REPORT

INTERNATIONAL EXPERT MEETING ON HEPATITIS B CONTROL IN THE WESTERN PACIFIC REGION

Seoul, Republic of Korea
24–25 November 2008

Manila, Philippines
March 2009
REPORT

INTERNATIONAL EXPERT MEETING ON HEPATITIS B CONTROL IN THE WESTERN PACIFIC REGION

Convened by:

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and

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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NOTE

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Keywords:

Hepatitis B - prevention and control / Certification / Disease transmission, Vertical - prevention and control / Immunization programs / Program evaluation / Western Pacific

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SUMMARY

The International Expert Meeting on Hepatitis B Control in the Western Pacific Region, held in Seoul, the Republic of Korea, from 24 to 25 November 2008, was co-sponsored by the Korea Centers for Disease Control and Prevention (KCDC) and the World Health Organization (WHO) Western Pacific Regional Office.

The objectives of the meeting were:

(1) to review progress made, constraints faced, and strategies followed for achieving hepatitis B control goal in the Western Pacific Region; and

(2) to make recommendations on the certification process, prevention of mother-to-child transmission of infection, and the need to set another target date for the final hepatitis B control goal.

Dr Jong-Koo Lee, Director-General of KCDC, opened the meeting and Dr Yang Baoping, Regional Adviser, Expanded Programme on Immunization (EPI), WHO Regional Office for the Western Pacific, provided introductory remarks on behalf of Dr Shigeru Omi, WHO Regional Director for the Western Pacific. The first day of the meeting included presentations on the status and progress made in hepatitis B control in the Region and globally, and on country experiences in hepatitis B control (the Republic of Korea, United States of America, Japan, China, the Philippines and Viet Nam). The second day of the meeting focused on group discussion among current and proposed hepatitis B expert resource panel members on four specific issues, namely, the regional plan of action, certification guidelines and procedures, prevention of mother-to-child transmission of hepatitis B and the need for setting another target date for the final hepatitis B control goal.

The participants concluded that hepatitis B is a very important public health problem in the Western Pacific Region; however, substantial progress has been made in its control. Twenty-six countries and areas are expected to have achieved less than 2% hepatitis B surface antigen (HBsAg) seroprevalence based on their reported vaccine coverage levels. Challenges remain in about 10 countries and areas in achieving optimal levels of coverage with the third dose of hepatitis B (HepB3) vaccine and the timely birth dose, mainly due to weak overall primary health care systems. The current regional plan of action for hepatitis B, finalized in March 2007, articulates eight major strategies with programmatic activities and indicators for each one. The current certification guidelines still hold valid. It was suggested that the expert resource panel constituted for certification should be shared with all the Member States. The issue of establishing a subnational goal of less than 2% HBsAg seroprevalence should be explored in countries where HBsAg prevalence may be lower than 2% nationally, but much higher among some of the indigenous or other disadvantaged population groups. Universal hepatitis B vaccination within 24 hours of birth is still the most appropriate policy in the absence of universal antenatal screening in most of the developing countries. Catch-up campaigns for older children, if needed, should be prioritized after achieving high vaccination coverage levels in infancy.

Key recommendations dealt with clarification on the target date of 2012 and on strategies for perinatal transmission of infection. The target date of 2012 means countries would have to reach the certification level of vaccine coverage by 2012. It was decided that countries reaching the required vaccine coverage levels (both HepB3 and timely birth dose) in 2011 and 2012 would be provisionally certified to have achieved the goal, but would have to demonstrate seroprevalence levels of less than 2% when these cohorts became at least five years old. Strategies for perinatal transmission of infection should be enhanced by strengthening links between maternal health and EPI programmes, facilitating
the implementation of out-of-cold-chain policy, and assisting countries to scale up activities from lessons learnt from various demonstration projects. The group recommended that a new target date for the less-than-1% HBsAg seroprevalence goal should be set in either 2011 or 2012, rather than now, based on a detailed review of the data generated by that time. Finally, more efforts should be made to increase the engagement of WHO and ministries of health with nongovernmental organizations at the global level (e.g. World Hepatitis Alliance), regional level (e.g. Asian Pacific Association for the Study of the Liver) and country level (liver and hepatitis foundations) and to streamline their objectives/goals and strategies to achieve maximum impact on the hepatitis B problem.
1. INTRODUCTION

The International Expert Meeting on Hepatitis B Control in the Western Pacific Region was held at the Grand Hilton Hotel in Seoul, the Republic of Korea, from 24 to 25 November 2008. This meeting was a follow-up to the three hepatitis B expert meetings convened by the World Health Organization (WHO) Regional Office for the Western Pacific in 1998, 2002 and 2007. These meetings have guided the expansion of hepatitis B control programmes through the proliferation of vaccination in the Region. This meeting was co-sponsored by the Korea Centers for Disease Control and Prevention (KCDC) and the WHO Regional Office.

1.1 Objectives

(1) To review progress, constraints and activities implemented towards the hepatitis B control goal in the Western Pacific Region.

(2) To review the current certification process followed for validation of achievement of the hepatitis B control goal in Western Pacific in the context of lessons learnt from certification of the Republic of Korea and Macao (China) in 2008.

(3) To review the strategies followed for prevention of mother-to-child transmission and make recommendations for increasing coverage with the timely birth dose, especially in countries with a high proportion of births taking place at home.

(4) To critically examine the feasibility and need for setting a target date for the final hepatitis B control goal of less than 1% HBsAg seroprevalence.

1.2 Organization

The meeting was co-sponsored by KCDC and the WHO Regional Office for the Western Pacific, with KCDC playing a major role in handling the organization of the meeting. Other key agencies represented at the meeting were the National Institute of Infectious Diseases (NIID), Japan, and the United States Centers for Disease Control and Prevention (US CDC). In addition, participants from China, Japan, the Republic of Korea, the Philippines and Viet Nam attended the meeting. Current members of the hepatitis B expert resource panel (except Dr Andrew Hall) and three potential members from KCDC and Australia also participated in the meeting. The meeting participants approved a chairperson and rapporteur for each session. The names of these people are listed before the summary of the proceedings for each session in the next section of this report.

1.3 Opening ceremony

Dr Jong-Koo Lee, Director-General of KCDC, opened the meeting and welcomed all the participants. He pointed out the public health importance of hepatitis B in the Region and the feasibility of its control based on the highly successful experience of the Republic of Korea, which became the first country to be certified for achieving the final regional goal of less than 1% HBsAg seroprevalence in June 2008. He announced that the Republic of Korea is committed to actively participating in the efforts of the global community to control hepatitis B and to sharing information and providing technical support for the related programmes. He concluded his speech by wishing participants a successful meeting.
Dr Yang Baoping, Regional Adviser in the Expanded Programme on Immunization (EPI) of the WHO Western Pacific Regional Office, gave introductory remarks on behalf of Dr Shigeru Omi, WHO Regional Director for the Western Pacific. He thanked KCDC for its generosity in sponsoring this meeting. He also noted the public health importance of hepatitis B-related morbidity and mortality in the Region, and noted that hepatitis B causes almost the same number of deaths in the Region as tuberculosis. He reminded the audience about the ambitious goal—adopted by all Member States in 2005—of reducing chronic hepatitis B virus (HBV) infection rates to less than 2%, measured among children at least five years of age by 2012. The three expert working group meetings held in 1998, 2002 and 2007 contributed greatly to the development of the hepatitis B regional plan, establishment of the hepatitis B control goal and development of certification guidelines. He noted the substantial progress made in hepatitis B control in the Region and congratulated the Republic of Korea and Macao (China) for becoming the first country and area to be certified for achieving the goal. He concluded by expressing optimism that the meeting would be able to achieve all the objectives set and would help to move the agenda of hepatitis B control forward in the Region.

