



IAEA

Atoms for Peace: The First Half Century

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Detecting drug-resistant malaria

The challenge...

The burden of malaria has been complicated by the emergence of drug resistance. The most pathogenic strain of malaria has developed resistance to all drugs currently in use, with the exception of the newly introduced artemisinin derivatives. The project drew heavily upon developments in molecular genetics which have led to the identification of mutations in genes involved in resistance to antimalarial drugs.

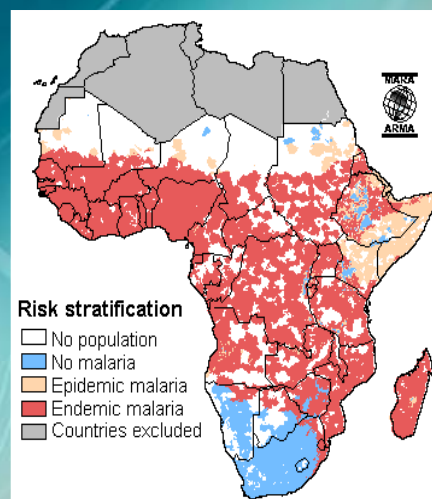
The project...

IAEA support to African Member States focused on using molecular methods associated with nuclear techniques, such as dot blot hybridisation, to detect mutations in the parasite associated with drug resistance.

Quantifiable data...

From 2002 to 2006, Burkina Faso, Cameroon, Kenya, Madagascar, Mali, Nigeria, Sudan and Zambia had:

- Enrolled over 4000 malaria patients into in vivo drug efficacy trials for chloroquine and Fansidar.
- Conducted molecular tests on about 9000 blood samples and detected the presence of drug-resistant malaria in all participating countries.
- Established an extended network through collaboration with 46 other national, regional or international institutions.
- Significantly upgraded laboratory capacities in molecular techniques, with equipment purchased from national contributions over and above inputs received from the IAEA.
- Created awareness of the project through articles in international scientific journals, presentations at conferences, national reports, television interviews and newspaper articles.
- Trained over 50 laboratory staff, most through own efforts and funding.



The results of the IAEA-supported studies have been used to influence policy on changes in first line anti-malarial drug use in six countries.