

Climate Variability and malaria incidence in the Solomon Islands: Towards an operational early warning system

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The theme of the proposed poster

Malaria remains one of the leading causes of morbidity in the Solomon Islands despite a significant decline in malaria incidence over the last decade due to improved control and intervention. Previous research has shown that the epidemiology of malaria is heavily influenced by local climate conditions – in particular rainfall and temperature.

The Climate and Oceans Support Program for the Pacific (COSPPac), funded by AusAID and implemented by the Bureau of Meteorology is a project which aims to improve the capacity of Pacific Island Meteorological Services to provide climate monitoring and forecasting services to climate vulnerable sectors in the region. COSPPac is currently working in collaboration with the Solomon Islands Meteorological Service (SIMS), the Solomon Islands Vector-Borne Disease Control Programme (VBDCP) and the Solomon Islands Medical Training and Research Institute (SIMTRI) to develop a Malaria Early Warning System based on the relationship between climate and malaria incidence.

COSPPac has developed a broad-scale monthly statistical model linking rainfall, temperature and malaria incidence which demonstrates the strong relationship between climate and malaria in the Solomon Islands at a provincial level. Initial analysis has demonstrated a one to two month time lag between the onset of the wet season (typically November – April) and the onset of peak malaria season (typically January – June) as well as a strong correlation between below average rainfall in the wet season and above average malaria incidence in the corresponding malaria season. These results strongly affirm the potential of using rainfall as a important indicator for the forecasting of variations in malaria incidence. COSPPac is now working towards the implementation of an operational Malaria Early Warning System with its climate and health sector partners in the Solomon Islands

The relevance to GFCS

The application of climate information services to health is one of the four priority areas of the GFCS. The development of an operational Malaria Early Warning System also incorporates key components of the GFCS framework including:

1. The collection of local rainfall, temperature and malaria incidence data for monitoring purposes.
2. The use of local climate and malaria data to model the relationship between the variability of climate parameters and the variability in malaria incidence.
3. The development of a climate-malaria model, along with ongoing climate and malaria monitoring to facilitate the creation of a climate information service.
4. A user interface platform provided by regular correspondence between SIMS, VBDCP, SIMTRI and COSPPac.

The expected benefit by presenting the poster at the meeting

The presentation of the poster at this conference will allow for the international climate community to gain a broader awareness of the integration of climate services into the control of vector-borne diseases. It will allow interested researchers the opportunity to learn more about the application of GFCS projects in the health sector and facilitate opportunities for collaboration and discussion.