



## MISSION REPORT

# Joint WHO–ECDC mission related to local malaria transmission in Greece, 2012

5 – 7 November 2012

## Introduction

Locally acquired cases of malaria have been occurring in Greece since 2009, with the highest numbers reported in 2011. In 2012, local malaria transmission was still ongoing, but fewer cases were reported. The presence of efficient malaria vectors and favourable conditions for seasonal transmission of malaria, combined with the arrival and high turnover of migrant workers from malaria-endemic countries, considerably increased the degree of vulnerability of the country, especially in the Evrotas river delta area (Lakonia). The high receptivity and vulnerability to malaria urged the Greek authorities to develop an adequate strategy to prevent the re-introduction of malaria and increase basic preparedness and response capabilities in order to cope with the malaria situation.

Within this context, a joint WHO-ECDC mission was conducted to aid the Greek authorities in their efforts to respond to the challenge of malaria and support preventive activities for the control of malaria in the country\*.

## Findings

Between 1982 and 2010, imported malaria continued to be reported in Greece, with a total of 1 027 cases detected. In 2009, seven microscopically confirmed cases of locally acquired *Plasmodium vivax* malaria were reported in Greece, and in 2010 four cases were reported. In 2011, Greece recorded 42 cases of *P. vivax* malaria in persons without a travel history to an endemic country.

As of 26 October 2012, 76 cases of malaria were reported in Greece. Sixteen cases refer to patients with no history of travel to a malaria-endemic country, with evidence that they acquired the infection locally during the 2012 transmission period (Figure 1).

Cases were reported from the municipalities of Evrotas (Lakonia), Marathon and Markopoulo (East Attiki), Sofades (Karditsa), Avdira (Xanthi). One case was attributed to the area around Lake Paralimni (Viotia). Sixty of the 76 cases were classified as imported. Fifty-four of the 60 cases were reported in migrants from malaria-endemic areas. The classification 'imported' was based on the arrival date in Greece and/or past history of malaria. Among the 54 cases, 47 were *Plasmodium vivax*, six *Plasmodium falciparum*, and one was a mixed infection *P. vivax/P. falciparum*. Six imported *P. falciparum* cases were reported from Greek travellers. In addition to the 76 cases, nine cases were reported in 2012 but classified as relapses or infections from past transmission periods.

The Hellenic CDC developed an 'action plan for malaria' during winter and spring 2012. The action plan underlines the necessity to enhance the epidemiological surveillance of malaria; to increase the capacity of laboratory

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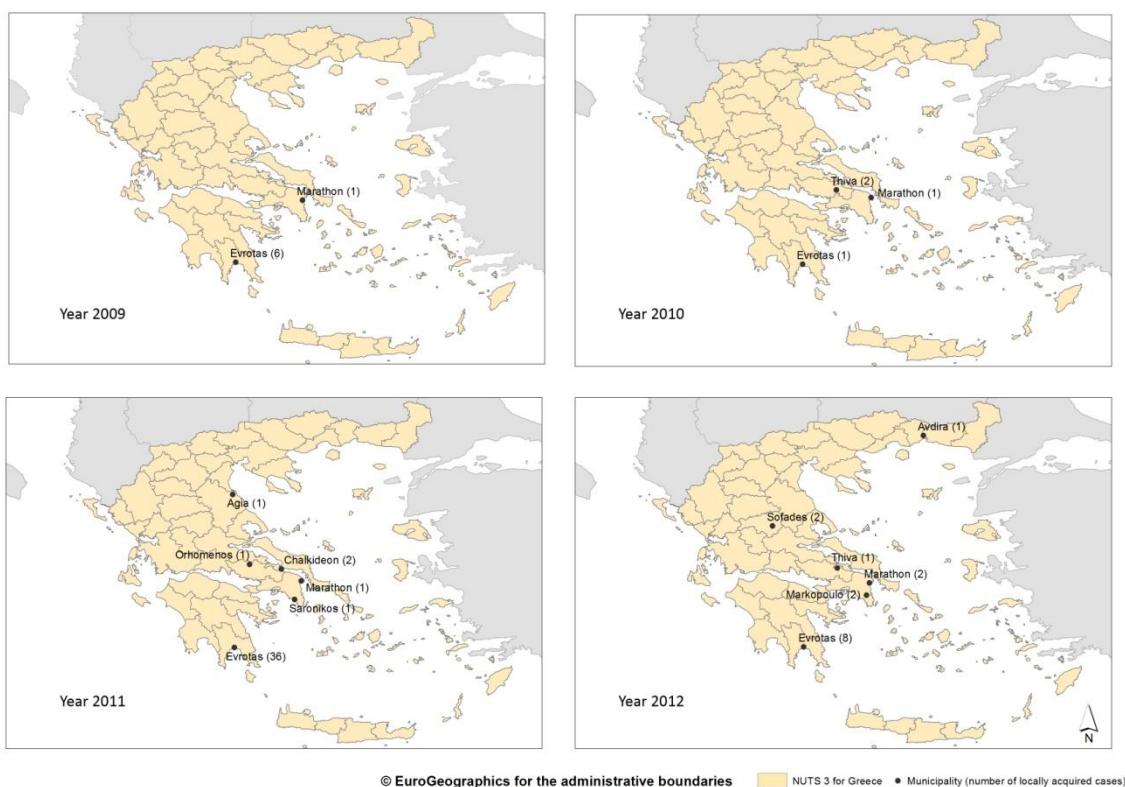
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ECDC and WHO would like to thank all Greek colleagues for facilitating this mission, the many fruitful discussions, for sharing their experiences, and for their kind hospitality.

