

**MALARIA CROSS BORDER WORKSHOP
BETWEEN SYRIAN ARAB REPUBLIC,
IRAQ AND TURKEY**

Aleppo, Syrian Arab Republic
20–22 April 2004



World Health Organization
Regional Office for the Eastern Mediterranean

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1. INTRODUCTION

1.1 Rationale and objectives

Malaria and then mosquito vectors that transmit the disease do not recognize or respect national boundaries. Border malaria between the Syrian Arab Republic, Turkey and Iraq is therefore a problem that requires the coordination effort of the three countries. This is important especially when there is disparity in capacities and resources available between the countries involved in addressing the malaria problem. The problem is further compounded when there is also variation in malaria endemicity between the countries.

For example, the Syrian Arab Republic was at the point of eliminating malaria three years ago. Its capacity in vector control—an important component of malaria control—more so when cases are very low, is however, very weak. Iraq on the other hand, despite her current situation, has the capacity to eliminate malaria. In Turkey, malaria is almost endemic in the southern parts of the country that shares borders with Syria and Iraq.

To collectively address the problem, both countries would benefit from joint planning, coordination and implementation of malaria control activities. It is only through such efforts that the risk of malaria re-introduction would be achieved in countries that successfully eliminate the disease.

It was for these reasons that a workshop on malaria cross border between the Syrian Arab Republic, Turkey and Iraq was jointly convened by WHO/EMRO and WHO/EURO in Aleppo from 20 – 22 April 2004, with the following objectives:

- To review the malaria situation in participating countries;
- To share experiences on surveillance, disease management and vector control activities;
- To identify problems and solutions towards improving malaria efforts;
- To discuss and develop plans of action for malaria control, particularly in border areas.

1.2 Opening Remarks

The meeting was attended by participants from the ministry of health from the three countries-Iraq, Turkey and the Syrian Arab Republic and WHO staff from EURO and EMRO. The list of participants is found in Annex 1.

The meeting was formally opened by Mr Yassin Shukr—Deputy WR Syrian Arab Republic on behalf of Dr Hussein A. Gezairy, Regional Director of WHO/EMRO. In his message, Dr Gezairy stressed the importance of joint planning and implementation of malaria activities in bordering countries, especially those aiming at malaria elimination as the risk of re-introduction is a possibility even after elimination. The full text of Dr Gezairy address is found in Annex 2. His address was followed by the welcome address from Dr Ammar Talas, Director of Health, Aleppo Directorate, on behalf of H.E Minister of Health, Syrian Arab Republic Prof. Dr Mohammad Iyad Chatti, welcomed the participants to Aleppo, Syrian Arab Republic and wished them successful deliberations during the meeting.

Dr Hoda Yusuf Atta, Regional Adviser, Roll Back Malaria, WHO/EMRO briefed the participants on the objectives of the meeting, the method of work and the expected outcome of the workshop. Details of the workshop programme are found in Annex 3.

2. TECHNICAL PRESENTATIONS

The following are summaries of the presentations and the main issues discussed.

2.1 Malaria situation in the Eastern Mediterranean Region with emphasis on Syria and Iraq

Dr Hoda Atta, RBM/WHO/EMRO, Cairo, Egypt

Malaria is still a public health threat in EMR where 287 million live under risk (60% of EMR population), 15 million clinical cases and 47 thousand deaths occur annually. The countries of the regions are categorized into 4 groups according to epidemiological and operational situation. Group 1: Malaria free countries, Lebanon, Palestine, Jordan, Qatar, Libya, Bahrain, Tunisia, Kuwait, UAE; Group 2: Countries targeting malaria elimination Egypt, Morocco, Oman, UAE, Syria; Objectives of the programme in those countries are: Prevent malaria reintroduction in malaria free areas and elimination of residual foci. In 2003 all cases reported from those countries were imported except 2 indigenous cases were recorded from each of Syria and Morocco. Group 3 countries with low/moderate endemicity includes Iraq, Iran, Saudi Arabia and Pakistan. Good progress has been achieved in the former three countries in terms of reduction of malaria cases. Group 4 countries with intense malaria transmission (Sudan, Somalia, Djibouti, Yemen, and Afghanistan) are responsible for 95 % of the malaria cases in EMR. RBM Regional strategic approaches include: Strengthening WHO Regional office and country offices in priority countries; Support inter-country actions and interregional cooperation; Support the countries in implementing priority activities. The malaria control programmes in Syria, and should be in near future in Iraq, has set the goal of elimination of residual malaria foci and prevention of its reintroduction to free areas. Coordination of activities at the border of Turkey is a crucial activity to achieve that goal.

