in preparation for certification, and preparation is now underway, while Tajikistan has initiated preparation internally. The whole Region reports about 8000 imported cases each year. Several cross-border collaboration agreements have been signed among bordering countries in order to mitigate the risk of re-establishment of transmission.

2.3 Overview of malaria situation in the WHO Eastern Mediterranean Region

The malaria situation in the WHO Eastern Mediterranean Region is similar to that at global level. The Region is not expected to reach all the targets set for 2020, but it is on track to achieve the 2020 elimination target set by the regional action plan, with 14 countries malaria-free in 2019 and a further two very close to elimination. However, there were more malaria cases and deaths in 2018 than in 2015. There are clearly gaps in funding and coverage of core interventions, including vector control. Countries in the Region with a high burden of malaria face a range of challenges, including humanitarian emergencies, insecurity, population movement, weak health systems, inadequate infrastructure for vector surveillance and control, lack of human resources, invasive vectors, and frequent outbreaks of other vector-borne diseases (VBDs).

2.4 Technical updates

2.4.1 Border malaria

The concept of border malaria has been defined as malaria transmission, or potential transmission, taking place across or along borders between countries that share a land border. As such, it is distinct from both importation and transnational malaria, which do not necessarily involve transmission at or close to borders. Border malaria is frequently recognized as a particular challenge for countries attempting to eliminate malaria or to prevent re-establishment of malaria transmission, and such countries often find their last few cases occurring along their international land borders.

[*] Burkina Faso, Cameroon, Democratic Republic of the Congo, Ghana, India, Mali, Mozambique, Niger, Nigeria, Uganda and United Republic of Tanzania.

There are a number of reasons why border areas are especially challenging: they are transmission zones shared with a neighbouring country, where interventions to combat malaria may not be synchronized or pursued with equal vigour; they are often geographically remote and may be subject to conflict or other complex political situations that give rise to insecurity; and they may be areas of relatively low development and have weak health systems or poor access to health services.

In her presentation, Dr Li described the work that WHO has conducted to understand the complexity and multifaceted nature of border malaria. She also explained the latest progress that has been made to develop tools to help countries analyse the factors that affect malaria transmission in border areas. Before developing solutions, countries should first analyse the particular causes of malaria transmission in their own border areas. They should determine what kind of cross-border coordination and collaboration activities should be put in place. Information sharing at local level is essential and is often found to be most efficient and effective if conducted through informal channels. Furthermore, border malaria should not be considered only as a technical issue – it is also an issue of political and social development. Above all, high-quality surveillance and rapid response remain key to achieving malaria elimination and maintaining malaria-free status in border areas.

2.4.2 The challenge of *Aedes*-borne diseases in the WHO Eastern Mediterranean and European regions

VBDs continue to represent a significant health threat and burden to countries of the WHO Eastern Mediterranean and European regions. Malaria, followed by leishmaniasis and schistosomiasis, present the highest burden of VBDs in the Eastern Mediterranean Region, while leishmaniasis, tick-borne diseases and mosquito-borne viral diseases impose the highest burden of VBDs in the European Region. Many European countries also face the challenge of preventing the re-establishment of malaria transmission, from which the Region was declared free in 2015.

Both Eastern Mediterranean and European regions have also witnessed, in recent years, outbreaks of emerging and re-emerging VBDs – principally, the mosquito-borne arboviral diseases West Nile virus, dengue and chikungunya. The rapid expansion of the distribution of *Aedes aegypti* and *Aedes albopictus* – vectors of dengue, chikungunya and Zika virus – in these regions is alarming and poses a significant risk to public health.

Vector control plays a critical role in the prevention of most VBDs and as a response to outbreaks of VBDs – provided that such interventions are well planned, well implemented and sustained. Use of resources and coordination would both be most effectively optimized by an integrated approach to VBDs that involves establishment/strengthening of central and peripheral vector control units with a multi-disease mandate, as recommended in WHO's *Global vector control response 2017–2030*.[5] Entomological surveillance is an important component of integrated surveillance for evidence-based decision-making for the prevention and control of VBDs. Designing effective and sustainable entomological surveillance systems is of utmost importance for preparedness and response to VBD outbreaks.

