



CONSULTATIVE SIGNAL ASSESSMENT
PRIMARY RISK ASSESSMENT
 EVIDENCE BASED RISK ASSESSMENT
 PUBLIC HEALTH EVENT ASSESSMENT
AUTOCHTONOUS MALARIA CASE

Date of the signal	Date of the PRA	Signal provider	Experts consultation	Method
30/06/2021	01/07/2021	Saniport	Permanent experts: Dirk Wildemeersch (AZG), Romain Mahieu (COCOM), Paul Pardon (FOD), Tiffany Dierinck (AViQ), Karin Cormann (DGOV), Patrick Demol (HGR-CSS), Sophie Quoilin (Sciensano) Specific experts : Wim Van Bortel (ITG), Steven Callens (UZ Gent), Emmanuel Bottieau (ITG), Marjan Van Esbroeck (ITG)	E-mail consultation
Date of update	Closing date			

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Signal

Confirmed malaria case, autochthonous, from unknown origin.

On the 30th of June 2021, a case of malaria caused by *Plasmodium falciparum* in a person without recent travel history was reported. The patient is an employee at the Zaventem International airport, baggage and platform service. The start of symptoms (flu-like illness, anorexia, vomiting) was 19th of June 2021, with high fever by 23th of June (42°C). The diagnosis was made the 25th of June at hospitalization of the person (from 25th of June till 30th of June at Europa Ziekenhuis, Etterbeek). Currently the clinical evolution is favorable, with remaining fatigue and cough.

Description

Cause known?

Although the route of transmission remains undetermined, **airport malaria** (acquired through an imported exotic *Anopheles* mosquito) seems the most plausible explanation for infection. The patient works at Zaventem International Airport (luggage and platform service, more specifically for luggage containers arriving from Africa). He also lives in Zaventem, at approximately 4 km of the airport.

According to the information from Zorg en Gezondheid, travel related malaria, acquired in endemic zones, can be excluded:

- no recent travel history
- no travel of another member of the family to an endemic area and no visitors from abroad
- no relapsing malaria as *Plasmodium falciparum* spp.

According to the information from Zorg en Gezondheid, induced malaria or non-mosquito transmitted is also excluded: no particular medical history, no blood transfusion.

Introduced malaria, or transmission by local *Anopheles* infected on (asymptomatic) gametocyte carrier (originating from endemic areas) is unlikely.

There was a case of malaria in Schaarbeek beginning of June, but the distance seems long (patient lives and works in Zaventem).

Although competent vectors to transmit the parasite could be present, as already identified by Modirisk project in 2008 in Belgium, it is unlikely that they are at the origin of the case. In June 2021, no other cases in the same municipality were confirmed at ITM.

Unexpected/unusual

- Autochthonous malaria cases have already been described in Belgium and occur sporadically, but it is an unusual event. The latest cases occurred in 2011, 2015 and two cases in autumn 2020. All were classified as acquired through imported exotic mosquitoes, except the case in 2015, for which the route of transmission remained undetermined (unknown origin).
- The main vectors of *Pl. falciparum* are tropical *Anopheles* such as *Anopheles gambiae* and *Anopheles funestus* in Africa. Based on laboratory experiments and modelling *An. gambiae* is expected to be able to fly between 2 and 10 km. Adult blood-fed *An. gambiae* can live until 30 days in laboratory conditions.

Severity	Patients with autochthonous malaria can present complications and die due to the delayed or missed diagnosis of the cause of illness.
Dissemination (Low/Medium/High)	<ul style="list-style-type: none"> - No risk of malaria dissemination expected. - Further entomological assessment awaited.
Risk of (inter)national spread	<ul style="list-style-type: none"> - No
Preparedness and response	
Preparedness	<ul style="list-style-type: none"> - The laboratory capacity to diagnose malaria is available in most Belgian labs and Belgium has a National Reference Laboratory (NRL). Laboratories participate to an external quality control program organized by Sciensano. Free service is offered to all labs by ITM to confirm the diagnosis by PCR. - Malaria surveillance in Belgium relies on the sentinel laboratory network and the NRL. Both report on a voluntary base. Autochthonous malaria is mandatory notifiable, and all cases are to be reported to regional health authorities. - Currently no national surveillance/monitoring of (invasive/exotic) mosquitoes in Belgium is in place and there is no national plan to prevent the potential establishment of invasive/exotic mosquitoes. A two years surveillance project (but with a focus on <i>Aedes</i> mosquitoes) has been submitted and accepted by the Joint-Interministerial Conference on Environment and Health (JICEH) beginning of 2020. A tender is currently ongoing. - Saniport performs checks on respect of procedures for disinfection before take off from endemic countries, for planes with travelers arriving at Zaventem National airport. In June, there were 169 of such flights and all respected the procedure. Manpower is lacking to check the cargo flights (about 5 planes a week from risk areas). These checks do not currently take place in other airports.
Specific control measures	<ul style="list-style-type: none"> - No measures taken so far.
Public health impact	
Public health impact in Belgium (Low/Medium/high)	<ul style="list-style-type: none"> - Low. No further autochthonous malaria cases are expected related to this event.
Recommendations (surveillance, control, communication)	<ul style="list-style-type: none"> - Entomological investigation at the luggage handling area of Zaventem International airport following this case. - A permanent entomological surveillance in Belgium is needed to have an appropriate risk characterization, also taking into account the evolution of the number of human cases.
Actions	<ul style="list-style-type: none"> - In view of the upcoming summer months, a new communication will be done to GPs working around airports, raising awareness about airport malaria. - Entomological investigation at the luggage handling area of Zaventem International airport. - The notification of the event to WHO (IHR) is not necessary since this is an isolated case. The event will be notified through EWRS for information.

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