2.2 Scaling up the response to malaria in the WHO European Region

Dr Mikhal Ejov, RBM/WHO/EURO, Copenhagen, Denmark

The perception that the WHO European Region is free from malaria has been changing rapidly over the past two decades. Since the early 1980's and throughout the decades to follow, the number of countries affected by autochthonous malaria has increased from 3 to 10. The seriousness of the malaria situation in Turkey; the progressive return of endemic malaria, the spread of *P. falciparum* transmission and the occurrence of resistant *P. falciparum* malaria in Tajikistan; the explosive outbreaks of malaria in Georgia and Kyrgyzstan; the re-establishment of malaria transmission in Uzbekistan, and the need to consolidate further the results achieved in Azerbaijan, Armenia and Turkmenistan, are major causes for concern within the Region. Despite official data reported to WHO by Member States, which indicate a recovery from the 1994-1996 epidemic and the continuing improvements in the regional malaria situation (the reported number of autochthonous malaria cases declined from 90,712

to 15,900 during 1995-2003), it is important to be realistic with respect to the actual figures of malaria in the Region. Out of a total population in the Region of 873,457,500, it is estimated that between 60 and 70 million people currently live in areas at varying degrees of risk of malaria in Central Asia, the Trans-Caucasian countries and Turkey.

Amongst all health priorities of the countries in the WHO European Region, the control of infectious diseases, including malaria, is one of the highest. The WHO Regional Office for Europe has committed itself to an intensive response to the burden of malaria, and, had by 1999 developed a regional strategy to Roll Back Malaria (RBM) in affected countries of the European Region. The malaria issue was on the agenda of the Fifty-Second session of the Regional Committee for Europe, and a resolution entitled "Scaling up the Response to Malaria in the European Region of WHO" was endorsed by all Member States. In the Region, RBM focuses on addressing malaria-related issues through expansion and intensification of country-level RBM partnership actions; enhancing national capacities for decision-making; investing in human development and capacity building; improving capacities for early diagnosis and prompt treatment of malaria; strengthening capacities for early detection, containment and prevention of outbreaks and epidemics; promoting cost-effective and sustainable preventive measures, including vector control; strengthening surveillance and operational research capabilities; ensuring community mobilization, and enhancing inter-sectoral collaborative actions.

The regional RBM movement has successfully mobilized the collective efforts of international agencies, bilateral organizations, the NGO community, and others to create greater awareness of the malaria problem and to increase the amount of overall resources available for malaria in the WHO European Region. A project entitled "Roll Back Malaria in Central Asia" has gained the financial support of the United States Agency for International Development (USAID). The grant supports malaria control activities in Tajikistan, Kyrgyzstan and Uzbekistan. WHO provides the overall technical guidance and strategic coordination of project activities with the partners concerned. Other strategic partners within the Central Asian region (CDC, MERLIN, ACTED, UNICEF) have been called upon to provide financial support and technical assistance in the establishment of sustainable malaria control and prevention programmes in the region. A series of RBM technical and partnership consultations and meetings have taken place in Kyrgyzstan, Uzbekistan and Tajikistan in 2003 to ensure that this process remains on track. In October 2003, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFTAM) has given Georgia a grant to support its national response to malaria over three years.

