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ROLL BACK MALARIA PARTNERSHIP MEETING FOR CENTRAL ASIAN REPUBLICS AND KAZAKHSTAN

Report on a WHO Meeting

Tashkent, Uzbekistan
8 June 1999

EUROPEAN HEALTH21 TARGET 7

REDUCING COMMUNICABLE DISEASES

By the year 2020, the adverse health effects of communicable diseases should be substantially diminished through systematically applied programmes to eradicate, eliminate or control infectious diseases of public health importance

(Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998)

ABSTRACT

A meeting was held in Tashkent, Uzbekistan to establish a Roll Back Malaria partnership in the central Asian republics and Kazakhstan. The representatives of malaria surveillance and control programmes in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan and representatives of about 30 United Nations organizations, institutions, embassies, international banks, nongovernmental organizations and foundations were present. The meeting reviewed the regional and country malaria epidemiological situation and discussed the objectives and strategies of the Roll Back Malaria initiative. Three main malaria epidemiological strata are present in central Asia: a large-scale epidemic (Tajikistan), a limited epidemic (Turkmenistan), and a high risk of malaria re-establishment (Kazakhstan, Kyrgyzstan and Uzbekistan). Participants appreciated the efforts made by national authorities, assisted by WHO, to tackle the malaria problem, especially with the limited resources available. The conditions for establishing a Roll Back Malaria partnership in central Asia are already present and can easily be made effective by building on the existing collaboration between the central Asian republics and Kazakhstan. Such a partnership should incorporate the organizations listed above. Governments of the five countries concerned should take a leading role as these countries already have programmes, plans of action and an indication of the resources required.

Keywords

MALARIA – epidemiology – prevention and control
INTERNATIONAL COOPERATION
INTERINSTITUTIONAL RELATIONS
PROGRAM DEVELOPMENT
GOVERNMENT PROGRAMS
PRIVATE SECTOR
EUROPE
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Introduction

The meeting to establish a partnership to roll back malaria in the central Asian republics and Kazakhstan (CARK) took place in Tashkent, Uzbekistan, on 8 June 1999. All five central Asian republics, which are currently experiencing a resurgence of malaria, were represented. WHO was represented by Regional Office for Europe (WHO/EURO) staff as well by the Roll Back Malaria (RBM) project and the Communicable Diseases cluster at headquarters. Representatives of approximately 30 United Nations, governmental and nongovernmental organizations, institutions, embassies, international banks and foundations attended the meeting (Annex 2).

Dr Bakhtyor Niyazmatov, Deputy Minister of Health of Uzbekistan opened the meeting. The officers of the meeting were: Mr Pavel Kral (UN Resident Coordinator) – Chairperson, Dr Erkin Durumbetov (Deputy Minister of Health of Kazakhstan) and Dr David Nabarro (Programme Manager, Roll Back Malaria) – Vice chairpersons, Dr Anatoli Kondrachine (WHO headquarters) – rapporteur, and Dr Guido Sabatinelli and Dr Roufat Yansupov (WHO/EURO) –secretaries.

Scope and purpose

The main objectives of the meeting were:

- to review the dynamics of the malaria situation and problems/constraints encountered in the prevention and control of malaria outbreaks/epidemics in the central Asian republics and Kazakhstan in 1997–1998;
- to discuss RBM initiative concepts with special reference to their application in the Region, and to recommend follow-up action plans;
- to define the purpose and strategy for action to roll back malaria through the establishment of partnerships at the regional and country levels;
- to recommend activities aimed at enhancing the capacity of national/oblast/district staff in the planning, monitoring and evaluating of long-term malaria prevention and control.

It was expected that the outcomes of the meeting would be:

- identification of priority needs for action in order to achieve sustainable reduction/elimination of the malaria problem through the implementation of the RBM initiative;
- formulation of the components of a draft plan for implementation of RBM in central Asian republics and Kazakhstan;
- identification of partners in malaria control.

Situation analysis and progress towards malaria control in the European Region

Global overview

In the 1990s, all the newly independent states (NIS), especially those in central Asia and the Caucasus, have experienced considerable problems in preventing and controlling malaria. Difficult economic and social conditions, which have mainly resulted from the disruption of traditional links between the former republics of the USSR, have resulted in human migrations

and consequently a reduction in the quality of health services. The shortage of essential equipment and supplies for malaria prevention and control has also weakened malaria prevention activities. Lack of knowledge and experience in malaria prevention and control among health service staff who have not seen malaria for 30 years is another obstacle in the planning and effective implementation of these measures.

The alarming epidemiological situation in the WHO European Region and the lack of resources available indicates a serious risk of an uncontrollable resurgence of malaria. In addition, WHO/EURO is encountering increasing difficulties in obtaining financial support for malaria activities from traditional donors who are now supporting the malaria programmes at central level, e.g. the Roll Back Malaria Project at WHO headquarters. As a result, malaria epidemics are affecting five countries in the European Region: Armenia, Azerbaijan, Tajikistan, Turkey and Turkmenistan.

Approximately 62 000 cases were "officially" registered in 1998 but estimates indicate that there were 100 000 cases in Tajikistan alone. Although the majority of cases are caused by *P. vivax*, in Tajikistan *P. falciparum* is reaching a prevalence of 16% in some areas. As a result of the importation of malaria cases from epidemic countries, indigenous cases and malaria outbreaks also occurred in 1998 in Georgia, Kyrgyzstan and the Russian Federation.

The constant increase in international travel and population movements has also led to the importation of about 13 000 malaria cases into countries of the European Region. Several deaths have also occurred as a consequence of the high number of imported *falciparum* malaria cases recorded in western European countries.