2.5 Country presentations

Progress made by individual countries towards eliminating malaria and maintaining malaria-free status is summarized below.

2.5.1 Afghanistan

Reported confirmed malaria cases have been increasing in Afghanistan since 2010. Nearly 250 000 cases were reported in 2018, the majority being *Plasmodium* (*P.*) *vivax*. The country divides its territory into areas at three different phases: transmission reduction phase, elimination phase, and prevention of re-establishment phase. The areas bordering Pakistan have the highest malaria incidence. Case detection is mostly passive, but active case detection has started to be used in areas targeted for elimination. Cases are notified only in areas that have reached the elimination phase, but a timeline for notification has not yet been implemented. Cases are not yet investigated and classified, and private and military health services are not included in the surveillance information system. The national treatment guideline was updated in 2017. Distribution of long-lasting insecticidal nets (LLINs) is conducted through campaign and antenatal care services in target provinces and covers high-risk districts. Indoor residual spraying (IRS) is only used for outbreak response but is planned for areas that have initiated malaria elimination. The country faces several challenges, including irregular private sectors, cross-border collaboration, insecurity issues, funding sustainability, and lack of staff capacity, especially in quality-assured diagnosis and entomology. Cross-border coordination has not been implemented and is not yet functional.

2.5.2 Armenia

Armenia was certified as malaria-free in 2011. A few imported cases have been reported over the last few years, including six in 2018. The regions of Ararat and Armavir, which border Turkey, were hyperendemic with malaria and are considered high-risk areas. Both passive case detection and proactive case detection that targets risk groups such as students from endemic countries are implemented. All cases are notified, investigated and classified within a timeline according to national guidelines. Microscopy is used for malaria diagnosis and a quality assurance (QA) programme is in place. Doxycycline is the only drug available for chemoprophylaxis. Verbal consultation on malaria prevention is provided for people travelling to malaria-endemic countries. Routine entomological surveillance is implemented in high- and moderate-risk areas; IRS is used in malaria foci with imported cases during the transmission season (and in leishmaniasis foci). The treatment guideline, last updated in 2011, needs to be updated again. There are issues with procurement and supply of antimalarial drugs. Agreements have been signed with Georgia and Iran on cross-border collaboration, but information exchange at national and district levels does not in reality take place. Migrant workers from malaria-endemic countries are another area of concern for the country in preventing re-establishment of malaria transmission.

2.5.3 Azerbaijan

Indigenous malaria transmission in Azerbaijan was interrupted in 2013. Azerbaijan has been reporting imported cases over the last few years, including two in 2018. Passive, proactive and reactive case detection are all used for surveillance. All detected cases are notified, investigated and classified. Microscopy is used for malaria diagnosis, while a training and QA programme is in place to ensure quality of diagnosis. The national treatment guideline was last updated in 2016. Cross-border collaboration with Georgia has been well sustained, with regular exchange of information. The country is concerned that nearly 80% of the country was endemic with malaria in the past; the presence of refugees and migrants in the country is another area of concern. Challenges the country faces in preventing re-establishment of malaria transmission include problems over procurement of antimalarials, staff turnover, and border cooperation with other neighbouring countries. The country is actively preparing for certification.

2.5.4 Georgia

No indigenous malaria cases have been reported in Georgia since 2010. The country has been reporting imported cases over the last few years, including nine in 2018. Areas close to the Black Sea and the border with Azerbaijan are considered high-risk. Georgia relies on passive case detection for malaria surveillance, and all cases detected are notified, investigated and classified. There is good collaboration in malaria surveillance between the national programme and the private and military health services. Risk groups include travellers and students from malaria-endemic countries, migrant workers, military personnel in the United Nations peacekeeping mission, and sailors returning from malaria-endemic countries. Both microscopy and polymerase chain reaction (PCR) testing are used for diagnosis. The treatment guideline was updated in 2015. Only verbal consultation on malaria prevention – not chemoprophylaxis – is provided to people travelling to malaria-endemic countries. Use of vector control is limited, depending on the level of risk, and conducted in collaboration with Ministry of Agriculture. Collaboration with Azerbaijan has been successful in tackling foci that were formerly concentrated in the border area.

