

**Ministry of Health
and Long-Term Care**

Chief Medical Officer of Health

Public Health Division
11th Floor, Hepburn Block
Queen's Park
Toronto ON M7A 1R3Telephone: (416) 212-3831
Facsimile: (416) 325-8412

NOV 09 2010

**Ministère de la Santé
et des Soins de longue durée**

Médecin hygiéniste en chef

Division de la santé publique
Édifice Hepburn, 11e étage
Queen's Park
Toronto ON M7A 1R3Téléphone: (416) 212-3831
Télécopieur: (416) 325-8412**MEMORANDUM****TO: MEDICAL OFFICERS OF HEALTH and ASSOCIATE MEDICAL OFFICERS
OF HEALTH****RE: Introducing Prevnar®13 for Immunization Against Invasive Pneumococcal
Disease (IPD) for Infants and Children**

This letter is to inform you that a new pneumococcal conjugate vaccine known as Prevnar®13 is now available and is publicly funded in Ontario for infants and children. The vaccine was approved for use in Canada in December 2009, and provides broader protection against invasive pneumococcal disease (IPD).

The Vaccine

Prevnar®13 is a 13-valent pneumococcal conjugate vaccine indicated for active immunization against *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F, which are responsible for causing invasive pneumococcal disease.

The vaccine provides protection against 6 more serotypes (1, 3, 5, 6A, 7F and 19A), than the serotype coverage provided in the Prevnar® (7-valent) vaccine and 3 more serotypes than the coverage provided in the Synflorix™ vaccine.

The unique serotypes contained in Prevnar®13 which are not in either Prevnar® (7-valent) or Synflorix™ are **3, 6A and 19A**.

Background

In 2005, Ontario introduced a publicly funded pneumococcal conjugate immunization program with Prevnar® (7-valent) vaccine for all infants and children < 2 years of age to protect against pneumococcal serotypes 4, 6B, 9V, 14, 18C, 19F and 23F. In 2009, Synflorix™ vaccine replaced Prevnar® (7-valent) to provide protection against 3 additional serotypes (1, 5 and 7F).

Since the introduction of the pneumococcal immunization program in Ontario, there has been a dramatic shift in the epidemiology of IPD. While there has been a decline in the incidence of paediatric IPD caused by serotypes contained in the Prevnar® (7-valent) vaccine, the incidence of IPD caused by non-vaccine serotypes has increased, particularly for one and two-year old children. Across Canada and the United States, the incidence of disease due to non-vaccine strains, in particular serotypes 3 and 19A that are now contained in Prevnar® 13, have increased.

.../2

Please refer to the following attachments and links for additional information:

- Eligibility criteria and detailed schedules for Prevnar[®]13 (Attachment A)*:
 - Table 1: Routine pneumococcal conjugate immunization
 - Table 2: Catch-up pneumococcal conjugate immunization
 - Table 3: Prevnar[®] 13 schedules for low risk children
 - Table 4: Prevnar[®] 13 schedules for high risk children
- Qs & As for Health Units (Attachment B)
- Qs & As for Health Care Providers (Attachment C)*
- Letter to Health Care Providers (Attachment D)*
- Prevnar[®] 13 vaccine order form: Public Health Unit - Requisition for Biological Supplies
[http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/GetFileAttach/014-2255-64E~1/\\$File/2255-64E.doc](http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/GetFileAttach/014-2255-64E~1/$File/2255-64E.doc)
- Fact sheet on pneumococcal conjugate vaccine and invasive pneumococcal disease
http://www.health.gov.on.ca/english/public/pub/immun/pnem_conjugate.html
- Publicly Funded Immunization Schedules for Ontario
<http://www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf>
- Prevnar[®]13 product monograph
http://www.wyeth.ca/en/products/Product%20Monographs%20PDFs/Prevnar_13_Product_Monograph_Dec_21_2009_EN.pdf

The Ministry of Health and Long-Term Care will be distributing an information package (including all documents listed above with an *) to physicians across Ontario. However, we also encourage your health unit to provide communication to all service providers in your jurisdiction.

Prevnar[®] 13 is now available and can be ordered from the Ontario Government Pharmaceutical and Medical Supply Service (OGPMSS) using the *Public Health Unit - Requisition for Biological Supplies* form (link provided above).