Taking into account the malaria trends over the past 20 years, the present day situation, and the actual magnitude of the issues faced as described above, it is logical to conclude that affected countries in the Region will continue to face a public health problem caused by malaria, unless a more serious commitment for sustainable malaria control effort is made on the part of malaria-affected countries as well as the international community. Agricultural development, social unrest, extensive and often uncontrolled population movements from endemic/epidemic to non-malaria areas, combined with the fluctuating meteorological and ecological changes favourable for the enhancement of malaria transmission, could all serve as determinants to the possible aggravation of the malaria problem within the Region in years to

come. At present, despite the widespread recognition of the need for additional resources for the global RBM programme, resources for malaria control in the European Region remain severely constrained, and all national programmes are chronically dependent on external support. The annual Roll Back Malaria regional programme requirements (the level of inputs required to see visible impact within the malaria-affected countries of the Region), are estimated to be between USD 5 and 6 million. A shortfall in funding will limit the scope of regional RBM programme activities.

Although there are solid grounds for optimism in considering that the adoption of the Regional Resolution on Malaria has facilitated the promotion of measures that will lead to the goal of reduction of the burden of malaria within the Region, it is crucial that the support rendered to the countries is sustained. There is an urgent need for an increase in resources to address the challenges created by the grave malaria situations in Tajikistan and Turkey, as well as the warning malaria trends in Georgia and Kyrgyzstan, and to sustain the results achieved in Azerbaijan, Armenia and Turkmenistan.

2.3 Rationalization of vector control interventions in areas of low malaria transmission

Dr Abraham Mnzava, RBM/WHO/EMRO, Cairo, Egypt

Whereas there is a wide range of powerful vector control tools available such as indoor residual house spraying, insecticide-treated bednets (ITNs) and to a certain degree larval control, the three countries (Iraq, Turkey and Syria) have not benefited to the maximum from the use of these tools. Malaria is still endemic in the southern parts of Turkey, Syria has struggled to get rid of her last malaria cases and in the last 10 years Iraq has experienced its worst malaria outbreak. The question is—what is failing us—technical failure or health/vector control systems?

The answer is no doubt the lack of a strong and functional system to deliver these tools. The Integrated Vector Management (IVM) approach which encompasses intersectoral action for health (collaboration and partnerships) and the synergistic use of interventions is one of the ways in which vector control systems could be strengthened. As the three countries plan together to address malaria border problem, they are in essence putting IVM into practice.

In utilizing the available tools in the three countries, as a general rule, selection must be based on disease endemicity, vector species (biting and resting habits), financial and technical resources available and eco-epidemiological settings. Given the fact that the three countries have an infrastructure to deliver indoor residual house spraying (however weak the system may be)—this is the method of choice. Spray teams need to be trained regularly—preferably prior to commencing spraying and provided with protective clothing/gear. To be able to implement spraying in time i.e. just before the beginning of the transmission season and in the shortest possible time (maximum 4 weeks), insecticides and spray equipment must be supplied adequately. These supplies could also be stocked by all programmes to be able to respond immediately in the event of a malaria outbreak.

The choice of insecticides (including the correct formulation for house spraying—wetable powder) is crucial to ensure that resources are not wasted or operational deficiencies

are experienced because of using wrong formulations and products of inferior quality. The World Health Organization has produced “Guidelines for the purchase of Public Health Pesticides”–WHO/CDS/WHOPES/2000.1, also available on the WHO website www.who.int/ctd/whopes. Use of ITNs and larval control where they are appropriate could be used to supplement indoor residual house spraying.

In countries where malaria endemicity is very low and elimination of the disease is aimed at, it is very crucial that the programmes are able and carry out entomological surveillance regularly. The purpose of entomological surveillance is to assess vector species composition, abundance and biting and resting behaviour. Since it is impossible to carry out entomological surveillance everywhere, selection of representative sentinel sites is recommended. Parallel to this is the routine monitoring of insecticide resistance/sensitivity of the main vectors to insecticides in current use. The data on the vectors distribution and their sensitivity status should be mapped at the lowest administrative unit to guide the implementation of vector control interventions.

