Supporting research

WWARN’s scientific work is carried out by six groups, called modules. Five modules – Clinical, Pharmacology, In vitro, Molecular and Antimalarial Quality – examine complementary aspects of antimalarial resistance. Each module is responsible for curating data contributions relevant to their area of expertise. The Informatics Module works with all the other modules to create unique solutions for data management, analysis and visualisation.

<table>
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<th>MODULES</th>
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<td>Clinical: clinical responses of malaria patients treated with various drugs</td>
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<td>Antimalarial Quality: monitoring and evaluation of antimalarial drug quality</td>
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Be part of the WWARN project

Visit our website at www.wwarn.org or email info@wwarn.org for further information.

The challenge of antimalarial drug resistance

Malaria continues to claim thousands of lives daily, even though the global community has made great strides in combating the illness. Increased investment, attention to prevention and widespread adoption of artemisinin combination therapies (ACTs) – the globally recommended first-line drug treatments – have helped to decrease morbidity and mortality from malaria in many countries.

Making further progress presents a substantial challenge, not least of which is antimalarial drug resistance. Resistance to artemisinin derivatives has already been seen in the Greater Mekong region of Southeast Asia. Historically, resistance to other antimalarial drugs emerged in the same region and spread rapidly around the world. With no new effective drugs or vaccines to replace ACTs on the horizon for at least ten to fifteen years, the loss of ACT efficacy is a potential global health disaster.

The global community needs accurate, timely intelligence that will support efforts to prevent or slow antimalarial resistance, particularly to ACTs, from spreading. A coordinated global effort is needed to integrate data from different studies — and sometimes disciplines — to support cross-comparisons and complex analysis. This is a real challenge because there are many areas where no information on ACT efficacy is available and the information that is available is fragmented in many locations, inaccessible, stored in different formats and often of poor quality.

There is an urgent need to improve data quality, strengthen existing resources, cover regional gaps and compile existing data in a standardised way. The WorldWide Antimalarial Resistance Network (WWARN) was set up to help meet these needs.
The WWARN Explorer is a dynamic, interactive mapping tool that customises the display of combined data from multiple drug studies submitted to the WWARN Data Repository.

**Data usage**

Data submitted to WWARN remains the property of the data contributor. WWARN has developed a legal and ethical framework to protect the rights of the data owners and contributors to the WWARN Data Repository, and of those individuals and communities who are the subject of the research. The measures WWARN will take to secure an individual’s data, how we will ensure that the contributor retains control of the submitted data and its use, and how WWARN will use that data, are all set out in the Terms of Submission, a simple agreement between the data contributor and WWARN. The complete Terms of Submission is available on our website www.wwarn.org/data/usage.

**Data sharing advances scientific knowledge**

Combining data across countries and time is the only way to effectively track the emergence and spread of antimalarial drug resistance.

**Data sharing saves limited resources**

With more data sharing and less duplication of effort, scientists will be able to understand more complex issues, like antimalarial resistance, faster and more cost-effectively.

**Combining data sets increases their overall value**

Pooling studies increases sample sizes, so that subtle trends or sub-population effects can be identified with higher statistical certainty.

**A standardised approach is more efficient**

By transforming submitted data to a common format, WWARN facilitates meta-analyses that may uncover previously unseen trends.

**Access data analysis tools**

Study data, transformed to the WWARN format, can be queried using WWARN Explorer.

**Network with the malaria community**

Researchers working in the same geographic or scientific areas can network to extend their circles of collaborators. A common data format facilitates collaboration with other data contributors.

**Data analysis tools facilitate data presentation**

New collaborations and data analysis tools support publication and grant funding applications.

**Benefit from increased security**

With advanced informatics capabilities, security and encryption, WWARN offers a safe location to store submitted data.

**Meet data sharing obligations**

Funders of public health research increasingly require proponents to specify how data will be shared. Standards may make data sharing a condition of publication. WWARN offers a secure data repository and a rapid, effective route to sharing top-line results to meet this imperative — subject to contributor approval.

**Data sharing increases accountability and transparency**

By enabling scientists to validate each other’s findings, policy makers gain reassurance and trust in study outcomes.
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