Kindly share this information with staff in your health unit. Should you or your staff have any questions, please contact Nurse Consultants Sharon Dolman at sharon.dolman@ontario.ca (tel: 416-327-7417) or Joanne Rey at joanne.rey@ontario.ca (tel: 416-212-6413).

We thank you for your continued support with and commitment to the publicly funded immunization program and protecting our children against vaccine preventable diseases.

Sincerely,



David C. Williams, MD, MHSc, FRCPC
Associate Chief Medical Officer of Health
Health Protection & Prevention

Attachments

c: Vaccine Preventable Diseases Managers, Ontario Public Health Units

Prevnar[®]13 Eligibility

Table 1: ROUTINE Pneumococcal Conjugate Immunization

Eligible age cohort	Health status	Recommended doses of Prevnar [®] 13	Recommended schedule
Starting at 2 months	Low risk (healthy with no medical conditions that increase the risk of IPD)	3 doses	2, 4, and 12 months of age
Starting at 2 months	High risk [†]	4 doses	2, 4, 6 and 15 months of age

Table 2: CATCH-UP Pneumococcal Conjugate Immunization

Eligible age cohort	Health status	History of pneumococcal conjugate vaccine	Recommended dose(s) of Prevnar [®] 13	Recommended schedule
2 months to 59 months (<5 years)	<ul style="list-style-type: none"> • Low risk or • High risk[†] 	<ul style="list-style-type: none"> • Any incomplete series with pneu-C-7 and/or pneu-C-10 	1 to 3 doses depending on age at first dose	See Table 3 and Table 4 for schedules
12 months to 59 months (<5 years)	<ul style="list-style-type: none"> • High risk[†] 	<ul style="list-style-type: none"> • Completed series with pneu-C-7 and/or pneu-C-10 	1 catch-up dose	≥8 weeks after the last dose of pneumococcal conjugate vaccine
Eligible starting January 2011 2 years old or turning 2 years old in 2011	<ul style="list-style-type: none"> • Low risk 	<ul style="list-style-type: none"> • Completed series with pneu-C-7 and/or pneu-C-10 	1 catch-up dose	≥8 weeks after the last dose of pneumococcal conjugate vaccine

Pevnar[®]13 Schedules

Table 3: Pevnar[®]13 schedule for LOW RISK children who have not completed or have not started their series

Child's current age	Vaccination history of pneumococcal conjugate vaccine	Recommended Pevnar [®] 13 dose(s) required to complete series
2 to 6 months	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
	1 dose (1st dose)	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
	2 age-appropriate doses (1st and 2nd dose)	3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
7 to 11 months	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
	1 dose (1st dose)	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
	2 doses (1st and 2nd dose)	3rd dose, ≥8 weeks after 2nd dose and ≥12 months of age
12 to 23 months (<2 years)	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose
	1 dose (1st dose) at <12 months of age	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose
	1 dose (1st dose) at ≥12 months of age	2nd dose, ≥8 weeks after 1st dose
	1 dose (1st dose) at <12 months of age + 1 dose (2nd dose) at ≥12 months of age	3rd dose, ≥8 weeks after 2nd dose
	2 or more doses at <12 months of age	1 dose, ≥8 weeks after most recent dose
24 to 59 months (<5 years)	0 doses	1 dose, ≥8 weeks after most recent dose (if applicable)
	Any incomplete series	

For a list of medical conditions that increase an individual's risk for IPD, see page 3.

Prevnar®13 Schedules

Table 4: Prevnar®13 schedule for HIGH RISK† children who have not completed or have not started their series

