Eliminating malaria in
TAJIKISTAN

Tajikistan reported just 7 local cases of malaria in 2013 and is on track to reach its goal of malaria elimination by 2015.

Overview
Tajikistan has made tremendous progress in reducing malaria incidence, with reported malaria cases dropping from 19,064 in 2000 to just seven in 2013. The country is categorized in the elimination phase by the World Health Organization (WHO). Tajikistan has eliminated Plasmodium falciparum, and transmission is now due only to P. vivax. Primary malaria vectors in Tajikistan include Anopheles superpictus and An. pulcherimus, while An. maculipennis, An. hyrcanus, An. claviger, and An. artemievi are secondary vectors. Seasonal transmission of P. vivax malaria typically occurs between May and October, although duration of transmission varies geographically, with shorter seasons in mountainous areas and longer seasons of up to 6–8 months in the lowlands. In the spring, heavy rainfall and mild temperatures create ideal vector breeding grounds, and during the summer these breeding areas are sustained by an increase in rice cultivation and agricultural land use changes. Southern Tajikistan is considered to be malaria endemic, whereas central and northern Tajikistan are prone to occasional outbreaks. There is no malaria in high altitude areas over 2,500 meters.

Tajikistan was nearly successful in eliminating malaria in the mid-1970s, reducing local cases to only seven in 1974. Due mostly to the collapse of the Soviet Union and an ensuing civil war, malaria cases surged in the mid-1990s to an estimated 120,000 cases. Between 200 and 500 cases were recorded annually during this time. Local health services utilized a range of methods to control the increase in cases, including intensified active case detection and treatment, vector control with IRS, anti-larval measures, and vector research studies were employed. By 1954, malaria incidence had fallen to five cases per 1,000 population. A malaria elimination campaign continued to reduce malaria cases, and between 1956 and 1960, malaria incidence dropped to less than one case per 1,000 population. The malaria burden remained at very low levels in the 1960s and early 1970s through the use of IRS, regular active case detection, and prompt treatment. By 1974, Tajikistan had nearly reached its goal of elimination, reporting only seven cases of malaria.

Progress Toward Elimination
In the early 1920s, malaria was a disease of considerable significance in Tajikistan; surveys revealed that entire populations in the valley areas were affected. The first malaria control campaign was launched in the 1930s when annual cases totaled more than 100,000. In response to this high caseload, health workers and malaria experts in Tajikistan led epidemiological assessments of the situation, established antimalaria field stations, and conducted routine examinations of individuals traveling from endemic areas. In addition, active case detection and treatment, vector control with IRS, anti-larval measures, and vector research studies were employed. By 1954, malaria incidence had fallen to five cases per 1,000 population. A malaria elimination campaign continued to reduce malaria cases, and between 1956 and 1960, malaria incidence dropped to less than one case per 1,000 population. The malaria burden remained at very low levels in the 1960s and early 1970s through the use of IRS, regular active case detection, and prompt treatment. By 1974, Tajikistan had nearly reached its goal of elimination, reporting only seven cases of malaria.

In the late 1970s and early 1980s, the incidence of both P. vivax and P. falciparum began increasing in the southern areas bordering Afghanistan. Between 200 and 500 cases were recorded annually during this time. Local health services utilized a range of methods to control the increase in cases, including intensified active case detection, mass
screen and treat campaigns, and additional trainings for health and laboratory personnel.\textsuperscript{3,9} Despite these efforts, cases in the southern areas of the country continued to slowly increase during the mid-1980s, largely a result of the Soviet-Afghan War (1979–1989), though control measures were successful enough that the number of annual cases stayed below one thousand.\textsuperscript{6,12}

The malaria situation in Tajikistan quickly deteriorated following the collapse of the Soviet Union in 1991, and was further impacted by a civil war (1992–1997). Malaria control operations and public health services were abandoned, and mass population movement to and from endemic areas in Afghanistan contributed to a steep rise in malaria cases.\textsuperscript{3,10} Between 1993 and 1997, reported cases increased dramatically from only 619 to nearly 30,000, though some estimates put the apex at more than 120,000.\textsuperscript{3} In 1997, the Republican Tropical Disease Center was created with the objectives of strengthening disease surveillance and management systems, increasing the availability of national health information, and deploying malaria control measures in focal areas.\textsuperscript{5} Other international partner organizations, such as the Agency for Technical Cooperation and Development (ACTED), Merlin, and UNICEF, began to launch malaria control interventions including vector control and support for health services, laboratory capacity-building, health education, and community engagement activities.\textsuperscript{5} By 1998, reported cases declined to approximately 19,000.\textsuperscript{12}
With the introduction of insecticide-treated bed nets by ACTED in 1998, along with IRS and community awareness efforts already in place, total cases decreased to fewer than 13,500 in 1999. Despite this downward trend, Tajikistan experienced an outbreak of *P. falciparum* malaria in 2000, accompanied by a sharp increase in *P. vivax* infections.13 With continued support provided by the international partner organizations to strengthen the capacity of the malaria program, cases steadily declined after the outbreak was contained.

