

**For information on  
9 March 2009**

**Legislative Council Panel on Health Services**

**Inclusion of Pneumococcal Conjugate Vaccine in the  
Childhood Immunisation Programme**

**PURPOSE**

This paper briefs Members on the inclusion of Pneumococcal Conjugate Vaccine (PCV) in the Childhood Immunisation Programme (CIP) and the provision of free pneumococcal vaccination for children aged below 2 years under a Catch-up Programme.

**BACKGROUND**

**Incidence Rates**

2. *Streptococcus pneumoniae* is a common bacterial pathogen causing pneumonia, acute otitis media, and various forms of invasive pneumococcal diseases (IPD), namely, septicaemia, meningitis and bacteremic pneumonia. In 2005, the World Health Organization (WHO) estimated that IPD has been causing 1.6 million deaths annually, including 0.7-1 million children younger than 5 years of age mostly in developing countries. In developed areas such as Europe and the United States, the annual incidence rates of IPD range from 10 to 100 per 100 000 and are higher in children, with up to 200 per 100 000 children younger than 2 years of age.

3. In Hong Kong, the average annual incidence rate of IPD among children aged below 2 years was 7.7 per 100 000 during the period 2000 to 2004 based on laboratory results from the Hospital Authority.

**Childhood Immunisation Programme (CIP)**

4. Locally, immunisation against various infectious diseases for infants and children in Hong Kong has been introduced since 1950s through the CIP of the Department of Health (DH). It has been operating effectively in reducing the incidence of many childhood infectious diseases in the territory to a low level. Throughout the years, there have been continuous reviews and updates to the local CIP. It was

last updated in 2007 when inactivated poliovirus vaccine (IPV) and acellular pertussis (aP) vaccine replaced oral poliovirus vaccine (OPV) and whole-cell pertussis (wP) vaccine respectively. The current CIP comprises vaccines against nine infectious diseases, namely hepatitis B, mumps, rubella, poliomyelitis, diphtheria, pertussis, tetanus, measles and tuberculosis. Children under the age of five will receive their vaccinations through 31 Maternal and Child Health Centres (MCHCs) of DH. School Immunisation Teams will also visit all primary schools in Hong Kong to provide vaccination to primary 1 and 6 students.

### **Inclusion of PCV in CIP**

5. In considering whether a new vaccine should be included in the CIP, a number of factors should be taken into account, including the epidemiology, disease burden, the safety, efficacy, side effects, cost-effectiveness and supply of the vaccine, as well as the acceptance of the vaccine among the public, etc. To this end, experience in industrialized countries has shown a decline in the incidence of IPD among children by up to 77% after introducing PCV to the CIP<sup>1</sup>. In addition, clinical trials conducted in developed countries demonstrated an efficacy of over 90% against the serotypes contained in the vaccine; and post-marketing surveillance showed that PCV is safe and adverse reactions are generally mild. Although the incidence rate of IPD in Hong Kong is much lower compared to overseas countries and most Asian countries do not include PCV in their CIP, a local study commissioned by the Centre for Health Protection (CHP) of DH confirms the benefits of including PCV in our CIP.

6. Back in October 2007, the Scientific Committee on Vaccine Preventable Diseases (SCVPD) of the CHP recommended the use of PCV for **personal protection** for those at risk of severe IPD, primarily children under two years of age. Having reviewed the latest scientific evidence and the findings of the above study, SCVPD recommended in October 2008 the incorporation of PCV in the CIP. Based on the recommendation and the various factors cited in paragraph 5 above, we have decided to include PCV in our local CIP to enhance primary healthcare and disease prevention.

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<sup>1</sup> To reduce the incidence of IPD, countries including the United States, Canada, the United Kingdom, Australia, France, New Zealand, etc. have included pneumococcal vaccination under their CIP.

## IMPLEMENTATION DETAILS

7. At present there is only one registered PCV in Hong Kong, which is a 7-valent PCV<sup>2</sup> (PCV7) targeting seven of the most common serotypes of the bacteria. According to SCVPD, a total of 4 doses of PCV7 should be given to infants with a standard 3-dose primary series at 2<sup>nd</sup>, 4<sup>th</sup> and 6<sup>th</sup> months of age and a booster dose at 12-15 months. As there are about 70 000 newborns annually, about 280 000 doses of PCV7 are required per annum under the CIP.

