Malaria risk unlikely to increase under climate change

Continuing economic development and public health measures are likely to outweigh the impact of climate change on malaria prevalence, according to new research. The research found that the prevalence of malaria has declined over the past century despite rising temperatures.

Among the United Nation's Millennium Development Goals is to ‘Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases'. This goal has added urgency to the international community's efforts to curb malaria, which is currently estimated to kill more than a million people worldwide each year, many of them young children and pregnant women.

Warmer conditions can encourage the spread of malaria and many modelling studies have suggested that climate change could facilitate the spread of malaria to currently unaffected areas, making it harder to achieve the Millennium Development Goal. However, newly published research confirms that the incidence of malaria is declining despite rising temperatures.

The researchers argue that climate change is only part of the picture. They compared a current map of regions where malaria is prevalent with a map of regions where malaria is understood to have been prevalent in 1900 (when malaria is assumed to have been most widespread in the world). The research focused on areas affected by Plasmodium falciparum, the most deadly form of the malaria parasite.

In 1900, malaria was prevalent in parts of Europe and other areas, including the United States, but it has since largely disappeared from these regions. For the first time, the researchers were able to measure the extent of global decline of malaria and reveal that it has fallen substantially since 1900, even in tropical areas.

The maps reveal that malaria was probably prevalent in 58 per cent of the world’s land surface in 1900. By 2007 this had dropped to only 30 per cent of the Earth’s surface and malaria is now restricted to the tropics. Malaria is also now less common in over two-thirds (67 per cent) of the tropics. For example, in 1900 over 75 per cent of the population in large parts of central Africa had malaria, but in 2007, this figure had fallen to between 10 and 50 per cent.

The researchers then compared the impacts of rising temperatures on the spread of malaria (as predicted by global warming scenarios) with the impacts of different control methods, such as mosquito nets and medication. They concluded that the influence of climate change is comparatively small and disease control interventions could outweigh the effects of global warming by as much as tenfold, assuming that current control efforts continue. The indirect effects of increased urbanisation and economic development also restrict the spread of the disease, through improved housing, for example.


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