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MALARIA, FILARIASIS AND OTHER PARASITIC DISEASES

Malaria and parasitic diseases occur in certain ecological conditions and are closely associated with rural poverty. Malaria remains the most important parasitic disease in the Region and is endemic in 10 countries, with more than 400 000 confirmed cases and 2000 deaths reported in 2000. While malaria is a disease of international significance, attracting considerable attention and funding, other parasitic diseases remain hidden from view. Yet lymphatic filariasis is a serious and disfiguring disease that is endemic in 21 countries and areas and intestinal helminths affect the health of children in nearly all tropical and subtropical areas.

The launching of the global Roll Back Malaria initiative in 1998 marked a turning point in global malaria control. Mekong Roll Back Malaria was launched at a biregional meeting in Ho Chi Minh City in 1999. This partnership among countries, bilateral and multilateral agencies and academic institutions has been a driving force in surveillance, information exchange and strategy development.

With regard to filariasis control, the Pacific Programme to Eliminate Lymphatic Filariasis (PacELF) is setting an example, not just for the rest of the Region, but for the world.

In many countries helminths are considered to be part of life. However, WHO and Member States are working together to reduce the burden of intestinal helminths, through control strategies, often implemented in schools, that are effective, safe and inexpensive.

This report is presented for the information of the Regional Committee and for discussion at its fifty-third session.

INTRODUCTION

The situation with regard to malaria, lymphatic filariasis and soil-transmitted helminths in the Western Pacific Region is covered in greater detail in *The Work of WHO in the Western Pacific Region: 1 July 2001–30 June 2002* (pp. 19-36).

ROLL BACK MALARIA

1. CURRENT SITUATION

In the Western Pacific Region, malaria is endemic in 10 countries, seven of them in Asia and three in the south-west Pacific. In 2000, the total number of confirmed malaria cases reported to the Regional Office was 404 376 and the total number of reported deaths was 2371. The actual figures are estimated to be at least 10 times higher. About one third of the cases and deaths occur in Pacific island countries.

The three endemic south-west Pacific countries, where the distribution of malaria is relatively generalized in rural and even some urban areas, have successfully used insecticide-treated bednets as the main method of prevention. In Solomon Islands and Vanuatu, malaria incidence rates were reduced by about 60% between 1990 and 2000, while in Papua New Guinea the coverage of insecticide-treated nets is still too low to have an impact on the disease at the national level. In these countries, malaria is generally treated by the public health services. To date falciparum malaria is only moderately drug-resistant and a combination of chloroquine and sulfadoxine-pyrimethamine is still effective.

In South-east Asia, Cambodia, the Lao People's Democratic Republic and Viet Nam all made good progress in reducing malaria morbidity (by 14%–70%) and mortality (by 34%–95%) during the 1990s, despite facing complex problems. These included: multidrug resistance; unregulated private sales of antimalarial drugs, some of which proved to be counterfeit pharmaceuticals; the concentration of malaria in remote rural areas affecting ethnic minorities; and the difficulty of applying effective vector control for frequently migrating at-risk groups. In recent years, the very significant efforts made by these countries have been bolstered by substantial financial and technical support from

international partners. In China, major reductions in malaria had already been achieved during the 1980s, but in recent years progress has been slow, as public funding has been difficult to maintain. In Malaysia, progress in controlling malaria has been sustained over two decades and the malaria incidence rate decreased by 71% between 1992 and 2000. However, the Philippines has in recent years experienced great difficulties in maintaining its formerly excellent malaria control programme as health systems are being progressively decentralized. Vivax malaria re-emerged in the Republic of Korea in 1992, but its spread has now been halted.

2. ISSUES

1. The challenge to malaria control in the Pacific is to increase coverage with insecticide-treated nets in Papua New Guinea, and to maintain commitment by governments and partner agencies in Solomon Islands and Vanuatu. This is particularly demanding in Solomon Islands, where continued conflict presents enormous obstacles to the provision of preventive and curative services.
2. Multidrug resistance of falciparum malaria is a critical issue in South-east Asia and this makes it difficult to provide affordable and effective treatment. In some situations, patients are willing and able to pay for drugs, but, because of the poor quality of health services in many of the areas where malaria occurs, especially an inability to diagnose the disease precisely, patients often resort to polypharmacy and underdosing, further contributing to the development of resistance. To address this, new combination treatments costing significantly more than the drugs which have been used for many years, used in conjunction with rapid diagnostic tests (RDTs), may improve quality of care for patients with fever and reduce malaria mortality. However, putting these principles into practice will require increased funding; operational research on, for example, the use of RDTs by rural health workers; and innovative systems of quality assurance that can also be applied to informal private services. WHO has recently cooperated with institutions in the Philippines to set up a quality control system for these tests.
3. In some countries, expertise built up over many years is being dissipated because of health reforms. Malaria is strongly associated with rural poverty, and requires national-level funding, and national and local expertise to identify the most appropriate strategies to reduce morbidity and mortality in remote populations.