2.4 Measures for elimination of residual foci and prevention of reestablishment of malaria transmission

Dr Hoda Atta, RBM/WHO/EMRO, Cairo, Egypt

The objectives of antimalaria measures at the stage are: 1) achieving a sustainable interruption of malaria transmission, 2) depleting the reservoir of infection, 3) preventing a reestablishment of malaria from the same area, from the same country or from abroad. The intervention measures should address: vector control methods, strengthening surveillance activities to ensure early detection and prompt treatment of cases, epidemiological investigation of cases and foci, forecasting, early warning of malaria epidemic and ensure epidemic preparedness, vigilances and awareness of the health staff and the community at risk. Prevention measures include indoor residual spraying is the most effective method that selectively eliminates mosquitoes feeding on potential parasite carriers while antilarval chemical method is indicated under specific conditions when breeding places are well-defined and limited size. Environmental projects (drainage, clearing of drains, flushing) should be considered wherever applicable and intersectoral collaboration is a prerequisite for success.

Awareness measures might include seminars to health staff dealing with fever cases including private sector. Community IEC activities to ensure early seeking for medical case in case of fever or advise in travelling abroad. Such activities should target Priority risk groups (Travellers to endemic areas, living across the border with endemic areas, refugees, Airlines’ personnel, Military, police, Sportsmen, Intravenous drug users, students from endemic areas) and Priority risk areas (e.g., border areas, rural, with recent transmission, highly endemic in the past, with high vector densities, border areas, near international airports, military camps). This awareness and vigilance measures might be intensified by organising a national malaria free day, may be before the transmission season.

Surveillance is a crucial component of the programme at the stage of elimination and has several functions: Information collection, its analysis and dissemination; early detection and treatment of cases; epidemiological investigation of cases and foci; analysis of

malariogenic potential; Planning and evaluation of malaria preventive measures through monitoring process.

Early detection of cases is a cornerstone in the programme. Cases might be detected by both active and passive methods, Presumptive treatment by full dose chloroquine might be given in case of delayed diagnosis, Slides promptly dispatched to a laboratory for examination. Radical treatment by giving primaquine (14 day) with ensuring compliance (supervised treatment). Shorter courses of primaquine (e.g.5 days) are not effective and should be stopped. Quality of lab diagnosis should be assured. Diagnosis by RDT may be used in remote areas, however results should be considered preliminary and cases confirmed by microscopy. Delayed blood examination. Timeliness of diagnosis and hence treatment is important and blood examination done more than 2 days after collection should be considered delayed.

Epidemiological investigation: An epidemiological investigation “is a part of surveillance operation and is concerned with ascertaining the origin and means of any malaria cases discovered, determining the existence and nature of any malaria foci in the neighbourhood; and seeking to establish whether transmission is taking place and, if it is, its source“ (WHO, 1963). Epidemiological classification of cases includes five categories: induced case, imported case, relapsing case, introduced case, indigenous case. The latter three categories are often considered together as autochthonous cases, i.e. cases due to the local transmission by mosquitoes. On the basis of the epidemiological classification of cases, functional status of foci will be determined. WHO definition of a focus “a defined and circumscribed locality situated in a currently or formerly malarious area and containing the continuous or intermittent epidemiological factors necessary for malaria transmission” (WHO, 1963). Functional status is classified accordingly into 7 types. Reclassification is made promptly if situation changes (e.g. if cases appeared in a cleared-up focus, it should be reclassified as a new potential focus). Status is reviewed at the end of the transmission season. Measures to be implemented are selected on the basis of this classification.

Measures for prevention of reintroduction include: Epidemiological investigation of the cases (that are mostly imported) to early detect local transmission, Monitoring malariogenic conditions (meteorological, vectors, immigration), Monitoring malaria in residual foci, monitor malaria transmission in border areas, coordinate cross border activities, measures to address airport malaria transmission and detection and treatment of induced cases.