Child's current age	Vaccination history of pneumococcal conjugate vaccine	Recommended Prevnar®13 dose(s) required to complete series
2 to 6 months	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose 4th dose, ≥8 weeks after 3rd dose and ≥15 months of age
	1 dose (1st dose)	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose 4th dose, ≥8 weeks after 3rd dose and ≥15 months of age
	2 age-appropriate doses (1st and 2nd dose)	3rd dose, ≥8 weeks after 2nd dose 4th dose, ≥8 weeks after 3rd dose and ≥15 months of age
7 to 11 months	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥15 months of age
	1 dose (1st dose)	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose and ≥15 months of age
	2 doses (1st and 2nd dose)	3rd dose, ≥8 weeks after 2nd dose and ≥15 months of age
12 to 23 months (<2 years)	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose
	1 dose (1st dose) at <12 months of age	2nd dose, ≥8 weeks after 1st dose 3rd dose, ≥8 weeks after 2nd dose
	1 dose (1st dose) at ≥12 months of age	2nd dose, ≥8 weeks after 1st dose
	1 dose (1st dose) at <12 months of age + 1 dose (2nd dose) at ≥12 months of age	3rd dose, ≥8 weeks after 2nd dose
	2 or more doses at <12 months of age	1 dose, ≥8 weeks after most recent dose
24 to 59 months (<5 years)	0 doses	1st dose (now) 2nd dose, ≥8 weeks after 1st dose
	Any incomplete series	1 dose, ≥8 weeks after most recent dose

† Medical conditions that increase an individual's risk for IPD:

- Chronic respiratory disease (excluding asthma, except those treated with high-dose corticosteroid therapy)
- Chronic cardiac disease
- Cirrhosis
- Chronic renal disease or nephrotic syndrome
- Diabetes mellitus
- Asplenia, splenic dysfunction, sickle-cell disease and other sickle cell haemoglobinopathies
- Chronic cerebrospinal fluid leak
- Primary immune deficiency
- HIV infection and other conditions associated with immunosuppression (malignancies, long-term systemic corticosteroids and other immunosuppressive therapy)
- Solid organ transplant recipients
- Cochlear implant recipients (pre/post implant)

Note: Children 24 to 59 months of age and at high risk of IPD should also receive a dose of pneumococcal polysaccharide vaccine after the pneumococcal conjugate vaccine. Refer to the current *Publicly Funded Immunization Schedules for Ontario* at www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf

Pneumococcal 13 valent Conjugate Vaccine (Pevnar[®] 13) Program

Questions and Answers for Health Units

The Ministry of Health and Long-Term Care (the “ministry”) is replacing the current pneumococcal conjugate vaccine with **Pevnar[®] 13** for enhanced protection against invasive pneumococcal disease (IPD) for Ontario infants and children.

About the disease:

Q1: What is invasive pneumococcal disease (IPD)?

A1: IPD is caused by the bacterium *Streptococcus pneumoniae* (commonly known as pneumococcus). The bacterium can be commonly found in the upper respiratory tract of approximately 15% of healthy adults and up to 65% of children in child care centres at any time without any ill effects.

Streptococcus pneumoniae is a common cause of pneumonia, and an important cause of bacterial meningitis. Bacteremia without a known site of infection is the most common clinical manifestation in children < 2 years. Other less common manifestations of the disease may include endocarditis (infection of the inner lining of the heart muscle and, most commonly, the heart valves). Common local infections of *Streptococcus pneumoniae* include acute otitis media, and sinusitis.

Q2: How does *Streptococcus pneumoniae* (the bacteria that causes pneumococcal disease) spread?

A2: *Streptococcus pneumoniae* bacteria are spread from person to person as a result of direct contact with respiratory droplets or by autoinoculation in persons carrying the organism in the upper respiratory tract. Some people carry *Streptococcus pneumoniae* bacteria in their throat or nose and remain healthy; however, they are able to spread the bacteria to others.

Q3: What are the symptoms of pneumococcal disease?

A3: The signs and symptoms of pneumococcal disease can vary widely depending on the clinical syndrome. Symptoms of pneumonia most often include the sudden onset of fever, chills or rigors, pleuritic chest pain, productive cough, rusty-coloured sputum, shortness of breath, rapid breathing, hypoxia tachycardia

malaise and weakness. Signs and symptoms of meningitis such as headache, vomiting, stiff neck occur less frequently. Symptoms in infants may include: fever, difficulty waking, irritability, vomiting, feeding poorly, and stiff neck.

Q4: What is the epidemiology and serotype distribution of IPD in Ontario?

A4: IPD became reportable in Ontario in 2002. From 2004 to 2008 an average of 987 cases were reported each year. In 2009, 1212 cases were reported in Ontario, up from 1065 cases in 2008. This increase in cases may be due in part to changes to the case definition starting in 2009. In the past 2 years, 2.2% of IPD cases have died.

