

Country profile of Tajikistan

In 2015, for the first time, Tajikistan reported zero indigenous cases. Transmission of *Plasmodium falciparum* malaria in the country was interrupted in 2009.

The malaria vectors in Tajikistan include *Anopheles superpictus*, *An. pulcherimus*, *An. macullipennis*, *An. hyrcanus* and *An. martinius* (1). Studies on vector resistance to insecticides (DDT, fenitrothion, cyfluthrin and deltamethrin) showed that all the vectors are susceptible.

Short history of malaria and malaria control

After malaria eradication was achieved in Tajikistan in 1960, isolated cases were registered only in areas bordering Afghanistan and were associated with the introduction of infected vectors from that country.

During 1963–1980, 135 malaria cases were detected in 25 settlements in seven of eight districts bordering Afghanistan. With the beginning of the war in Afghanistan in the 1980s, malaria incidence began to increase in Tajikistan. In 1980, 36 indigenous cases were registered, and the number rose to 121 in 1981. The increase continued until 1985, although use of indoor residual spraying, mass drug administration, training of local medical staff and health education of the population led to a reduction in malaria incidence.

The epidemiological situation in Tajikistan deteriorated further in 1993, when an influx of refugees from Afghanistan resulted in mass importation of *P. vivax* and *P. falciparum* malaria to receptive areas of Kurgan-Tube. In 1993, 628 malaria cases were registered, in 1994, there were 2410, and in 1995, 2410 cases were detected. In 1997, at the peak of the epidemic, 29 794 malaria cases were officially reported in the country.

Tajikistan was the only country in the WHO European Region that had a resurgence of *P. falciparum* malaria, which constituted up to 5% of all malaria cases (2).

Considerable financial, scientific and practical support from various international organizations, such as WHO and UNICEF, from the European Union Humanitarian Aid Office, Food and Agriculture Organization, the French Agency for Technical Cooperation and Development, Medical Emergency Relief International in the United Kingdom and the United States Agency for International Development, and from the governments of Italy, Japan and Norway played a crucial role in controlling the malaria epidemic. The support was instrumental in the re-establishment of specialized malaria control services in Tajikistan, including the central and 10 regional tropical disease control centres.

In 1997, the first national programme for control of tropical diseases (malaria) was established in Tajikistan for 1997–2005. Various epidemic control measures were used, such as indoor residual spraying with an effective

insecticide, use of lavivorous fish and mass drug administration in stable malaria foci, resulting in a rapid decrease in morbidity. Between 1997 and 1999, the number of malaria cases was reduced by more than 50%, from 29 794 to 13 493 cases (2). The malaria situation nevertheless remained serious because of its spread throughout the country and the re-emergence of local transmission of *P. falciparum* malaria. In 2000, 19 064 cases of *P. vivax* and 831 cases of *P. falciparum* malaria were reported in the country (3).

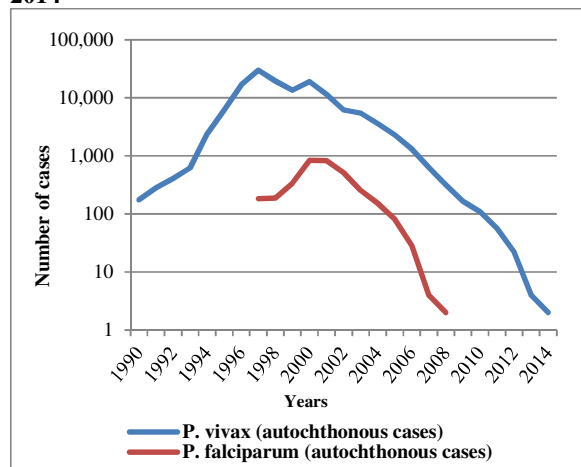
Malaria situation between 2000 and the present

In 2005, Tajikistan and other affected countries in the WHO European Region signed the Tashkent Declaration, committing themselves to eliminate *P. falciparum* malaria by 2010 and *P. vivax* malaria by 2015.

On 30 December 2005, the Government approved the national malaria control programme for 2006–2010, with the aims of interrupting *P. falciparum* malaria transmission and reducing malaria morbidity to less than 20 per 100 000 population. The programme was successful, and transmission of *P. falciparum* was interrupted in 2009.