2.5.5 Islamic Republic of Iran

In 2018 the Islamic Republic of Iran reported 625 imported cases of malaria, 20 introduced cases and no indigenous cases. The majority of reported cases were *P. vivax*, but there were also some *P. falciparum* cases. Most cases were detected in Afghan nationals. The country considers areas that share a border with Pakistan to be at high risk of malaria. All detected cases are notified, investigated and classified. Private and military health services participate in surveillance. The country has identified several high-risk groups, including fuel smugglers, unregistered foreign seasonal workers, border guards, workers in African countries and travellers to Africa. Intensified surveillance and vector control, as well as health education to prevent mosquito bites and chemoprophylaxis, have been implemented and targeted at high-risk groups. Both rapid diagnostic tests (RDTs) and microscopy are used for diagnosis. Initial and refresher training is provided to personnel. The QA programme is implemented through blinded cross-checking of slides, use of external panel, and on-site support supervision. The treatment guideline was updated in 2019. The country has a well-established referral system for severe malaria cases. Mefloquine is provided for travellers to malaria-endemic countries. Routine entomological surveillance is conducted in receptive areas, and proactive and reactive vector control is used. Iran faces a number of challenges that threaten its malaria-free status; these include economic sanctions, cross-border movement, lack of cross-border coordination, declining investment support for malaria, lower awareness among health professionals, and insufficient community engagement.

2.5.6 Tajikistan

Tajikistan reported its last indigenous malaria case in 2015. Over the last few years, imported (including passively imported) cases have been detected every year. Both imported *P. falciparum* and *P. vivax* cases have been detected. Indigenous transmission of *P. falciparum* malaria in Tajikistan was interrupted in 2009. The south-eastern area of the country, which shares a border with Afghanistan, and the northern part are considered to be at high risk of malaria. Passive, proactive and reactive case detection is used, and all detected cases are notified, investigated and classified. There is good collaboration in surveillance with private medical institutions and the military medical service. Initial and refresher training is provided for laboratory technicians, and the QA programme is implemented through blinded cross-checking of slides. Entomological surveillance is carried out in areas with high malariogenic potential using updated data from 2019. Vector control is used in selected areas and quality is monitored in collaboration with other ministries. Tajikistan collaborates effectively with the

Kyrgyz Republic, and the two countries have jointly conducted a study of VBDs in border areas. The border areas between Tajikistan and Afghanistan are a shared transmission zone, representing a major concern in terms of preventing re-establishment of malaria transmission in Tajikistan. Several meetings have been held with Afghanistan, but further action (including information exchange, especially on border areas) has yet to be taken. Tajikistan faces a number of challenges in maintaining its malaria-free status: limited resources, border issues, staff turnover, new migrant issues, and limited access to high-quality medicine and RDTs.

2.5.7 Turkey

No indigenous malaria cases have been reported in Turkey since 2010. The country reported 234 imported cases and one introduced case in 2018. Most of the imported cases are Turkish nationals. The number of irregular migrants captured in Turkey has increased significantly over the last few years, reaching 384 967 in 2019, coming mainly from Afghanistan, Pakistan, Syria and elsewhere. The number of Syrian refugees under temporary protection is also increasing, reaching 3.6 million in 2019. Turkey has been able to map the irregular migrants and refugees in the country. In addition to routine surveillance and response, enhanced surveillance is carried out in the case of migrants, in collaboration with the special department for migrant health, refugee centres and polyclinics for foreign nationals. Syrian health professionals have been recruited and trained to provide services to migrants and refugees. The treatment guideline has recently been updated (in 2019). Entomological surveillance is not conducted as a routine activity, but studies are carried out as need arises. Both IRS and larval source management are used and routinely implemented in high-risk areas. Chemoprophylaxis is provided to travellers free of charge. Irregular migrants, instability in Syria, population movement and increased travel to endemic areas are all challenges that Turkey faces in maintaining its malaria-free status. There is also a lack of information on the malaria situation and malaria activities being conducted in neighbouring countries.