diagnostic facilities for malaria in Greece; to standardise the national policy for the treatment of malaria; and to improve communication, education and intersectoral collaboration on malaria control and prevention. The Ministry of Health is currently developing a National Action Plan for vector-borne diseases, including specific sections on malaria, West Nile virus and other vector-borne diseases. The objective is that this National Plan will be endorsed by all involved ministries and provide the legal framework necessary for assigning responsibilities to all involved stakeholders.

The 'Integrated surveillance and control programme for West Nile virus and malaria in Greece' (MALWEST) project supports malaria-related surveillance (as outlined in the paragraph above), data integration, and data analysis activities in Greece. This project is funded by the National Strategic Reference Framework 2007–2013, through the Greek Ministry of Health, and is coordinated by the Laboratory of Hygiene and Epidemiology at the University of Thessaly. It was launched in January 2012 and will run for a total of 24 months (until 31 December 2013).

**Figure 1. Map of Greece indicating municipalities where locally acquired malaria cases were detected in 2009–2012\***



\* Number of locally acquired cases in brackets

The action plan for malaria, developed by the Hellenic CDC, with precise objectives based on the commitments and capabilities of the country, contributed to the:

- establishment of a functioning system which offers access to early detection, diagnosis and prompt radical treatment of cases;
- strengthening of institutional capacities of public and specialised health services;
- improvement of vector control interventions, albeit additional improvements are required;
- reinforcement of malaria surveillance and adequate reporting;
- increased public awareness in malaria control and prevention; and
- enhanced intersectoral collaboration.

These activities contributed to a substantial reduction in the number of malaria cases among local residents in the most affected municipality of Evrotas (Lakonia). However, taking into account the fact that the number of imported cases is still increasing, that the number of locally acquired cases continues to rise outside Evrotas, and that locally acquired cases are reported in new locations, there is substantial concern that the malaria problem could assume larger dimensions in the years ahead. Consequently, control activities should be in place all across the country.

The adopted blood safety measures for malaria in Greece are sufficient and appropriate. There were no reports of transmission of malaria through transfusion of blood and blood components after the introduction of the measures. Open issues that need further discussion and analysis – in close collaboration between Greek blood safety authorities, ECDC, and European blood safety groups – refer to:

- the definition of triggers for the recall of implemented blood safety measures;

- the possibility to adapt triggers for the implementation of blood safety measures in case of local malaria transmission;
- recommendations on screening and deferring blood donors in malaria-affected areas; and
- the spatial definition of areas of disease outbreak with local transmission in order to inform travellers from abroad.

## Recommendations and future steps

- In the short-term, priority should be given to the Evrotas delta area (Lakonia) where coordinated and intensive outbreak containment measures should be continued with the purpose to bring local transmission down and prevent the re-introduction of malaria (i.e. the occurrence of three or more introduced and/or indigenous malaria infections in the same geographical focus for three consecutive years for *P. vivax*) in 2013.
- In other risk areas that remain receptive to the disease, the main emphasis should be given to disease surveillance; to the establishment of mechanisms that allow authorities to predict, early detect, and rapidly respond to the onset of possible outbreaks; and to vector control measures in order to reduce the man-vector contact (e.g. long-lasting insecticidal mosquito nets for the immigrant community) and the control of larval density.
- For the programme to be successful, capacity building has to be a key component. In-service training on disease diagnosis and treatment, vector control, disease surveillance, and disease control should be carried out for different categories of public and private health personnel at the national level, with the aim to maintain the malaria-free status and prevent the re-establishment of malaria transmission. Basic training should be supplemented by regular supervision and refresher courses. The training should be practical and directed towards developing skills and competence.
- Operational research is essential for the planning, implementation, adaptation and evaluation of all programme activities. Such research should address programme evaluation, entomology, parasitology and epidemiology. Based on a comprehensive overview and analysis of all available information and data, a national coordination body should overlook all aspects of the malaria prevention and control programme and assure the continued improvement of the programme and its sustainability.
- Active intersectoral collaboration between the different public and private stakeholders in malaria control and prevention should be promoted further. Improved collaboration between the different sectors – health, agriculture, internal affairs and environment – at a higher political level is essential when prioritising the necessary actions needed to combat malaria.

At the international level:

- WHO can provide support regarding guidance on the diagnosis and treatment of malaria, vector control and malaria surveillance. WHO can also support the sharing of experiences from WHO European Region countries that are in the malaria elimination phase and assist in the application of vector control measures.
- ECDC can provide support in risk assessment and data analysis. ECDC can also act as a liaison to expertise in genotyping services for malaria and vector surveillance, and facilitate the scientific discussion on blood safety issues.