NATIONAL PUBLIC
HEALTH ORGANIZATION

EPIDEMIOLOGICAL SURVEILLANCE REPORT

Malaria in Greece, 2025, up to 01/09/2025

Introduction

Malaria was eliminated from Greece in 1974, following an intense control program (1946-1960). Since then, several (20-110 cases) imported cases are reported annually to the National Public Health Organization (NPHO), referring to patients infected abroad (travellers or migrants from malaria endemic countries). Increasing numbers of imported malaria cases are expected due to the increase of travels and population movements worldwide, a phenomenon that is observed in all developed countries.

Additionally, during 2009 - 2021, a number of locally acquired/ introduced *P. vivax* malaria cases were recorded in some areas of the country (i.e., among patients without travel history to a malaria endemic country), mainly as sporadic introduced cases (1st generation of transmission) but also in clusters (mainly in 2011-2012). Regarding these *P.vivax* introduced cases, the *Plasmodium* transmission was mosquito-borne, through mosquitoes that got infected from imported cases. Most areas where *P.vivax* locally acquired/ introduced cases were recorded, during 2009 - 2021, were rural, close to wetlands, with high number of persons from malaria endemic countries. Since 2009, no malaria transmission through blood transfusion has been recorded.

You can find more information regarding epidemiological malaria data at the NPHO website (https://eody.gov.gr/en/epidemiological-statistical-data/annual-epidemiological-data/).

Malaria surveillance data, Greece, 2025, until 01/09/2025

In 2025, up to 01/09/2025, a total of twenty-eight (28) laboratory diagnosed and confirmed malaria cases have been reported to the NPHO (Table 1): twenty-five (25) cases were classified as imported (i.e., were infected abroad), for two *P.falciparum* malaria cases there is evidence of probable local transmission/ introduction (1st generation of transmission), and for one case the place and mode of transmission is considered undetermined.

Among the 25 imported cases, thirteen (13) were immigrants/migrants from malaria endemic countries (from Africa) and twelve (12) cases were travellers (11 travellers from Africa and one from the Indian Subcontinent/ south Asia). Among the 13 cases in immigrants from malaria endemic countries, five cases concerned immigrants visiting friends and relatives at their country of origin.

In 2025, up to 01/09/2025, for two *P.falciparum* malaria cases there is evidence of probable local transmission/ introduction (1st generation transmission), concerning two migrants of foreign nationality, who arrived in Greece in October 2024, from a malaria endemic country of the Indian subcontinent, with epidemiological link among them, with symptoms' onset (for both) in week 31/2025 (27/07 - 02/08/2025), and probable place of exposure a rural village at the Municipality of Thiva, Regional Unit (RU) of Voiota, in

Central Greece (Sterea Ellada) Region. No more malaria cases were detected in the village, during the field investigation (reactive case detection).

In addition, for one *P.falciparum* malaria case, the place and mode of transmission is considered undetermined; this case concerns an migrant from a non malaria endemic country of north Africa, who arrived in Greece in late June 2025 (resided initially in an island and then in a migrants' accommodation facility in Attica), and had symptoms' onset in late July 2025 (week 30/2025 20-26/07/2025).

Table 1 presents the reported malaria cases in Greece by epidemiological case classification (imported/ with evidence of probable local transmission-introduction/ with undetermined place of infection), status (immigrants/ travellers) and *Plasmodium* species.

Table 1. Malaria cases by epidemiological classification, status and *Plasmodium* species, Greece, 2025, up to 01/09/2025 (n=28)

Epidemiological classification	Status	*P.falciparum*	*P.vivax*	*P.ovale*	*P.malariae*	*P.ovale* and *P.malariae*	Total
Imported cases	**Immigrants**	10	2	1	0	0	13
	Travellers	7	2	1	1	1	12
With evidence of probable local transmission/ introduction	**Immigrant**	2	0	0	0	0	2
With undetermined place of infection	**Immigrant**	1	0	0	0	0	1

Activities for the management of malaria

Since 2011, NPHO has developed and continuously implements an Action Plan for the Management of Malaria. In addition, in 2015 the Ministry of Health published the "National Action Plan for the Management of Malaria".