3. ACTIONS PROPOSED

The following actions by Member States are proposed for consideration by the Regional Committee.

1. Link Roll Back Malaria initiatives to national programmes for poverty reduction, rural development, education and general health service development in remote areas.
2. Coordinate national and external partners to ensure that the resources available for malaria control are maintained at adequate levels and directed to improve preventive and curative health services for the populations in greatest need.
3. Establish or maintain properly managed systems within the national health service structure to ensure complete coverage of populations at high risk with insecticide-treated nets and other vector control methods, as appropriate to local situations.
4. Establish or maintain systems for monitoring drug resistance of malaria parasites, treatment-seeking behaviour of malaria patients and the quality of public and private curative services, in order to ensure that all patients with malaria are treated with a complete and highly effective regimen immediately on presentation.
5. Collaborate internationally to share information on operational research and pilot projects, especially those related to the introduction of new interventions such as RDTs and combination treatment. Provide timely malaria data and information, disaggregated by age and gender, on emerging problems such as counterfeit drugs.

LYMPHATIC FILARIASIS

1. CURRENT SITUATION

Lymphatic filariasis has traditionally been endemic in 15 of 22 Pacific island countries and areas and in Cambodia, China, the Lao People's Democratic Republic, Malaysia, the Philippines and Viet Nam. In its chronic form the disease causes severe deformity and disability in affected individuals. However, simple tools that will enable the eventual elimination of the disease now exist. A rapid diagnostic test is available that effectively detects the presence of adult worms. When given on a mass scale in endemic areas over a period of three to five years, a combination treatment of albendazole and diethylcarbamazine can interrupt transmission of the parasite.

The global elimination strategy consists of two components. The first is annual mass drug administration and the second is reducing the impact on patients with the chronic forms of the disease, elephantiasis or hydrocele. Recent evidence has shown that regular cleansing and treatment of the affected areas with antibiotic ointments can substantially reduce the super infection of the skin in the affected areas and thereby limit the extent of lymphoedema. This simple procedure has been shown to improve the quality of life substantially for those with the severe disfiguring form of the disease.

Of the countries in the Region, only China has so far successfully eliminated lymphatic filariasis. This was achieved in the 1980s following a major national campaign that lasted for more than 25 years. In Malaysia, a successful control campaign has been implemented for the past 15 years, leaving only small pockets of transmission in parts of peninsular Malaysia and Sabah. Malaysia has just begun to implement the global elimination strategy. In the Philippines, mass drug distribution began on a limited scale in 1999 and will be expanded to cover all endemic areas within the next few years. Viet Nam will begin mass drug administration campaigns in a limited number of districts during 2002 and these will be expanded to cover other endemic districts in the following years. Cambodia and the Lao People's Democratic Republic are currently in the first stages of preparation for elimination and are mapping the distribution of areas of continued transmission of the parasite.

Although the tools now exist to eliminate lymphatic filariasis, the disease is not considered a priority in many countries. However, in the Pacific, health ministers have strengthened their political commitment to work together and share resources to rid the Pacific of a debilitating disease that has had a major impact on island life for hundreds of years. Filariasis was a major topic at the meetings of Ministers of Health for the Pacific Island Countries in Koror, Palau, in 1999 and Madang, Papua New Guinea, in 2001. The target date for elimination established by the Pacific Programme for the Elimination of Filariasis (PacELF) is 2010, a full ten years before the global target. Mass treatment campaigns in the Pacific began in 1999 and by the end of 2003 all of the endemic countries except for Papua New Guinea will have begun annual mass drug administration activities.

2. ISSUES

1. Lymphatic filariasis has a major economic and social impact on chronically infected and disfigured individuals in communities where infections rates are high.
2. Because of the focal nature of lymphatic filariasis and the fact that it is not routinely reported as part of communicable disease surveillance, there are no reliable figures on the actual disease burden.
3. Although the tools to eliminate lymphatic filariasis already exist, in many endemic countries the disease is not considered a priority, so it is often difficult to generate the political commitment to mount an effective elimination programme.
4. Even where political commitment exists, an elimination programme requires a considerable five-year obligation in terms of both financial and human resources. A successful programme requires a strong health infrastructure and this is often lacking in the smaller developing countries of the Region.
5. Sustainability is the single most important issue facing all endemic countries of the Region. To eliminate the disease, mass drug administration activities covering at least 85% of the affected populations must be maintained over a period of three to five years.