2.5.8 Turkmenistan

Turkmenistan was certified as malaria-free in 2010. The country continues surveillance with both passive and active case detection. The country has divided its territories into hypermalariogenic, mesomalariogenic and hypomalariogenic zones. Each zone is subdivided into three or four subzones depending on the ecological environment. Students, tourists and other contingents travelling to or arriving from countries where malaria is endemic are considered risk groups. Chemoprophylaxis is available and provided to people travelling to malaria-endemic countries. Routine entomological surveillance continues. Both microscopy and PCR are used for malaria diagnosis. Personnel are trained through annual seminars and short-term courses. The QA programme is implemented through blinded cross-checking of slides, using external panels of slides. Although a cross-border cooperation agreement has been signed, practically no information is exchanged with neighbouring countries and no joint activities to tackle malaria and VBDs are conducted in border areas. The country faces a number of challenges including procurement of antimalarial drugs, and the national guidelines and protocols related to malaria need to be updated.

2.5.9 Uzbekistan

Uzbekistan has reported no malaria cases since 2014. The country has updated its map of risk stratification after it was certified malaria-free by WHO in 2018. The Surkhandarya region, bordering Afghanistan and Tajikistan, is considered a high-risk area, taking into account its past endemicity and its economic and cultural ties with neighbouring Afghanistan, which are currently growing. Uzbek nationals travelling back from Afghanistan and students and travellers from malaria-endemic

countries are considered at risk of malaria. Both passive and active case detection are used for malaria surveillance, and microscopy is the main method used for malaria diagnosis. The QA programme is functioning. Personnel training is conducted in collaboration with academic institutions and uses a variety of methods. Routine entomological supervision is carried out by entomologists and their assistants at the provincial/district level throughout the country. Vector control is carried out according to entomological indications, using integrated methods. In the past, local malaria transmission occurred in areas bordering Afghanistan, Tajikistan, Kyrgyzstan and Turkmenistan. Several agreements on cross-border collaboration have been signed, but no actions have been taken. The challenges the country now faces in preventing re-establishment of malaria transmission include a reduction of staff working in parasitological departments/units (a consequence of ongoing health reform) and an increasing flow of people from malaria-endemic countries.

2.6 Interregional collaboration on capacity strengthening for integrated vector surveillance and control

Capacity and capability for vector surveillance and control, including insecticide resistance monitoring, are inadequate in a number of countries of the WHO Eastern Mediterranean and European regions (including among central Asian countries). This deficiency calls for urgent attention and requires further support for and strengthening of action to prevent VBDs and responses to VBD outbreaks.

The goal of possible interregional collaboration would be to reduce the threat and burden of VBDs in the WHO Eastern Mediterranean and European regions.

Specific objectives would be:

- to support member countries in implementation of WHO's *Global vector control response*;[5]
- to strengthen capacity of member countries for integrated vector surveillance and control, including insecticide resistance monitoring; and
- to strengthen information exchange and collaboration among member countries, and between the WHO regional offices for the Eastern Mediterranean and for Europe, on entomological surveillance and vector control.

Following presentation discussions, the participants asked the WHO regional offices for the Eastern Mediterranean and for Europe to support the following actions:

- to recommend models of integrated vector surveillance and control systems to countries interested in creating similar systems;
- to develop standardized protocols for entomological surveillance and guidelines for analysis and interpretation of data to support vector control;
- to continue to assess the capacity-building needs of individual countries, and the types and levels of training each country requires, and to facilitate training support for national programmes by regional centres of excellence;
- to establish an insecticide resistance monitoring network to support national capacity strengthening and regional surveillance efforts to enhance insecticide resistance management; and
- to establish mechanisms to assist transfer of knowledge and technology among member countries, and to further promote and facilitate, as a priority, cross-border surveillance, information exchange and coordination, especially as they relate to emerging VBDs.

3. Summary of discussion points and common issues across country presentations

1. High-quality case management should be maintained throughout the country, regardless of the risk of re-establishment of transmission.

   Countries should update their treatment guidelines based on the latest recommendations from WHO. A small quantity of antimalarial drugs should be available for treatment of uncomplicated malaria cases as well as for treatment of severe cases, even if the country currently reports no cases. Measures such as training and refresher training should be in place to maintain vigilance in general health services so that health practitioners are aware how to recognize suspect malaria cases and where malaria diagnosis and treatment are available in the country. Chemoprophylaxis should be provided as individual protection for travellers to malaria-endemic countries.