According to these plans, a series of activities are implemented nationwide for the prevention and management of malaria, with the collaboration of national, regional and local authorities:

I. Risk assessment for the re-emergence of malaria: All areas (Regions, Municipalities) are assigned a Risk Level from 0-3, taking into consideration the locally acquired/ introduced malaria cases reported since 2009, and other local risk factors (entomological, environmental and demographic data). The area Risk Level defines the activities to be implemented.

II. Enhanced malaria surveillance and intervention activities:

- **Case finding:** In order to promptly detect all malaria cases, awareness raising among health professionals nationwide and active case detection activities in high risk areas are implemented, as well as support for the laboratory diagnosis of malaria.
- **Case investigation:** NPHO investigates all notified malaria cases. For locally acquired/ introduced cases, an in-depth interview with the patient is conducted, in order to identify the most likely place of exposure and mode of transmission, and the risk for further local transmission.

- **Immediate communication to stakeholders and health professionals** at national and local levels, after the reporting of each locally acquired/ introduced malaria case to the NPHO:
  i. Hierarchy of the Ministry of Health (MoH),
  ii. MoH Committee for the Prevention and Management of Tropical Diseases,
  iii. Working Group for the designation of vector-borne diseases' (VBD) affected areas (MoH),
  iv. Hellenic National Blood Transfusion Center, responsible for the relevant blood safety measures,
  v. Regional public health authorities,
  vi. Municipalities,
  vii. Local physicians practicing in the area, to raise their awareness for investigating suspect cases.
- **Focus investigation - reactive case detection**: NPHO investigation teams are deployed after the notification of each locally acquired/ introduced case to perform a "focus investigation", in an area indicated by the epidemiological, entomological and environmental investigation. In this activity, all individuals in the "focus" are screened for malaria compatible symptoms and tested for malaria accordingly.

  Following the 2025 reports of the two malaria cases with evidence of probable local transmission and the malaria case with undetermined place of infection, the NPHO, in collaboration -as applicable- with the relevant regional public health authorities and agencies, urgently organized and performed reactive case detection:

  i. As response to the recording of the two *P.falciparum* malaria cases with evidence of probable local transmission/ introduction in the village of Voiotia Regional Unit: a reactive case detection was immediately performed, with door-to-door visits, screening for malaria compatible symptoms of the local population and malaria screening (with rapid diagnostic tests - RDTs) of migrants from malaria endemic countries residing in the village.

  ii. As response to the recording of the *P.falciparum* malaria case with undetermined place and mode of infection: a reactive case detection was immediately performed, with door-to-door visits, in the accommodation facility where patient resided in Attica, screening for malaria compatible symptoms and malaria screening (with RDTs) of migrants from malaria endemic countries residing in the facility. During this field activity, one more imported asymptomatic *P.falciparum* case was actively detected, concerning a newly arrived migrant from a malaria endemic country of Africa, with no epidemiological link to the first case.

- **Environmental and vector investigation** is performed in the area after the recording of each locally acquired malaria case (or imported case in a receptive area), in collaboration with regional and local authorities, in order to identify *Anopheles* breeding sites and other risk factors for local transmission. As response to the recording of the two malaria cases with evidence of probable local transmission and the malaria case with undetermined place of infection, in 2025, targeted intensified vector and environmental investigation was recommended, and performed by the relevant regional authorities.

- **Proactive malaria case detection (PACD) in Evrotas Municipality, Lakonia** (where clusters of locally acquired *P.vivax* cases were recorded in 2011-2012): The NPHO, in collaboration with the Region of Peloponnese, the Municipality of Evrotas, the University of Thessaly, and Doctors Without Borders (2012), supported from 2011-2014 a field team in the area for the proactive detection of malaria cases. Since 2015, the field team -with staff from the University of Thessaly and field education from the NPHO- is supported by the Region of Peloponnese to continue the PACD programme,

undertaking also the radical treatment and focus investigation of all recorded malaria cases. A significant number of migrants from malaria endemic countries (mainly Pakistan) live and seasonally work in Evrotas. During this activity, fever screening visits are regularly performed in migrants, in the particular area. During the field visits, health promotion information is provided for protection against mosquitoes and fever screening and/or testing for malaria is performed regularly.