3. ACTIONS PROPOSED

The following actions by Member States are proposed for consideration by the Regional Committee.

1. The PacELF network of countries represents the first and so far the most successful regional grouping of countries working together towards the elimination of lymphatic filariasis. Members of PacELF need to build on the organization's achievements and to strengthen its network through increased cooperation, resource sharing and information. This could enable the Western Pacific Region to be the first WHO region to eliminate the disease.
2. Endemic countries of the Region need to ensure that the necessary financial and human resource commitments are made to eliminate lymphatic filariasis from the Region by 2020.
3. To increase the sustainability of mass drug administration activities, countries should integrate filariasis elimination with other disease control programmes such as helminth control, nutritional supplementation, environmental health and malaria control (e.g. with the distribution, treatment and re-treatment of mosquito nets).
4. There is increasing awareness of the need to incorporate effective vector control activities into the lymphatic filariasis elimination programme, especially in Pacific countries. Member States should include activities to control lymphatic filariasis vectors in other vector control programmes, such as use of insecticide-treated bed nets for malaria and water container sanitation for dengue.

SOIL-TRANSMITTED HELMINTHS

1. CURRENT SITUATION

Intestinal helminth infections are among the most common infections of humans worldwide and are an important public health problem in the Region. Most children living in developing countries, regardless of social status, have been infected with “worms” at some time during their lives. At least one quarter of the world's population is estimated to be chronically infected with intestinal

parasites. In 1996, WHO estimated that, worldwide, roundworms (*Ascaris lumbricoides*) infect 1.4 billion people, whipworms (*Trichuris trichiura*), 1 billion people, and hookworms (*Ancylostoma duodenale* and *Necator americanus*), 1.3 billion people. School-age children (5-14 years of age) and pregnant women bear the greatest part of the disease burden.

Transmission of intestinal helminths is linked to inadequate sanitation and poor living conditions. It is common to find 90% or more of school-age children in poor communities harbouring one or more parasitic helminths. Children infected with helminths are 3.7 times more likely to be stunted and 1.5 times more likely to be underweight. Children who are anaemic are 1.6 times more likely to be stunted and 1.5 times more likely to be underweight. Children who are both infected with helminths and anaemic are 5.9 times more likely to be stunted and 4.0 times more likely to be underweight. Infected children are typically anaemic, less physically fit and underperform academically in school, thereby compromising their chances to overcome the cycle of poverty.

Treatment can reverse these effects. The drugs used for intestinal helminths are safe, effective and inexpensive (less than US\$ 0.03 per child per treatment). If treatment is given twice a year, usually directly through the schools, the overall health of children can be greatly improved.

2. ISSUES

1. The growth and development of children throughout the Region is severely affected by intestinal parasites. Helminth infestation is easily treated, but often neglected. However, Member States throughout the Region are now beginning to implement aggressive school-based helminth control programmes, supported by WHO and by many local and international partners. The Western Pacific is establishing a lead for other WHO Regions in implementing these basic but effective public health interventions.
2. Children infected with intestinal helminths are usually anaemic and have a low height for age compared with children without intestinal parasites.
3. The ideal means of preventing intestinal worm infestations is the provision and use of toilets, regular washing of hands and general safe handling of food. In poor communities lacking appropriate sanitation facilities, prevention can be accomplished by regular deworming of school-age children and others at high risk. The most effective means of implementing regular deworming is through schools.

4. Deworming costs about US \$0.06 per child per year, a small investment that can lead to radically improved cognitive ability and growth.

3. ACTIONS PROPOSED

The following actions by Member States are proposed for consideration by the Regional Committee.

1. Take steps to implement World Health Assembly resolution WHA54.19 which, among other things, calls for Member States to ensure access to essential drugs for treatment of clinical cases of schistosomiasis and soil-transmitted helminth infections in all health services in endemic areas, in particular for high-risk groups such as women and children. The goal is to achieve regular administration of chemotherapy to at least 75% and up to 100% of all school-age children at risk of morbidity by 2010.
2. Ministries of health should engage their colleagues in ministries of education to work with them to make helminth control a routine activity in all schools in endemic areas, preferably through health-promoting schools programmes. This is the best way to achieve the target of deworming 75%-100% of school-age children annually.
3. Wherever possible, countries should implement basic sanitary measures such as providing toilets and hand-washing facilities and safe water in order to provide a long-term solution to the problem of intestinal helminths.