

Report on the

Tenth intercountry meeting of national malaria programme managers

Sharm El-Sheikh, Egypt
18–20 February 2013



**World Health
Organization**

Regional Office for the Eastern Mediterranean

Report on the

**Tenth intercountry meeting of national
malaria programme managers**

Sharm El-Sheikh, Egypt
18–20 February 2013

© World Health Organization 2013

All rights reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Publications of the World Health Organization can be obtained from Health Publications, Production and Dissemination World Health Organization, Regional Office for the Eastern Mediterranean, PO Box 7608, Nasr City, Cairo 11371, Egypt (tel: +202 2670 2535, fax: +202 2670 2492; email: HPD@emro.who.int). Requests for permission to reproduce, in part or in whole, or to translate publications of WHO Regional Office for the Eastern Mediterranean – whether for sale or for noncommercial distribution – should be addressed to WHO Regional Office for the Eastern Mediterranean, at the above address: email: WAP@emro.who.int.

CONTENTS

1.	INTRODUCTION	1
2.	TECHNICAL PRESENTATIONS	1
2.1	Progress and challenges of malaria elimination and control at the global level.....	1
2.2	Progress and challenges of malaria elimination and control in the Region.....	2
2.3	Update on the World Malaria Report, burden estimation, malaria surveillance, malaria programme review, vivax malaria	3
2.4	Regional data management.....	4
2.5	The regional burden of vivax, and falciparum mortality and morbidity in Somalia	4
2.6	Progress towards malaria elimination in Europe	5
2.7	Update on vector control interventions and insecticide resistance management	5
2.8	Updates on the New Global Fund funding model and its implications for countries of the Region.....	6
3.	PANEL DISCUSSIONS.....	6
3.1	Panel 1. Test: current situation, achievements, challenges and the way forward for malaria diagnostic testing in countries that are in the control phase	7
3.2	Panel 2. Treat: current situation, achievements, challenges and the way forward for malaria treatment for countries that are in the control phase.....	8
3.3	Panel 3. Track: current situation, achievements, challenges and the way forward for malaria monitoring and evaluation and surveillance	9
3.4	Panel 4. Malaria elimination: achievements and challenges	10
3.5	Panel 5. Imported malaria in the Region: challenges and action needed for prevention of re-establishment of malaria transmission.....	11
4.	RECOMMENDATIONS	12
	Annexes	
1.	PROGRAMME	14
2.	LIST OF PARTICIPANTS	16

1. INTRODUCTION

The tenth intercountry meeting of national malaria programme managers was conducted from 18 to 20 February 2013 in Sharm El-Sheikh, Egypt. The objectives of the meeting were to: review the progress made and challenges and problems encountered in the implementation of malaria control and elimination strategies; update countries with new developments on malaria prevention, diagnosis and treatment; and discuss and monitor implementation of national malaria workplans for 2012–2013 and agree on priorities for 2014–2015.

The meeting was opened by Dr Jaouad Mahjour, Director, Communicable Diseases Prevention and Control, WHO Regional Office for the Eastern Mediterranean, who delivered a message from Dr Ala Alwan, WHO Regional Director for the Eastern Mediterranean. In his message, the Regional Director noted that malaria mortality worldwide had been reduced by 25% from 2000 to 2010. The distribution of malaria in the Region was heterogeneous: the six countries which were still fighting malaria accounted for 98% of the cases in the Region. In recent years, the Islamic Republic of Iran, Iraq and Saudi Arabia had made exemplary progress, and they were now close to elimination of malaria or falciparum malaria. In general, the efforts in the Region were now oriented by the principle of aiming for universal coverage; however coverage rates in high burden countries were still far from adequate, especially for antimalarial diagnosis and treatment. The Region placed great emphasis on the “T3” approach: test, treat and track. There had been considerable increase in coverage of malaria vector control in the Region, but insecticide resistance could become a major challenge. For malaria-free countries, increased population movement led to increased risk of re-establishment of malaria transmission. Review of anti-malaria activities and strengthening malaria surveillance and vigilance were crucial in these countries. Subnational malaria elimination initiatives were also among the priorities in the Region.

Dr Harriet Pasquale (South Sudan) was elected as Chairperson. The meeting programme and list of participants are attached as Annexes 1 and 2, respectively.

2. TECHNICAL PRESENTATIONS

2.1 Progress and challenges of malaria elimination and control at the global level

Dr R. Newman, WHO headquarters

At present the greatest challenge to global malaria control is to obtain enough funding to resume the momentum in growing coverage with essential anti-malaria interventions that was seen between 2005 and 2010. The number of insecticide-treated nets (ITNs) delivered to countries peaked in 2010. As the typical duration of effectiveness of these nets is three years, it is desperately important in 2013 to deliver at least as many nets as in 2010, and preferably more. The estimated proportion of the population in sub-Saharan Africa sleeping under an ITN reached 33% in 2010–2011, still far below desired target. In 2011 large volumes of artemisinin-based combination therapies (ACTs) were delivered by the Affordable Medicines Facility for malaria, but public sector deliveries went down, to some extent because availability was reduced. Giving ACT to anyone with fever can be dangerous. This practice is especially problematic in endemic areas because of the long half-lives of the partner drugs in ACTs.

Great emphasis is now placed on scaling up integrated community case management, which bundles malaria diagnostic testing together with treatment for malaria, pneumonia and diarrhoea, as well as referral for all severe illnesses.

Among the main problems of contemporary malaria control and elimination is population movement; this was echoed by several interventions programme managers in the discussion and it was agreed that this must be addressed by malaria programmes with appropriate strategies to be defined at country and local levels. Another issue to be addressed is rapid urbanization in almost all developing countries. This leads to changed epidemiological patterns and may require adaptation of malaria control strategies.