- **Ad-hoc malaria surveillance reports** (uploaded on the NPHO website), following the recording and the investigation of each local malaria transmission event.

III. **Enhancing laboratory diagnosis of malaria:** Since 2012, NPHO distributes rapid diagnostic tests (RDTs) for malaria to Hospitals and Health Centers in areas with recently recorded malaria transmission, and in areas with large populations of migrants from endemic countries (i.e., large urban centers, in refugee/migrants' accommodation facilities and the nearby Health Units, areas hosting large travellers' populations), aiming at prompt diagnosis and treatment of malaria cases. In 2025, NPHO continues providing RDTs to a total of >300 Health Units/facilities, nationwide. RDTs have contributed significantly to the early detection of malaria cases in our experience and have been proven a valuable field tool.

In addition, NPHO supports the Reference Malaria Laboratory (RML, School of Public Health, University of West Attica) for the (free-of-charge) testing for malaria of every suspected case, and recommends the transportation of samples from any laboratory in Greece to the RML for verification of diagnosis and further identification (and genotyping) of *Plasmodium* species.

IV. **Case management - Standardization of the malaria treatment in Greece,** according to treatment and management guidelines developed by the NPHO with the input of experts in infectious diseases. NPHO infectious diseases specialists are available for counseling. NPHO also maintains a stockpile of anti-malarial medicines (e.g., the national stockpile of artesunate for parenteral injection, for severe cases), for the timely distribution of the proper anti-malarial treatment to Health Units in cases of emergency.

V. **Increase awareness amongst health professionals** for the diagnosis and management of malaria. NPHO staff delivers presentations and organizes seminars -as necessary- for health professionals in Health Centers/Hospitals in areas with recently recorded locally acquired cases. The NPHO provides guidelines for the recognition and diagnosis of malaria and the recommended laboratory investigation and case management (mailings and website). NPHO communicates annually (through informative letters) to all Hospitals/Health Centers and Medical Associations of the country about malaria. As response to the recording of the two malaria cases with evidence of probable local transmission and the malaria case with undetermined place of infection, in 2025, the NPHO urgently performed informative seminars (face to face and online) for the health professionals of the local Health Units/ facilities.

VI. **Communication to the public** on malaria and personal protection measures against mosquitoes:

- **Educational material** on malaria and protective measures against mosquitoes is available on the NPHO website.

- **Information material** for the public (leaflets, posters) is distributed according to the needs. In June 2025, NPHO sent -via email- informative material to regional and local authorities. NPHO sends informative leaflets for the protection against mosquito bites and for malaria to local authorities/ health facilities, upon request.

- In areas with introduced cases recorded, the NPHO field team informs the local population, raises awareness about malaria and the necessary protective measures against mosquitoes, during the focus investigations (door-to-door), and urgently provides informative leaflets on malaria and mosquito bites' protection (in 12 languages).

VII. Designation of affected areas - Blood safety and haemovigilance measures: An inter-sectoral "Working Group (WG) on the designation of VBD affected areas" (under the MoH) considers all available epidemiological and laboratory data for each locally acquired/ introduced case and -after risk assessment- decides on the characterization of the "affected" areas. This designation is then used by the Hellenic National Blood Transfusion Center to issue guidance on blood safety. The affected areas are also published on NPHO's website.

