EXPANDED PROGRAMME ON IMMUNIZATION: MEASLES AND HEPATITIS B

At its fifty-fourth session in 2003, the Regional Committee decided that measles elimination and hepatitis B control should be the two new pillars to strengthen the EPI. If measles elimination is to be achieved, the percentage of one-year-olds immunized against measles needs to increase. However, because measles vaccine is only about 85% effective when given at age nine months, and 90% to 95% effective after the age of 12 months, a single dose of measles vaccine given at any age is not able to provide the required level of population immunity. A second dose is necessary to protect those who fail to be protected by the first dose.

The Region accounts for just under half of all hepatitis B chronic carriers and more than half of global mortality due to hepatitis B. Universal childhood vaccination with three doses of hepatitis B vaccine, including a birth dose, is the most effective way of controlling hepatitis B, especially in countries where perinatal transmission is common. In the countries using combination vaccines (DPT-HepB), four doses will be required: a birth dose with monovalent vaccine and three doses of combination vaccine. Although all the countries in the Region have introduced hepatitis B vaccine into their national programmes, coverage levels, especially for the birth dose, have yet to reach the recommended level of at least 80% in most countries.

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

1 Resolution WPR/RC54.R3.
1. CURRENT SITUATION

The Expanded Programme on Immunization (EPI) has had several notable achievements in the Western Pacific Region in the past decade, including the Region's achievement of poliomyelitis-free status, a reduction in measles deaths by 95% compared with the pre-vaccine era, the inclusion of hepatitis B in all national immunization programmes and the elimination of neonatal tetanus as a public health problem in all but six countries of the Region. However, concerted efforts are still needed to maintain past successes and to achieve new goals, such as control of hepatitis B and elimination of measles. Vaccine security needs to be assured, the quality of immunization and disease surveillance data improved, laboratory capacity for disease surveillance strengthened, and hard-to-reach disadvantaged populations provided with access to immunization.

To build on the successes of the Region's immunization programmes, the Regional Committee endorsed two new pillars for the EPI, measles elimination and hepatitis B control, at its fifty-fourth session in 2003. A detailed discussion of the recent work of the Expanded Programme on Immunization in the Region can be found in The work of WHO in the Western Pacific Region: 1 July 2003-30 June 2004.

1.1 Measles

Measles is the primary cause of vaccine-preventable childhood morbidity and mortality in the Region. Worldwide, measles infects 30 million to 40 million children each year and kills more than 600,000. Although it is extremely contagious, measles can easily be prevented by two doses of vaccine; a routine first dose according to a routine schedule, and a second delivered by routine or supplementary immunization. All countries recognize the need for a second dose. Each country will now need to decide whether to administer the second dose as part of the routine schedule, or through periodic campaigns, or through a combination of the two.

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2 Cambodia, China, the Lao People's Democratic Republic, Papua New Guinea, the Philippines and Viet Nam.
Nearly all the measles burden in the Region is borne by eight countries.\(^4\) In 2003, more than 100,000 measles cases were reported in the Region; in developing countries, up to 6% of cases die from the disease. It is probable that the actual number of cases is up to 10 times higher than the reported total because of poor quality surveillance in areas with the highest prevalence. Even in countries that have already achieved good measles control, there is still potential for large outbreaks, as was illustrated by the measles outbreak in the Republic of Korea in 2000-2001. The country's response, including nationwide immunization campaigns and other efforts, demonstrated the Government's commitment to make progress towards measles elimination. After nearly four years with no reported indigenous measles cases, since 1999 Mongolia has suffered similar outbreaks of acute fever and rash illness. The vast majority of the cases have been measles, although the number of rubella cases has been increasing. These examples demonstrate the need for continual efforts in measles surveillance and control.

In March 2004, the EPI Technical Advisory Group (TAG) recommended that WHO should immediately convene a task force comprising representatives of partner organizations and selected countries to review progress in measles elimination through a comprehensive assessment of epidemiological, financial, and programmatic factors and to recommend a target date for the elimination of measles in the Region. The task force met in July 2004.

### 1.2 Hepatitis B

Around 45% of the global total of hepatitis B chronic carriers live in the Region, although only 28% of the global population lives in the Region. Every day, about 800 people die from hepatocellular cancer, liver cirrhosis and other diseases related to hepatitis B infection. Most of these deaths result from infection acquired in childhood. As a result, the impact of the hepatitis B vaccination programme on morbidity and mortality will be seen only after few decades, and hence more advocacy and social mobilization efforts will be required to convince parents and governments to invest in hepatitis B immunization.