The presenter reviewed recent recommendations made by WHO's Malaria Policy Advisory Committee (MPAC), which has been convened biannually since 2012. The recommendations of the MPAC are official WHO recommendations and are reported in *Malaria Journal* and on the malaria programme website.

2.2 Progress and challenges of malaria elimination and control in the Region

Dr H. Atta, WHO Regional Office for the Eastern Mediterranean

The apparent dramatic fall in clinical cases from 2010 to 2011 is in fact due to one country (Pakistan) ceasing to report clinical cases. Only 37% of reported malaria cases were confirmed parasitologically. 98% of confirmed cases were reported from 5 countries (Sudan 44%, Pakistan 29%, South Sudan 10%, Yemen 8%, Afghanistan 7%).

One of the main problems of the Region is the high rate of turnover of highly qualified staff. This makes it necessary to continually train new staff in malaria control and elimination. Several regional activities were conducted in 2011–2012 including: 13th and 14th diploma courses on malaria programme planning and management for 42 participants; training on use of molecular techniques for malaria in collaboration with the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) in April 2012 for 13 participants; 2 courses in the regional centre of excellence on malaria microscopy in Muscat, Oman for 32 participants; and the first malaria elimination course in Luxor, for 22 participants including participants from other WHO regions. The Regional Office emphasized the importance of quality management of malaria diagnosis in a regional workshop on strengthening quality management systems for parasitological diagnosis of malaria and held a regional workshop on strengthening quality management systems for parasitological diagnosis of malaria in Muscat, Oman, in September 2011 attended by 11 priority countries. Three countries were supported (Afghanistan, Sudan, Yemen) with experts for assessment, gap analysis or development of the national dual strategy aiming at universal access to quality parasitological diagnosis of malaria. The Regional Office strengthened efforts on monitoring antimalarial efficacy by organizing a training course for consultants on methods of antimalarial therapeutic efficacy testing and malaria microscopy at the Blue Nile National Institute for Communicable Diseases for 15 participants from 6 countries with falciparum malaria), supporting drug efficacy studies in 6 countries and organizing the second meeting of programme managers from countries in the Horn of Africa Network for Monitoring Antimalarial Treatment (HANMAT) and the Pakistan–Islamic Republic of Iran–Afghanistan Malaria Network (PIAM-net) in September 2011.

For vector control, the Region supported a consultation on insecticide resistance management in Casablanca, Morocco, 25–27 September 2012, including experts and representatives from 12 countries. Some countries were supported to conduct national training on vector surveillance, monitoring insecticide resistance. A regional database on insecticide resistance for all vectors in countries was developed in collaboration with two experts. The fifth meeting of the Scientific and Technical Advisory Committee of the WHO/UNEP project supported by the Global Environment Facility was held in Cairo, Egypt 10–12 July 2012. The project was extended to end 2014. Mid-term review of the project started in October 2012.

The Regional Office considers malaria programme reviews to be highly useful for countries and plans to complete these in all countries including those, which are currently considered as malaria-free. Key challenge is a number of countries in the region are beset by deep security problems, which hampers all antimalarial efforts including external assessment and certification

2.3 Update on the World Malaria Report, burden estimation, malaria surveillance, malaria programme review, vivax malaria

Dr R. Cibulskis, WHO headquarters

Over US\$2 billion were spent on malaria control globally since 2002 but remains substantially less than US\$5 billion required for adequate malaria control funding. Domestic funding was highest in richest countries and lowest in the poorest. External funding for malaria, however, targeted the poorest and highest mortality countries.

It was estimated that there were 219 million cases and 660 000 deaths globally. The estimates of malaria in the World Malaria Report were half those estimates by the Institute for Health Metrics and Evaluation group. However, in most settings the uncertainty intervals of the estimates overlap – and therefore cannot be considered statistically significant – and it is only in persons >5 years of age that there is a real difference. It is estimated that investment in malaria control has averted 1.1 million deaths, with the largest impact in the countries with highest burden. 55 out of 99 endemic countries are likely to achieve 75% reduction in malaria deaths.

Inadequate surveillance systems were seen as the main challenge to accurate estimation of disease burden. Globally only 10% of cases are captured in surveillance systems annually. For many countries an assessment of disease trends cannot be made owing to inconsistent reporting and therefore for some countries an assessment of trends must be derived from estimates of disease burden obtained from models. The main bottlenecks in the surveillance system was that only a few fever cases sought treatment, of which only a sub-set went to government health services. Only some were tested and of these a small proportion were reported. In 40% of endemic countries of the Region, data were sufficiently reliable to assess trends. Dr Atta emphasized the need for countries to review estimates and various aspects of the bottlenecks and to improve current understanding of disease burden, and also design ways of removing the bottlenecks for a reliable malaria surveillance system.

The meeting was informed of the availability of two malaria surveillance manuals: one for control countries and one for elimination countries. Copies of the guidelines are available on the WHO website. The guidelines advise countries that are in the control stage to register outpatient, report aggregated data at district level and graph surveillance of admissions, cases and deaths monthly. Six control charts were recommended. These were on incidence rates, patient attendance, quality of diagnosis and reporting, proportional malaria incidence, diagnostic effort, percentage of cases due to falciparum. For elimination countries it was recommended that confirmed cases are recorded and immediately notified, followed with full case investigation, each new focus of transmission to be carefully investigated included epidemiological and entomological analysis and high-risk foci to be monitored.

Malaria surveillance assessment tool was presented with the aim of assessing trends, determining malaria endemicity across countries and estimating overall malaria burden. This tool will be piloted in Sudan. The process of updating the malaria programme review manual is ongoing, WHO is also developing elimination scenario planning tool to help programmes judge what progress can be achieved with different levels of interventions. WHO and the Global Health Group (UCSF) have published four country studies on malaria elimination. A *P. vivax* control and elimination strategy is under development. The Evidence Review Group on Malaria Burden Estimation was set up to advise the MPAC on issues around appropriate approaches for estimating malaria burden.