Achievements

In order to control the resurgence of malaria, WHO/EURO has provided technical assistance to all the affected countries. A detailed assessment of the malaria situation in the Region has been made, and an overall regional strategy to roll back malaria in the European Region developed. Furthermore, the plans of action for the control of epidemics at subregional and country levels have been prepared and agreed with the authorities of countries concerned. An extensive programme for training health staff in different aspects of malaria control has been carried out in the affected countries with the assistance of the WHO collaborating centres in Rome (Istituto Superiore di Sanità) and Moscow (Martsinovskiy Institute). Limited funds available in WHO/EURO for epidemic prevention and control were used to provide antimalarial drugs and to strengthen the capacity of the countries for the immediate implementation of malaria control activities. Project proposals have been submitted to donors to elicit financial support. Financial support has been received from Austria, Denmark, Italy, Norway, Sweden and Japan. Implementation of malaria control projects in Armenia and Tajikistan has been technically assisted by WHO. National guidelines for the prevention and control of malaria have been revised and updated, and manuals and other documents have been translated into relevant national languages, printed and distributed. It is important to emphasize that WHO assistance has been coordinated with other international or nongovernmental organizations, working at the country level in the health sector. As a result of the activities carried out in 1998–1999, the epidemics have been contained and in Azerbaijan, Armenia and Tajikistan a significant decrease in the incidence has been observed.

Plans

In view of the importance of malaria as a public health problem in the European Region, WHO/EURO has committed itself to making special efforts to ensure that the necessary technical support reaches affected countries. The newly established Roll Back Malaria project is giving new impetus to malaria control. Even though the project is mainly focusing on Africa, limited funds have been reserved in 1999 for basic activities to contain epidemics in the European Region. The main strategic directions of the programme in the next five years will be: the reinforcement of the surveillance system, the strengthening of national capabilities at central and peripheral levels to control malaria outbreaks, the provision of drugs and basic equipment, the strengthening of water management and vector control, and increasing malaria awareness among populations. Activities to prevent malaria re-emerging in countries at high risk (those not yet affected by malaria) will focus on training and strengthening the surveillance capacity.

In view of the financial difficulties faced by the affected countries, considerable support will be needed from donor countries and agencies, and international and nongovernmental organizations, in order to sustain the above mentioned activities. Therefore project proposals were developed and submitted to a number of donors to elicit the required support.

Reports from central Asian republics

Kazakhstan

Imported cases of malaria have been reported in Kazakhstan since the disease was practically eradicated there in 1960. In 1992–1993, a rise in the incidence of tertian malaria in Azerbaijan and Tajikistan resulted in an increase in imported cases and a deteriorating situation in Kazakhstan. In 1998, 88 cases of malaria were reported (compared to 102 in 1997 and 88 in 1996), including eight relapses and four carriers of the parasite. In some years (1992, 1994 and 1996) isolated cases of local malaria were reported. Only in 1998 were 4 local cases of a sporadic character reported: 2 in Almaty Oblast, 1 in Jambyl Oblast and 1 in West Kazakhstan Oblast.

In 1998, 66.7% of cases were imported by citizens of Kazakhstan, including 51.8% of troops demobilized from service in Tajikistan. The only oblasts to escape imported cases were Kostanaj and Aktjubinsk Oblasts. Some 93.2% of cases were among adults and 6.8% among children; 19.3% were among labourers and office workers and 47.4% among unemployed people.

Of the parasitologically confirmed cases, *P. vivax* was found in 89% of cases, *P. falciparum* in 3%, *P. malariae* in 1% and a mixture in 7%. Some 52% of the people diagnosed had come for treatment in good time (within 1–3 days of falling ill), and 58% were diagnosed within one to three days.

The measures taken are supervised by the Health Committee and the Republican Sanitary and Epidemiological Office. In order to intensify this work, Decree No. 393 “Increased epidemiological surveillance of malaria”, taking account of WHO recommendations, was issued on 3 August 1998.

Work continues on screening, diagnosing and registering people coming from countries where malaria is endemic, and patients with persistently high temperatures who are then given the

appropriate clinical treatment. In 1998, 9141 people arriving from malaria-endemic countries were registered, 95% of whom were given laboratory examinations; 83 711 with persistent high fevers were also examined (in 1997, the figure was 36 312).

In 1994, the Ministry of Health started using the "malaria" computer program for daily surveillance of incidence and the monitoring and evaluating of malaria control measures twice a year.

WHO provided some financial support for malaria prevention. In 1998 primaquine, microscopes, lancets, pumps and Giemsa stain were received as humanitarian aid and sent to the field.

In coordination with the Ministries of Defence and Internal Affairs, the Ministry of Health is organizing preventive treatment of members of the armed forces serving in the peace-keeping forces in Tajikistan.

Reservoirs in settled areas where anopheline mosquitos could breed and areas 3–5 km around them are being certified. Potential breeding sites covering 5268 ha have been registered. Rice-fields covering another 77 000 ha present a certain epidemiological threat. Four types of malaria vector have been found: *An. hyrcanus*, *An. pulcherrimus*, *An. messeae* and *An. claviger*, all of which could serve as malaria vectors in Kazakhstan.

Systematic observation of the phenology and seasonal fluctuations in numbers of *Anopheles* are conducted at 117 observation points covering all the geographical and climatic regions in the country.

Each year at a given moment, mass catches of mosquitos are made in 400–500 settled areas for the purposes of study. These systematic observations showed that in 1998 the highest mid-season numbers of the imago of *An. messeae*, the main vector of malaria, were 28–99.5 specimens per cattle-stall and 3.4–5.6 specimens per human living premises. In mass catches, the numbers of mosquitos in living premises reached 21–118 specimens. Up to 1997, the numbers of malarial mosquitos had been decreasing but in 1998, numbers rose over most of the country.

Malaria vectors are controlled in foci of the disease and in settled areas where there is a high danger of malaria transmission. In 1998, a total of 751 159 m² of accommodation were sprayed and 1907.9 ha of reservoirs; the figures for 1997 were 1 215 122 m² and 2780.7 ha, respectively.

Some contribution to the control of malarial mosquitos was made by the spraying of reservoirs and land to control midges and other blood-sucking arthropods of veterinary importance, in accordance with the Government's Decree No. 840 of 2 July 1996 "On urgent measures to protect the population from blood-sucking insects and ticks". In 1998, 30 451 ha were treated by aerial and ground-based spraying.

