Drains linked to lymphatic filariasis and malaria in Dar es Salaam, United Republic of Tanzania

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The most common aquatic habitat in Dar es Salaam - drains - are important vectors for the development of lymphatic filariasis (LF) and malaria, according to new research. The study, published May 25 in the open-access journal *PLoS Neglected Tropical Diseases*, shows that more than 70% of open Anopheles and Culex larval habitats in Dar es Salaam are human-made, and may be treatable.

Dar es Salaam has an extensive drain network, mostly with inadequate water flow, making Anopheles and Culex larvae common. However, the importance of drains as larval habitats was previously unknown. The researchers analyzed detailed surveys of both mosquito habitats and drain conditions in the city; their findings suggest that simple but well-organized environmental management interventions, aimed to restore and maintain the functionality of drains, may help reduce mosquito-borne disease transmission. The authors say that such an intervention will also promote an overall healthier environment, particularly for those living in slum conditions.

The intervention would also reduce costs of the ongoing Urban Malaria Control Program (UMCP), the authors find, by eliminating an average of 42% of all potential mosquito larval habitats that are currently treated with larvicides in weekly intervals. This type of vector control is critical to minimize LF transmission when mass drug administration efforts have moderate population coverage or are prematurely ceased, the authors

say.

The authors conclude: "A synergy between efforts to control lymphatic filariasis and malaria, identifying common strategies, combining monitoring activities, optimizing the use of limited financial resources, and carefully evaluating the cost-effectiveness of the joint venture would not only contribute to current goals of lymphatic filariasis and malaria elimination, but also provide important lessons for future integrated control efforts."

More information: de Castro MC, Kanamori S, Kannady K, Mkude S, Killeen GF, et al. (2010) The Importance of Drains for the Larval Development of Lymphatic Filariasis and Malaria Vectors in Dar es Salaam, United Republic of Tanzania. PLoS Negl Trop Dis 4(5): e693. doi:10.1371/journal.pntd.0000693