2.4 Regional data management

Mr A. Aman, WHO Regional Office for the Eastern Mediterranean

A demonstration of the regional database was given and the coding systems and data management process were explained. The current malaria case data captured in the database were from the period 1990 to 2011. It was explained that data were geographic information system (GIS) technology-enabled and could be used to generate country profiles on malaria stratification, trends, entomology and intervention coverage. Countries can use the same data architecture and it is easy to instal. The same database would then be replicated for each country at regional level and would be used in the preparation of the World Malaria Report.

2.5 The regional burden of vivax, and falciparum mortality and morbidity in Somalia

Dr A. Noor, WHO Temporary Adviser

The presentation on the burden of vivax covered three main issues: the distribution of Duffy negativity globally, the case burden of vivax in the Region using confirmed case reports; and the distribution of G6PD in the Region. The maps of Duffy negativity suggested very low prevalence in many countries indicating probable high risk of vivax transmission. The greatest burden of locally transmitted vivax malaria is in Pakistan and Afghanistan. In the endemic tropical countries (Djibouti, Somalia, South Sudan and Sudan) very little is known on the extent of vivax transmission. In the eliminating and malaria-free countries, the highest burden of importation is in the United Arab Emirates, Saudi Arabia, Oman and Qatar. The frequency of G6PD alleles was generally low in the Region (<0.3%). It was noted that better understanding of the burden of vivax in Djibouti, Somalia, South Sudan and Sudan is needed, as well as improved evidence on G6PD deficiency to guide vivax treatment.

Modelled estimates of falciparum transmission showed substantial reductions from 2007 to 2010 leading estimated declines in morbidity and mortality in Somalia. The largest decline happened in the densely populated malarious areas in the south of the country. It is speculated that the severe drought during the period 2008–2010 and the moderate scale-up of control interventions have contributed to the observed decline in transmission.

2.6 Progress towards malaria elimination in Europe

Dr M. Ejov, WHO Regional Office for Europe

Good progress has been made towards malaria elimination in the European Region and the goal is to interrupt transmission in all countries by 2015. A recent resurgence of malaria in Greece and a focal outbreak in Turkey contributed to the bulk of the 251 cases recorded in the European Region in 2012. The outbreak in Turkey occurred in one village on the border with the Syrian Arab Republic linked to a truck driver who got infected in the Islamic Republic of Iran. Kyrgyzstan and Uzbekistan are aiming at starting the certification process in 2013; Georgia is planning to reorient the programme towards prevention of re-introduction by 2015 and Turkey and Azerbaijan are targeting for interruption of transmission by 2015.

2.7 Update on vector control interventions and insecticide resistance management

Dr A. Mnzava, WHO headquarters

Whereas the proportion of population protected with indoor residual spraying has not changed much, the proportion protected by long-lasting insecticidal nets (LLINs) has decreased. For example, the number of nets distributed in 2010 was 145 million, which dropped to 66 million in 2012. The question is how to sustain universal coverage with LLINs and indoor residual spraying when resources are unstable. Is targeting (geographical and/or biological) of vector control interventions the way forward? How feasible is this at country level? Should we focus our efforts in mobilizing the needed resources and ignore prioritization for the time being? Countries are already doing some kind of prioritization. The Global Malaria Programme is earnestly working towards providing guidance to countries and partners on how to address this important issue.

For a very long time, there has been no functional mechanism for malaria vector control policy. For example, the former Expert Group on Vector Biology and Control has not been meeting regularly; also it was not specific for malaria. Participants were informed of the establishment of two committees to address this problem following the recommendations of the Malaria Policy Advisory Committee (MPAC). The first is the Vector Control Advisory Group (VCAG), which will make recommendations to the MPAC on new forms/tools/technologies for vector control. The other committee – the Technical Expert Group (VCTEG) – is tasked with reviewing and providing guidance on the implementation of malaria vector control, including issues related to programme management.

Maintaining the effectiveness of these tools is threatened by the development and spread of insecticide resistance. The development and launching of the Global Plan for Insecticide Resistance in Malaria Vectors (GPIRM) in 2012 to address this challenge is not enough. Countries need to implement the approaches and recommendations proposed in GPIRM to

pre-emptively manage insecticide resistance. This includes strengthening capacity for the routine collection, analysis, management and timely sharing of resistance data for national and global policies as well as for procurement decisions at country level. The Global Malaria Programme is working closely with partners to mobilize the needed resources for the implementation of GPIRM.

Recently, WHO developed guidelines to monitor durability of LLINs as well as guidelines for procurement of vector control products (nets, insecticides and equipment). In these guidelines, countries were requested to routinely monitor durability of LLINs and use such data to decide which nets they should procure. Except in Sudan, none of the countries in the Region are collecting this critical data. Secondly countries in the Region and elsewhere are not using WHO guidelines when developing tender documents for procurement of vector control. The result is that countries have been supplied with sub-standard products. It is therefore important that as WHO/Global Malaria Programme works with industry to encourage investing in durable nets, countries and institutional buyers such as the Global Fund adhere to the importance of quality control – using WHO collaborating centres.

In conclusion, an unprecedented investment in commodities has been witnessed in the past decade. However, it is unfortunate that this has not been translated to investing in both human and infrastructural resources. As the call was made in 2005 through a Regional Committee resolution to strengthen capacity in entomology and vector control, this call is still relevant today. Implementation of the resolution requires a two-pronged approach – long-term training for a national cadre that will train others, supervise and carry out entomological surveillance but also short-term training for periphery staff. Both types of training require a well-tailored curriculum that is specific to the needs of national control programmes. This is key in the Region, where malaria is being eliminated in several countries and entomological surveillance will be more needed than before.

