

Country profile of Kazakhstan

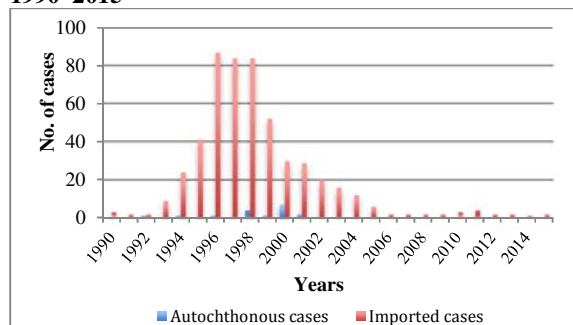
Malaria was eliminated in Kazakhstan in 1967; subsequently, local *Plasmodium vivax* transmission was re-established in 1992 and then interrupted in 2000. The country is now in the “prevention of malaria reintroduction” phase. In 2012, Kazakhstan was added to the WHO supplementary list of countries free of malaria.

The malaria vectors in Kazakhstan are *Anopheles messeae* (the most common, found throughout the country), *An. superpictus*, *An. pulcherrimus*, *An. martinius*, *An. hyrcanus* and *An. claviger*.

Short history of malaria and malaria control

Malaria was common in Kazakhstan in the past. As a result of a large-scale, nationwide antimalarial campaign, local malaria transmission was interrupted by 1960, and malaria elimination was confirmed in 1967. The country maintained malaria surveillance, and only imported cases were registered in the 1970s and 1980s. In 1992–1999, however, an increase in importation of *P. vivax* was seen from the countries of the former Soviet Union, where malaria epidemics had broken out, and a few introduced cases of *P. vivax* malaria were officially reported. Local transmission of *P. vivax* then resumed, and seven indigenous cases were recorded in 2000 and two in 2001 (1–4) (Fig. 1).

Fig. 1. Numbers of malaria cases in Kazakhstan, 1990–2015



Sources: reference 2; Department for Monitoring of Parasitic Disease and Risk Assessment, Scientific and Practical Centre for Sanitary-Epidemiological Expertise and Monitoring, Consumer Protection Committee, Ministry of National Economy, Kazakhstan (unpublished data).

Malaria situation between 2000 and the present

After resumption of local transmission of *P. vivax*, the Ministry of Health reinforced antimalarial activity, and the increased malaria control and surveillance quickly interrupted transmission and prevented further distribution of vivax malaria. Since 2002, no autochthonous cases have been reported, although malaria importation continued. During the period 2000–2015 malaria, importation accounted for 135 cases.

Since 2000, after the sharp rise in the number of cases imported from malaria-endemic countries in the 1990s, there has been a steady decrease (see Fig. 1). The

majority of cases (114, 84.4%) were due to *P. vivax* and the rest to other species (*P. falciparum*, 14 cases; *P. malariae*, 3; *P. ovale*, 1; and mixed infection, 3).¹

Analysis of imported malaria cases in 2011–2015 showed that most were male (9 of 11), all were aged 20–40 years, more than half (6 cases) were foreign students, and malaria was imported predominantly from Pakistan (6 cases) but also from Afghanistan, Nigeria, and India. A potentially favourable factor for preventing local malaria transmission is that most cases (10) were in towns, forming pseudofoci, and there was only one potential focus, which did not become active.¹

Strategies, policies and interventions

For rapid interruption of the renewed *P. vivax* transmission and to achieve malaria elimination, the country mobilized resources and scaled up epidemiological surveillance and control. In 2000, a national plan for malaria prevention for 2001–2003 was set up. With application of indoor residual spraying in the new foci and larval control (*Gambusia affinis*) in mosquito habitats, the level of transmission was quickly reduced. Intensified case detection (passive and active), prompt diagnosis and radical treatment led to elimination of the sources of infection. Case-based surveillance, prevention and capacity-building helped to reach the target. These complex, integrated interventions, supported by the Ministry of Health, WHO and the United States Agency for International Development, resulted in prevention of the spread of malaria in the country, and the last autochthonous malaria cases were reported in 2001 (1,3).

Kazakhstan has committed itself to eliminating malaria, and, in 2005, signed the Tashkent Declaration (5).

Prevention of reintroduction of malaria

After achieving interruption of local malaria transmission, the malaria programme was reoriented to prevention of malaria reintroduction.