In 2011, the Government endorsed the national programme for interruption of malaria transmission for 2011–2015. In 2015, for the first time, the country reported zero indigenous cases (Fig. 1).

Fig. 1 Numbers of malaria cases in Tajikistan, 1990–2014



Source: Tropical Diseases Control Centre, Tajikistan

The goals of the strategy were to eliminate local transmission of malaria in Tajikistan by 2015 and to maintain the malaria-free status in areas in which the disease has been eliminated.

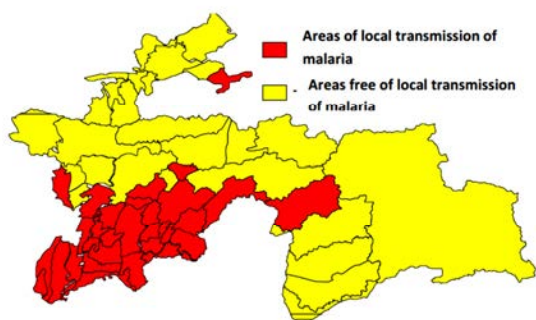
The strategy had the following objectives:

- interrupt local transmission of *P. vivax* malaria, although ephemeral transmission may occur in areas bordering Kunduz, Tahir and Badakhshan in Afghanistan;
- prevent reintroduction of *P. falciparum* malaria, which was eliminated in 2009;

- prevention reintroduction of malaria transmission in districts in which it has been interrupted; and
- prevent deaths due to imported malaria (4).

A total of 41 districts (Fig. 2) have been identified for malaria control interventions on the basis of the current distribution of malaria cases in the country, the risk for malaria transmission and rational use of resources.

Fig. 2 Map of priority target districts for malaria control, Tajikistan, 2011–2015



Source: Tropical Diseases Control Centre, Tajikistan

Strategies, policies and interventions

In 2001, a WHO Roll Back Malaria field office was established in the Khatlon region of Tajikistan to evaluate the extent of the malaria problem, particularly in regard to *P. falciparum*. Operational studies conducted there provided a baseline for future interventions. The activities in 2002–2003 included early diagnosis and radical treatment of malaria, selective indoor residual spraying, promotion of biological means of vector control, distribution of insecticide-impregnated mosquito nets, seasonal prophylaxis for high-risk groups, training in malaria, surveillance, community mobilization and operational research.

In 2003, WHO, in cooperation with the United States Agency for International Development, initiated a malaria control programme in Central Asia. In Tajikistan, the project covered the most severely affected regions. In 2003–2005, 92 parasitologists, 19 assistant parasitologists, 306 laboratory technicians, 43 entomologists and 13 assistant entomologists were trained or retrained in malaria. During the project, 105 070 houses were covered by indoor residual spraying, protecting 748 125 people. In 2003–2005, 126 supervisory visits were made by international staff and 433 by local staff. All medical facilities were provided with sufficient amounts of antimalarial drugs. During the project, 302 public awareness sessions for 11 222 people were conducted.

In the districts covered by the project, the number of malaria cases fell noticeably. While *P. falciparum* malaria was registered in 24 of the 38 districts included in the project in 2002, the numbers of districts fell to 20 in 2003, 18 in 2004 and 14 in 2005. A similar trend was

observed for *P. vivax* malaria, with 4658 registered cases in 2003 and 2067 in 2005.

In 2005, Tajikistan received the first grant for malaria from the Global Funds to Fight AIDS, Tuberculosis and Malaria. Funding from the Global Fund played a significant role in achieving interruption of malaria transmission in the country.

Prevention of reintroduction of malaria

After interruption of local transmission of malaria, all efforts should be directed to preventing its reintroduction. A national strategy is being prepared.

Outlook

Despite the remarkable achievements, the risk for reintroduction of malaria into Tajikistan remains high, primarily in the districts bordering Afghanistan, due to possible importation of cases and infected mosquitoes. The high receptivity (presence of local vectors and environmental and climatic conditions favourable for malaria transmission) of the southern part of the country means that even limited importation of malaria could lead to reactivation of foci that have been cleared. The close proximity of Afghan and Tajik settlements in border areas (within 3–5 km or even 100 m) aggravates the situation, as 3–5 km is the common flight range of *Anopheles* mosquitoes.

The maintenance of strong vigilance, timely detection of any malaria case and effective response should be assured in the future.

References

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