   WHO regional offices have been working together with countries to solve the issue of antimalarial drugs procurement and will continue to provide this support.

2. Malaria cases can be imported to anywhere in a country, so high-quality passive case detection must be maintained throughout the country. Countries might consider using key performance indicators to assess the quality of surveillance, especially in high-risk areas, including border areas, as laid out in WHO's framework for malaria elimination.[6]

3. It is important to gain a better understanding of who in the country is at risk of malaria as it helps to target interventions at at-risk populations and to achieve impact and improve efficiency.

4. It is important to analyse receptivity and vulnerability in the country, particularly if there have been significant changes in recent years, as this will inform the update on the country's risk stratification.

5. The objectives of entomological surveillance should be clear so that the data collected are used for decision-making. In order to sustain entomological surveillance, countries should consider integrating malaria entomological surveillance with other VBDs. Entomological surveillance at point of entry should be strengthened. It is recommended that collaboration is established between the WHO regional offices for the Eastern Mediterranean and for Europe on capacity strengthening for integrated vector surveillance and response.

6. The methods, frequency and scope of cross-border collaboration should be realistic, and the objectives should be clearly identified. WHO is committed to supporting cross-border collaboration and to facilitating cross-border communication. However, countries should take responsibility for turning signed agreements into action.

7. Maintaining malaria-free status requires continued political commitment. This should be reflected in necessary resources being allocated to malaria so that imported cases can be managed and preparations made for emergence and outbreaks. At the same time, the malaria programme should consider prioritizing the use of limited resources to achieve higher impact.

4. Recommendations

The following recommendations are based on those formulated by the working groups and subsequently adapted and approved by participants in the final plenary sessions.

For Member States

- Sustain political commitment by raising and allocating necessary resources to achieve malaria elimination and to maintain malaria-free status.
- Strengthen/maintain capacity to provide high-quality malaria diagnosis and treatment throughout the country.
- Maintain/strengthen vigilance in general health services and sustain surveillance of malaria cases throughout the country.
- Ensure that appropriate interventions are in place in high-risk areas in order to prevent onward transmission caused by imported cases.
- Strengthen information sharing and cross-border collaboration on malaria and other VBDs. In the event of outbreaks of malaria and/or other VBDs in border areas, information should be shared with relevant neighbouring countries in a timely manner.
- Strengthen capacity for integrated vector surveillance and vector control and improve preparedness for emerging VBDs.

For WHO

- Continue providing technical support to countries in eliminating malaria and preventing re-establishment of malaria transmission.
- Continue supporting and facilitating cross-border collaboration between countries.
- Support regional and subregional collaboration on malaria and other VBDs, including vector control and surveillance, information sharing and knowledge transfer, and capacity building.

References

[1] Global Technical Strategy for Malaria 2016–2030. Geneva: World Health Organization; 2015 (https://www.who.int/malaria/publications/atoz/9789241564991/en, accessed 3 June 2020).

[2] Tashkent Declaration, "The move from malaria control to elimination in the WHO European Region". Copenhagen: WHO Regional Office for Europe; 2006 (https://apps.who.int/iris/handle/10665/107789, accessed 3 June 2020).

[3] Ashgabat Statement, "Preventing the re-establishment of malaria transmission in the WHO European Region". Copenhagen: WHO Regional Office for Europe; 2017 (http://www.euro.who.int/en/health-topics/communicable-diseases/vector-borne-and-parasitic-diseases/malaria/the-ashgabat-statement-preventing-the-re-establishment-of-malaria-transmission-in-the-who-european-region-2017, accessed 3 June 2020).

[4] World malaria report. Geneva: World Health Organization; 2018 (https://www.who.int/malaria/publications/world-malaria-report-2018/en, accessed 3 June 2020).

World malaria report. Geneva: World Health Organization; 2019 (https://www.who.int/malaria/publications/world-malaria-report-2019/en, accessed 3 June 2020).