Because of the economic crisis and the lack of expertise on parasitology and medical entomology, it is difficult to train staff for the Parasitology Department and to provide specialists with up-to-date literature on systematic classification of blood-sucking insects. Visual aids are lacking (tables, slides showing the parasite, etc.); and the Ministry of Health cannot purchase entomological and laboratory equipment (modern microscopes). It becomes difficult to choose and use insecticides and safer methods of vector control for human diseases properly due to the lack of technical literature on the subject. The health authorities do not have the wherewithal to purchase sufficient quantities of drugs and insecticides. The country needs 20 000 × 150 mg

tablets of Chloroquine, 2000 × 150 mg tablets of Mefloquine and 30 000 × 150 mg tablets of Sulfadoxine-pyrimithamine.

The requisite quantities of insecticides or other safer preparations are determined by the following annual areas treated: 750 000 m² of premises, 3000 ha of water reservoirs where anopheline mosquitos could breed, 31 000 ha of land and water treated for midges; annual quantity of repellent required: 21 500 kg.

Kyrgyzstan

Kyrgyzstan is in a zone where there is a high potential for the development of malaria. The country experienced epidemics of the disease in 1930–1950; the worst being in 1944 when 60 152 cases were reported. By the end of the 1950s, malaria had been eliminated as a disease affecting large numbers of the population. The last local case was recorded in 1959.

Elimination of malaria was possible due to: planned malaria control at All-Union level, healthy conditions in towns and villages, hydrotechnical sanitation measures conducted on a vast scale, and targeted operations by the health authorities in a large network of specialized institutions (malaria control stations).

At the beginning of the 1980s the malaria situation changed radically. There was a sharp increase in imported malaria cases from Afghanistan, leading to the appearance of secondary foci in Tajikistan along Kyrgyzstan's southern border.

In 1986, 14 cases of malaria were reported and 10 in 1987. In 1988, 21 people contracted the disease, 11 of them residents of Batken Rayon who became infected via demobilized troops returning from Afghanistan. In the following years, individual imported cases were reported.

Over the last 10 years there was one case of malaria in a resident of the area (Chuj Oblast, Panfilov Rayon, 1996) and 24 imported cases.

In 1997, 13 imported cases of malaria were reported. In 1998 there were 11 cases, 5 of them indigenous among residents of Panfilov Rayon who had been in direct contact with people coming from Tajikistan. The wave of immigration from Tajikistan, where the disease is widespread, could lead to the disease spreading in Kyrgyzstan.

Both climate and geography make Kyrgyzstan a potentially malarial area. There is a well developed irrigation network, with many reservoirs, ponds, lakes, springs and marshy areas around rivers. According to the sanitary and epidemiological service, on 1 January 1998 there were 3861 bodies of water where *Anopheles* could breed, covering 4605.8 ha. In 1997 alone, the area of such bodies of water increased by 2541 ha to 7146.8 ha.

According to the Ministry of Agriculture and Water Management, Kyrgyzstan has 5440 km of drainage canals, 1605 km of which have to be cleaned mechanically and 36 km by flushing. There are 87.9 ha of land that need reclaiming, of which over 30 ha are potential breeding places for *Anopheles* mosquitos. However, the high cost of this work is preventing community enterprises from carrying out a number of water sanitation projects.

The greatest potential for malaria is in the south, especially in Osh and Jalal-Abad Oblasts because of the immense rice-growing area of over 2000 ha. The small rice paddies beside private homesteads where no mosquito control measures are taken constitute further breeding-places for mosquitos in those oblasts. Around 80% of the population in the oblast is threatened with malaria. Almost all species of malarial mosquito are to be found there. In addition to *An. claviger* and *An. messeae* there are *An. martinius* and *An. superpictus*, which were the main vectors of malaria in the south in the 1930s–1950s.

The climate is warm with a long hot season. The many ponds that form from the high groundwater make excellent breeding-grounds for mosquitos. The mass development of the larval stages occurs over 5–7 months, during which time 4–6 generations can develop.

The entomological situation in the towns is also unfavourable. There are many mosquito breeding-sites in towns in the water and heating pipes in the basement of multistorey buildings. The mosquitos that breed there are not malarial, but most towns are near rural settlements where *Anopheles* mosquitos do breed, which means that the towns are exposed to malaria risk.

Since malaria has not been a problem for over 30 years, and because of the difficult economic situation, the number of malaria control specialists has fallen sharply. In practically every region the numbers of parasitologists, entomologists and their assistants has fallen by 50–60%. There is a shortage of personnel with a thorough knowledge of the disease, experience of malaria control, and the ability to define priorities and appropriate and effective measures in the global strategy for malaria control.

The Entomology Department has fewer staff to look after ponds and water works or to collect insects. There are also fewer hydraulic engineers in the Sanitary and Epidemiological Inspectorate, which adversely affects the monitoring of the use of water resources and the implementation of water works.

The laboratory service needs substantial support: essential ingredients for laboratory research are practically out of stock, necessary equipment is lacking and staff training is inadequate.

Since the country does not produce vector control equipment and is severely short of funds, many regions have no insecticides or larvicides for mosquito control. Entomologists do not have equipment for treating reservoirs or for studying them and introducing mosquito fish; some localities cannot be monitored due to lack of transport, fuel and lubricant.

The result of all this is that the reporting and examination of marshes and economically useless ponds is inadequate. Not nearly enough vectors are sampled and no biological methods are used for mosquito control.

In view of the current importance of malaria control, the Government has prepared a national "Malaria" programme for 1999–2003.

Tajikistan

The physical geography of the southern border rayons of Tajikistan means that there is always endemic malaria, with the influx of malarial mosquitoes from northern Afghanistan across the river Pjandz and its extension into the Amudarja for more than 3000 kilometres from the Gorno-Badahšan autonomous oblast to Šaartuz rayon.

