

Country profile of Armenia

Transmission of *Plasmodium vivax* malaria was interrupted in Armenia in 2006, and the country was officially certified by WHO as malaria free in 2011.

Anopheles maculipennis is the main malaria vector in the country. Others include *An. sacharovi* and *An. claviger*. The appearance of *An. sacharovi* (the main vector in Transcaucasia) in the Ararat valley has created more favourable conditions for malaria transmission in the country (1).

Short history of malaria and malaria control

Malaria has been highly endemic in Armenia since ancient times but was absent for 31 years, during the period 1963–1994.

From 1963, when no autochthonous malaria cases were reported, control operations were sharply reduced. After 1991, however, following the collapse of the former Soviet Union, the malaria-free status of the country was jeopardized. Several factors placed Armenia at risk for the re-emergence of malaria. Severe financial constraints contributed to reduction of vector control activities and, because of inadequate epidemiological control, new malaria cases were not diagnosed, treated or reported properly. Nevertheless, despite sporadic imported cases, Armenia maintained its malaria-free status until 1993 owing to a well-developed network of public health institutions (2). Subsequently, the situation deteriorated, due to military conflict with neighbouring countries (91.8% of imported cases were in people returning from conflict areas).

In 1994, the first indigenous case was registered since malaria eradication (3), and 196 imported cases of malaria (5.1 per 100 000) were recorded among military personnel. All the cases were due to *P. vivax*. The epidemiological situation and distinctive spread of malaria in Armenia was similar to that in South Asian countries (4).

In 1995, the number of imported cases increased to 502 among both the military and civilians, but no indigenous cases were detected that year. In 1996, 149 of 347 cases were reported as autochthonous. During 1997–1998, the number of imported and autochthonous cases continued to rise, with 567 indigenous cases in 1997 (3). In 1998, the epidemic reached its peak, with 1156 malaria cases. Although 30 of 81 districts recorded malaria cases, in 1998, 89% of the autochthonous cases were detected in the Masis district of the Ararat valley, an area bordering Turkey.

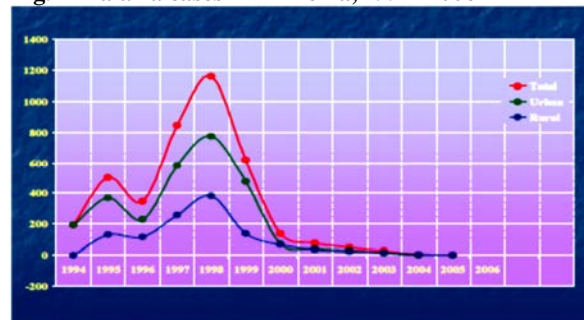
The malaria situation started to improve after 1999, when 616 *P. vivax* malaria cases were reported in Armenia, 376 in Masis district.

Malaria situation between 2000 and the present

After 2000, due to epidemic control interventions, the number of malaria cases (imported and autochthonous) continued to decline. Altogether, 79 malaria cases were

registered in 2001 (32 autochthonous), 52 in 2002 (13 autochthonous), 29 in 2003 (8 autochthonous) and 47 in 2004 (6 autochthonous). The last three autochthonous cases in Armenia were reported in 2005. The dynamics of malaria morbidity in Armenia in 1994–2006 is shown in Fig. 1.

Fig. 1 Malaria cases in Armenia, 1994–2006



Source: National Centre for Disease Control, Armenia

Strategies, policies and interventions

After 1994, when malaria cases began to be registered in the country again, the Government paid particular attention to the problem. The national policy during this period focused on protecting the population from an epidemic.

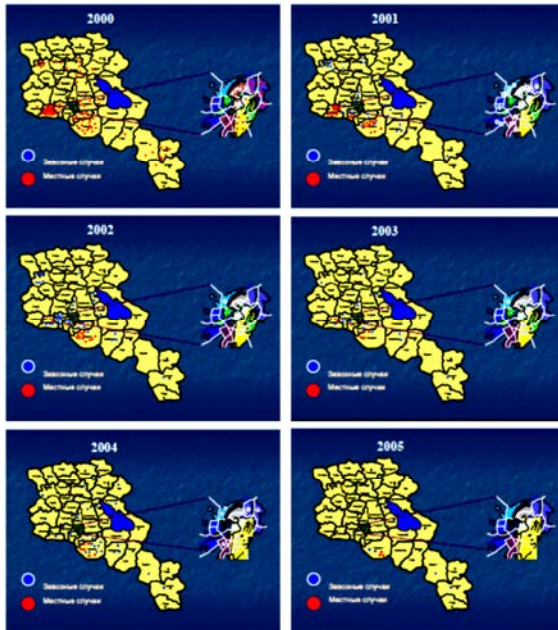
In 1998, the Ministry of Health, with technical support from WHO and financial contributions from the governments of Italy and Norway, resumed malaria control activities. With WHO, UNICEF and the International Federation of Red Cross and Crescent Societies, a Roll Back Malaria programme was implemented to eliminate recently established foci of malaria infection and to prevent further spread of the disease (5).

The first malaria control programme was adopted by the Government Council in 1999, and a national coordination council for malaria was established by a decision of the President and the Prime-Minister. The coordination council consisted of various ministers, the heads of Government agencies (including health, agriculture, internal affairs, defence and water resources) and the governors of malaria-endemic districts.

Broad consensus was built among local authorities and Government departments, civil society and the media to tackle the malaria problem in the 11 regions of the country, where regional councils were formed. Particular emphasis was paid to Ararat, Armavir and Yerevan City, where malaria control activities are currently being implemented.

In 2005, Armenia and other malaria-affected countries in the WHO European Region, taking into consideration the progress achieved in control of malaria (Fig. 2), endorsed the Tashkent Declaration (6). In 2006, Armenia prepared a national malaria elimination strategy, based on the results achieved so far and with the goal of eliminating *P. vivax* malaria by 2010.

Fig. 2. Mapping of malaria cases, Armenia, 2000–2005



Source: National Centre for Disease Control, Armenia

Activities that played significant roles in the control and elimination of malaria in Armenia were:

- inclusion of malaria control and prevention activities in the general plans of action of local health authorities;
- staff training and re-training;
- preparation of inpatient facilities for malaria patients (window nets, regular disinsection, stocks of antimalarial drugs);
- provision of guidance to medical personnel;
- laboratory testing of samples, with clinical and epidemiological observation, to ensure early detection and treatment of cases;
- establishment of a reserve stock of antimalarial agents;
- strengthened capacity of parasitological laboratories;
- establishment of internal and external quality assurance for clinical and epidemiological diagnosis of malaria; and
- social mobilization and communication for the population.

Prevention of reintroduction of malaria

In 2011, the Government adopted the national programme and plan of action for the prevention of malaria reintroduction for 2011–2015. The key strategies for implementing the programme were:

- consolidation of the system for preventing reintroduction of malaria;
- integration of measures for preventing malaria reintroduction into the activities of the emergency programme;
- a cross-border cooperation policy;

- adaptation of the epidemiological surveillance system to prevention of reintroduction;
- improved preventive and anti-epidemic measures in foci of infection;
- preventive activities and measures for high-risk groups;
- dissemination of information on malaria prevention and medical hygiene to the population; and
- recruitment and capacity-building of staff for malaria prevention.

Outlook

The experience of reintroduction of malaria into Armenia after more than 30 years of interruption showed the importance of sustained surveillance for the prevention of resurgence. Now that the country has been certified by WHO as malaria free, continuous efforts and resources are needed to maintain a high level of vigilance and preparedness for a prompt response to prevent reintroduction of the disease.

References

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