3. SUMMARY OF COUNTRY PRESENTATIONS

3.1 Turkey

The malaria situation in Turkey remains still serious in terms of its impact on the health of the population and its socio-economic development. Within the country, over 15 million people, or 23% of the total population, reside in areas where malaria remains endemic. Despite the fact that only 9182 autochthonous cases were reported in 2003, it is generally accepted that the actual magnitude of the malaria problem in Turkey is greater than that reported, especially in south-eastern Anatolia, where the incidence of malaria is the highest in

the country. The reduction in malaria morbidity over the past years was most probably not only the result of malaria control interventions but also a consequence of changes in climatic and environmental conditions, which adversely affected malaria mosquito survival and their capacity to transmit malaria. Thus, despite the significant decrease in malaria morbidity over the past years, the malaria situation, as we have learned by experience, may be subject to sudden and very negative changes.

In the light of the country's overall malaria potential, it is vitally important to consider the intensification of malaria surveillance activities at the periphery, especially in south-eastern Anatolia, where the malaria situation remains particularly serious. At present, the country focuses on addressing malaria-related issues through investing in capacity building; improving capacities for early diagnosis and prompt treatment of malaria; promoting cost-effective and sustainable preventive measures, including vector control; strengthening surveillance and operational research capabilities, and ensuring community mobilization. There are no obvious signs of chloroquine (CQ) resistance in *P. vivax* malaria in Turkey. It was decided to continue drug efficacy monitoring in the country.

There are thirteen *Anopheles* species recorded in Turkey. *Anopheles sacharovi* and *An. superpictus* are the principal malaria vectors, while *An. maculipennis*, *An. pulcherimus*, *An. algeriensis*, *An. claviger*, *An. hyrcanus*, *An. marteri*, *An. multicolour*, *An. plumbeus* and *An. sergenti* may be considered secondary or possible vectors of malaria in the country. Malaria transmission is from March to September and vector control is mainly by indoor residual house spraying with Alpha-cypermethrin wettable powder. Larval control using Abate (Temephos EC 50) and biological control using larvivorous fish as well as BTi and insect growth regulators are being used. The use of insecticide-treated bednets on the other hand is uncommon although that of untreated traditional nets is popular.

3.2 Iraq

Malaria in Iraq is exclusively due to *Plasmodium vivax* with peak transmission between May and November. The main vectors are species of *Anopheles sacharovi*, *An. superpictus*, *An. maculipennis*, *An. stephensi* and *An. pulcherrimus*. Most of the malaria cases in Iraq occur in the northern governorates—mainly in Zakho district in Duhok where four of the five vector species also occur. The northern parts of Iraq share borders with the Syrian Republic as well as with Turkey.

In 2003, a total of 362 malaria cases were recorded (34 from south and central Iraq, 165 in Duhok, 83 in Erbil and about 30??? from Suleymania). Imported malaria cases—including those due to *P. falciparum* have been reported from Africa and Asia. The largest malaria outbreak was reported in 1994—almost 3 years after the First Gulf War. Whereas weak health services could have attributed to this outbreak, there is evidence that similar increases of cases were reported elsewhere in Eastern Europe and in central Asia. Over 100 000 cases were reported in 1994 but since then the cases have been declining. The recommended treatment for *P. vivax* is a 14 day course of primaquine. Currently, however, this is not the case due to either shortage of primaquine or the lack of knowledge by clinicians who administer a five day course. The need to revise such treatment guidelines is of paramount importance.

Vector control activities comprise of two rounds of indoor residual house spraying of Lambda-cyhalothrin (Icon) 10% wettable powder (WP) in May and September. Due to the current situation in Iraq, one cycle of spraying was undertaken in May/June in the northern governorates and in September/October in central and southern Iraq. During the discussion the rationale for two cycles of spraying was questioned given the fact that the length of malaria transmission is only six months. Since the residual efficacy of the pyrethroids varies between 3-6 months depending on the surface sprayed, it is recommended that Iraq sticks to the two spraying cycles. Larval control is implemented in the south and central areas of Iraq where also fogging is routinely done. Two hundred thousand Long Lasting Insecticidal Nets (LLINs) are ready to be distributed during the upcoming spraying season—150 000 in Duhok and 50 000 elsewhere. The plan is to distribute them as spray teams spray the homes as well accompanied by health education campaigns. Although data from studies in Pakistan and Afghanistan suggest limited impact on *P. vivax* malaria, there is no doubt that their use especially outdoors during the summer months is necessary.

