Can the Pacific get rid of filariasis by the year 2020? A conference report

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Introduction

The World Health Organisation (WHO) estimated more than 1.1 billion people (20% of world's population) live in areas where the risk of acquiring lymphatic filariasis infection is very high. Some 120 million people are affected by the disease and living in 73 countries in Asia, Africa, the Western Pacific and parts of American.[1] It is suggested that the impact of the disease is significant in developing countries affecting people mostly living in slums (unplanned localities in cities) and rural communities. The disease will continue to cause negative impact on the economy through direct and indirect costs from incapacitation. In the hope of eliminating lymphatic filariasis globally, the WHO embarked on two major strategic policies, firstly stop the spread of infection and secondly alleviate the suffering of persons affected.[1,2] In so doing the WHO anticipates global elimination of lymphatic filariasis as a public health problem by the year 2020.

Lymphatic filariasis caused by parasite *Wuchereria bancrofti* is the only type of filarial infection in the Pacific. The epidemiology of lymphatic filariasis in many Pacific countries was documented as early as 1930s.[3] Despite established reports on the lymphatic filariasis little was done to control the disease in the Pacific and filariasis still causes social and economic burden in many countries. To date only few countries in the Pacific have attempted to control the disease. These countries are American Samoa, Fiji, French Polynesia and Western Samoa. Many other countries such as Vanuatu, Solomon Islands, Nauru, Palau, Guam, CNMI, Papua New Guinea, and others have yet to establish control plans of action against lymphatic filariasis.

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In sharing the concerns over the impact of the disease in the Pacific, the Secretariat for the Pacific Communities (SPC), supported by WHO, initiated a meeting for Pacific countries to discuss issues on the impact of lymphatic filariasis in Brisbane on 23-34 April, 1998. The meeting was attended by representatives from Vanuatu, Fiji, and Solomon Islands. *The objectives of the meeting were to discuss the prevalence of lymphatic filariasis in the Pacific and motivate those countries with incomplete or no epidemiology data to begin field investigation and device national plans to control the disease.*

In the meeting, four phases of filariasis elimination strategy were categorized and countries in the Pacific were identified (see Table 1). Only four countries qualified in phase III that involved distribution of drugs in the population. Other Pacific countries were noted to have no or very limited epidemiological data on lymphatic filariasis and were placed in phases I and II of the elimination strategy.

Where do we begin?

It was emphasized by Dr Eric Ottesen of the WHO/CTD that countries identified in Table 1 of elimination strategy should begin plan of action towards the elimination of lymphatic filariasis.[4] In countries where there is limited epidemiology data, the primary need is to establish the prevalence of the disease. Because of high logistic costs, it is worthwhile to select credible, cheap and ideal methods for rapid assessment (RAM) of filariasis. Papua New Guinea have opted to establish the epidemiology data, with minimal cost, with retrospective study of published literature to plot the distribution of the disease in the country. Arguably, the method will provide basic information required for the purpose of planning but may be subjected to criticism. After establishing the epidemiology data the country proceeds to phase II of elimination strategy. Solomon and Vanuatu identified in phase I indicated surveillance work will begin in 1998. In the Solomon Islands the 'rapid assessment method" will include sampling people at squatter settlements around Honiara and a Province. Meanwhile studies are already underway at Vanuatu to establish the prevalence of the disease.

Table 1. Showing phases of LF elimination for the Pacific

Phase	LF elimination activity	Country
I	Low - No/Limited Epidemiology data - need rapid assessment of disease	Solomon Islands, Vanuatu, FSM, New Caledonia, Tonga, Kiribas, Wallis/Futuna, Marshalls, Nauru, Palau, Guam, CNMI, Pitcairns, Papua New Guinea
II	Plan of Action - require prevalence assessment and formulation of control plan.	Vanuatu, Solomon Islands, Cook Islands, American Samoa, ?Tuvalu
F	Control Activities - already there is control program in existence but require support	Fiji, Western Samoa, French Polynesia, Niue
IV	Elimination - met the criteria to qualify as LF free	?Tokelau