In 2005, Tajikistan and nine neighboring malaria-endemic countries endorsed the Tashkent Declaration—the move from malaria control to elimination in the WHO European region—which marked Tajikistan’s political commitment to eliminate malaria.14 The WHO Regional Office for Europe and the Tajikistan Ministry of Health also signed a biennial collaborative agreement to support Tajikistan’s national malaria elimination campaign by providing technical assistance and building capacity within the malaria program, strengthening cross-border collaboration with malaria-endemic Afghanistan, and supporting operational research on malaria.15

In 2006, Tajikistan received a five-year Round 5 Global Fund grant to strengthen the national malaria control program and general health services, improve access to early diagnosis and treatment of malaria, and support prevention activities, operational research, and community-based interventions with a goal to eliminate *P. falciparum*.16 Progress made with Global Fund support was significant: by 2008, Tajikistan reported only 318 malaria cases, an 87 percent reduction from 2005.1 In 2009, Tajikistan received a Round 8 Global Fund grant to build on the success achieved under Round 5, aimed at reducing the remaining local *P. vivax* transmission through IRS, distribution of insecticide-treated bed nets, and community education.8 The National Malaria Combating Programme then developed a 2011–2015 elimination strategy, focusing on capacity-building, strengthening of surveillance, improving coverage and quality of early diagnosis and prompt treatment, promoting integrated vector management, and developing evidence-based interventions based on operational research.17 This strategy was endorsed by the government of Tajikistan in 2011, and its successful implementation has put the country within close reach of its 2015 elimination goal.
Eliminating malaria in Tajikistan

Eligibility for External Funding

<table>
<thead>
<tr>
<th>Program</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
<td>Yes</td>
</tr>
<tr>
<td>U.S. Government’s President’s Malaria Initiative</td>
<td>No</td>
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<tr>
<td>World Bank International Development Association</td>
<td>Yes</td>
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Economic Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tr>
<td>GNI per capita (US$)</td>
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<tr>
<td>Country income classification</td>
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<tr>
<td>Total health expenditure per capita (US$)</td>
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<td>Total expenditure on health as % of GDP</td>
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<tr>
<td>Private health expenditure as % of total health expenditure</td>
<td>70</td>
</tr>
</tbody>
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Challenges to Eliminating Malaria

Malaria importation
Importation of malaria from Afghanistan poses a significant challenge for Tajikistan in its quest to achieve and maintain elimination. The Ministries of Health for both countries are working together to provide diagnosis and treatment services along the border to prevent importation. Continued collaboration between the two countries will be critical in Tajikistan’s path to elimination.

Human and financial resources
Insufficient resources for malaria treatment and prevention activities are a barrier for Tajikistan’s malaria elimination program. Global Fund grants support many of the necessary resources, including training for health providers and malaria staff. However, many of the health providers are working within deficient health infrastructures and the salaries of community workers are low, making it difficult to retain staff and keep them motivated.

Conclusion

For Tajikistan to achieve and sustain zero malaria transmission, maintaining surveillance and the capacity of primary health care facilities for effective case management and vector control will be critical. Tajikistan has confirmed its political commitment to increase cross-border collaboration with Afghanistan and is supported by the Global Fund to eliminate the remaining cases of P. vivax malaria. With only 7 local cases in 2013, Tajikistan is on track to attain its goal of interrupting malaria transmission by the end of 2015.
Sources


Transmission Limits Maps Sources

About This Briefing

This Country Briefing was developed by the UCSF Global Health Group’s Malaria Elimination Initiative, in collaboration with the WHO Regional Office for Europe and Tajikistan’s Ministry of Health. Malaria transmission risk maps were provided by the Malaria Atlas Project. This document was produced by Gretchen Newby; to send comments or for additional information about this work, please email Gretchen.Newby@ucsf.edu.

The Global Health Group at the University of California, San Francisco (UCSF) is an ‘action tank’ dedicated to translating new approaches into large-scale action that improves the lives of millions of people. Launched in 2007, the UCSF Global Health Group’s Malaria Elimination Initiative works at global, regional and national levels to accelerate progress towards eradication by conducting operational research to improve surveillance and response, strengthening political and financial commitment for malaria elimination, and collaborating with country partners to shrink the malaria map.

The Malaria Atlas Project (MAP) provided the malaria transmission maps. MAP is committed to disseminating information on malaria risk, in partnership with malaria endemic countries, to guide malaria control and elimination globally. Find MAP online at: www.map.ox.ac.uk.