2.8 Updates on the New Global Fund funding model and its implications for countries of the Region

Dr M. Gleixner, Global Fund to fight AIDS, Tuberculosis and Malaria

This update aimed to explain the structure of the new funding model, when it will be implemented and the implementation process. The main aspects of the new funding model was: alignment with country schedules; focus on high burden countries while maintaining a global reach, simplicity of process, predictability of funding and ability to elicit full expression of demand and while rewarding performance. In 2013 grants for a limited number of countries will be piloted with the aim of full implementation in 2014.

3. PANEL DISCUSSIONS

In this meeting, five technical panels for diagnosis, treatment, malaria surveillance, malaria elimination and prevention of reintroduction of malaria to malaria-free countries; in addition to technical presentations and discussions on global situation of malaria control and elimination, vector control and vivax malaria; were conducted.

The three panels on “T3: test, treat, track” were handled in an innovative way: the presentations, which had been submitted by the seven countries in the Region, which are in the control phase (Afghanistan, Djibouti, Pakistan, Somalia, South Sudan, Sudan and Yemen) were consolidated by Regional Office staff into a single overview for each of the three “Ts”, which was presented by WHO country staff. It was then discussed first by a panel of representative of the countries and then by the plenary.

3.1 Panel 1. Test: current situation, achievements, challenges and the way forward for malaria diagnostic testing in countries that are in the control phase

The session was moderated by Dr K. Kanani from Jordan. Dr J. Amran presented the data from the countries.

Data was presented on coverage related to total number of cases reported and to health facilities by each of the two major diagnostic techniques, microscopy and rapid diagnostic tests (RDTs). In most countries, it will still take much effort before all reported cases are confirmed. In general, one of the main problems for testing is the high rate of turn-over of trained staff. In many countries, there is still lack of confidence in the results of RDTs as well as microscopy, on the part of service providers as well as the general public.

Some countries are now able to report which cases are confirmed and which are only clinical, but cannot yet distinguish confirmation by technique in their surveillance system. This will be addressed, as the information systems. Some countries are struggling with health system decentralization and devolution; this makes it necessary to rapidly attempt major capacity building at state and province level for various aspects of malaria control including diagnostic testing.

In most countries, so far, stock-outs of RDTs have not been a major problem. However, the training and maintenance of community health workers in the use of RDTs often represents a considerable managerial challenge. In several countries it is a problem that competitive bidding leads to frequent change of the brand of imported RDTs, which makes it necessary to retrain staff frequently. With reduction of *P. falciparum* burden in some countries (Sudan, Somalia and Yemen) *P. vivax* has become more dominant. So, it is crucial for malaria programmes to review diagnostic strategy and ensure selection of RDTs that can detect other species in addition to *P. falciparum*.

Several speakers expressed concern about the fact that the widespread use of RDTs leads to a degradation of microscopy skills in health facilities, even hospitals. This is particularly worrying, when all those RDTs are supported exclusively by external funding, which might not always be sustained. It was noted that there are no and should not be a generic WHO guidelines on the selection between microscopy and RDTs. The latter is a relatively new technique, but now, as countries have several years of experience with both, they should plan themselves what should be used where and when based on local analysis. It may appear to be of concern for example, when RDTs are used in hospitals, but this can be rational, for example for very ill patients at night-shift or at time of electricity failures, but does not imply a replacement of microscopy by RDTs. In some hospitals, where malaria has

become a very rare disease, it may in fact be more rational to rely on RDTs for primary examination, and also prepare a slide for microscopy examination in a reference laboratory. It should be recalled that for elimination, microscopy must be the standard technique; one of the reasons being that only microscopy can detect *P. falciparum* gametocytes

In conclusion, Dr Newman emphasized that “microscopy vs. RDTs” is a false dichotomy. In many endemic countries the main priority should be to ensure full coverage by RDTs in peripheral services, where microscopy is not possible. At the same time, we should not allow RDTs to replace microscopy at higher levels, where the latter can be used and maintained at reasonable cost.

3.2 Panel 2. Treat: current situation, achievements, challenges and the way forward for malaria treatment for countries that are in the control phase

The session was moderated by Mr Farah Ahmed. Dr T. Abdelgadir presented the findings from the countries.

All countries in the Region now have an ACT as the primary treatment of falciparum malaria; however, Afghanistan and Pakistan still use chloroquine as treatment for clinical malaria. Some countries use primaquine as radical treatment of vivax malaria; others would like to be able to test for G6PD deficiency before introducing of primaquine for this purpose.

Most countries monitor susceptibility to their selected ACT; so far there has been no reports of resistance problem, except that in Sudan and in Somalia artesunate plus sulfadoxine–pyrimethamine has shown failure of more than 10% in certain sentinel sites; this is considered to reflect sulfadoxine–pyrimethamine resistance.

Stock-outs of ACTs have been experienced by several countries. These have had various causes including problems in supply channels to the periphery and high level administrative problems related to financing mechanisms. For supply chains there is often a choice between following the general health system or using a categorical malaria system. Some countries have opted for flexibility, using the general system when possible and the special one, where necessary. However, as it is now aimed to prioritize integrated community case management, it will be attempted to work jointly with other programmes to ensure a single channel for supplying the needed drugs to community level.

Sometimes, countries address supply chain problems by borrowing from stocks set up for emergency situations to deal with supply chain delays. In most countries, monotherapy has now become rare, as manufacturers have stopped marketing oral artemisinin monotherapy products. However, in several countries, the misuse of injectable artemisinin products, especially artemether, has become a serious problem. Furthermore, in many countries, the private sector is using a broad array of antimalarial medicines, which are often of questionable quality, and official national treatment guidelines are ignored. It was recognized that after many years of awareness of the role of the private sector, some countries have not yet addressed this effectively. There may still be a need for operational research in some of these countries to be able to develop effective strategies.