Choice of diagnostic tool

The traditional method of thick blood smear to identify microfilaria will be superseded by more sensitive methods such as ELISA and the ICT diagnostic tools. These methods have high sensitivity (99%) and specificity (100%) and also alleviates the problems of night blood collections. The ICT diagnostic kit produced by AMRAD (Australia) is cheap and has advantage over the ELISA method of producing results in the field. The ICT kit provides a useful opportunity for people to know their results immediately and motivates the people to feel responsible to eliminate the disease in their community. The low cost of the kit and easy to use make it a suitable RAM to determine the prevalence of lymphatic filariasis and more importantly evaluation of control programs.

Single or double drug therapy

Anti-filarial drugs such as diethylcarbamazine (DEC) and Ivermectin as single dose or multiple have been used in trials and control programs in the Pacific. Studies have shown the efficacies of the two drugs to reduce the infection in countries like Western Samoa, French Polynesia and Papua New Guinea.[5,6,7] Recently, WHO has endorsed the combination of DEC/Albendazole or Ivermectin/Albendazole in the control of lymphatic filariasis.[4] The advantages of drug combination are apparent over single drug. However, in the Pacific there are reports of recurrence of the infection despite combination of drugs like DEC/Ivermectin in places like Western Samoa (Dr Ichimoru - personal communication). This raises questions on the validity of double drug therapy (especially Ivermectin) in the control of lymphatic filariasis.

It is very important to eliminate the factors that may hinder the progress and success of control programs. Issues such as selecting appropriate drug therapy and the method of distribution must be clearly established.

Despite huge support for the new DEC/Albendazole or Albendazole/Invermectin drug combination, each country in the region should assess these carefully. Pacific countries must reconsider use of Ivermectin in future control program plans because the drug is yet to be registered as a treatment for lymphatic filariasis. Hence, there is only one choice of two drug combination is DEC/Albendazole for the Pacific. The advantage with DEC/Albendazole combination is that Albendazole will be very cheap if obtained for the purpose of lymphatic filariasis control. The drug company Smith Kline Beecham (SB) have agreed to provide the drug free through WHO for lymphatic filariasis control.

All potential carriers must be eliminated for success

It is very important to eliminate the factors that may hinder the progress and success of control programs. Issues such as selecting appropriate drug therapy and the method of distribution must be clearly established. One important factor noted in ongoing programs in few Pacific countries was the absence of a criteria for exclusion from treatment. Exclusion of potential microfilaria carriers should only be done on confirmation with the drug manufacturer. Sub-population such as pregnant mothers were excluded from treatment in control programs in some Pacific countries. The non-treatment of sub-populations is one of many potential reasons for minimal decline in the prevalence of the disease. Treatment should also be made at the lowest age possible. The ethics of transient symptoms related with drugs in young children should be carefully considered by each country. The choice when to begin treatment should be based on the epidemiological data that reflects the age groups contributing to the transmission of the disease in each country.

Optimism in filariasis elimination in the Pacific

The WHO is optimistic that by the year 2020 lymphatic filariasis will be eliminated globally. There are still many other

countries that have not established epidemiology data on lymphatic filariasis. These are the countries that require urgent emphasis. Special effort from supporting agencies such as the SPC, WHO/CTD and WHO-representative offices must be promoted immediately before another similar meeting to review the status of activities after this first meeting. The optimism of eliminating lymphatic filariasis in the Pacific will only take shape when all the countries are actively in Phase III plan of action.

The task to achieve a 'lymphatic filariasis free' Pacific is mammoth. Each country need to set its goal against lymphatic filariasis. There is no room for superstitions and inaction if we aim to eliminate the disease in our region. Our best bet for our dollar is to develop a mechanism that encloses target communities, program implementers, program managers, and donor partners in 'circle of hope'.

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Tradition is probably the most potent force against efforts to aid the process of gender equality in the island countries. It operates not unlike a double-edged sword, for the one side are men who are too used to dominating and on the other, women used to being dominated. To break this vicious knot requires an all-embracing campaign directed at and touching all aspects of our people's living culture.

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