2. PROCEEDINGS

2.1 Session I: Overview of current situation of hepatitis B control in the Western Pacific Region

Chair: Dr Hoan-Jong Lee

2.1.1 Overview of hepatitis B control in the Western Pacific Region

Presenter: Dr Yang Baoping

With only 28% of the global population, the Western Pacific Region accounts for almost half of the global HBV-related mortality and morbidity. In a majority of the Member States, HBsAg seroprevalence averages 8% to 10%. Almost 160 million chronic HBV carriers are estimated to live in the Region. An estimated 333,000 HBV-related deaths annually surpass the number of deaths from tuberculosis. However, with the introduction of universal hepatitis B vaccination in all the countries in the Region, substantial progress has been made in reducing chronic HBV infection in cohorts born after the start of national vaccination programmes. For example, the aggregate HBsAg seroprevalence among children five to nine years old in China has declined to less than 2% in 2006, compared to almost 10% in 1992, as measured in comparative serosurveys implemented in 2006 and 1992. Similarly, HBsAg seroprevalence declined to less than 1% among birth cohorts born since 1994 in the Republic of Korea. Overall, regional HBsAg seroprevalence among five-year-old children is estimated to have declined from 9.2% in the pre-vaccination era to about 1.7% in 2007. Twenty-six countries and areas in the Region are expected to have achieved the regional goal of hepatitis B control in 2008 based on reported vaccine coverage rates.

Notwithstanding the substantial progress made, some countries are still struggling to achieve optimal vaccine coverage levels. Around 10 countries and areas are still reporting less than 85% coverage among infants with three doses of hepatitis B vaccine (HepB3) and very low coverage with the timely birth dose of hepatitis B vaccine. These countries still face considerable challenges in improving and sustaining routine immunization coverage and reaching newborn infants with the timely birth dose, mainly due to weak overall primary health care systems. High neonatal mortality in developing countries, with increased risk of coincidental adverse events following immunization (AEFI), is another constraint in increasing coverage with the timely birth dose. Conducting nationwide hepatitis B serosurveys for documenting the impact of vaccination programmes also remains challenging because of limited technical expertise and multiple competing priorities within the countries.
2.1.2 Strategy of hepatitis B control and process of hepatitis B certification in the Western Pacific Region

Presenter: Dr Manju Rani

The presentation covered the regional goal for hepatitis B control, the revised regional plan of action developed in 2007, and the certification criteria and process for validation of achievement of the goal.

Setting up a time-bound goal implies continuous performance monitoring to measure achievement of the goal. Monitoring coverage with HepB3 by age one and with timely birth dose within 24 hours will help a country to know whether it is nearing the hepatitis B control goal or not. In the absence of regular disease surveillance, as applicable to other acute vaccine preventable diseases, a nationally representative serosurvey would be needed to estimate HBsAg seroprevalence among children at least five years old who were born after the start of a nationwide immunization programme.

The WHO Regional Office intends to take responsibility for monitoring the goal at the regional level and coordinating the certification of each Member State for achievement of the goal. WHO convened the third hepatitis B expert meeting in March 2007 to finalize the certification guidelines and procedures and to revise the hepatitis B action plan first developed in 2003. The certification process is not a new process; all the countries and areas in the Western Pacific Region participated in the certification process for the polio eradication goal. However, due to the different epidemiology of hepatitis B disease and polio (chronic versus acute disease) and different goals (control versus eradication), the certification process for the hepatitis B control goal will be different than the one for achieving polio-free status.

For certification, a country has to prove that it has achieved less than 2% HBsAg seroprevalence among children at least five years old for the interim goal and less than 1% for the final goal. The accuracy of the estimate has to be within ± 0.5%. HBsAg seroprevalence should be measured through a nationally representative population-based serosurvey sampling of children at least five years old, with a sample size sufficient to provide estimates with ± 0.5% accuracy with 95% confidence. In addition, the survey should use standard laboratory procedures and tests with demonstrated sensitivity and specificity with adequate quality assurance. It will be acceptable to use simple and rapid field tests with established sensitivity and specificity. The documentation of the process of serosurvey will be as important as the end-result of the survey.

Though the certification will be based on HBsAg seroprevalence levels, the certification panel will also take into account vaccine coverage levels (both HepB3 and timely birth dose), especially in the last five years. HBsAg levels lower than 2% among children at least five years old would reflect the performance of immunization services five years ago. However, if the vaccination coverage goes down subsequently, there is a risk that the HBsAg seroprevalence levels among younger children may increase again, especially in countries with high baseline chronic HBV infection rates. Proof of sustained high vaccination coverage in the last five years, with seroprevalence measurement among children five years and older, will indicate that even younger children who were not included in the current serosurvey will have a less-than-2% HBsAg positive rate.

Hence, vaccine coverage rates will be used to monitor the maintenance of the certification level among the younger birth cohorts as well as to guide hepatitis B control efforts in the country. For example, if a country is certified for achieving the less-than-2% goal, then the country has to submit plans for achieving the less-than-1% goal. These plans will include activities to improve the vaccine coverage to higher levels. A Regional Certification Commission was set up for certification for poliomyelitis elimination status involved. Similar to certification for polio eradication—where monitoring continues with clearly defined performance standards for acute flaccid paralysis (AFP)
surveillance even after regional certification—monitoring for hepatitis B control will continue in the form of monitoring of vaccine coverage rates even after certification.

An expert resource panel, consisting of hepatitis B experts working in different institutions and different countries, has been appointed by the WHO Regional Director for the Western Pacific. All appointments to the expert resource panel are honorary and voluntary, though the members will serve as temporary advisers when called on for the certification process in a particular country. The expert resource panel will be shared with all Member States. It is open-ended and more experts can be added if the need arises.

A certification panel, comprising three to four members drawn from the expert resource panel, will conduct the certification process. The WHO Regional Office for the Western Pacific will be responsible for the constitution of the certification panel. The certification process will be initiated by a country, which, after completing its own internal evaluation and review process, feels confident of having met the certification criteria. The country will submit the required documents to WHO with a formal request to carry out the certification process. The documents submitted should show the detailed methodology and results from a serosurvey done among children five years old or older. WHO has developed a template to guide countries in preparing the certification documents.

WHO will announce the countries that have been certified as achieving the interim and final hepatitis B control goals to the Regional Committee for the Western Pacific at its annual meeting. If possible, the results will also be published in the *Weekly Epidemiological Record* (WER) of WHO.

WHO has developed a tentative timeline for certification based on the status of the hepatitis B programme in Member States. The Republic of Korea and Macao (China) were the first country and area, respectively, to be certified for achieving the final hepatitis B control goal in 2008. Approximately six to nine countries are expected to undergo certification in 2009.

2.1.3 Role of the laboratory for the certification process of hepatitis B control

Presenter: Dr Youngmee Jee

The role of the laboratory for the certification process of hepatitis B control was presented. The use of rapid testing for hepatitis B serosurvey was discussed and examples of rapid testing in Cambodia were also presented. Rapid testing can be used for hepatitis B serosurveys, with adjustment of the threshold for certification from 2% to 1.8% HBsAg positive rate. The regional reference laboratory for hepatitis B will be designated in 2009 to support the regional goal of hepatitis B control by 2012. This laboratory will be involved with quality assurance and external quality assessment of serosurveys for hepatitis B in the Region and should work closely with the hepatitis B expert working group and the WHO Regional Office to ensure the quality of serosurvey results.