Countries agreed that the traditional control programme training and education approaches on case management may not be enough. There is a need for working much more with medical schools, where curricula are often outdated; for targeting senior recognized clinicians-for example through professional associations-who serve as role models also for those service providers, who are not medically qualified; and for working more with the pharmaceutical sector including distributors. It was pointed out that the younger generation of clinicians are more likely to use the internet than textbooks as source of information. The speed of change in official guidelines and recommendations constitute a challenge, and also WHO needs to innovate its communication in this respect.

Participants pointed out that there is a need to streamline procurement among different partners and agencies including nongovernmental organizations. There is considerable potential in working with pharmaceutical distributors, who are often interested in being informed about which products are appropriate and of good quality. Even in countries, where the private sector appears to play a dominant role and is poorly regulated, it is possible to change the practices by a systemic approach, for example providing the information which is needed and requesting the highest level of the regulatory authorities to officially ban inappropriate products. In some cases formal agreements with pharmaceutical manufacturers and distributors may also be appropriate.

3.3 Panel 3. Track: current situation, achievements, challenges and the way forward for malaria monitoring and evaluation and surveillance

The session was chaired by Dr Al-Zahrani. Dr W. Butt presented the country findings.

The countries rely on malaria information systems, which typically include several channels of information, are part of general health management information systems, or specialized. For some countries the inclusion of data from community level is still a challenge. All countries have conducted or planning to conduct malaria indicator surveys. Some have or are establishing unified national databases. Countries agreed that their experience in providing information for the World Malaria Report has been beneficial, as it serves as a stimulus to collaborate on the timely assembly of quality data.

It is recognized that in most countries, the completeness of data in time and space is still incomplete. This is mostly due to systemic problems like absent, under-paid, under-motivated or overburdened staff. There is generally a need for more supervision. Some countries have recently started quality assurance by using checklists and quality indicators. Quarterly review meetings have been helpful in some countries.

It was recognized that in all countries there is a need for improving technical capacity of malaria programmes at central level in information systems and information technology. All countries recently completed or are currently working on malaria programme reviews.

Several speakers including Dr Mahjour emphasized that information systems are not only to serve the national level, but at least as much to strengthen the capacity of more

peripheral levels for using data for situation analysis, detection of problems and decision-making. This aspect needs to be strengthened in the majority of countries.

3.4 Panel 4. Malaria elimination: achievements and challenges

In Afghanistan, the falciparum elimination programme is ongoing in the northern provinces of the country on the border with Tajikistan. Indoor residual spraying has been implemented in and around active foci resulting in very low reported incidence, only five cases in 2012. Although this figure cannot represent the real burden of falciparum malaria in 2012, given the cases were reported from the public health sector only, the trend of reduction is quite encouraging.

The Islamic Republic of Iran achieved an 86% reduction in local cases between 2000 and 2011. In 2011 only 50% of cases were locally transmitted with the majority of imported cases coming from Pakistan and Afghanistan. In 2012, a total of 532 were locally transmitted, of which 492 were vivax and only 40 cases were falciparum and mixed. 491 cases were from Sistan va Baluchestan, bordering Baluchistan province in Pakistan, 40 from Homorzogan and one case from Kerman province. Kerman province is now free of falciparum. A real-time case and foci classification has been established at all levels of primary health care with same-day reporting of cases from all districts throughout the country. RDT is used in the periphery for treatment but confirmation is done by microscopy. The elimination programme in the country has strong political and intersectoral support. However, a weak malaria programme in the bordering areas in Pakistan and uncontrolled human population movement were identified as major threats to malaria elimination. Economic sanctions were identified as a future obstacle in the procurement of malaria commodities, in case of cessation of Global Fund support.

In Saudi Arabia, Jizan and Asir governorates in the southwest at the border with Yemen have local transmission and been targeted for malaria elimination. Over the period 2000 to 2011 locally transmitted malaria cases have reduced from 1210 to 82 but a sharp rise in imported cases was observed. All locally transmitted cases are currently falciparum and no vivax transmission in the last 8 years. The majority of imported cases come from Yemen, India and Pakistan. The huge cross-border movement (up to 3000 persons per day) with Yemen has been identified as the main threat to malaria elimination in Saudi Arabia. Border coordination with Yemen exists as part of the “Arabian peninsula free from malaria” initiative and involves screening of travellers along 10 km buffer from the border with Yemen supported with indoor residual spraying. Combo RDTs are used for screening and only positive cases are confirmed with slides. It was suggested that febrile individuals who test RDT negative should also be confirmed with slides. Efforts focused on testing and treating of malaria cases and twice a year indoor residual spraying has also been implemented by the Yemeni malaria control programme along the Tihama region. Insecurity in Yemen with identified as an obstacle to the success of cross-border cooperation. Another challenge for malaria elimination in Saudi Arabia is the large population of pilgrims (estimated at 7 million annually), which sometimes coincides with high malaria season.

The subnational elimination initiative in Yemen focused on the three governorates of Hadramout region under an elimination strategy developed in 2012 by Ministry of Public

Health and Population and local nongovernmental organizations. No malaria cases have been reported from Socotra Island since 2006 which is also part of the Hadramout region.

In Pakistan, Punjab, which has a population of more than 92 million, has been targeted for elimination. However uncontrolled movements from neighbouring high-risk areas are a problem. Only a few districts in the southern part of Punjab have local transmission. A severe epidemic of dengue fever in 2009 led to diversion of resources.

Key issues highlighted are: maintaining momentum for malaria funding after elimination, including the private sector in malaria surveillance, testing illegal migrants, including a single dose of primaquine for falciparum.