In Kazakhstan, 4.5 million citizens in the 26 provinces live in potentially malarious areas, although differences in eco-climatic settings, landscape, vector species distribution and occupational and migration patterns make the malariogenic potential heterogeneous. The areas at highest risk for resumption of malaria transmission are Almaty, Jambyl and South, West and East Kazakhstan and also the cities of Almaty, Astana and Karaganda (4).

A recent decrease in the number of imported cases and the improved malaria situation in neighbouring and other countries of the former Soviet Union have reduced vulnerability, although increasing migration throughout the world may change the situation rapidly.

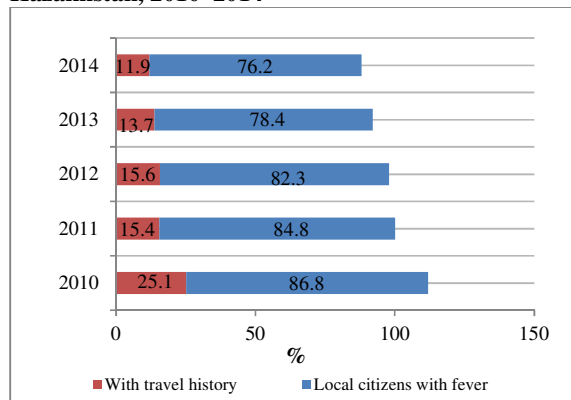
¹ Department for Monitoring of Parasitic Disease and Risk Assessment, Scientific and Practical Centre for Sanitary-Epidemiological Expertise and Monitoring, Consumer Protection Committee, Ministry of National Economy, Kazakhstan (unpublished data).

The aims of the programme for prevention of malaria reintroduction in Kazakhstan are to reduce malaria potential (receptivity and vulnerability), prevent imported malaria and its consequences and establish and maintain high vigilance for cases. The main approaches and operations are:

- timely passive and active detection of malaria cases on clinical and epidemiological indications (fever, history of travel to malaria-endemic countries) (Fig. 2);
- quality-assured laboratory diagnosis;
- treatment of malaria free of charge (6);
- comprehensive investigation of all imported cases and new foci and management of foci, in line with national legislation (7);
- entomological monitoring at selected control points (8) and studies on insecticide resistance;
- vector control mainly through larval control and environmental management (Indoor residual spraying has not been used since 2010.);
- continuous work to reduce malaria importation;
- numerous Ministry of Health regulations and guidelines, which are updated periodically;
- continuous training and retraining of staff to maintain malaria expertise; and
- an agreement for cross-border cooperation for malaria elimination with Kyrgyzstan, Tajikistan and Uzbekistan, signed in 2010 in Bishkek.

2. Centralized Information System for Infectious Diseases. Copenhagen: WHO Regional Office for Europe (<http://data.euro.who.int/cisid/?TabID=266677>).
3. Inception meeting on the malaria elimination initiative in the WHO European Region. Report on a WHO meeting, Tashkent, Uzbekistan, 18–20 October 2005. Copenhagen: WHO Regional Office for Europe; 2005.
4. Scaling up the response to malaria in the WHO European Region. Progress towards curbing an epidemic, 2000–2004. Copenhagen: WHO Regional Office for Europe; 2005.
5. The Tashkent Declaration. The move from malaria control to elimination in the European Region. Copenhagen: WHO Regional Office for Europe; 2006.
6. Guidelines on malaria case management, 27.11.2014., Ministry of Health of Kazakhstan
7. Order No. 451 on regulation of registration and reporting of infectious and parasitic diseases. Astana: Ministry of Health; 2015.
8. Guiding recommendation on malaria mosquito phenologic studies and on determination of their species composition. 07.03.03., Ministry of Health of Kazakhstan

Fig. 2. Percentages of people examined for malaria on clinical and epidemiological indications, Kazakhstan, 2010–2014



Outlook

The experience of Kazakhstan shows the importance of sustainable surveillance in preventing malaria resurgence. Now, having achieved malaria elimination again, the country requires resources to maintain high levels of vigilance and preparedness to ensure a prompt response to any reintroduction of the disease.

References

1. Sergiev VP, Baranova AM, Majori G, Ejov MN. Malaria in the European Region of the World Health Organization (1970–2000). Copenhagen: WHO Regional Office for Europe; 2007.