2.1.4 Current updates and recent research on hepatitis B control through immunization and future research needs

Presenter: Dr Harold Margolis

This presentation summarized key evidence in relation to hepatitis B and highlighted the questions warranting additional research. Several studies from Alaska (USA), China, Gambia, the Republic of Korea, Malaysia, etc., have demonstrated beyond doubt that hepatitis B immunization—both pre- and post-exposure—prevents chronic HBV infection and consequent hepatocellular carcinoma. However, additional population-based outcome studies are needed on HBV-related hepatocellular carcinoma and cirrhosis to further quantify the public health impact, as many of the
existing studies do not capture liver disease burden prevented by virtue of prevention of hepatitis delta infection by hepatitis B immunization.

While controlled clinical trials have shown that the timely delivery of the birth dose (within 12 to 24 hours of birth) helps to prevent perinatal transmission of chronic HBV infection, clarification is needed on how long after birth the post-exposure prophylaxis with hepatitis B vaccine remains effective. Ethical considerations pre-empt any prospective studies. Retrospective study designs with serological testing of mothers and children with information on timing of vaccination may be needed.

Another key area of research is HBsAg variants. HBsAg variants may be responsible for perinatal HBV infection among: (1) infants, despite post-exposure prophylaxis (rare); (2) re-infected liver transplant patients, despite receiving hepatitis B immune globulin (HBIG); (3) persons with chronic HBV infection and co-circulating HBsAg and anti-HBs; and (4) persons with late infections following pre-exposure immunization (very rare). The duration of immunity among adults following immunization as an infant is another area needing further research.

2.2 Session 2: Experiences of and lessons learnt from the Republic of Korea in hepatitis B control

Chair: Dr Kyung Seo

2.2.1 Hepatitis B in the Republic of Korea

Presenter: Dr Un-Yeong Go

The presentation provided an overview of hepatitis B control in the Republic of Korea. The country was certified in June 2008 for achieving the regional hepatitis B control goal. Hepatitis B seroprevalence among children under 14 years of age was measured to be less than 1%.

Plasma-derived vaccine was introduced in the Republic of Korea in 1983 and recombinant hepatitis B vaccine was introduced in 1987. Currently, recombinant hepatitis B vaccine is the only vaccine used, as the production of plasma-derived vaccine was discontinued in 2004. Hepatitis B vaccine is recommended for all infants at birth, at one month and six months of age, and has been provided as part of the national immunization programme since 1995.

The Republic of Korea implemented three main strategies for hepatitis B control:

1. strengthening the national immunization programme (NIP) to reach 95% coverage for HepB3 at the national and metropolitan/province level;
2. preventing perinatal transmission to minimize chronic HBV infection; and
3. strengthening the surveillance system to monitor and evaluate the hepatitis B control programme.

Since the introduction of hepatitis B vaccine, the overall HBsAg rate has declined from 7.25% in the 1980s, to 4.38% in 2001, and to 3.7% in 2005.

The strategy to prevent perinatal transmission relies on universal antenatal screening for HBsAg, provision of hepatitis B vaccine within 24 hours of birth to all infants, and hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 12 hours of birth to infants born to HBsAg-positive mothers. In 2007, 94.6% of newborn infants were documented as having received hepatitis B vaccine before discharge from the hospital. All costs associated with antenatal screening, hepatitis B birth dose, HBIG, follow-up vaccinations and follow-up testing of infants born to HBsAg-positive mothers in both public
and private sectors have been covered under the National Health Insurance Act since 2002. The HBsAg-positive rate among pregnant women was documented to be about 3.2% in 2005, with almost 15,351 infants estimated to be born to HBsAg-positive mothers in 2006. That same year, 15,064 infants (98% of estimated number) were registered under the national perinatal transmission prevention programme. Serosurveys done in 2003 and 2006 show that the hepatitis B vaccination programme in the Republic of Korea had a very strong impact on preventing chronic HBV infection among cohorts born after the start of the hepatitis B vaccination programme.

2.2.2 Hepatitis B perinatal transmission prevention programme in the Republic of Korea

Presenter: Dr Jong-Hyun Kim

The presentation covered the hepatitis B perinatal transmission prevention programme in the Republic of Korea and recent research conducted in the country. Before 1989, when the country began providing hepatitis B vaccine at birth within 24 hours, only mothers who screened positive for HBsAg were provided vaccine (and mothers had to pay for the screening and vaccine). The Republic of Korea started a special project on prevention of mother-to-child transmission in 2002, whereby screening of pregnant mothers, provision of birth dose and HBIG, and follow-up testing of infants born to HBsAg-positive mothers were covered by national health insurance in both public and private health facilities. Coupon booklets were issued to women attending private hospitals for hospitals to receive reimbursement for the services provided. The system showed a failure rate of about 3.4% among infants born to HBsAg-positive mothers.

2.3 Session 3a: Updates on hepatitis B control from other countries

Chair: Dr Harold Margolis

2.3.1 United States of America

Presenter: Dr John Ward

Almost one in 20 persons (~12.5 million) are estimated to be infected with HBV during their lifetime, with an estimated 800,000 to 1.4 million people living with chronic HBV infection in the United States of America. Hepatitis B-related disease causes about 2000 to 4000 deaths each year.

With licensure of plasma-derived vaccine in 1982, vaccination was mainly recommended for high-risk populations (e.g. men who have sex with men [MSM], injecting drug users [IDUs], health care workers, infants born to HBsAg-positive mothers) between 1982 and 1991. Universal HBsAg maternal screening has been recommended since 1988. The policy of high-risk vaccination was replaced with universal infant vaccination in 1991 and catch-up campaigns were organized for adolescents (11 to 12 years old) and all persons under 19 years of age in 1995 and 1999, respectively. Universal birth dose was recommended for all infants in 2005, changing the earlier policy of birth dose for infants born to HBsAg-positive mothers only. Universal testing and vaccination have been recommended in settings serving adults at high-risk (e.g. STI clinics, HIV testing/care facilities, correctional facilities, substance abuse treatment centres) since 2006.

Hepatitis B vaccine coverage increased rapidly to more than 90% among infants 19 to 35 months of age in the 2000s, as a result of large increases in federal support for universal infant immunization through routine schedules. The change in vaccination policies over time is reflected in the declining number of new cases of acute hepatitis B since the introduction of universal infant immunization (1991) and all adolescent immunization (1995), though little impact was observed with the high-risk vaccination strategy between 1982 and 1990.
With the launch of a comprehensive perinatal transmission prevention programme for hepatitis B, all states are receiving funds from the United States Centers for Disease Control and Prevention (US CDC), and more than 85% of pregnant women are being screened for HBsAg—leading to a decline of more than 85% in perinatal chronic infections between 1990 and 2005. However, some challenges remain, with 900 infants developing chronic infections each year from perinatal transmission, mainly due to testing omissions and programme failure to provide the timely birth dose. An enhanced perinatal hepatitis B case management project aims at identifying the cause of HBV infections (programme or vaccine failure) and optimize secondary prevention activities (e.g. referring HBsAg-positive women for care, screening and vaccinating family members).