Malaria had been practically eradicated from the country by 1960. Individual cases were reported in the southern border areas, Soviet experts and their colleagues in Afghanistan and Tajikistan worked for eight years to eradicate the disease completely and successfully in the country.

After the change of regime in Afghanistan and the departure of the Soviet experts from Tajikistan, malaria control activities in northern Afghanistan ceased so that from 1980 onwards a series of major outbreaks occurred in Pjand, Parhar, Moskovskij, Kuljab, Darvaz and other rayons. These outbreaks were curtailed by major malaria control efforts and for ten years up to 1992 incidence was kept to 200–300 cases.

For obvious reasons, no malaria control activities were conducted between 1993 and 1998. As a result, incidence rocketed to more than 30 000 cases in 1997. Of the reported cases, 25 364 (85.2%) were in Khatlon oblast, and the others were in Gorno-Badahšan autonomous oblast (3%), the region of Dushanbe (11.3.0%) and Leninabad oblast (0.5%).

The analysis of incidence in Khatlon oblast shows a concentration in the Kurgan-Tjube zone, which has 65% of cases, mainly in Vash rayon where there are 5686 cases (22.4%), the town of Kurgan-Tjube with 2657 (10.5%), Bohtar rayon with 2525 (10%) and Pjand rayon with 2571 cases (10.1%). Cases in those rayons account for over half the cases in the entire country. The main reason for the growth in the incidence of malaria in Khatlon oblast is the movement of people from Afghanistan.

In the Kuljab zone, 20.2% of the cases were registered including 1262 in the town of Kuljab (5%) and 784 cases in Dangara oblast (3%).

Analysis of the causes and prevalence of the disease showed that the main work in 1998 was needed in those rayons. In 1998, in accordance with the Government Decree No. 343 of 4 August 1997 “On the national programme for tropical disease (malaria) control in the Republic of Tajikistan, 1997 to 2005”, large scale chemoprophylaxis against malaria was conducted jointly with WHO in the above-mentioned rayons and towns. The following measures were taken:

- interseasonal chemoprophylaxis for the population of six rayons (Vahš, Bohtar, Kurgan-Tjube, Pjand, Dangara and Suroabad) in April, May and December, involving a 10-day and a 14-day course of primaquine for 421 000 people;
- spraying of lambda-cyhalothrin 10% in 15 towns and rayons of the republic (an area of 20 million m²);

These measures reduced the incidence of malaria in 1998 by 35.1% (19 361 cases). Incidence was mainly reduced in the rayons where the antimalarial measures were taken: by 79.1% in Vahš rayon, by 61.2% in Kurgan-Tjube, by 50.0% in Pjand rayon, by 35.5% in Bohtar rayon, and by 49.6% in the total area where malaria control activities had been organized. In spite of a reduction in incidence, there were also rayons where incidence actually increased: Javan (by 69.9%), Dilikul (by 80%), Moskovskij rayon (by 16.5%), Parhar (by 24.4%), Muminabad (by 79.9%) and Hovaling (by 19.7%).

The pattern of incidence in 1998 was: 54.7% of new cases were in males and 45.3% in females, including the 33.2% of cases in children under 14. Incidence among children varies from one rayon to the next: 47.3% in Kolhozabad, 44.9% in Kurgan-Tjube, 43.9% in Šaartuz, 43.3% in

Hovaling, 38.6% in Dilikul, 37.3% in Moskovskij rayon, 36.1% in Dushanbe, 35.0% in Nurek and 33.6% in Hodimaston.

Malaria was diagnosed early (by the third day) in 33.7% of cases nationally, 82.5% in Gorno-Badahšan autonomous region, 80.3% in Dushanbe, 47.8% in rayons with republican subordination, 45.2% in Leninabad oblast and 28.5% in Khatlon oblast.

The effectiveness of malaria control measures and treatment can be summarized as a reduction of 0.5% in the Bahš group of rayons, including a reduction of up to 80% in Kolhozabad in the Bahš rayon.

Action planned for 1999 includes:

- interseasonal chemoprophylaxis in the Bahš, Bohtar and Pjand rayons (November 1998) and in the Moskovskij, Dangara, Šurobad and Darvaz rayons (April 1999), covering 500 000 people;
- seasonal chemoprophylaxis planned for 1 June – 1 October 1999 in the Van, Darvaz and Dangara rayons, and selectively for workers in special services, the airport, main railway station, bus terminal and special customs points on the borders with the Commonwealth of Independent States, covering 130 000 people;
- introducing mosquito fish to 10 rayons in Khatlon oblast;
- lambda-cyhalothrin – 10% spraying in 15 rayons over an area of 20 million m²;
- protection of the population with mosquito nets.

The following measures are planned for the next three years:

- interseasonal chemoprophylaxis for 500 000 people
- seasonal chemoprophylaxis for 150 000 people
- introduction of mosquito fish into reservoirs in 10 rayons of Khatlon oblast
- insecticide spraying in 15 rayons every year over an area of 20 million km².

Turkmenistan

Endemic malaria was eradicated from the country in 1960, when Turkmenistan was part of the Soviet Union. Between 1965 and 1980, 23 local cases of malaria were reported in Turkmenistan. All of these were in the Maryj and Ahal administrative districts.

In Turkmenistan there are nine species of malaria vector. The strongest and most dangerous are: *An. superpictus*, *An. pulcherrimus* and *An. hyrcanus*. The potentially endemic territories are the Tedjen and Murgab flood plains, areas with an abundant network of reservoirs fed by the Murgab and Tedjen rivers, plus the Hauz-Han reservoir which is fed by the Karakum river.

Most of the imported cases in 1980 were among soldiers returning from Afghanistan. In spite of massive importation from Afghanistan, only 24 individual cases were reported in 10 villages of the Maryj district (Kuška, Tahtabazar and Bajramalij).

Until 1998 the number of imported cases of malaria fell, a few isolated cases were reported in connection with blood transfusion, but there were no local outbreaks. In 1998, however, the epidemiological situation deteriorated with the resumption of local transmission: 137 cases were

reported – 134 new diagnoses and 3 recurrences; 9 were among children under 14. There were 123 more cases than in the previous year (9.7 times more), and 11 more imported cases (2.2 times more), mostly reported in the Dašhovuz and Lebap districts and imported from the malaria focus in Gušgin.