Given the current decline in malaria cases and the difficulty at which the malaria programme has been operating, there is optimism that the disease could be eliminated. This, however, will require the strengthening of capacity in epidemiological surveillance. Monitoring of insecticide resistance as part of the entomological surveillance is very weak although vector abundance through well defined sentinel sites is routinely being monitored and seems adequate. This is an area of expertise that the Syrian Republic could benefit from Iraq through sharing of information and exchange.

3.3 Syrian Arab Republic

In the past Syria suffered from endemic malaria throughout its history. In recent years Syria recorded very low numbers of local malaria cases and was on the way to eliminating the disease in the country. The programme recorded a significant reduction of locally occurred cases during the period from 1996 and 2000 (annual local cases during that period were 280, 83, 14, 5, 6 respectively). During that period local transmission was interrupted from Idlib, Homs, and then Aleppo and remained only in Hassaka province. In 2001 an outbreak of 63 local malaria cases occurred in Hassaka province mainly in Ras El Ein (55) and Malkaia (8). Increase Population movement between Syria and Turkey, abnormal heavy rainfall occurred at the border areas after 3 years of drought, accumulation of workers for agricultural activity, poor awareness about malaria among the health team which led to delayed diagnosis and treatment and lack of coordination of malaria control activities at the border. The programme intensified surveillance activity by active case detection during 2002-3, 29425 slides were examined by in 2002 compared to 11394 in 2000 during active case detection. Only 2 local cases were reported in 2003. The population at risk is estimated at 253983, living in 116 villages in Hassaka governorate

The vectors of malaria are species of *An. sacharovi*, *An. superpictus*, *An. claviger* and *An. sergenti*. The malaria control programme has produced a malaria vector distribution map, however information on the proportion of each vector species is not available. Updating the distribution of malaria vectors in the country is essential for targeting vector control. Historically, the programme used to spray with DDT up to 1976 when DDT was replaced with

fenitrothion (1976-1982) as a result of vectors developing resistance. In 1982 pyrethroids were introduced. Currently the programme is performing two rounds of indoor residual spraying using an EC formulation which is not appropriate for house spraying. Moreover, insecticide resistance monitoring has not been performed since 1985. The programme also received 4000 ITNs which are to be distributed in the coming transmission season by the spray teams.

Malaria cases in Syria from 1996- 2003

	1996	1997	1998	1999	2000	2001	2002	2003
Hasaka	243	71	14	3	6	63	15	2
Aleppo	35	11	0	2	0	0		
Homs	1	1	0	0	0	0		
Idleb	1							
Total local cases	280	83	14	5	6	63	15	2
Imported	65	47	46	37	36	16	12	16
Total	345	130	60	42	42	79	27	18

4. CONCLUSIONS AND RECOMMENDATIONS

Follow-up of recommendations made by the Interregional Malaria Coordination Meeting held in Baku 2000

The three concerned countries attended the above meeting. Most of the recommendations made to WHO were implemented. However, there is weakness in the implementation of the following recommendations to countries and this should be brought to their attention of the member states:

- There has been no mechanism for exchange of malaria-related information between countries on a regular basis, and no cross-notification of malaria outbreaks.
- Joint action plans for border areas have not been developed, and malaria control activities have not been synchronized.
- Adequate epidemic warning and reporting systems have not yet been widely developed. Countries still do not have a comprehensive insecticide policy and drug policy need to be updated in certain countries. Community awareness activity has not been established and intersectoral collaboration is weak or not existing.