US CDC has also issued recommendations for identification and management of persons with chronic HBV infection. Recommendations include: testing for high-risk populations (e.g. foreign-born populations from high-prevalence countries, MSM, IDUs, and persons with HIV, other immunosuppressive diseases and/or elevated liver enzymes); management guidance for patient counselling; contact management (screening and vaccination); and case referral. However, despite these recommendations and efforts, hepatitis B vaccine coverage is lowest among adults with behavioural risks; adults represented 95% of all new HBV infections in 2006. Major barriers to increasing hepatitis B vaccination coverage among adults are cost of purchasing and administrating vaccine, lack of provider training, patient and/or client concerns, multidose schedule, and risk-based strategy. An adult hepatitis B vaccination initiative has been started with funding from US CDC to buy adult hepatitis B vaccine for special project areas.

Ongoing studies among Alaskan native children and Micronesia suggest long-term protection even though evidence of antibody protection may wane over time. Hence, provision of the hepatitis B vaccine booster dose is not currently recommended following primary immunization with three doses. More work is needed on measurable correlates of long-term protection.

US CDC is contributing to the global hepatitis B initiative by supporting hepatitis B control goals in the Western Pacific Region, promoting adoption of control goals in other regions and globally, responding to countries’ request for assistance and strengthening global partnerships. Providing support to launch Asia and Pacific Alliance to Eliminate Viral Hepatitis is part of US CDC global efforts.

2.3.2 Japan

Presenter: Dr Mashashi Mizokami

Hepatitis B control efforts in Japan rely on high-risk vaccination of infants born to HBsAg-positive mothers. Nationwide screening of pregnant mothers for HBsAg started in 1985 with government funding. More than 90% of pregnant women have been screened for hepatitis B under the national prevention programme for hepatitis B since 1986. Japan provides two doses of HBIG (at birth and at two months) and three doses of hepatitis B vaccine (at two, three and five months of age) to infants born to HBeAg-positive mothers). This practice is different from the standard global recommendation of administration of HBIG and hepatitis B vaccine within 24 hours of birth followed by two doses of hepatitis B vaccine between one to six months of age with at least one-month interval between the two doses. The practice also differs from the regional recommendation of universal birth dose for all newborn infants irrespective of the HBsAg status of mothers. The infection rates among infants born to HBeAg-positive mothers declined from 85.7% to 4.7% after the implementation of this programme.

Based on the results of a study of chronic infection rates among infants born to HBsAg-positive but HBeAg-negative mothers, the prevention programme was extended to all HBsAg-positive mothers irrespective of their HBeAg status in 1995. Anti-HBs testing is recommended for all infants born to
HBsAg-positive mothers after the third dose of vaccine and booster doses are given. The cost of the programme is covered by social health insurance.

The nationwide programme on prevention of mother-to-child hepatitis B infection is estimated to have reduced chronic infection rates among infants from 0.26% in 1985 to 0.024% in 1995 (from perinatal infections). The anti-HBc positive rate among children born to HBsAg-positive mothers has declined from 81.9% in 1978–1980 to 9.9% in 1986–1996.

Data collected by the Japan Red Cross Society between January 1995 and December 2000 show high HBsAg-positive rates among the 50- to 60-year-old population (1.5%) and 40- to 45-year-old population (0.63%) and a much lower rate among the 20- to 25-year-old population (0.017%). Though perinatal transmission of infection has been controlled, the share of intra-familial infections (e.g. from parents, grandparents) increased after 1985 due to the absence of universal infant immunization.

Detailed mapping of HBV genotype distribution is done in Japan based on data collected from cases of acute hepatitis B and from Japanese blood donors. The analysis shows increased prevalence of genotypes seen most often in Europe, Japan and the United States of America in recent years, suggesting increasing infection transmission through sexual transmission.

The data presented show the need for adoption of universal infant and adolescent immunization policy in Japan, replacing the current policy of targeted infant immunization only.

2.3.3 China

Presenter: Dr Hui Zhuang

The Ministry of Health of China has declared hepatitis B as one of four priority infectious diseases along with HIV/AIDS, tuberculosis and schistosomiasis. The Ministry of Health has developed a national hepatitis B control plan for 2006 to 2010, with a goal of reducing chronic HBV infection rates to less than 1% among five-year-old children by 2010.

Hepatitis B vaccine (plasma-derived and domestically manufactured) was first licensed in China in 1986, followed by the licensure of domestically produced recombinant vaccine in 1996. Universal infant hepatitis B vaccination has been the mainstay of hepatitis B prevention in China since 1992 (provided on a cost-sharing basis until 2004 and free of charge since 2005), though catch-up vaccination of children under five years of age and vaccination of high-risk groups have been implemented in some provinces with local government funding. A national immunization coverage survey of children aged 12 to 23 months old in 2004 estimated national coverage with three doses of hepatitis B vaccine (HepB3) to be 89.4%, with 22 out of 31 provinces reporting more than 85% coverage; only three provinces (Xinjiang, Tibet and Guizhu) reported less than 60% coverage. In addition, a hepatitis B serosurvey conducted in 2006 estimated HepB3 coverage to be 30% in the birth cohort born in 1997, 83% among children born in 2002, and 93.4% among those born in 2006. The same serosurvey estimated the timely birth dose coverage to be 22.2% (among children born in 1997), 64.4% (2002) and 82.6% (2006). However, timely birth dose coverage is only 31.4% among home births, compared to 84.5% among births in hospitals at county level or higher, and 75.5% among births in hospitals at township level. A comparison of the results from serosurveys conducted in 1993 and 2002 shows a substantial decline in HBsAg seroprevalence—from 9.9% among children from 0 to 5 years in 1993 to 0.96% in the same age group in 2002. Other data presented, e.g. incidence of acute hepatitis B among children (under 10 years old), hepatocellular carcinoma mortality rate in Longan Country (Guangxi), also support the impact of universal infant vaccination programmes.
Other strategies for hepatitis B control include screening of blood donors since the 1970s, use of auto-disable (AD) syringes for all immunization injections since 2005, and government-led health education programmes to modify high-risk behaviours.

Additional data were presented on the long-term efficacy of HBV vaccine in children from four provinces (Hebei, Guangxi, Hunan and Shanghai). The data showed declining anti-HBs levels with increasing numbers of years from vaccination, but strong evidence of immune memory among the anti-HBs-negative population.

2.4 Session 3b: Updates on hepatitis B control from other countries

Chair: Dr Yang Baoping

2.4.1 Viet Nam

Presenter: Dr Nguyen Van Cuong

The national immunization programme was started in 1981 with six basic antigens and expanded in 1997 to include vaccines against hepatitis B, Japanese encephalitis, cholera and typhoid for limited geographical areas. Locally produced hepatitis B vaccine was used to vaccinate 5% to 19% of the eligible birth cohort between 1997 and 2001. Hepatitis B vaccine was integrated into EPI nationwide in 2003 with support from the Global Alliance for Vaccines and Immunization (GAVI). While the first dose of hepatitis B vaccine was scheduled at 0–1 month between 1997 and 2001, the schedule was revised in 2005 to provide the first dose of hepatitis B vaccine within 24 hours of birth. Only one- and two-dose vaccine vials are used in Viet Nam. A pilot project in 2006 in four districts demonstrated the feasibility of out-of-cold-chain vaccine to increase coverage with the timely birth dose. HepB3 coverage has been maintained above 90% since 2003 and coverage with the timely birth dose increased rapidly to 64.3% in 2006. However, both HepB3 and timely birth dose coverage suffered in 2007, declining to 64% and 28.6%, respectively, following reports of adverse events following provision of the both birth dose and other doses in April 2007. Communication efforts, including training of health workers, are being undertaken to reverse the decline in coverage. Viet Nam’s experience with adverse events following immunization (AEFI) demonstrates the critical need for continued communication and education of health workers and parents, especially in countries with high neonatal death rates from other causes.