Universal childhood vaccination with hepatitis B vaccine is the most effective way of controlling hepatitis B. Although the vaccine is a relatively recent addition to the EPI, it is already included in each country's immunization programme. Coverage in some countries is not yet

\(^4\) Cambodia, certain provinces of China, Japan, the Lao People's Democratic Republic, Malaysia, Papua New Guinea, the Philippines and Viet Nam.
nationwide, so partners such as the United Nations Children’s Fund (UNICEF) and the Japan International Cooperation Agency have supported these countries to expand hepatitis B availability and coverage. Recently, the Global Alliance for Vaccines and Immunization (GAVI) supported the introduction of the vaccine in Cambodia and the Lao People's Democratic Republic and nationwide expansion of immunization in China and Viet Nam. In 2002, 15 countries out of the 25 countries and areas that reported data had coverage higher than 85%. In 2003, 12 out of the 19 that reported had coverage higher than 85%. Of the countries and areas that reported in both years, only Guam reported a drop in the coverage rate (from 99% to 77%).

In September 2003, the Regional Committee determined that the objective of hepatitis B control programmes should be HBsAg seroprevalence of less than 1% in five-year-olds born after hepatitis B immunization started. The Regional Committee also recommended that countries ensure that at least 80% (and ideally 95%) of each birth cohort in every district is covered by three doses of hepatitis B vaccine by age of 12 months, except in countries where a high-risk approach (i.e. immunization for children of carrier mothers) has been shown to be effective.\footnote{Resolution WPR/RC54}

2. ISSUES

2.1 Measles

Many countries in the Region are ready for or have already reached measles elimination. Following a recommendation of the EPI Technical Advisory Group in March 2004, a task force composed of representatives of several countries in the Region met at the Regional Office in July 2004. The task force assessed a number of factors affecting progress towards the elimination of measles and made recommendations regarding the setting of a realistic target date for measles elimination in the Region. There is wide consensus that measles elimination is technically feasible, but achieving it will require a high level of political commitment and financing.

A second dose of vaccine, given to children over one year at least one month after the first dose, will protect more than 95% of children. It is recommended that all countries in the Region should...
offer a first dose of measles vaccine early, preferably at 9–12 months, followed by a second dose, either in routine or supplementary campaigns. Delivery of the second dose must reach every child to achieve the required 95% population immunity. Those who missed the first dose will require an additional dose to reach this level of immunity.

2.2 Hepatitis B

There are three major issues with respect to hepatitis B control through universal childhood hepatitis B vaccination: (1) increasing the percentage of children receiving three doses, and especially increasing the percentage receiving a birth dose; (2) improving the quality of immunization coverage data, and (3) ensuring vaccine security.

Universal childhood immunization with three doses of hepatitis B vaccine, including a timely birth dose within 24 hours of birth to prevent perinatal transmission, is the most effective way of controlling hepatitis B. However, delivering a birth dose within 24 hours of birth remains a challenge in countries where a substantial percentage of deliveries take place outside health facilities.\(^6\) In addition, immunization coverage apart from the birth dose is stagnating in countries such as the Lao People's Democratic Republic. More social mobilization efforts are required to increase demand for the vaccine.

Because of the long time between infection and manifestation of the disease, monitoring through routine immunization coverage data instead of disease incidence data remains the most effective way of assessing the progress of hepatitis B control programmes. Hence, improvements in the quality of routinely reported coverage data, which continues to be unreliable in many countries, will be required.

Ensuring vaccine security is another challenge to maintaining or increasing coverage with hepatitis B vaccine. In countries such as Cambodia, China, the Lao People's Democratic Republic and Viet Nam, the hepatitis B vaccine was introduced with the help of GAVI, which has, however, committed to only five years of support. Other countries also face difficulties in maintaining vaccine supplies; the Philippines, for example, has resources to procure enough vaccine for only 40% of its

\(^6\) For example, in Cambodia, 66% of births take place outside health facilities; in the Lao People's Democratic Republic, 79%; and in the Philippines, 44%. 
population. Hence, to maintain coverage, countries will need to commit more resources or find other sources of funding after GAVI support ends.

3. ACTIONS PROPOSED

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

(1) participate in the process established by the task force on measles elimination to evaluate whether the country is moving towards elimination, and, if so, how long it would take it to do so;

(2) develop, within the next 12 months, both a national plan for hepatitis B control and a measles elimination plan as part of an overall plan to strengthen the EPI that will (a) strengthen social mobilization and service delivery to improve service coverage, (b) improve the quality of routinely reported immunization coverage data, including data on the delivery of a timely birth dose, and (c) put in place a sustainable financing plan to ensure availability of all EPI vaccines for the entire eligible population.