4.1 Recommendation to the three countries

Coordinate malaria control in border areas

1. Establish border coordination committee (BCC) with members from the national level and from bordering districts/provinces. A focal point from each country should be

nominated to be responsible for follow up of the implementation of the plans of actions at the border areas, recommendation of the border meetings and sharing information among the countries

2. Periodic meeting at six month basis of the provincial malaria managers of the bordering risky districts (Hassaka in Syria, Dhok in Iraq and Urfa in Turkey)
3. Periodic border meeting of the BCC members of three countries with assistance by WHO to review the progress achieved and develop the plans of action
4. Develop and implement joint action plans and, if possible, establish joint implementation team, in the high risk bordering districts/governorates/provinces, in order to synchronize malaria control operations.

Improving the exchange of information among the countries

5. Develop a functional mechanism for the exchange of epidemiological, entomological, outbreak information in border areas on periodic basis.
6. Communication and data processing tools should be secured to the malaria programme in the bordering districts/governorates to facilitate exchange of information
7. malaria information should be sent to WHO on a regular basis to be posted in the RBM websites in EMRO and EURO.
8. Immediate notification to WHO of emergency epidemiological situations and outbreaks

Update anti-malaria treatment guidelines

9. Update malaria treatment guidelines to be in line with the recent WHO recommendation on use of antimalarial drugs.

Vector control

10. Ensure that all the countries use WHOPES-approved insecticides and the correct formulation for house spraying as the main intervention measure. This is particularly so for Syria where an Emulsion Concentrate formulation of Deltamethrin is currently being used for house spraying. This formulation is not meant for house spraying.
11. Monitor insecticide resistance, vector composition and abundance in sentinel sites and map their distribution to guide vector control measures, particularly in the border areas. All the three countries use pyrethroids but there is no current information available on the sensitivity of the vectors to pyrethroids.
12. Identify all supplies (vehicles, insecticides, spray pumps and spray teams, protective clothings) needed for timely implementation of spraying. It is recommended that by the

end of May of each year, house spraying should be completed in a period of less than four weeks in all the risk areas. Programmes should also stock needed supplies for emergence response

13. Exchange of expertise in the planning and implementation of vector control and sharing of information on insecticide resistance and insecticide use

Capacity-building

14. With the assistance and under the guidance of WHO, continue to develop and produce learning/training materials related to malaria and its control.
15. Continue conducting basic training/refresher training on malaria and its control for various categories of general and specialized health personnel including private providers
16. With the assistance of WHO, support national training of trainers in different malaria-related fields.
17. Exchange of training modules and guidelines in Arabic particularly those on vector control operation between Iraq and Syria
18. Joint training activities in the areas of geographic reconnaissance, vector control and entomological monitoring whenever language is not a barrier

Operational research

19. Collaborate with research institutes and universities in developing and implementation of relevant applied field research, e.g., assessing the impact of ITN use against vivax malaria, malaria vector distribution/bionomics and susceptibility to insecticides, drug efficacy monitoring trials (PV-CQ).

IEC and advocacy

20. Raise awareness of the community as well as the health staff dealing with fever cases including private sector. Specific IEC activities targeting the risky populations to ensure early seeking medical care in case of fever, use of preventive measures such as ITN. Specific awareness seminars targeting travel agents about malaria in travellers
21. Organization of a national malaria free day on 15 May in the three countries with a common annual theme for intensification of IEC activities and advocacy.

Establish/strengthen Intersectoral collaboration and RBM partnership at country level

22. A country coordination mechanism (CCM) composed of all relevant sectors, including school health, municipalities, agriculture, NGOs should be established in each country as it is demanded in submission of a proposal to the Global Fund.

Resource mobilization

23. With assistance and under technical guidance of WHO , the three countries should develop and submit a malaria proposal for strengthening malaria control and prevention activities in the border areas to be submitted to the fifth round of the global fund.

4.2 Recommendations for WHO

Malaria control in border areas

24. Provide technical support and back-up, facilitate the exchange of information and coordinate malaria control activities, including the organization of periodic border meetings among the three countries.