VIII. Vector surveillance and control activities:

- **Raising awareness and guidance to Regional Authorities:** NPHO communicates regularly (meetings, letters and technical guidance) with all Regional Authorities in Greece recommending the timely planning, organization and implementation of integrated vector control programmes, particularly in high-risk areas. For 2025, NPHO sent relevant awareness letters in late January 2025 underlying the high risk areas, and recommending the intensification of vector control in areas with risk factors for local transmission. In addition, NPHO timely informs the regional and local authorities of areas with recorded malaria cases, and -after risk assessment- recommends prevention and response measures, including the urgent intensification of vector control in the area, in order to reduce the mosquito vector population.
- **Monitoring of the implementation of vector control programmes across the country** (through a structured questionnaire).
- **Distribution and placement of Long Lasting Insecticide-treated Nets (LLINs):** According to WHO and ECDC guidance, NPHO provided/ distributed (in 2013) LLINs to migrants, in the Municipality of Evrotas, Lakonia, under a special license from the Ministry of Rural Development and Food. Since then, the distribution, placement and monitoring of the proper use of the nets is implemented -according to the needs- by the PACD field team, which conducts the active case detection in the area.
- **Entomological surveillance**: In the last years, the NPHO performs/ coordinates active mosquito surveillance programmes nationwide, in collaboration with several stakeholders and agencies, by placing mosquito traps in various areas throughout the country. For the 2025 period, NPHO performs an extended active mosquito surveillance programme, in collaboration with Universities and public Institutes, with an expanded network of mosquito traps, with standardized methodology and representative geographical distribution. The programme is implemented -under the coordination of the NPHO- in collaboration with the University of West Attica, the Benaki Phytopathological Institute, the Foundation for Research and Technology, the MoRD&F's Organization ELGO-Dimitra, the Agricultural University of Athens, the Aristotle University of Thessaloniki, the University of Thessaly, the Democritus University of Thrace and the University of Patras. The mosquito surveillance data are directly available and accessible to the relevant regional authorities.

  Furthermore, MoH and NPHO recommend that local authorities should perform vector surveillance systematically, especially in areas with risk factors for local malaria transmission (e.g., rural areas with large populations of individuals from malaria endemic countries) and tries to collect the available vector surveillance data.

IX. **Communication with international public health stakeholders:** The NPHO communicates frequently for exchange of knowhow and information on malaria cases and activities with the ECDC and WHO, as well as with a number of European and international agencies and networks.

In addition, due to the increased **migrant/ refugee population residing in the country** in reception and accommodation facilities, a series of targeted activities have been organized in these facilities, including: strengthening malaria surveillance and diagnosis, distribution of rapid diagnostic tests to the facilities' clinics and nearby Health Units, recommendation for systematic vector surveillance in the area and, if necessary, intensification of mosquito control measures, personal protection measures against mosquitoes and communication activities (leaflets distribution) for the hosted migrants/ refugees.

Conclusions

During 2009 - 2021 and in 2025, locally acquired/ introduced malaria cases have been recorded in Greece, in -mainly rural- areas. Following a peak of locally acquired *P.vivax* malaria cases in 2011-2012, their number declined steadily in the following years. This decrease is the result of a number of intense public health interventions implemented since 2011, with the collaboration of various stakeholders at the national, regional and local level, which have contributed to the successful prevention of the re-appearance of malaria in Greece.

As indicated by the recent malaria surveillance data of the last years (including 2025), and despite the malaria elimination in Greece since 1974, the risk of introduction of the disease in specific vulnerable and receptive areas of the country exists, especially where the presence of adequate numbers of *Anopheles* mosquitoes (the competent vector of malaria) is combined with the presence of malaria patients coming from endemic countries, indicating the need to sustain malaria prevention activities as a priority for the preparedness of public health authorities.

Early detection and **eradication treatment of malaria cases,** together with **appropriate investigation** and **effective integrated vector control measures** represent the main components of the public health strategy to prevent malaria reintroduction and re-appearance in high-risk areas of the country. In this context, high level of preparedness and awareness of health and public health services should be maintained. In addition, important determinants for the prevention of local malaria transmission in Greece include the migrants' health care and access to health services, for the timely diagnosis and treatment of malaria, the communication with the migrant population and achieving a minimum standard for their living conditions and well-being.

Advice for travellers in Greece:

The NPHO, based on the surveillance data available until now and the implemented prevention measures in the areas where locally acquired/ introduced malaria cases have been reported, maintains that **the risk to travellers for malaria infection in Greece is extremely low**. **Chemoprophylaxis for malaria is not recommended for visitors to any area in Greece** (including areas where locally acquired/ introduced malaria cases have been recently recorded). Nevertheless, personal protective measures against mosquitoes are encouraged during the mosquito circulation season (given also the seasonal circulation of West Nile virus in some areas in the country).