2.4.2 Philippines

Presenter: Dr Ma. Joyce U Ducusin

Community-based serosurveys in the rural areas of the Philippines have estimated an average chronic HBV infection rate of 12%, suggesting hyper-endemic status for hepatitis B. Most of the chronic HBV infections are acquired in early childhood.

The Department of Health convened an international task force on hepatitis B in 1990, which recommended the integration of hepatitis B vaccine (priced at US$ 10 per dose at the time) into the national immunization programme in a phased manner, with the first dose of vaccine given at six weeks of age. Accordingly, hepatitis B vaccine was introduced in 1992, covering 40% of the eligible population with the plan to increase by 10% each year. Republic Act 7846, enacted in 1994, mandated compulsory immunization against hepatitis B and rubella for all children under eight years of age. However, hepatitis B vaccine coverage remained less than 50% until 2006, mainly because of lack of financial commitment from the Department of Health to procure sufficient vaccine to cover 100% of the eligible cohort. With the establishment of the regional goal of hepatitis B control and other advocacy efforts, the Department of Health finally allocated 100% of the funds in 2006, and the
coverage with three doses of hepatitis B vaccine increased to more than 80% in 2007. In January 2007, the Department of Health revised the hepatitis B vaccination schedule to include provision of the first dose of vaccine within 24 hours of birth rather than at six weeks of age. Provision of the hepatitis B birth dose has been added to the newborn package of PhilHealth—a major health care insurance provider in the Philippines.

Delivery of the timely birth dose remains a challenge because 40% of births are delivered at home by unskilled birth attendants. Efforts in this area have been focused on promoting institutional deliveries and providing counselling on essential services, including immunization within 24 hours of birth. More surprising, the timely birth dose is not assured automatically in hospitals, accounting for 38% of all births. Increasing timely birth dose coverage in hospitals required efforts to establish systems for cold chain, vaccine supply, reporting, etc., in hospitals that were not involved earlier in the delivery of any childhood vaccines. Several training programmes and assessments have been undertaken to ensure 100% timely birth dose coverage for hospital births. Efforts are also ongoing to ensure the delivery of the timely birth dose for births delivered at home by a skilled midwife. An assessment carried out in 2008 shows that midwives support the provision of hepatitis B birth dose and routinely administer it between eight and 23 hours after birth. There are ongoing programmes to re-orient midwives on safe injection practices, multidose vial policy, proper cold chain maintenance, etc. However, promotion of out-of-cold-chain policy for hepatitis B vaccine is still limited. The reported timely birth dose coverage in 2007 was about 14%.

During the discussion period, it was suggested that single-dose vials should be procured, rather than the current 10-dose vials, to increase coverage. This practice would also facilitate implementation of the out-of-cold-chain policy.

2.5 Session 4: Expert panel meeting: Review of regional plan of action, certification guidelines and birth dose policies

Chair: Dr. Mark Kane and Dr. Wakita

2.5.1 Review of the progress, constraints and activities implemented towards the hepatitis B control goal in the Western Pacific Region

Presenter: Dr Manju Rani

A brief overview was presented on the progress made and activities implemented under each of the eight strategies defined in the Western Pacific Regional Plan for Hepatitis B Control through Immunization (2007). In terms of increasing coverage with HepB3 among infants (Strategy 1), major constraints were highlighted in countries still struggling to achieve 85% coverage on a consistent basis, e.g. Lao People's Democratic Republic and Papua New Guinea. Six countries (Fiji, Kiribati, the Commonwealth of the Northern Mariana Islands, the Philippines, Samoa and Solomon Islands) have yet to reach one of two coverage targets (HepB3 and timely birth dose), while five countries (Cambodia, the Lao People's Democratic Republic, Papua New Guinea, Viet Nam [in 2007] and Vanuatu) have yet to reach either of the two coverage targets. These 11 countries have overall weak health systems and suffer from weak service delivery and poor implementation of the programmes.

Increasing coverage with the timely birth dose (Strategy 2) remains challenging in countries with a high proportion of home births, though much needs to be done to increase coverage for hospital births as well. To deal with the constraints, countries have been implementing strategies pilot-tested in other countries and conducting trainings.
Catch-up campaigns (Strategies 3 and 4) are recommended for older children and high-risk population groups. However, the situation in countries where catch-up campaigns are justified (e.g. where the vaccine was only recently introduced or coverage in the initial birth cohorts is poor) has been exactly the same, with few exceptions, as the countries struggling to achieve high infant immunization coverage, which is prioritized over catch-up campaigns for older children.

Major progress has been made in ensuring vaccine self-sufficiency (Strategy 5) with earmarking of domestic funds in most of the countries. Cambodia, China, the Philippines and Viet Nam, which were either reliant on donor funding or unable to procure 100% of vaccine needs because of funding gaps, have been able to mobilize domestic funding for hepatitis B vaccine. In addition, each country has included strategies to achieve the hepatitis B control goal in its multiyear plan (Strategy 8). However, implementation of the plans remains weak in some countries.

Discussion points

(1) Increasing routine immunization coverage

The presenter pointed to an over-reliance on outreach services in the Lao People's Democratic Republic as a major programmatic constraint to increasing routine coverage and suggested making health facilities functional as predictable providers of immunization services. She suggested using outreach services for only difficult-to-reach populations, as quality is hard to assure in outreach services (privacy, logistics, etc.). However, changes to the long-standing system may be challenged by health care workers who will lose income/per diem and potentially more work. Cambodia, another country with a similar situation, has done several pilots for fixed-site immunization and is slowly moving towards that mode of service delivery. Optimal use of both outreach and fixed-site services is recommended as part of the Reaching Every District (RED) strategy, which is being implemented in many countries in the Region.

Dr Harold Margolis stressed the need for a tailored plan of action for each of the priority countries. He pointed to the need for involvement and development of active partnerships with the private sector in the provision of immunization services, as the private sector is growing in importance as a health care provider in some of the countries.

Dr Mark Kane suggested developing individual plans of action for countries still struggling to meet the hepatitis B vaccine coverage targets, with involvement of international teams, which will increase the donor buy-in to support such plans.

Dr Tilman Ruff suggested promoting the use of combination vaccines, already articulated in the regional plan of action.

(2) Birth dose coverage

Dr Mark Kane suggested holding an international meeting, with invitations to people involved in implementing pilot projects for timely birth dose in different countries, to share experiences and to understand successes and challenges to scaling up the experience from pilot projects. Dr Margaret Thorley suggested linking birth dose coverage with ongoing maternal and child health programmes both at the time of assessments as well as for advocacy. This suggestion was shared by Dr Kyung Seo and Dr Jong Koo Lee. Dr Kyung Seo suggested that strong maternal and child health programmes based on well-established primary health care provision would enhance the timely delivery of the birth dose.