Support for regional and national training programmes

25. Continue to support the regional courses in using the regional training facilities in Bandar Abbas Iran, Cairo, Egypt, Gezira State, Sudan , and others.
26. Support specific training needs and exchange of trainees and trainers between the countries
27. Continue to support the production of regional/country learning/training materials
28. Support courses for training of trainers
29. Provision of WHO training guidelines and modules

Improving national operational research capabilities

30. Assist and coordinate in carrying out operational research. EMRO countries could be supported through the Small Grants Scheme operated by the Organization's
31. Special Programme for Research and Training in Tropical Diseases could be applied in countries of the European Region.
32. Provide the countries with test kits for monitoring insecticide resistance

GIS

33. Organize a joint training course in E Hasaka to health staff from Iraq, Syria and possibly Turkey in detailed mapping of the risk foci

Assist the country programmes to mobilize resources

34. Support countries in develop a joint country proposal to be submitted the global funds

Specific country recommendation

Syria

1. Recruit a competent national focal point for planning, guide implementation, monitoring and evaluation vector control interventions for malaria and other vector borne diseases. The focal point should have a basic degree in biological science/agriculture/veterinary and have has a specialty in medical entomology and vector control.
2. Make sure that that the right formulation of insecticides are used for residual spraying. The programme is currently using EC formulation of delatmethrin which is not the formulation recommended by WHO for indoor residual spraying. A change to a wetttable powder formulation should be implemented immediately.
3. Support the operational activities for indoor residyal spraying. MOH should avail all the needed requirements without any delay (e.g., spraymen incentives, protective clothing, transportation means, supplies and equipment
4. Support specific training to the malaria manager in El Hasaka, Syria in Martsinovsky institute, Moscow since he is Russian speaking.
5. Syria received 4000 untreated nets with the insecticide tables for impregnation nets. distributed by the spray team before the next transmission season in the high risk areas mainly in El Hasaka governorate , following proper community awareness .

Iraq

1. To share the epidemiological case investigation form with the northern governorates
2. Legislation and rules should be changed in The northern governorates to restrict the availability of antimalarial drugs I the public sector.
3. To expand the system of quality assurance of malaria diagnosis to northern governorates
4. Establish sentinel sites for insecticide monitoring in the border areas

5. Iraq has 400,000 LLINs. It is recommended that these nets should be distributed by the spray team before the next transmission season in the high risk areas mainly in Duhok and Erbil, following proper community awareness.

Turkey

1. To ensure that Roll Back Malaria issues remain high on the country`s health and development agenda
2. To ensure that a project proposal to tackle malaria-related issues in border areas of Turkey with Syria and Iraq is developed and submitted to the Global Fund with technical assistance provided by WHO.

Annex 1

PROVISIONAL PROGRAMME

Tuesday, 20 April 2004

- 8:30–9:00 Registration
- 9:00–9:30 Opening Session:
- Welcome Remarks, *MOH Syria*
 - Opening Remarks, *WR Syria*
- 9:30–10:30
- Situation analysis/progress and challenges of RBM in EMRO, *Dr Hoda Atta*
 - Situation analysis/ programme and challenges of RBM programme in EUR, *Dr Mikhail Ejov*
 - Discussion
- 11:00–11:30 Rational use of vector control measures in areas with limited malaria transmission, Dr Abraham Mnzava
- 11:30–13:00 Country presentations and discussion
- Syria, Country Participant
 - Iraq, Country Participant
 - Turkey, Country Participant
 - Discussion
- 14:00–16:00 Working groups focusing on coordination between three country groupings and organization of border activities and drafting the plan of action

Wednesday, 21 April 2004

- 9:00–9:30 Briefing on the working group by the facilitator
- 9:30–10:30 Continuation of the working group
- 11:00–13:00 Continuation of the working group
- 14:00–16:00 Presentation

Thursday, 22 April 2004

- 9:00–10:30 Discussion on country presentation and plan of actions
- 11:00–12:00 Recommendations and closing session
- 13:00–16:00 Report Writing by RBM Secretariat

Annex 2

LIST OF PARTICIPANTS

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