

**2 SEASONAL DISEASES**

**a Malaria update, and insecticide resistance in northern KwaZulu-Natal Province**

*Malaria in South Africa during 2015*

The number of malaria cases reported to the National Department of Health in 2015 decreased to 11 245, compared to 13 988 cases in 2014. There was a corresponding decrease in deaths, from 174 in 2014 to 135 in 2015. Figure 1 describes the numbers of reported cases and deaths by month over 2015. It is anticipated that the number of cases will increase during the first quarter of 2016 in keeping with seasonal trends.

Travellers to malaria endemic areas in South Africa and surrounding countries are advised to take appropriate chemoprophylaxis, as well as observe measures to prevent mosquito bites. Currently recommended chemoprophylactic regimens include one of the following: mefloquine, doxycycline or atovaquone-proguanil.

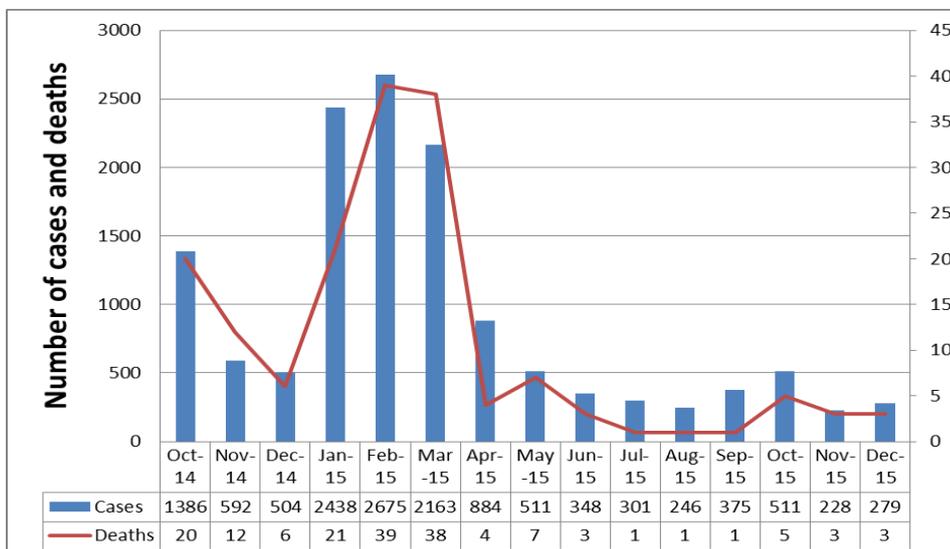
An acute febrile or flu-like illness in a resident of a malaria endemic area, or traveller recently returned from a malaria area, should prompt immediate testing for malaria. Artemeter-lumefantrine (Coartem®) is recommended for uncomplicated malaria. Parenteral artesunate is the preferred treatment for complicated malaria, with intravenous quinine as an alternative (with an initial loading dose of 20mg/kg over four hours in 5% dextrose).

*Insecticide resistance monitoring*

The control of malaria vector mosquitoes in South Africa’s endemic provinces is primarily based on indoor spraying of long-lasting residual insecticides. South Africa’s National Malaria Control Programme

has adopted a malaria elimination agenda and has scaled up vector control activities accordingly. However, despite these plans local transmission continues and is most likely due to outdoor feeding by populations of the major vector species *Anopheles arabiensis*. An outdoor *Anopheles* surveillance system has been set up in three sections of the Mamefene district in northern KwaZulu-Natal Province in order to assess the extent of outdoor resting *An. arabiensis* in Mamefene and to assess the current insecticide susceptibility status of this population. The *An. arabiensis* samples tested showed evidence of resistance to deltamethrin (pyrethroid), DDT (organochlorine) and bendiocarb (carbamate), and full susceptibility to the organophosphates pirimiphos-methyl and fenitrothion. These results affirm the presence of pyrethroid and DDT resistance previously detected in this population and also indicate the comparatively recent emergence of resistance to the carbamate insecticide bendiocarb. The implications of these findings are that special attention and commitment needs to be given to the principles of insecticide resistance management as well as to investigations into alternative control techniques designed to target outdoor-resting *An. arabiensis* in northern KwaZulu-Natal Province. Full details of these findings can be found in the South African Journal of Science at <http://dx.doi.org/10.17159/sajs.2015/20150261>.

**Source:** Centre for Opportunistic, Tropical & Hospital Infections, NICD-NHLS; ([basilb@nicd.ac.za](mailto:basilb@nicd.ac.za)); Malaria Control Programme, National Department of Health;



**Figure 2.** Total malaria cases and deaths reported to the National Department of Health Malaria Control Programme, from October 2014 until December 2015. Data courtesy of the National Department of Health.