[5] Global vector control response 2017–2030. Geneva: World Health Organization; 2017 (http://www.who.int/vector-control/publications/global-control-response/en, accessed 4 June 2020).

[6] A framework for malaria elimination. Geneva: World Health Organization; 2017 (https://www.who.int/malaria/publications/atoz/9789241511988/en, accessed 4 June 2020).

Annex 1 **Agenda**

Wednesday, 27 November 2019

08:30–09:00	Registration of participants
09:00–09:30	Opening of the meeting • Ministry of Health and Social Protection of the Population of the Republic of Tajikistan • World Health Organization (WHO) • Introduction of participants • Objectives of the meeting
09:30–10:00	Global situation on malaria control and elimination *Dr Xiao Hong Li, WHO headquarters*
10:00–10:30	Malaria situation in the WHO European Region *Dr Elkhan Gasimov, WHO Regional Office for Europe*
10:30–11:00	*Coffee break*
11:00–11:30	Progress made with malaria control in the WHO Eastern Mediterranean Region *Dr Ghasem Zamani, WHO Regional Office for the Eastern Mediterranean*
11:30–12:00	Descriptive and analytical framework for border malaria *Dr Xiao Hong Li, WHO headquarters*
12:00–12:30	The challenge of *Aedes*-borne diseases in the WHO Eastern Mediterranean and European regions *Dr Morteza Zaim, Expert*
12.30–13.30	*Lunch*
13:30–15:30	Progress with malaria elimination/prevention of malaria re-establishment in countries, with emphasis on situations and challenges in border areas: Afghanistan, Armenia, Azerbaijan, Georgia, Islamic Republic of Iran
15:30–16:00	*Coffee break*
16:00–17:45	Progress with malaria elimination/prevention of malaria reintroduction in countries, with emphasis on situations and challenges in border areas: Iraq, Syria, Tajikistan, Turkey, Turkmenistan, Uzbekistan
17:45–18:00	Wrap-up of the first day

Thursday, 28 November 2019

09:00–10:30	Working group discussions on a strategy and implementation mechanisms to improve coordination of malaria elimination/prevention of malaria re-establishment activities in participating countries, with special emphasis on border areas
10:30–11:00	*Coffee break*
11:00–12:30	Working group discussions on practical modalities for regular exchange of information related to malaria in border areas
12:30–13:30	*Lunch*
13:30–14:00	Presentations of the working groups
14:00–15:00	Interregional collaboration on capacity strengthening for integrated vector surveillance and control *Dr Morteza Zaim, Expert* Plenary discussions
15:00–15:30	*Coffee break*
15:30–16:00	Conclusions, recommendations and next steps
16:00–16:30	Closure of the meeting

Annex 2 **List of participants**

Country representatives

Afghanistan

Dr Mohammad Sami Nahzat
Programme Manager
National Malaria and Leishmaniasis Control
Ministry of Public Health

Armenia

Dr Lusine Paronyan
Head of Vector-borne and Parasitic Diseases
Epidemiology Department
National Centre for Disease Control and Prevention

Dr Ara Keshishyan
Head of the parasitology laboratory
Reference Laboratory Centre
National Centre for Disease Control and Prevention

Azerbaijan

Dr Afag Aliyeva
Deputy Director-General
Republican Centre of Hygiene and Epidemiology
Ministry of Health

Dr Suleyman Mammadov
Head of the parasitology department
Republican Centre of Hygiene and Epidemiology
Ministry of Health

Georgia

Mr Levan Baidoshvili
Head of Nosocomial, Emerging, Water- and Food-borne Diseases and Parasitology Division
Communicable Diseases Department
L. Sakvarelidze National Centre for Disease Control and Public Health

Mr Merab Iosava
Chief Specialist, Nosocomial, Emerging, Water- and Food-borne Diseases and Parasitology Division
Communicable Diseases Department
L. Sakvarelidze National Centre for Disease Control and Public Health

Islamic Republic of Iran

Dr Raeisi Ahmad
Head of Vector Transmitted Diseases Department
Ministry of Health and Medical Education

Tajikistan

Dr Mirhomuddin Kamolzoda
Deputy Minister
Ministry of Health and Social Protection of the Population

