

MDA associated with the prevention of a resurgence of malaria in Greece

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Greece was declared malaria free in 1974, however, in 2011 a resurgence of *P. vivax* malaria was seen in Southern Greece in connection with the presence of agricultural workers from malaria-endemic regions in malaria receptive areas. Standard control measures were implemented for one year (i.e. Active case detection, intensifies vector control), after which a program of mass drug administration (MDA) was implemented to provide the entire local immigrant population with a curative course of antimalarial drugs. No malaria cases were reported for the years 2013-2014, when the MDA was on-going.

Since 1974 with only a small and sporadic number of malaria cases have been reported in Greece. However in 2011, 21 *P. vivax* cases from arriving immigrants were reported in the Southern agricultural area of Evrotas, along with 36 local cases. An integrated control program was immediately implemented, with house visits established to screen immigrants from endemic countries. Screening included a rapid diagnostic test for those reporting compatible symptoms along with blood sampling for smear and molecular testing for malaria. Directly Observed treatment was provided for all who tested positive. A [vector control](#) program was also implemented, with indoor residual spraying and long-lasting insecticide nets provided in areas close to mosquito breeding sites.

Despite these interventions 20 more introduced cases were reported in 2012 and, due to fears that the malaria parasite may be re-establishing in the area, a program of mass [drug administration](#) of one course of

chloroquine and primaquine, which are the first line recommended antimalarials for *P. vivax*. Adverse events were recorded and managed daily. The program was implemented prior to the onset of peak adult mosquito activity and field teams remained in situ continuing the Active Case Detection until the end of the mosquito season.

An [immigrant population](#) of 1270 persons was identified, mostly from Pakistan and Afghanistan. MDA covered 87% of this population. Of the treated individuals 13% reported gastrointestinal symptoms from primaquine, while 36% reported non-severe side effects from chloroquine including headaches, dizziness and gastrointestinal complaints. One potentially serious adverse event was recorded; a case of primaquine-induced hemolysis due to a false normal G6PD level obtained prior to enrollment. The patient was hospitalized and recovered fully.

In this case, mass drug administration was a suitable and effective response for a small and geographically confined population over a short seasonal transition period. The combination of two drugs minimizes the risk of drug resistance. Although an observational study of this nature cannot assess the extent to which mass drug administration was responsible for eliminating malaria, it certainly indicates that mass drug administration should be considered and can be effective in local settings alongside other [malaria](#) control measures.

More information: *PLOS Neglected Tropical Diseases* ,
[dx.plos.org/10.1371/journal.pntd.0004215](https://doi.org/10.1371/journal.pntd.0004215)

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