3.5 Panel 5. Imported malaria in the Region: challenges and action needed for prevention of re-establishment of malaria transmission

Fourteen countries in the Region are free of malaria, two of them are certified. The major sources of importation are Pakistan, the Indian sub-continent and sub-Saharan Africa. The United Arab Emirates attracts highest number of cases from India and Pakistan. In GCC countries, falciparum and mixed cases account for 10.5% of overall case load, 87.5% of north African countries, and 53.8% in west Asian countries. Although cases from India have declined over time, those from Pakistan are rapidly increasing. One explanation for this is that the majority of Pakistan are unskilled labourers from rural origin and exposed to greater transmission while many Indians of professional background from urban areas. In the North African region, Morocco receives the highest number of imported cases, mainly from sub-Saharan Africa, followed by Egypt, Tunisia and Libya. In the west Asian countries, Jordan has the highest imported caseload followed by Lebanon, Syrian Arab Republic and Iraq. The majority of cases (57%) imported into Egypt were from Sudan. Since 1970, Egypt has had cross-border collaboration with Sudan, under the Gambia project, whose aim is to prevent the re-introduction of the *An. arabiensis* to Egypt.

The main strategy across the malaria free countries was the prevention of re-establishment of malaria transmission, through clinical, epidemiological and entomological surveillance and the management of imported malaria. Active case detection is implemented in all countries. All countries had areas that remained receptive to malaria. Focal vector control activities including indoor residual spraying and larviciding based on and vulnerability with change in migration patterns in the North African countries immigrants from the sub-Saharan Africa region, instead of using these countries as transit point to Europe, select these countries as their primary destination increasing the risk of re-introduction. However, the likelihood of the Palearctic vectors transmitting falciparum from the Afro-tropical region is very low.

High level lobbying for continued support of national programmes in malaria free countries was considered critical and it was recommended to prepare a short and effective brief advocacy document for national parliaments and equivalent, as the Arab League summit and the Organization of Islamic Cooperation.

4. RECOMMENDATIONS

To national malaria programmes

1. Refine national plans for diagnostic testing with the following priorities:
 - scaling up testing towards 100% coverage of all suspected malaria cases in all health facilities including those managed by community and private services;
 - maintaining, upgrading and expanding existing microscopy services in order to provide reliable reference and first-line diagnosis, except where rapid tests are clearly more cost-effective because of epidemiological and operational factors. Both methods should be supported by quality assurance;
 - developing a mechanism for regular training of microscopists, especially in eliminating and malaria-free countries where the expertise can be lost due to the low incidence of cases.
2. Strengthen or develop a strategy for ensuring compliance and quality through a combination of regulations, communication, monitoring of products and services and, eventually, involvement in malaria surveillance.
3. Strengthen malaria surveillance and management information systems with priority given to completeness of coverage, quality assurance and timely use of epidemiological and operational data for decision-making at all levels. Countries should identify the surveillance bottlenecks in the public and private health sectors.
4. Develop a comprehensive national database, which may be adapted from the regional database according to the specific context of the national health information system.
5. Develop a plan on insecticide resistance management as part of the national malaria strategic plan.
6. For procurement of vector control commodities, use available WHO resources and guidelines on how to develop tender documents including the request for pre-shipment quality control tests (from WHO collaborative test centre) at the cost of the potential supplier. The use of locally generated data to guide procurement must be emphasized.
7. Conduct advocacy activities on T3: “test treat track” including distribution of advocacy documents for the T3 initiative to all stakeholders.
8. Develop key messages for World Malaria Day through different channels (SMS, internet, social media and television broadcast).

To WHO

9. Develop a position statement on the use of RDTs (where and when) for malaria-free countries including for routine diagnosis and screening.
10. Advocate for the standardization of the RDT format.
11. Develop focused briefs for political and economic forums to sustain secure appropriate programme funding for eliminating and malaria-free countries.
12. Sustain mechanisms to ensure supply of antimalarials to malaria-free countries where commercial suppliers are difficult to engage due to the small volumes of medicines required.
13. Continue and expand the existing collaboration with other WHO regions.

14. Support operational research on *P vivax* burden through a combination of community prevalence surveys and health facility studies in the endemic countries, and on G6PD deficiency prevalence in eliminating and malaria-free countries, in order to guide treatment with primaquine.

Annex 1**PROGRAMME****Monday, 18 February 2013**

08:00–08:30	Registration	
08:30–09:00	Opening session	
	Message from Dr Ala Alwan, Regional Director, WHO/EMRO	<i>Dr J. Mahjour</i>
	Objectives of the meeting and methods of work	
	Introduction of participants and nomination of officers	
09:00 – 10:00	Progress and challenges of malaria elimination and control at the global level	<i>Dr R. Newman</i>
10:00 – 10:30	Discussion	
11:00 – 11:30	Progress and challenges of malaria elimination and control in the Region	<i>Dr H. Atta</i>

Panels 1–3. “T3: Test, Treat, Track”. Scaling up diagnostic testing, treatment and surveillance for malaria countries: Afghanistan, Djibouti, Pakistan, Somalia, South Sudan, Sudan and Yemen

Rapporteur: Dr Allan Schapira

11:30 – 13:00	Panel 1 – Test: Current situation, achievements, challenges and the way forward for malaria diagnostic testing in countries that are in the control phase	<i>Moderator: Dr K. Kanani</i> <i>Presenter: Field Staff</i>
14:00 – 15:30	Panel 2 – Treat: Current situation, achievements, challenges and the way forward for malaria treatment for countries that are in the control phase	<i>Moderator: Dr A. Raeisi</i> <i>Presenter: Field Staff</i>
16:00 – 17:30	Panel 3 – Track: Current situation, achievements, challenges and the way forward for malaria monitoring and evaluation and surveillance for countries that are in the control phase	<i>Moderator: Dr M. Al Zahrani</i> <i>Presenter: Field Staff</i>