Two of the participants enquired about the process for monitoring birth dose coverage and asked if there were any standardized recommendations for reporting the delivery of the birth dose.
within 24 hours. It was clarified that standard recommendations for reporting were included in the operational field guidelines for delivery of the birth dose of hepatitis B, published by the WHO Regional Office for the Western Pacific. Dr Van Cuong from Viet Nam explained that there are two birth dose columns, with time indicated as “<24 hours” and “>24 hours”. However, improvement is still needed with data collection at different levels. Viet Nam has already conducted three workshops to support health staff. Dr Joyce Ducusin from the Philippines also noted that its reporting forms have two columns, one for “<24 hours” and another for >24 hours” but that most health centres do not follow the recommended method of reporting (e.g. some record the actual date/time of immunization so timing has to be calculated). Recording the delivery of the birth dose in hospitals is challenging in the Philippines because no system is in place; hospitals were not involved in vaccination services earlier. Efforts are ongoing to establish a system in hospitals, and a revised field health recording system will be rolled out in 2009.

(3) Funding for hepatitis B control activities

One of the participants noted that the hepatitis B programme is probably under-funded for this ambitious goal, and that additional resources may need to be mobilized. Dr Yang Baoping stressed that WHO’s strong commitment to hepatitis B is evident by the mobilization of resources for one full-time staff for hepatitis B-related activities in the Regional Office. However, since hepatitis B control through vaccination is linked with routine immunization, resource needs for hepatitis B are difficult to distinguish from routine immunization. Efforts were made to emphasize the link of hepatitis B activities with routine immunization.

2.5.2 Feedback on the certification process for achievement of hepatitis B regional control goal

Dr Manju Rani from the WHO Regional Office provided a brief introduction on the appointment of the expert resource panel and certification panels. The expert resource panel is an open-ended panel with appointment of any number of independent hepatitis B experts from within or outside the Region. Panel members, which are honorary and voluntary, can be added at any time. A certification panel consists of three to four members drawn from the hepatitis B expert resource panel. The Regional Office constitutes a certification panel upon receiving a request from a country or area. The certification panel for Macao (China) and the Republic of Korea, which were certified in 2008, consisted of Dr John Ward, Dr Hui Zhang and Dr Andrew Hall. Dr Ward and Dr Zhuang presented feedback on the certification process with Macao (China) and the Republic of Korea. Dr Ward suggested that the certification application prepared by countries and areas may be arranged along the eight strategies articulated in the revised regional plan of action for hepatitis B.

Key issues that emerged from the discussion included:

• The target date of 2012 means that countries have to reach certification level of vaccine coverage by 2012 (even though the achievement of the goal cannot be validated by a serosurvey by the target date of 2012). Countries that reach the required vaccine coverage levels (both HepB3 and timely birth dose) in 2011 and 2012 will be provisionally certified to have achieved the goal, but will have to demonstrate seroprevalence levels of less than 2% when these cohorts become at least five years old.

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Though vaccine coverage rates may be used for provisional certification, the focus will still remain on outcomes (e.g. chronic HBV infection rate as measured by point HBsAg seroprevalence among children at least five years old).

- Share the hepatitis B expert resource panel with all the Member States.
- Distribute standardized template for certification application to all the Member States.

- One of the members suggested constituting a special fixed hepatitis B certification commission in each country. However, upon further discussion in the group, it was decided to leave it optional to the countries. Many countries may not have enough human resources for creating disease-specific committees; rather the national EPI advisory committees (or technical working group) may be given the task of regularly monitoring the maintenance of the hepatitis B control goal once certified. At the regional level, the goal will be monitored through vaccine coverage data reported through Joint Reporting Forms (JRFs), as validated by household surveys from time to time.

### 2.5.3 Strategies followed for prevention of mother-to-child transmission

Several studies have demonstrated that vaccination of newborn infants within 24 hours of birth is 70%–95% effective in preventing acquisition of HBV infection at birth. However, provision of hepatitis B vaccination within 24 hours is programmatically challenging in many settings due to:

- non-involvement of hospitals earlier in the delivery of immunization services, and
- high proportion of home births attended by both skilled and unskilled providers.

The WHO Regional Office for the Western Pacific published operational guidelines for prevention of mother-to-child transmission of hepatitis B in 2006 for the guidance of Member States. It recommended that hepatitis B vaccine, if labelled with a vaccine vial monitor (VVM), could be used out of the cold chain for up to one month at the lowest level of use (i.e. at the level of health centre or at the level of midwife). Most of countries in the Region have started procuring single-dose vaccine vials to replace multidose vaccine vials procured earlier. Countries are also recommended to implement information, education and communication (IEC) programmes to increase the demand for the birth dose among parents and to encourage parents to bring newborn babies born at home to health facilities for the birth dose if health workers fail to reach them on time.

While significant progress has been made for hospital births, the progress with respect to home births remains low. The critical issue remaining is having a trained provider with vaccine present at the time of birth. The high rate of neonatal deaths in poor developing countries is also a barrier in increasing coverage with the timely birth dose, as health workers are worried about coincidental adverse events following immunization.

**Major issues of discussion**

- Pilot projects and scaling up

With only four years away from the target date, several countries are still planning to implement pilot projects, even though there is sufficient evidence from other countries. It was agreed that while

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several demonstration projects have been successful in different countries, there have been few successful instances of scaling up. One of the members suggested holding a special intercountry meeting and inviting people who led pilot projects in different countries to share the experiences and to assess what can be transferred to and scaled up in other settings. It was concluded that while some pilots may still be needed in some countries to assess strategies on specific issues, simultaneous national plans should be developed for scaling up interventions that have demonstrated effectiveness.

- Constraints in implementing out-of-cold-chain (OCC) policy for increasing timely birth dose coverage for home births

The operational guidelines for delivering the hepatitis B birth dose, published by the WHO Regional Office for the Western Pacific, recommend using hepatitis B vaccine out of the cold chain for one month or until the vial bearing a VVM reaches its discard point or expiry date, whichever is earlier. It was clarified that the one-month limit was added, instead of using only VVM discard point criteria, as most of the data collected from laboratories and in the field on the thermal stability and effectiveness of vaccines are based on a one-month time period. In addition, the one-month limit is operationally practical, as most health facilities collect vaccine at least once a month from higher-level facilities with cold chain systems. However, despite the recommendation of using hepatitis B monovalent vaccine out of the cold chain for up to one month at the point of use, and the promotion of OCC use by PATH for several years, the use of relatively heat-stable hepatitis B vaccine out of the cold chain has remained limited. The Philippines reported that OCC use remains limited in the field despite an administrative order from the national level to promote it. Absence of VVM in domestically produced hepatitis B vaccine in China and Viet Nam was also mentioned as a major constraint. In addition, Viet Nam reported that the absence of manufacturers' instructions on the package insert creates problems, as "off-label" use is still problematic in some countries. As a possible remedy, it was pointed out that in some countries (e.g. Australia), the immunization handbook, which articulates national guidelines for vaccine use, specifically identifies where national programmes' recommendations differ from manufacturers' guidelines, and that similar practices may be followed in other countries. In addition, this issue may be conveyed to Project Optimize, specifically set up at global level for cold chain issues. Furthermore, manufacturers should be required to include information on OCC use and thermal stability of vaccine on package inserts.