Local transmission of malaria increased by 111 cases (27.7 times more than previously) and most of them were in the Gušgin part of the Maryj district (108 cases).

The first case was found in Kuška in June and in August seven cases were found in two neighbouring houses in a nearby village. A further four cases were reported in Dašhovuz and Lebap districts among former frontier guards returning from work in Kuška. In August, active screening for cases of malaria was carried out in Kuška and two neighbouring villages. At present there are five active foci. The approximate population of those areas is 10 000. By 1 November 1998, 115 cases of tertian malaria had been found in that area.

The reason for recurrence of local malaria in border regions was periodic importation of the disease when infected mosquitos flew in from neighbouring countries.

In recent years, with the global deterioration in the malaria situation, including in some southern members of the Commonwealth of Independent States (CIS), the number of imported cases in the country has risen sharply. Most of them are tertian malaria, which is the most dangerous in epidemiological terms, since its main vectors in Turkmenistan are highly receptive to *Plasmodium vivax*. The rise in tertian malaria in rural areas is particularly dangerous, since patients and parasite-carriers are in close contact with highly receptive vectors. There is, therefore, a high risk of renewed outbreaks of malaria and of the disease becoming endemic, because of factors such as:

- more frequent importation of the causative agent;
- the presence of sources of infection in all districts (patients who have recovered and are not reported, undiagnosed carriers of the parasite, etc.);
- the presence of an effective vector;
- a receptive population, and
- climatic conditions favourable to development of the parasite.

Over the last three years, imported and local cases of transmission of *Plasmodium vivax* infection were caused by tertian malaria (in 1995 there were two cases of imported tropical malaria from the Congo and India).

Major changes in the water situation have complicated the Anopheles situation. Seventeen major reservoirs have been constructed in the Karakum canal and river basin area, and enormous filtration ponds have formed round them that have become breeding grounds for malaria mosquitos.

The main reasons for the malaria situation are:

- late diagnosis of patients and carriers due to lack of specialists;
- inadequate health technology;

- ignoring the rules for use of water installations, leading to an increase in the number of vectors;
- late and poor quality malaria control measures due to lack of drugs for the treatment of patients and carriers, and
- a shortage of parasitologists and entomologists.

The sanitary and epidemiological inspection units are short of appropriate vehicles, disinfection equipment, insecticides and larvicides. Some 1219 reservoirs covering a total of 1054 hectares serve no economic purpose but still require regular insecticide and larvicide treatment.

The Ministry of Health of Tajikistan has drawn up a plan for malaria prevention in Turkmenistan in 1999–2001, which includes the following measures:

- increasing the parasitology staff of the Central Laboratory for Hygiene and Epidemiology of the State Sanitary and Epidemiological Inspectorate, appointing a Head of Department, a parasitologist, a laboratory physician, an entomologist and two laboratory technicians;
- strengthening the numbers of parasitologists, entomologists and laboratory physicians working in the sanitary and epidemiological inspection offices at all three administrative levels;
- organizing a seminar on parasitology for physicians at the Central Laboratory for Health and Epidemiology, in conjunction with the WHO Representative;
- training teachers for the sanitary and epidemiological inspection offices at district level, training specialists for the problem areas and training laboratory physicians;
- running seminars on malaria vector control for those responsible for disinfection in all the sanitary and epidemiological inspection offices;
- provision of quality prophylaxis and treatment;
- improving the screening of patients and carriers;
- improving vector control and entomological observation;
- strengthening preventive sanitary inspections;
- providing the necessary laboratory equipment and reagents.

Uzbekistan

According to WHO data, the epidemiological situation with regard to malaria is continuing to deteriorate throughout the world, including in states neighbouring Uzbekistan and individual countries in the CIS. Information is available showing that local cases have begun to be registered in Kazakhstan, Kyrgyzstan and Turkmenistan. In conjunction with this, a further increase is being seen in the importation of the infection to Uzbekistan. The epidemiological situation is most tense in the cities and districts along the frontier with Tajikistan (eight provinces of Uzbekistan, with a total population of more than 5.6 million people, border that country). In total, some 25% of the total population live in the 67 cities and districts that border Tajikistan, Turkmenistan, Kazakhstan, Kyrgyzstan and Afghanistan. The epidemiological situation is being made worse by large-scale migratory movements of people between the countries, including people resettled from Tajikistan and other countries.

Imported cases of malaria are registered in virtually all regions of the country, apart from the Republic of Karakalpakstan and the province of Khorezm. In recent years, there has been an upward trend in the number of populated localities into which malaria has been imported: between 1991 and 1998, the number of populated localities in which malaria was registered for the first time in the previous two years increased four-fold.

Between 65% and 80% of cases of malaria have been registered in cities. In recent years, however, there has been an increase of importation into rural areas, where there is the highest risk of malaria transmission owing to the large number of disease vectors (mosquitoes). This is clearly evident from the example of Surkhandarya, where in 1996, 43% of malaria cases were imported into rural areas, compared with 56% in 1997 and 100% in 1998.

The environment and climate in Uzbekistan favour the general spread of malaria vectors. The presence of a large number of bodies of water, of differing types and origins, facilitates the simultaneous occurrence in a given locality of all the epidemiologically dangerous species: *Anopheles maculipennis*, *An. pulcherrimus* and *An. superpictus*. The temperature ensures that there is rapid reproduction of vectors (up to five generations) and parasites (up to eight cycles) and transmission of the disease in a period of not more than five months. At present, a total of seven malaria vector species are recorded in the country. The most dangerous areas, from the point of view of the possibility of malaria transmission following its importation, are the districts named after the main rivers of Syr-Darya, Amy-Darya, Chirchik, Surkhan, Naryn, etc., as well as rice-growing areas.