Tuesday, 19 February 2013

08:30 – 09:00	Summary of Day 1	<i>Dr A. Schapira</i>
09:00 – 09:30	Update on: World Malaria Report, burden estimation, malaria surveillance, malaria programme review, vivax malaria	<i>Dr R. Cibulskis</i>
09:30 – 09:45	Regional data management: databases, profiles, data sharing	<i>Mr A. Aman</i>
09:45 – 10:00	Discussion	
10:00 – 10:30	Burden of vivax malaria in the Region Burden of <i>Plasmodium falciparum</i> morbidity and mortality in Somalia 2007–2010	<i>Dr A. Noor</i>
	<i>Panel 4 – Countries: Afghanistan, Islamic Republic of Iran, Saudi Arabia</i> <i>Rapporteur: Dr A. Noor</i>	<i>Moderator: Dr A. Schapira</i> <i>Presenter: Field Staff</i>
11:00 – 13:00	Malaria elimination: achievements and challenges (cross-border malaria, vivax elimination, surveillance)	

14:00 – 14:30	Recent outbreaks in malaria-free countries in Europe <i>Panel 5 – Countries: Iraq, Jordan, Morocco, Oman and United Arab Emirates</i>	<i>Dr M. Ejov</i>
	<i>Rapporteur: Dr A. Noor</i>	
14:30 – 16:00	Imported malaria in the Region Challenges and action needed for prevention of re-establishment of malaria transmission	<i>Moderator: Dr A. Beljaev</i> <i>Presenter: Mr K. Mustafa</i>
16:30 – 17:30	Updates on the new Global Fund funding model and its implication on countries	<i>Dr W. Buhler and Dr M. Berdnikov</i>
Wednesday, 20 February 2013		
08:30 – 09:00	Summary of Day 2	<i>Dr A. Noor</i>
09:00 – 10:00	Update on vector control interventions and insecticide resistance management	<i>Dr A. Mnzava</i>
10:00 – 10:30	Discussion on planned World Malaria Day activities, advocacy and resource mobilization	<i>Plenary</i>
11:00 – 12:00	Discussion on planned intercountry and regional capacity strengthening activities in 2013 (microscopy and surveillance)	<i>Plenary</i>
12:00 – 13:00	Development of the recommendations	<i>Group work</i>
14:00 – 15:00	Conclusions and recommendations	
15:00	Closing session	

Annex 2

LIST OF PARTICIPANTS

AFGHANISTAN

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

Dr Ahmad Walid Sediqi
Head of Epidemiology and Surveillance Department
National Malaria and Leishmaniasis Control Programme
Ministry of Public Health
Kabul

BAHRAIN

Mr Mohsin Jasim Ali
Head Malaria and Vector Control Group
Ministry of Health
Manama

DJIBOUTI

Mr Mahamoud Ahmed Guedi
Malaria Coordinator
Ministry of Health
Djibouti

EGYPT

Dr Mohamed Mehrez Mostafa
Director General
Malaria, Filariasis and Leishmaniasis Control
Ministry of Health and Population
Cairo

ISLAMIC REPUBLIC OF IRAN

Dr Ahmad Raeisi
Manager
Malaria Control Programme
Ministry of Health and Medical Education
Teheran

Dr Mahmood Nabavi
Deputy of CDC
Ministry of Health and Medical Education
Teheran

IRAQ

Dr Asim Mahdi Jaber
Head, Veterinaries
Malaria Unit
Ministry of Health
Diywania

JORDAN

Dr Khalil Abdul-Aziz Kanani
Head of Parasitic and Zoonotic Diseases Department
Malaria Control Programme
Ministry of Health
Jabal Al-Amir Hamzeh/Zarqa
Amman

KUWAIT

Dr Abdullah Abbas Haidar
Head of Public Health
Al Farwaniya Health Region
Ministry of Health
Kuwait

LEBANON

Dr Raymond Seeman
Malaria Control Programme Manager
Ministry of Public Health
Beirut

MOROCCO

Dr Abderrahmane Laamrani El Idrissi
Chief of Parasitic Diseases Unit
Directorate of Epidemiology and Diseases Control
Ministry of Health
Rabat

OMAN

Dr Majed Al Zadjali
Director
Malaria Eradication Programme
Ministry of Health
Muscat

PAKISTAN

Dr Masood Qadir Nousherwani
Director-General, Health Service
Balochistan
Quetta

Dr Jafer Ilyas
Director-General
Health Services Punjab
Ministry of Health
Lahore

Mr Muhammad Jamil
Malaria Focal Person for FATA
Directorate of Health and Population Welfare
Peshawar

Dr Sharif Ahmad Khan
Director General
Health Services
Khyber Pakhtunkwa
Peshawar

PALESTINE

Dr Saed Hanoun
Director General of Tulkarem PHCD
Ministry of Health
Palestinian National Authority
Tulkarem

QATAR

Dr Mohammed Mohammed Al-Hajri
Manager of Health Protection and Communicable Diseases and Focal Point for Malaria
Programme
Supreme Council of Health
Doha

SAUDI ARABIA

Dr Mohammed Hassan Alzahrani

Director

Malaria Control Programme

Ministry of Health

Riyadh

Dr Mohammed Abdullah Al Helal

Director

Vector Control Programme

Ministry of Health

Riyadh

SOMALIA

Dr Abdiqani Sheikh Omar

Director

Malaria Control Programme

Ministry of Health

Mogadishu

Dr Abdi Abdillahi Ali

Director

Malaria Control Programme

Ministry of Health Somaliland

Hargeisa

Dr Abdikarim Mussa

Case Management Focal Point

Ministry of Health

Hargiesa

Dr Mohamed Said Mohamed

Senior Medical Doctor and Communicable Diseases Adviser

Ministry of Health

Puntland

SOUTH SUDAN

Dr Harriet Pasquale

Manager

Malaria Control Programme

Ministry of Health

Juba

Dr Martina Constantino Jervas
Malaria Focal Point for Case Management
Ministry of Health
Juba