- Use of Uniject for birth dose

Uniject is a single-use injection device that comes pre-filled with monovalent hepatitis B vaccine. It is currently produced by a single manufacturer in Indonesia. Uniject is considered to be an attractive option for delivery of the birth dose, especially for home births, because it is not reusable, is simple to use, and facilitates OCC use by differentiating it from other vaccines. Several pilot studies have been implemented in Member States such as China and Viet Nam, as well as in Indonesia where it has been used at the national level since 2004. One pilot project has been ongoing in Papua New Guinea for home births since January 2008. China and Viet Nam did not scale up the use of Uniject beyond pilot projects because of higher product costs and issues with supply and procurement. Both these countries abandoned Uniject and adopted the single-dose vial of hepatitis B vaccine with AD syringe.

- During discussions, Dr Su Haijun referred to a comparative study done in two provinces on the use of Uniject and identified the substantial increase in cost with Uniject as a major constraint for its scale-up. Dr Harold Margolis pointed out the need for closer examination of procurement and regulatory pathways prior to recommending its use in demonstration projects.

- All the participants agreed that the central issue is to get the vaccine to all newborn infants on time, either with single-dose vials or with Uniject. Nonetheless, all the participants agreed that Uniject is an attractive alternative to single-dose vials and AD syringes, and its practical
feasibility in field use has already been demonstrated in pilot projects in China, Indonesia and Viet Nam. Countries should make a decision to include it at the national level after evaluating the financial, supply and logistic issues. If pilot projects are considered essential, then they should include a component comparing the use of Uniject vis-à-vis a single-dose hepatitis B vaccine vial with AD syringe. Table 1 below gives a comparative analysis of the two options.

| Table 1. Comparative analysis of Uniject and single-dose hepatitis B vaccine vial with AD syringe |
|-----------------------------------------------|-----------------------------------------------|
| Supply and procurement                       | WHO prequalified                              | WHO prequalified                              |
|                                              | Single supplier (BioPharma in Indonesia)       | Multiple suppliers                             |
|                                              | Price per dose is higher than single-dose vial (US$ 1.00 to US$ 1.50) | Price per dose is lower than Uniject (US$ 0.30 to US$ 0.45) |
| Positive cold storage requirements at higher-level stores | 30 cm$^3$                                      | ~12 cm$^3$ - 18 cm$^3$ (depending upon the supplier) |
| Out-of-cold-chain storage                    | Yes, comes with VVM                            | Yes, comes with VVM                            |
| Requirement of additional training           | Yes, as device is new, though considered minimal and fast. Major issue noted was the need to completely empty the vaccine from the container. | No, if the midwives are used to using AD syringes for other injections. |
| Requirement for competence to give an injection | Yes                                          | Yes                                          |
| Disposal                                     | Health worker needs to be instructed not to recap the needle. Requires disposal system (safety boxes, incinerators, etc.) | Health worker needs to be instructed not to recap the needle. Requires disposal system (safety boxes, incinerators, etc.) |

2.5.4 Should the WHO Regional Office set another hepatitis B control goal?

The WHO Regional Office for the Western Pacific set a time-bound goal of reducing HBsAg seroprevalence to less than 2% by 2012. Achieving this goal requires at least 85% coverage with HepB3 in infancy and about 70% coverage with the timely birth dose, with the assumption that the probability of getting vaccinated is independent of the risk of acquiring the chronic HBV infection. In setting the timeline for the regional goal, the status of immunization and maternal health programmes of the worst-performing countries were taken into account; and time it may take them to achieve those vaccination coverage levels. The other countries were encouraged to achieve vaccination coverage levels commensurate with the goal of less than 1% seroprevalence level. As per currently reported data on vaccination coverage for 2007, 26 countries and areas are expected to have achieved the regional control goal; a majority are likely to have achieved less than 1% seroprevalence, but still need to be validated by serosurveys. Both the Republic of Korea and Macao (China), the first country and area to be certified for achieving the goal, were certified for achieving the <1% control goal.
During the last Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine Preventable Diseases in the Western Pacific Region, held in Manila in June 2008, one of the TAG members recommended setting another target date of 2015 for achieving less than 1% HBsAg seroprevalence. However, it was decided to place the issue before the expert working group before proposing it to all the Member States.

The issue was discussed in great length in the meeting with the following conclusions:

- Countries that are yet to achieve the 1% goal in 2009 and 2010 are the same ones that are struggling to achieve 2% goal by 2012. Hence, it is more appropriate to consider setting another target date for the less-than-1% goal in 2011 or 2012, rather than now. A detailed review of country data on the progress made towards the 2% goal should be carried out before setting the timeline for the 1% goal. The certification guidelines already include indicators for certification for achieving the less-than-1% goal, and the majority of the countries expected to be certified in 2009 and 2010 are also likely to achieve the less-than-1% goal.

- The decline in HBsAg seroprevalence may be much more than predicted, as the model developed by US CDC for modelling expected seroprevalence does not take into account the herd immunity effect, the positive trends in injection safety and socioeconomic development, and some protective efficacy for birth dose given beyond 24 hours.

- Dr Jong-Koo Lee enquired about the possibility of conducting catch-up campaigns in 10 remaining countries that are struggling to achieve optimal levels of HepB3 in infancy. However, after discussions, it was concluded that achieving high HepB3 coverage in infancy through routine immunization is a much higher priority (as it will have a greater impact on chronic HBV infection rates) and that catch-up campaigns for older children are not appropriate in these settings. However, catch-up campaigns for older children should be considered for enhanced control in other countries that are already maintaining high HepB3 coverage during infancy, if resources allow. This is also in line with the revised regional plan of action for hepatitis B.

- Dr Kyung Seo from the Republic of Korea suggested providing awards for countries showing best performance (e.g. most rapid increase in coverage).

2.5.5 Involvement/engagement with other advocacy groups

Many advocacy groups or alliances have been formed at the global to work on hepatitis issues. For example, World Hepatitis Alliance, a nongovernmental organization established in 2007, represents more than 200 hepatitis B and hepatitis C patient groups from around the world, including The Hepatitis C Trust (UK), the European Liver Patient Association and the Chinese Foundation for Hepatitis Prevention & Control. World Hepatitis Alliance is governed by a representative board of patient groups from seven world regions: Europe, Eastern Mediterranean, North Africa, North America, South America, Australasia and Western Pacific. In 2008, World Hepatitis Alliance announced 23 May as World Hepatitis Day.

Similarly, many groups are active at the regional level. The Asian Pacific Association for the Study of the Liver holds annual meetings to develop, review and update guidelines on the management and treatment of HBV infection. Meanwhile, the Asia-Pacific Expert Committee on Hepatitis B Management focuses on treatment aspects.

At country level, liver or hepatitis foundations are active in many big countries such as China and the Philippines. In the Republic of Korea, various medical societies have been strong partners of the
hepatitis prevention programme. This kind of private–public partnership may strengthen hepatitis B prevention programmes as well as increase the birth dose rate.

On 1 November 2008 in San Francisco, an inaugural partners' meeting was organized to launch the Asia Pacific Alliance for Viral Hepatitis (APAVH), which intends to focus on both vaccination and management of hepatitis patients. They even proposed a goal of reducing chronic hepatitis B virus infection prevalence globally to less than 2% in children zero to 15 years of age by the year 2015.

The WHO Regional Office for the Western Pacific continues to work mostly with the ministries of health in an effort to influence their policies. This is especially true for poor developing countries that rely on the public sector for vaccination. Efforts and engagement with these other groups, therefore, have been minimal.

The group concluded that more efforts should be made to increase the engagement of WHO and the ministries of health with nongovernmental organizations and to streamline the objectives/goals and strategies to achieve maximum impact.