In 1998, a total of 74 cases of malaria were registered, including 17 (23%) among children up to 14 years old. All cases were imported, 93% of them from Tajikistan (in 1997 there were 69%). There was continuing importation from Azerbaijan (2 cases), Afghanistan (2 cases) and India (1 case), and 1 case was imported from Guinea.

As in previous years, *vivax* malaria was diagnosed in the majority of cases (70 cases, 95%). *falciparum* malaria was diagnosed in 4 cases: in Surkhandarya province (3 cases, imported from Tajikistan) and in Tashkent (1 case, imported from Guinea).

In the first four months of 1999, 5 cases of imported *vivax* malaria were registered, including 2 cases among children up to 14 years old. Importation was from Tajikistan (3 cases), Kazakhstan (1 case) and Azerbaijan (1 case). Epidemiological investigations of foci and the necessary anti-epidemic measures have been carried out in all cases, and transmission of the infection has been prevented.

Epidemiological surveillance of malaria is being carried out in a planned procedure by the general medical network and by parasitology units in sanitary/epidemiological surveillance facilities, with links to establishments of departmental medical services, the Ministry of Agriculture and Fisheries and the Isaev Medical Parasitology Research Institute. Active links with WHO are being maintained through its Liaison Office in Uzbekistan.

In recent years, humanitarian assistance received via WHO has been used for carrying out anti-epidemic measures in malaria foci and for strengthening the material and technological base of the sanitary/epidemiological surveillance facilities and the Isaev Institute. However, there are not enough qualified medical personnel, and there are a number of problems in supplying the medical service with antimalarial drugs, microscopes, reagents, insecticides, spraying equipment, etc. Measures being taken by the Government and the Ministry of Health are aimed at solving these problems.

Roll Back Malaria: the global partnership

Efforts to control malaria in the past 50 years have achieved a decline in mortality in some regions, but progress is now threatened primarily by the emergence of drug-resistant malaria. Recently, there has been a resurgence of malaria in epidemic form in previously low-risk areas, and predicted climate changes are expected to lead to changes in intensity of transmission in areas of high endemicity and to areas where malaria was previously controlled or eradicated, such as central Asia.

The Director-General of WHO, upon assumption of office, initiated a new international effort to roll back malaria and established a five-year cabinet project to provide the secretariat for the initiative.

Roll Back Malaria (RBM) represents a global partnership, drawn from governments of malaria-affected countries, United Nations agencies, development banks, bilateral development agencies, nongovernmental organizations and the private sector, working in concert to reduce the burden of malaria-related disease.

The core concepts of RBM are:

- a social movement with the main focus on action at country level involving community level groups and beyond the formal health sector;
- the RBM global partnership; and
- the RBM cabinet project, providing the secretariat for the global partnership and ensuring a coherent and unified approach across WHO.

RBM is committed to halving the malaria burden throughout the world by the year 2010. The global partnership will create an environment that helps countries develop policies based on evidence and implement relevant elements of the RBM strategy, effectively, sustainably and in the context of the local conditions.

There are six core elements to the strategy:

- early detection of malaria illness
- rapid treatment of those who are ill
- multiple means for preventing infection
- a well developed health sector with full intersectoral activities
- a powerful and sustained social movement, and
- focused research for new tools and better implementation.

The implementation of these core elements will vary in each region or country depending on the epidemiological situation. Some of the core elements expected to be addressed in central Asia will be the following:

- rapid diagnostics becoming available;
- radical treatment for cases;
- effective means of environmental management, including judicious use of insecticides;
- better surveillance systems (for example, managing national health information and sharing information across the region);

- new skill-based approaches to effective training and capacity development, and
- monitoring of the disease burden.

If they are implemented, these activities should lead to a better mechanism for predicting outbreaks in communities more efficiently, with public officials providing direction and response and working in concert with community groups and government departments.

The process of introducing RBM in countries has been through wide stakeholder in-country consultations, leading to sub-regional consensus meeting such as the meeting in Tashkent for the central Asian Republics and Kazakhstan. These meetings and consultations should create the necessary country and sub-regional political support to develop the RBM partnerships and foster the social movement. Once the country partnerships are established, they will develop plans to take concrete action at country level. The process may include the use of appropriate technical instruments (situation analysis and strategy development) to pull together the evidence for agreeing on national plans and actions. Initially, countries can draw on regional technical support networks (created by the global partnership) to provide the necessary expertise for these activities while fostering the development of local expertise.

Country-level partnerships will be expected to develop key indicators for measuring success, while the global partnership is expected to collate country indicators and develop broad indicators to evaluate the impact at global level. Some of the broad areas where success will be measured are:

- the development and the state of country and global partnerships
- the state of health sector development
- the results of strategic investments in drugs and tools
- access to and use of appropriate malaria prevention and treatment, and
- the impact on the malaria burden.

Already the RBM global partnership has identified some of the key challenges to the overall success of the initiative. These include: supporting malaria-endemic countries to be in the lead in reducing internal barriers to sector-wide action; and ensuring that countries have the capacity to address malaria and other disease threats, and negotiate effective country partnerships with realistic goals and the capacity to assess and demonstrate the benefits of the country and global impact of RBM.

The preparatory phase of the RBM initiative has started and should be completed by the end of 1999. By the beginning of 2000, the global partnerships expects to have (i) mobilized additional resources to roll back malaria, (ii) started baseline studies and intensive country action, and (iii) made plans for regular reviews. There is already promising progress in a few countries such as Armenia, Cote d'Ivoire, Ethiopia, Guinea, Mali, Mozambique, and the six countries of the Mekong Delta.

Building the partnership

Global coordination of malaria control efforts and the establishment of a global partnership in the European Region are necessary. Partnership in malaria can be defined as the process of working together to maximize and optimize efforts and resources towards the goal of providing effective interventions to malaria-epidemic countries and to the target populations. This partnership includes the following:

- articulating together a common vision and strategy for reaching a common goal;
- assisting in the search for additional partners and resources;
- taking advantage of the complementary skills and resources that each partner brings to the mix;
- developing together the process by which a partnership is implemented, establishing ground rules, a relationship and communication protocols;
- accepting differences of opinion and perspective;
- recognizing the need for flexibility in the development, design, and implementation of programmes, and
- sharing information.