SUDAN

Dr Khaled Abdulmutalab Elmardi
Malaria Programme Manager
Federal Ministry of Health
Khartoum

Dr Rahma Eltigani Mohammed Ahmed
Director
Case Management
Federal Ministry of Health
Khartoum

Dr Abdalla Ahmed Ibrahim
Director
Monitoring and Evaluation
Federal Ministry of Health
Khartoum

SYRIAN ARAB REPUBLIC

Dr Atef Al Taweel
Manager
Vector Control Programme
Ministry of Health
Damascus

TUNISIA

Dr Dhikrayet Gamara
Manager
Malaria Programme
Ministry of Public Health
Tunis

UNITED ARAB EMIRATES

Dr Abdel Aziz Mosaad Al-muthanna
Director General, Central Malaria Control Department
Ministry of Health
Sharjah

REPUBLIC OF YEMEN

Dr Niaz Abdo Saeed Abdulrab
Director
Malaria Case Management Unit
Ministry of Public Health and Population
Sana'a

Dr Adel Al Jasari
Manager
Malaria Control Programme
Ministry of Public Health and Population
Sana'a

OTHER ORGANIZATIONS

Building Resources Across the Community (BRAC)

Dr Abdul Aziz Rasooli
Deputy Project Coordinator
Malaria Control Programme
BRACH Health Programme
Kabul
AFGHANISTAN

Healthnet TPO

Dr Ajmal Mommand
Manager
Malaria Control Programme
Kabul
AFGHANISTAN

Eastern Africa Regional Network (EARN)

Dr Joaquim Da Silva
RBM EARN Focal Point
UNICEF – ESARO
Nairobi
KENYA

Global Fund to Fight Aids, Tuberculosis and Malaria

Dr Werner Buhler
Fund Portfolio Manager
Grant Manager Division
Geneva
SWITZERLAND

Dr Marion Hachmann-Gleixner
Global Fund Senior Fund Portfolio Manager
Middle East and North Africa
Geneva
SWITZERLAND

U.S. Naval Medical Research Unit no. 3 (NAMRU-3)

Dr Hanan El Mohammady Ismail
Head, Laboratory for Bacterial and Parasitic Diseases Research Programme
Cairo
EGYPT

Dr Alia Zayed
Deputy Head Vector Biology Programme
Head, Vector Control Section
NAMRU-3
Cairo
EGYPT

Yemen LNG Company Ltd

Mrs Entesar Awadh Bakhwar
SD Coordinator
Sana'a
YEMEN

United Nations Development Programme (UNDP)

Mr Abdallah Ahmed
Malaria Programme
Khartoum
SUDAN

WHO TEMPORARY ADVISERS

Dr Allan Schapira
Expert in Malaria Vector Control and Prevention
Manila
PHILIPPINES

Dr El Fatih Mohamed Malik
Minister of Health for Gezira State
Wad Medani
SUDAN

Dr Andrei Beljaev
Associate Professor
Chair of Tropical and Parasitic Diseases
Russian Academy for Postgraduate Medical Training
Moscow
RUSSIA

Dr Abdisalan Noor
Research Fellow
Malaria Public Health and Epidemiology Group Centre for Geographic Medicine
KEMRI–University of Oxford–Wellcome Trust Collaborative Programme
Nairobi
KENYA

WHO SECRETARIAT

Dr Jaouad Mahjour, Director, Department of Communicable Disease Prevention and Control, WHO/EMRO
Dr Robert Newman, Director, Global Malaria Programme, WHO/HQ
Dr Abraham Mnzava, Coordinator, Malaria Vector Control, Global Malaria Programme, WHO/HQ
Dr Richard Cibulskis, Coordinator, Strategy, Economics and Elimination, Global Malaria Programme, WHO/HQ
Dr Hoda Atta, Regional Adviser, Malaria Control and Elimination, WHO/EMRO
Dr Ghasem Zamani, Medical Officer, Malaria Control and Elimination, WHO/EMRO
Dr Mikhael Ejov, Programme Manager, Malaria and other Vector-Borne and Parasitic Diseases, WHO/EURO
Dr Marian Warsame, Medical Officer, Global Malaria Programme, WHO/HQ
Dr Amy Barrette, Technical Officer, Drug Resistance and containment, Global Malaria Programme, WHO/HQ
Eng. Amir Aman, National Professional Officer, Malaria Control and Elimination, WHO/EMRO
Dr Waqar Butt, Medical Officer, WHO Afghanistan
Mr Farah Ahmed, Entomologist, WHO Djibouti
Dr Qutbuddin Kakar, National Professional Officer, WHO Pakistan.
Dr Jamal Amran, Medical Officer, WHO Somalia
Mr Fahmi Isse Yusuf, MCE Data Manager, WHO Somalia
Dr Tarig Abdelgadir, Malaria Focal Point, WHO Sudan
Mr Kamal Salih Mustafa, Technical Officer, WHO Yemen
Mr Ahmed Abdel Wahab, Information Technology and Telecommunications Support, WHO/EMRO
Nahla Ibrahim, Programme Assistant, WHO/EMRO
Ms Omneya Aboul Seoud, Team Assistant, WHO/EMRO

The image features a minimalist, abstract design composed of several rectangular blocks. A large teal block occupies the top right and bottom right portions. A horizontal grey band runs across the middle. On the left side, there is a light grey block at the top and a darker grey block below it. The bottom of the image is a solid grey bar containing contact information.

World Health Organization
Regional Office for the Eastern Mediterranean
P.O. Box 7608, Nasr City 11371
Cairo, Egypt
www.emro.who.int