3. CONCLUSIONS AND RECOMMENDATIONS

The key conclusions and recommendations that emerged from the meeting are:

3.1 Conclusions

(1) Hepatitis B is a very important public health problem in the Western Pacific; however, substantial progress has been made in its control. Twenty-six countries and areas are expected to have achieved less than 2% HBsAg seroprevalence based on their vaccine coverage levels. The data presented by China and the Republic of Korea during the meeting confirmed that nationwide immunization programmes can lead to a substantial decline in chronic HBV infections rates over time.

(2) Review of regional plan of action for hepatitis B: The meeting participants concluded that the current regional plan of action for hepatitis B is very comprehensive and still holds good. No revision is necessary at this stage.

(3) Certification guidelines and procedures: The current guidelines hold valid. The expert resource panel constituted for this purpose should be shared with all the countries. The issue of establishing a subnational goal of less than 2% HBsAg seroprevalence should be explored in countries where HBsAg prevalence may be lower than 2% nationally, but much higher among some of the indigenous or other disadvantaged population groups.

(4) Preventing perinatal transmission: Universal hepatitis B vaccination within 24 hours of birth is still the most appropriate policy even in countries with universal antenatal screening. It not only prevents perinatal transmission, but also provides earliest protection from horizontal transmission. HBIG should be administered where feasible and affordable to infants born to HBsAg-positive mothers. Efforts should be made to foster and strengthen the links between maternal health and EPI programmes.

(5) Catch-up campaigns for older children have some value in countries that have already achieved high coverage with HepB3 in infancy. However, they should not distract the efforts of routine immunization in infancy, and should not be prioritized over improving coverage with HepB3 and the timely birth dose.
3.2 Recommendations

3.2.1 Interpretation of certification criteria and target date

(1) The target date of 2012 means that countries have to reach certification-level vaccine coverage rates by 2012 (even though the achievement of the goal cannot be validated in 2012 by a serosurvey showing less than 2% HBsAg among children at least five years old by 2012). Countries that reach the required vaccine coverage levels (both HepB3 and timely birth dose) in 2011 and 2012 will be provisionally certified to have achieved the goal, but will have to demonstrate seroprevalence levels of less than 2% when these cohorts become at least five years old.

3.2.2 Preventing mother-to-child transmission

(1) Universal birth dose for all newborn infants within 24 hours of birth should continue to be recommended for all the countries. Links between maternal health and EPI programmes should be strengthened, especially by incorporating the hepatitis B birth dose aspect into the maternal and child health programme.

(2) Program managers should promote out-of-cold-chain use with inclusion of OCC guidelines in the national immunization programme guidelines with simultaneous efforts at global level to include OCC use in the package insert.

(3) Demonstration projects in many countries have already established the pros and cons of using Uniject. Instead of setting up more demonstration projects, countries should consider formally introducing Uniject in national programmes for home births after evaluating the financial, supply and procurement issues. Pilot projects may be implemented to deal with specific issues, but countries need to prepare comprehensive strategies to increase birth dose coverage nationwide, and results from the pilot projects should not delay the implementation of nationwide strategies.

3.2.3 Need to establish target date for <1% goal

(1) Countries that are yet to achieve the 1% goal in 2009 and 2010 are the same ones that are struggling to achieve 2% goal by 2012. Hence, it is more appropriate to consider setting another target date for less-than-1% goal in 2011 or 2012, rather than now. A detailed review of country data on the progress made towards 2% goal should be carried out before setting the timeline for 1% goal. The certification guidelines already include indicators for certification for achieving the less-than-1% goal, and the majority of the countries expected to be certified in 2009 and 2010 are also likely to achieve the less-than-1% goal.

3.2.4 Effective links with other advocacy groups

(1) More efforts should be made to increase the engagement of WHO and ministries of health with nongovernmental organizations at the global level (e.g. World Hepatitis Alliance), regional level (e.g. Asian Pacific Association for the Study of the Liver), and country level (liver and hepatitis foundations) and to streamline their objectives/goals and strategies to achieve maximum impact on hepatitis B problem.
4. ACKNOWLEDGMENTS

The WHO Western Pacific Regional Office gratefully acknowledges the excellent facilities and administrative support provided by the KCDC in organizing this meeting. The Regional Office is extremely grateful to all the KCDC staff, especially Dr Hoon Sang Lee, as well as Ms Sook Kyung Park and Ms Ikyung Kim, who provided almost full-time support to the meeting in addition to their normal duties at KCDC. We also thank all the participants for their intensive participation and open discussion, which greatly contributed to making the meeting a success. Special thanks go to the participants who acted as chairpersons and rapporteurs in the various sessions.
ANNEX 1

International Expert Meeting on Hepatitis B Control in the Western Pacific
24-25 November 2008
Grand Hilton, Seoul, Korea

TIMETABLE

Day 1: Monday 24 November (Flamingo room, Upper Lounge)

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<td>8:30-9:00</td>
<td>Registration</td>
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<tr>
<td>9:00-9:05</td>
<td>Welcoming Remarks</td>
<td>Jong-Koo Lee</td>
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<td>9:05-9:10</td>
<td>Introductory Remarks</td>
<td>WPRO</td>
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<td>9:10-9:20</td>
<td>Self Introduction</td>
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<td>9:20-9:35</td>
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Chair: Hoan-Jong Lee

1. Current Situation of Hepatitis B Control in WPR

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<tr>
<th>Time</th>
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<tr>
<td>9:35-9:50</td>
<td>Overview of Hepatitis B Control in the Western Pacific Region</td>
<td>Yang Baoping</td>
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<td>9:50-10:10</td>
<td>Strategy of Hepatitis B Control and process of Hepatitis B Certification in the Western Pacific Region</td>
<td>Manju Rani</td>
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<td>10:10-10:30</td>
<td>Role of laboratory for the Certification process of Hepatitis B Control</td>
<td>Young-Mee Jee</td>
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<td>10:30-11:00</td>
<td>Current updates and recent researches on the Hepatitis B control through immunization and future research needs</td>
<td>Harold Margolis</td>
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<tr>
<td>11:00-11:10</td>
<td>Discussion on the current updates</td>
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<tr>
<td>Time</td>
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<td>11:10-11:30</td>
<td>20)</td>
<td>COFFEE BREAK</td>
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<tr>
<td>11:30-11:50</td>
<td>20)</td>
<td>Hepatitis B in Korea</td>
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<tr>
<td>11:50-12:10</td>
<td>20)</td>
<td>Hepatitis B Perinatal transmission prevention program in Korea and recent researches on Hepatitis B</td>
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<tr>
<td>12:10-12:30</td>
<td>20)</td>
<td>Discussion</td>
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<tr>
<td>12:30-13:30</td>
<td>60)</td>
<td>Lunch: Buffet Restaurant (Lower Lounge)</td>
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<tr>
<td>13:30-13:50</td>
<td>20)</td>
<td>United States</td>
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<tr>
<td>13:50-14:10</td>
<td>20)</td>
<td>Japan</td>
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<tr>
<td>14:10-14:30</td>
<td>20)</td>
<td>China</td>
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<tr>
<td>14:30-15:10</td>
<td>40)</td>
<td>Discussion</td>
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<tr>
<td>15:10-15:30</td>
<td>20)</td>
<td>COFFEE BREAK</td>
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International Meeting on Hepatitis B Control

Seoul, Korea

24-25 November 2008

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