Such a partnership should build on *principles* and *values*.

Partnership to achieve the common objective of improving the health and wellbeing of the people should be based on at least three principles: flexibility, transparency and accountability. The information flow between the partners should be unrestricted to maintain transparency, mutual trust and continuous concerted action. Strict adherence to financial rules and regulations is essential for maintaining clear accounting and the confidence of donors.

Three values should guide the partnership: equity, solidarity and sustainability. Malaria exacerbates inequities in health and impedes the development of the poorest communities which deserve greater attention when needs are prioritized and resources allocated. Malaria is everybody's business and the initiative should rest on community participation, multisectoral action, partnership and collaboration. Sustainability should be assured through building long-term health systems, developing human and financial resources, using appropriate technology and strengthening research and evaluation.

On the basis of their comparative advantages, the roles of the agencies and groups would be different but complementary.

Role of national governments

The key role of national governments should consist of carefully defining long-term national malaria strategies capable of taking account of current issues and predicting and preventing emerging problems. National governments should promote advocacy at the highest level to create awareness of the socioeconomic impact and the magnitude of the problem and involve the other socioeconomic sectors. Finally, national governments should make the necessary commitments to fund malaria control activities. This should commence by mobilizing local financial and human resources to reduce the mismatch often observed between political statements and the resources allocated for malaria control. In countries where there is no mechanism to coordinate donors, malaria can be used as an entry point for a more structured dialogue on health sector priorities.

Role of the community

The community has a key role to play in a partnership against malaria. Some NIS have set up health care cost recovery and co-management of health centres. The community is already

paying for health care and should be involved in mobilizing resources and planning malaria activities, especially health promotion activities such as awareness of malaria and its consequences, the environment and management to ensure sustainable malaria control. This can be done through community organizations such as local development associations.

Role of multilateral agencies and bilateral agencies

The comparative advantage of key multilateral organizations such as the World Bank, the United Nations Children's Fund (UNICEF) and the United Nations Development Programme (UNDP) are well known. The World Bank is committed to global development alleviating poverty. It can help to enhance multisectoral collaboration, facilitate the mobilization of resources and explore innovative mechanisms to deliver support. UNICEF is already widely involved in community-based and local action to improve health and can contribute effectively to reducing the burden of malaria in general, particularly in the young children and pregnant women who are its target populations. UNDP action is oriented towards strengthening sustainable human development activities, which are based on collaborative programming and intersectoral action. These organizations can synergistically share information, maintain momentum, sustain efforts and inputs and monitor progress.

Several bilateral agencies invest significant funds in various development sectors, some of which are strongly committed to malaria control and prevention. The challenge facing them and the countries will be to pay more attention to malaria and to environmental problems in their projects.

Role of nongovernmental organizations and private sector

Nongovernmental organizations (NGOs) as a rule work closely with communities and have adopted an integrated approach to health development. Their closeness to the people and to their problems offers deep insights and experiences which could contribute substantially to the recognition of the importance of community involvement in health efforts. NGOs can therefore be very useful in social mobilization and implementation of community programmes for malaria control.

Except for some research activities, private sector organizations do not unfortunately contribute much to the movement to control malaria. This is surprising for three reasons:

- on the one hand many private sector organizations are affected by malaria, which reduces their income, and on the other some of their activities can affect malaria patterns;
- in some countries, private sector organizations are the only organizations to provide their workers with health insurance;
- some international companies are interested in linking their names to non-profit activities such as malaria control.

There is, therefore, a need to get global companies, national companies and private health care providers on board at regional as well as country level.

Finally, other organizations and agencies such as foundations and trusts, research and academic institutions and the media should be called on to join in and build the partnership in rolling back malaria.

Role of WHO headquarters and the Regional Office for Europe

WHO has natural strategic leadership, a normative function and conducts political and financial advocacy. As a leader in dealing with health problems, WHO can easily spearhead the mobilization of resources.

WHO headquarters is well positioned to develop and implement global health strategies. Roll Back Malaria WHO/EURO will therefore collaborate closely with WHO headquarters (Roll Back Malaria and Infectious Diseases Cluster), particularly in the areas of joint planning activities and evaluations to ensure the implementation of the strategy.

WHO/EURO will be responsible for adapting global RBM strategies to the epidemiological conditions prevailing in the European Region, implementing them and providing direct support to countries. WHO/EURO will implement the strategy in the countries taking account of the experience gained from the implementation of malaria control programmes both in the European Region and other regions. The continuing process of health sector reforms also will be taken into account.

The malaria situation in neighbouring WHO regions, especially the Eastern Mediterranean Region, has a considerable impact on that in the European Region and vice versa. This requires greater cooperation between the regions, the consideration of malaria problems from a wider perspective and the organization of joint activities.

WHO offices in countries will play a facilitating role and will work in collaboration with national governments and partners to implement the activities.

Comments of partners in malaria control

The representatives of international, bilateral and nongovernmental organizations working in central Asia and Kazakhstan emphasized in their statements at the meeting that the partnership has been well established in the participating countries and is tackling the malaria problem. It was also stressed that the involvement of partners in malaria control should not be judged only by the amount of funds provided.

Some of the partners have worked in the countries concerned during the last few years, some joined only recently, and others are now ready to join. Some of them, for example UNICEF, have brought with them their own partners, such as the Centers for Disease Control (CDC) Atlanta.

The World Bank's assistance in the reforms taking place in health sectors, particularly in information systems, will be very important for the improvement of malaria surveillance in the participating countries.

The representatives of the UNDP, while appreciating the fact that the approaches to malaria prevention and control in the participating countries are similar, cautioned that the partners' assistance should not be directed exclusively at countries experiencing large-scale malaria epidemics. Such assistance should also be rendered to countries with a high malaria epidemic potential, including those bordering the countries of central Asia.

