

TropEd Masters Programme in International Health

**A rapid appraisal on the frequency of malaria  
and the availability of  
Sulfadoxine-Pyrimethamine (SP)  
in urban Dar es Salaam in June/July 2002**

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### III. SUMMARY

Malaria causes worldwide more than 300 million acute illnesses and at least one million deaths annually. In Sub-Saharan Africa including Tanzania, where the situation is particularly severe, malaria is leading cause of morbidity and mortality. Thus, the health of the population is affected but also the economy of the country; malaria has therefore a close link to poverty. In Africa, estimations describe the annual burden of disease attributed to malaria at more than 36'000 disability-adjusted life years. Despite that some control efforts were undertaken in Tanzania, annual numbers of malaria cases were estimated at 14-18 million, and 100'000-125'000 deaths were attributed to this parasitic disease.

Malaria control in Dar es Salaam, being a part of urban health, is a particular challenge for policy makers; a multi-sectoral approach is required to effectively combat the problem. Urbanization is an important phenomenon in this east African City; in the last decades the majority of growth of the city was due to rural-urban migration. For years, some residential areas of Dar es Salaam accommodated ideal breeding places for the malaria vector, the *Anopheles* mosquito, and local, urban malaria transmission was observed. Important determinants for the current malaria problematic with regard to case management, are increasing chloroquine resistance, inadequate diagnosing techniques and treatment of malaria patients but also difficulties in the control of the liberalized drug market within Tanzania. A study conducted in children of urban Dar es Salaam found, treatment failures towards chloroquine in 43%.

The aim of this study had two main components: first, to describe retrospectively malaria specific morbidity- and mortality data of health facilities within the three districts of Dar es Salaam. Second, to describe the availability of SP (Sulfadoxine-Pyrimethamine) in a sample of urban health facilities in June/July 2002. Furthermore, a selection of issues related to the official change of the first line treatment of the national malaria guideline, ratified by August 2001, almost one year before this study was carried out. A rapid appraisal methodology containing qualitative and quantitative elements, was a time-effective mean to capture relevant information of the current situation with regard to urban malaria in Dar es Salaam and contributes at enlarging epidemiological knowledge and understanding. The review of the literature, the media and of routine data, a cross-sectional survey in urban Dar es Salaam and key informant interviews were the main tools of data collection. Due to its rapid nature, it should be recognised that this appraisal cannot be understood as a comprehensive study.

Sulfadoxine-Pyrimethamine is the generic name of an antimalarial drug formulation belonging to the larger family of the antifolates. In this study, SP was used as the overall term for different Sulfadoxine-Pyrimethamine products which were arising manifold in Dar es Salaam's pharmacies.

The review of the routine data in urban areas of the three districts of Dar es Salaam did not show clear seasonal trends. There were fluctuations in numbers of malaria morbidity/mortality but no regularity could be observed. Despite that the quality of data was partly poor, the high burden of malaria could be shown. Since the travel history of patients was not investigated, the data was not adequate enough to conclude on urban malaria transmission patterns nor on clustering. Therefore, it is important that strengthening the surveillance system continues. The available data sets did not show evidence, that the introduction of SP lead to a reduction of mortality. There is a need to further observation of additional indicators, in order to be able to evaluate the process and finally the impact of the policy change.

The results of the cross-sectional study suggested that the public health facilities were the leading target group concerning the introduction of the new treatment guideline. In June/July 2002, drug shortages with SP were not a problem, neither for private- nor for public health facilities. Nevertheless, overall 60% of health facilities mentioned to have problems with SP. The health personnel reported, that many patients complained of having adverse reaction and refused to take the recommended first line treatment; additionally some patients still insisted to be treated with chloroquine. Concurrently, national newspapers were very critic of SP, while printing colourful pictures of a patient suffering of the Steven-Johnson Syndrom. Since additionally there occurred problems with quality insurance, this field requires stricter observation. Whereas all the pharmacies said, that they did not have chloroquine tablets or injections, it was still available in 4 private and 12 public facilities; the quantities however, were rather small excluding 3 facilities, which had > 10'000 tablets. How much chloroquine remained in the MSD was not communicated to us. A common decision is now needed about what should be done with the remaining chloroquine.

A large variety of antimalarial products were on the market in Dar es Salaam, including a range of artemisinin and derivatives formulations, which were used mainly for privileged patients who could afford them. Despite that SP was reported from all private and public facilities to be prescribed the most frequently the enormous quantity of different antimalarial drugs causes a threat of increasing drug resistance. It should be kept in mind, that in urban centres malaria transmission often is low and thus, not all fever episodes can be attributed to malaria. Improved diagnostic procedures might become important, when high drug resistance requires more expensive treatment in order to use them rationally.

Special attention should be brought to the fact that artemisinin containing products were used as a monotherapy and 40% of the overall respondents did not know about combination therapy. Therefore it is crucial to inform prescribers and sellers, but also the population about the risk and problems of drug resistance. This fact is supported by results that suggested that information, education and communication was believed to be crucial for improved malaria control in the future.

It is important to recognise the differences in malaria control between rural and urban areas. Multisectoral approaches should be strengthened for controlling malaria in cities like Dar es Salaam, where malaria transmission is low to moderate compared to rural areas but drug resistance is high.