Year	2004**	2005**	2006	2007	2008	2009
Cases reported	1,057	930	944	941	1,065	1,212
Population estimate	12,416,749	12,558,669	12,686,952	12,804,521	12,919,572	12,928,996
Incidence per 100,000 [^]	8.5	7.4	7.4	7.3	8.2	9.4
Case fatality rate (SP)*	0.0%	0.5%	1.9%	2.2%	2.2%	4.2%

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted: i) [17/07/2009] for 2004-2008 data; ii) [08/03/2010] for 2009 data

[^] Population estimates and projections from Provincial Health Planning Database (PHPDB), extracted 2008 to 2010

* SP deaths include only cases where SP specified in iPHIS as the underlying cause of death.

** Reporting of deaths prior to iPHIS (2003-2005) may be incomplete

Ninety distinct capsular serotypes have been identified worldwide, however, only a few serotypes produce the majority of invasive disease. In young children, studies have shown serotypes/groups 6 (A, B), 14, 18 (C), 19 (A, F) and 23 (F) are more common. Of the 1212 cases reported in 2009 in Ontario, serotype results were available for 64%. Serotype 19A was the most frequently reported serotype across all age groups (<2 years, 2-4 years, 5-64 years, 65+).

Data from the Toronto Invasive Bacterial Diseases Network indicated cases of serotype 6B and 14 decreased for children less than two years old after the introduction of the pneumococcal conjugate vaccine in January 2005; however, since 2004 cases of the non-vaccine strain 19A emerged, although the overall incidence of IPD was lower than the pre-vaccine period.

Ontario serotype data for 2008 and 2009 shows that there was an increase in reporting for serotypes 19A, 3 and 7F and for one to four year olds from 2008 to 2009 with the greatest increase in one and two year olds.

Q5: What are the vaccines that provide protection against IPD?

A5: There are two types of vaccine that protect against IPD:

1. Pneumococcal polysaccharide vaccines:

The pneumococcal polysaccharide vaccine protects against 23 serotypes and is publicly funded for persons two to 64 years with high risk medical conditions, persons 65 years and older, and residents of long-term care homes. Additional information about the pneumococcal polysaccharide vaccine schedule can be found in the *Publicly Funded Immunization Schedules for Ontario*:

<http://www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf>

2. Pneumococcal conjugate vaccines:

Pneumococcal Conjugate Vaccines Licensed in Canada			
Pneumococcal Conjugate Vaccine	Age Indication (as per product monograph)	Pneumococcal Serotypes	History in Ontario
7-Valent; Prennar[®]	6 weeks to <10 years	4, 6B, 9V, 14, 18C, 19F, 23F	January 2005: Introduced into the routine publicly funded immunization schedule. October 2009: provided to children ≥2 years of age with an incomplete pneumococcal conjugate vaccine series. June 2010: Vaccine no longer manufactured.
10-Valent; Synflorix[™]	6 weeks to <2 years	1, 4, 5, 6B, 7F, 9V, 14, 18C, 19F, and 23F	October 2009: Replaced Prennar [®] (7-valent) for routine use for children <2 years of age.
13-Valent; Prennar[®]13	6 weeks to <6 years	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F	November 2010: Replaced both Prennar [®] (7-valent) and Synflorix [™] vaccines in the publicly funded schedule.

About the pneu-C-13 vaccine (Prennar[®]13):

Q6: What does the pneu-C-13 vaccine protect against?

A6: The newest pneumococcal conjugate vaccine, approved for use in Canada in December 2009, is Prevnar[®]13. The vaccine is indicated for the active immunization against *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F.

The vaccine provides protection against 6 additional serotypes than in Prevnar[®] and 3 additional serotypes than the coverage provided in Synflorix[™]. Prevnar[®]13 will not protect against serotypes that are not included in the vaccine.

Q7: What is the pneu-C-13 vaccine composition, format, dosage and route of administration?

A7: Pneu-C-13 is a white suspension for injection and supplied in a 0.5 mL single dose pre-filled syringe in a 10-dose package without needles. It is a sterile suspension that should be shaken prior to expelling air from the syringe. The vaccine should be administered as a single dose intramuscularly in the anterolateral thigh in infants and the deltoid muscle of the upper arm in children.

