

Reported 'Odyssean' malaria cases not linked to new malaria vector discovery

March 13 2017



Credit: CDC

A new malaria vector discovered in South Africa is not linked to the 'Odyssean' malaria cases reported in two provinces this week.

Professor Maureen Coetzee, Director of the Wits Research Institute for Malaria confirmed a statement issued by the National Institute for Communicable Diseases that the newly discovered mosquito vector and

recently reported cases of malaria are unrelated.

The scientific publication on 6 March 2017 focussed on the identification of a new malaria vector in South Africa. Two adult females of the mosquito species *Anopheles vaneedeni*, one collected from Mpumalanga and another from northern KwaZulu-Natal, were identified in a study conducted a year ago as being infected with *Plasmodium* sporozoites. This means that they were able to transmit the malaria parasites to people they fed on.

Anopheles vaneedeni was shown to be capable of transmitting malaria 40 years ago in laboratory experiments, but until now has not been found infected in natural populations.

"This particular finding is interesting and important but the extent of the contribution of this mosquito vector to malaria transmission in South Africa is not known at present. Bear in mind that in the intervening 40 years South Africa has, for the most part, implemented a very successful malaria control programme," says Coetzee.

The above finding bears no relationship to the current seasonal increase in malaria cases, including the four 'Odyssean/minibus/suitcase' malaria cases in Tshwane, Gauteng, and Swartruggens, North West Province, and the increase in cases in Lephalale/Thabazimbi in Limpopo.

"The timing of the publication coincided by chance with these reported cases but there is absolutely no link at all. This research finding, however, needs further exploration to assess the extent of the contribution of this species to malaria transmission in South Africa and what effect this may have (if any) on longer term malaria elimination strategies," says Coetzee.

Increase in malaria cases in South Africa and

neighbouring countries

Due to recent heavy rains, an increase in ambient temperatures and high humidity, there has been an increase in seasonal malaria cases both within the usual malaria transmission areas in South Africa (northeast Limpopo, lowveld areas of Mpumalanga but excluding Mbombela, and the far northern areas of KwaZulu-Natal) and in neighbouring countries, especially in Mozambique, during the 2016/2017 malaria season. The malaria season in southern Africa is from September to the end of May.

Malaria must be urgently considered in any resident in or traveller from a known malaria transmission areas with acute onset of fever or flu like-illness – fever, headache, muscle pains, chills and sweats. Urgent blood tests must be done, and repeated if negative. Malaria treatment is very effective if administered early in the course of the illness. Travellers to known malaria transmission areas during the coming months must take precautions to avoid mosquito bites and should consider malaria preventive medication for high risk areas.

'Odyssean' or 'mini bus'/'suitcase' malaria

The National Institute for Communicable Diseases (NICD) was notified of two persons with malaria from Doornpoort, a suburb in the northern part of the City of Tshwane and two patients from Swartruggens in the North West Province. None of these people had travelled to a known malaria transmission area. Unfortunately three of the patients passed away due to complications of malaria.

These incidents are rare, but a few cases of so-called 'Odyssean' malaria or 'mini-bus' or 'suitcase' malaria are confirmed each year and coincide with the seasonal increase in malaria in the usual malaria transmission areas from January to April. There is no link between the cases in

Tshwane and those in Swartruggens. These cases do not represent an expansion of the malaria transmission areas in South Africa but are rather due to translocation of an infected malaria mosquito from a malaria area.

Given that females of certain Anopheles mosquito species are responsible for transmitting malaria parasites, an investigation of the two residences and environs in Tshwane was carried out. No Anopheles mosquito adults or larvae were found. There are Culex mosquitoes (the common house mosquito) breeding in the general area as expected, but Culex mosquitoes never transmit malaria.

The evidence available therefore suggests that these cases did not result from local transmission in Tshwane and Swartruggens but from translocation of infected mosquitoes from a malaria risk area in a vehicle or suitcase. Most mosquitoes would in fact not survive the journey. An investigation into the cases in Swartruggens will follow shortly but similar findings are expected.

All healthcare practitioners are encouraged to consider malaria as a differential diagnosis in all patients presenting with unexplained fever ($>38^{\circ}\text{C}$) and flu-like illness especially in the presence of a change in the level of consciousness and/ or progressive jaundice even in the absence of a travel history to a malaria endemic region.

Malaria in Limpopo Province

While the north-eastern areas of Limpopo Province are traditional [malaria transmission](#) areas, a number of malaria cases have also been reported in Thabazimbi and Lephalale in Limpopo province, mostly from rural villages along the Lephalala River. This area in the western Waterberg was historically prone to malaria during favourable years, so this is not totally unexpected this year. The Limpopo Malaria Control

Programme is currently investigating these areas. The community has been informed about malaria symptoms and the health facilities in the area have adequate supplies of malaria diagnostic tests and medication for treatment. A vector control intervention will commence in the next few days to target mosquitoes involved in [malaria](#) transmission.

More information: Ashley Burke et al. A new malaria vector mosquito in South Africa, *Scientific Reports* (2017). [DOI: 10.1038/srep43779](#)

Provided by Wits University

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