

## **Determinants of inpatient duration in patients with uncomplicated *P. falciparum* malaria**

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For the European and German Networks on Surveillance of Imported Infectious Diseases (TropNetEurop and SIMPID)

### **Objectives:**

Data from TropNetEurop and SIMPID, the associated European and German networks for surveillance of imported infectious diseases, can be used for comparative health care research. The aim of this study was to identify determinants of length of hospital stay in European patients with uncomplicated malaria, in particularly those that can be influenced by case management.

### **Methods:**

Combined network data reported from 2001-2004 and multiple linear regression were used to derive a prediction model for inpatient duration. Age, sex, patient classification, treatment, time to treatment, country of treatment, codisease, pregnancy, chemoprophylaxis and region of infection were considered as potential determinants.

### **Results:**

The analysis included 1541 cases. Patient classification, treatment, country of treatment and codisease were found to be independent determinants of inpatient duration in multivariate analysis.

The choice of therapy varied between countries. Treatments involving quinine were common, although they were associated with significantly longer hospital stay. With 34% ( $p < 0.001$ ) longer inpatient duration the greatest difference was found comparing the quinine + sulfa-pyrimethamine combinations to artemether-lumefantrine treatment. Atovaquone-proguanil and mefloquine treatment did not differ significantly from artemether-lumefantrine.

Compared to Germany, average inpatient duration was significantly longer in Poland (+93%). Countries with significantly shorter hospital stays were Switzerland (-70%), Sweden (-45%), Norway (-34%), Spain, Belgium (both -31%), United-Kingdom (-29%), Denmark (-28%), Italy and Austria (both -14%).

### **Conclusion:**

Hospital stays of patients with uncomplicated malaria in Europe could be reduced by:

- 1) Less frequent use of quinine treatment regimens
- 2) Harmonisation of European case management recommendations