8. Taking into account the time required for procurement and other preparatory work, we will introduce the PCV7 in the CIP starting from **1 September 2009**. As children can receive their first dose of vaccination at the age of 2 months, all infants born on or after 1 July 2009 can receive free pneumococcal vaccination under the CIP at the MCHCs of DH. Provision of PCV injection service at MCHCs is consistent with the administration of other childhood vaccines in the CIP. As children can receive their PCV together with some of the existing CIP vaccines under the same vaccination schedule, injection at MCHCs will bring greatest convenience to parents and their children as no extra visits to MCHCs is required.

## CATCH-UP PROGRAMME

9. We are also mindful of the need to provide adequate protection against IPD to other children born before 1 July 2009. In this regard, we have decided to provide free pneumococcal vaccination to children less than two years of age at the same time when we introduce PCV in our CIP, i.e. 1 September 2009. Specifically, children born between 1 September 2007 to 30 June 2009 inclusive will be eligible to receive free PCV under a one-off Catch-up Programme to be launched at MCHCs of DH starting from 1 September 2009 to 31 March 2011.

10. Unlike newborns of whom a standard 4-dose regimen of vaccine is required, the number of doses of vaccine required for children below the age of two under the Catch-up Programme will depend on the age group that they belong to. Details are summarized as follows –

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<sup>2</sup> There are over 90 serotypes of pneumococci. The currently available 7-valent PCV confers protection against serotypes 4, 6B, 9V, 14, 18C, 19F, and 23F. These serotypes account for approximately 90% of invasive pneumococcal disease in Hong Kong.

- Children aged 6 months and under: 3-dose primary series any time with 4-8 weeks' interval between doses; a booster dose at 12 -15 months or 2 months after the last dose whichever is later (i.e. "3+1");
- Children aged between 7 months and less than 1 year: 2-dose primary series with an interval of 4-8 weeks but not later than the age of 1 year; a booster dose at 12-15 months with an interval of at least 2 months after the last dose (i.e. "2+1"). If second dose of the primary series is not administered by the age of 1 year, a booster dose at 12-15 months with an interval of at least 2 months after the last dose (i.e. "1+1"); and
- Children aged between 1 year and less than 2 years: 1 dose

11. We estimate that about 128 000 children will benefit from the Catch-up Programme; and some 200 000-250 000 vaccine doses will be administered. It is our goal to provide pneumococcal vaccination services to children under the Catch-up Programme during their normal scheduled visits to MCHCs for receiving other CIP vaccines. However, we anticipate that extra visits to MCHCs to receive PCV are inevitable as the vaccination schedule varies for different age groups and may not coincide with other existing CIP vaccinations. As such, the existing service capacity of MCHCs must be enhanced to cope with the additional workload.

12. In order to minimize disruption to the existing services of MCHCs, we plan to open MCHCs outside normal weekday working hours, e.g. on Sundays, as a special arrangement to provide free pneumococcal vaccination under the one-off Catch-up Programme. Under this arrangement, eligible children whose PCV vaccination schedule falls outside their normal visiting schedule to MCHCs will receive pneumococcal vaccination during Sundays. We are also actively exploring the feasibility to recruit extra manpower, such as staff members of the Auxiliary Medical Service, to provide inoculation service under the Catch-up Programme. DH is carefully planning on the detailed logistics arrangements to ensure that we have enough capacity to vaccinate all children in the target groups and to provide easily accessible services to the general public. We will announce the details in due course.

13. DH will also set up a comprehensive pneumococcal surveillance programme to monitor the impact of vaccine use on herd protection,

serotype replacement, and antibiotic resistance strains. DH will also start launching publicity programme later this year to ensure that parents are well informed of the arrangements.

### **ADVICE SOUGHT**

14. Members are invited to note the content of this paper.

**Food and Health Bureau  
Department of Health  
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