With this in mind, there is an urgent need for the dissemination of epidemiological information among all the countries concerned through the publication of information bulletins at an agreed frequency (monthly, quarterly, etc.). The information materials should be well written, translated into the local languages and widely distributed.

The role of the NGOs as a major partner of RBM was addressed in detail. It was stated that the range of their support and participation in malaria control activities is very broad, ranging from health education activities and creation of community awareness (Medical Emergency Relief International (MERLIN)), the Department for International Development (DFID), the Soros Foundation) to distribution of insecticide-impregnated mosquito nets and treatment of malaria patients (Agency for Technical Cooperation and Development (ACTED)). The important role of women and schoolchildren in creating public awareness was particularly stressed by the partners such as Woman and Society, MERLIN and the Konrad Adenauer Foundation. Representatives of Médecins sans frontières (MSF) pointed out that it was important for RBM to undertake malaria prevention and control among refugees.

A proposal was made to evaluate the impact of current anti-malaria activities on the malaria situation in the region, with a view to identifying areas in which the partners' assistance is particularly needed.

The representatives of participating organizations and agencies who have already established partnerships with the countries concerned committed themselves to continue to support malaria prevention and control, while others are in the process of identifying areas for such assistance in the nearest future.

Conclusions

Participants greatly appreciated the efforts made by the national authorities and WHO to tackle malaria problem, especially in the face of the limited resources available. These efforts have resulted in an apparent decrease of malaria incidence in Tajikistan over the last two years. There are still, however, a number of areas that require strengthening if long-term sustainable success is to be achieved. This can be done through the establishment of an RBM partnership.

The establishment of an RBM partnership in central Asia can be easily done, building on existing collaboration. It should involve the United Nations agencies, development banks, NGOs and the private sector. The governments of the participating countries must play a leading role in establishing partnerships, as these countries already have programmes, plans of action and an indication of the resources required. Partnerships should have a strong country focus but the way in which they will operate can vary from country to country.

There is a general agreement on the appropriate policy and strategies for rolling back malaria throughout the region: prompt diagnosis, effective treatment, a functional surveillance system, vector control through rational use of insecticides and other methods, environmental management, strong emphasis on public information and social mobilization, and development of local capacities.

In order to achieve the goal of rolling back malaria the following points need to be addressed:

- the impact of health sector reforms on the capacities of countries to tackle malaria and other infectious diseases;
- development of the capacities of health professionals, NGO staff, local governments and community leaders, media and other groups to be involved in public education;
- improvement and strengthening of surveillance and information systems through development of materials in local languages;
- social mobilization through the mass media, using appropriate means of communication.

The impact of partnerships in malaria control should be evaluated at the regular meetings of the partners, where progress on malaria prevention and control can be reviewed, existing policies updated and cross-border issues discussed. The social consequences and the cost of malaria should be assessed and evaluated in order to demonstrate the economic advantages resulting from implementation of preventive measures and control.

In developing a sub-regional initiative to roll back malaria the meeting identified four favourable factors which might contribute to the success of the initiative:

- evidence of solidarity among the partners to combat malaria
- agreement of partners to act with synergy
- a high level of commitment
- great determination on the part of governments to achieve results.

The participants agreed unanimously that when this kind of consensus exists among the partners in malaria control, it would not be a great problem to mobilize additional resources for the effective reduction of the burden of malaria.

Recommendations

1. The Roll Back Malaria Initiative should be endorsed by the participating countries as a basis for malaria prevention and control in this region. The endorsement should indicate the willingness of the central Asian republics and Kazakhstan to work together and in partnership with United Nations agencies, development banks, foundations, the private sector and nongovernmental organizations.
2. National level partnership, resource mobilization and community involvement should constitute the starting points for planning and implementing the RBM initiative.
3. The most important component for successful RBM action in the region should be the capacity of national institutions to respond rapidly to the possibility of malaria resurgence through the strengthening of a surveillance and monitoring system. Secondly, it is important that people at risk of contracting malaria should have universal access to early diagnosis and prompt treatment. Thirdly, it is important to build capacity for efficient vector control in order to reduce malaria transmission.
4. RBM activities should, where possible, be integrated into national health services. Technical support to countries for malaria control should be given by the regional support networks based on the strengthened (by WHO) national institutes of parasitology and/or epidemiology.

5. With the establishment of RBM activities in the participating countries, WHO/EURO should provide support to the countries to develop the mechanisms for exchanging information about malaria and other infectious diseases.
6. There is an urgent need to establish a mechanism to address the cross-border malaria problem with other regions, such as WHO/EMRO.
7. WHO headquarters should strengthen WHO/EURO through the establishment of a post or the presence of a professional in order to assist the central Asian republics and Kazakhstan in the development of a Roll Back Malaria partnership.

Annex 1

PROGRAMME

09.30 – 10.00	Registration	
10.00 – 10.30	Opening	Ministry of Health of Uzbekistan, UNDP, WHO RBM
10.30 – 10.45	Objectives and expected outcome of the meeting	WHO/EURO
10.45 – 11.15	The Roll Back Malaria (RBM) initiative	WHO/HQ RBM
11.15 – 11.30	Coffee break	
11.30 – 13.15	Country presentation on the malaria epidemiological situation in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan (<i>15 minutes per country plus 5 minutes' discussion</i>)	Participants from central Asian republics and Kazakhstan
13.15 – 14.30	Lunch	
14.30 – 14.50	WHO/EURO policy and strategies on Roll Back Malaria	WHO/EURO
14.50 – 15.30	Round-table discussion on Roll Back Malaria partnership in regard to the malaria situation in the CAR and Kazakhstan	All participants
15.30 – 15.45	Coffee break	
15.45 – 17.00	Round-table discussion on Roll Back Malaria partnership in regard to the malaria situation in the CAR and Kazakhstan (continued)	All participants
17.00 – 17.30	Conclusions and closure	Ministry of Health of Uzbekistan and WHO RBM

Annex 2

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