Dr Ziyovuddin Avgonov
Secretary of the National Coordinator Committee

Dr Fayzali Salimov
Chief Specialist
Ministry of Health and Social Protection of the Population

Dr Azizulo Sharipov
Director
Republican Centre for Tropical Diseases
Ministry of Health and Social Protection of the Population

Dr Boir Shomudinov
Deputy Director
Republican Centre for Tropical Diseases
Ministry of Health and Social Protection of the Population

Dr Dilshod Kadamov
Head of Entomological Department
Republican Centre for Tropical Diseases
Ministry of Health and Social Protection of the Population

Dr Davron Kungurotov
Director
Centre for Tropical Diseases of Khatlon Region

Dr Shavkat Quvvatov
Director
Centre for Tropical Diseases of Panj District

Dr Kamol Nuridinzoda
Director
Centre for Tropical Diseases of Shaartuz District

Dr Mahmud Saydaliev
Director
Centre for Tropical Diseases of Jayhun District

Dr Munavar Karimov
Director
Centre for Tropical Diseases of Shamsiddin Shohin District

Dr Safar Gafurov
Director
Centre for Tropical Diseases of Hamadoni District

Dr Fayzullo Abdulloev
Director
Centre for Tropical Diseases of Farkhor District

Dr Asadullo Khudoyberdiev
Director
Centre for Tropical Diseases of Kabodion District

Dr Abdullo Khalimov
State Centre for Sanitary and Epidemiological Surveillance of Dusti District

Dr Nurhon Alijonov
State Centre for Sanitary and Epidemiological Surveillance of Vose' District

Dr Gulchehra Mirzobaytova
Director
Centre for Tropical Diseases of GBAO Region

Dr Zafar Gulmahmadov
Director
Centre for Tropical Diseases of Darvoz District

Dr Yodalieva Rahima
Director
Centre for Tropical Diseases of Rushon District

Dr Shifo Rajabova
Director
Centre for Tropical Diseases of Vanj District

Dr Mamed Mamedov
State Centre for Sanitary and Epidemiological Surveillance of Ishkoshim District

Dr Asror Tojiboev
Epidemiologist
Centre for Tropical Diseases of Sogd Region

Dr Jiyon Azizov
Head of the Border Troops Administration

Turkey

Dr Seher Topluoğlu
Director
Department of Zoonotic and Vector-borne Diseases
General Directorate of Public Health
Ministry of Health

Dr Dilek Cemil Göktaş
Department of Zoonotic and Vector-borne Diseases
General Directorate of Public Health
Ministry of Health

Turkmenistan

Dr Tazegul Suhanova
Head of parasitology reference laboratory
Centre of Public Health and Nutrition of State Sanitary-Epidemiological Surveillance
Ministry of Health and Medical Industry

Uzbekistan

Dr Inna Tyo
National coordinator on malaria
Chief Specialist
Department for the Organization of Epidemiological Monitoring and Preventive Measures
Agency of Sanitary and Epidemiological Well-being

Experts

Dr Morteza Zaim
WHO expert

WHO headquarters

Dr Xiao Hong Li
Technical Officer, Certification, border malaria and training
Malaria Elimination Unit
Global Malaria Programme

WHO Regional Office for the Eastern Mediterranean

Dr Ghasem Zamani
Regional Advisor on Malaria

WHO Regional Office for Europe

Dr Elkhan Gasimov
Technical Officer, Malaria, NTDs and Other Vector-borne Diseases
Division of Health Emergencies and Communicable Diseases

Ms Elena Chulkova
Programme Assistant, Malaria, NTDs and Other Vector-borne Diseases
Division of Health Emergencies and Communicable Diseases

WHO Country Office in Tajikistan

Dr Khadichamo Boymatova
National Professional Officer
Antimicrobial Resistance, Food Safety and Nutrition

Interpreters

Mrs Nigina Khadzhieva
Mr Akmal Eshankulov

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
North Macedonia
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

WHO/EURO:2020-1030-40776-55007

World Health Organization
Regional Office for Europe

UN City, Marmorvej 51,
DK-2100 Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01
Email: eurocontact@who.int
Website: www.euro.who.int