Q8: What is the age indication for the pneu-C-13 vaccine?

A8: Pneu-C-13 is approved by Health Canada for infants and children from 6 weeks to 5 years of age (prior to the 6th birthday). In Ontario, it is currently publicly funded for infants and children as per the eligibility criteria outlined in Attachment A:

- Table 1: Routine pneumococcal conjugate immunization
- Table 2: Catch-up pneumococcal conjugate immunization

Q9: Is the dosing schedule for Prevnar[®]13 the same as Prevnar[®] and Synflorix[™] vaccines?

A9: No, a three dose schedule for Prevnar[®]13 is now an approved schedule for the routine infant immunization of healthy (low risk) children. The product monograph refers to this as a “2 + 1” schedule; 2 primary doses and 1 booster dose at 12 months of age. Therefore, most children will need only 3 doses instead of 4, as indicated for other pneumococcal conjugate vaccines. Children with some high-risk medical conditions still require a four-dose vaccine series (please see attachment A for high risk conditions).

Q10: What safety and immunogenicity data is available on the use of Prevnar[®]13 for high risk children?

A10: The product monograph for Prevnar[®]13 states: “Safety and immunogenicity data on Prevnar[®]13 are not available for children in specific groups at higher risk for invasive pneumococcal disease (e.g. children with congenital or acquired splenic dysfunction, HIV infection, malignancy, nephrotic syndrome).”

While there have been no clinical trials in these groups, the vaccine **is** indicated for children at high-risk for invasive pneumococcal disease. These children may have reduced antibody response to active immunization due to impaired immune responsiveness and additional dosing as outlined above is recommended for these children.

Q11: If a child has already had IPD, do they still require immunization with the pneu-C-13 vaccine?

A11: Yes, while serotype-specific immunity may follow after infection, there are 90 serotypes of pneumococcal bacteria, although a relatively small number of serotypes account for invasive disease in children. Being vaccinated with the pneu-C-13 vaccine will provide children with broader protection than other pneumococcal conjugate vaccines.

About the publicly funded program:

Q12: Why has the province had 3 different pneumococcal conjugate vaccines since the publicly funded program began and why are we switching pneumococcal vaccines again?

A12: The manufacturing of the pneumococcal conjugate vaccine has advanced to provide broader protection against evolving serotypes that cause invasive pneumococcal disease (IPD) such as 19A. Surveillance has identified an increase in the incidence of IPD due to serotype 19A most notably in children one to two years of age. This serotype has been responsible for drug resistant disease^{2,3}. The ministry wants to ensure the best and most appropriate vaccine is available to protect Ontario infants and children through the publicly funded program.

Q13: Who is eligible to receive the publicly funded pneu-C-13 vaccine and when should they receive it?

A13: The Ministry of Health and Long-Term Care is now offering Prevnar[®] 13 through the publicly funded program as per the eligibility criteria outlined in Attachment A:

- Table 1: Routine pneumococcal conjugate immunization
- Table 2: Catch-up pneumococcal conjugate immunization

Q14: When routine immunization with Pevnar[®]13 begins in November 2010, how should a child complete their series if they have started their pneumococcal immunization series with Pevnar[®]7 or Synflorix[™]?

A14: Pevnar[®]13 should be given for the next and subsequent scheduled dose(s).

Q15: What are the detailed schedules for infants and children who have not completed or have not started their pneumococcal conjugate immunization series?

A15: See detailed schedules for Pevnar[®]13 outlined in Attachment A:

- Table 3: Pevnar[®] 13 schedules for low risk children
- Table 4: Pevnar[®] 13 schedules for high risk children

Q16: If a child missed their opportunity to receive their publicly funded dose(s), can they receive Pevnar[®]13 vaccine at a later date?

A16: Yes, children who were previously eligible to receive Pevnar[®]13 as outlined in Attachment A (refer to table 1 and table 2) but missed their opportunity to receive the vaccine will continue to be eligible to receive the vaccine up to 59 months of age (<5 years old).

Q17: Can Pevnar[®]13 be given at the same time as other vaccines?

A17: Pevnar[®]13 can be given, at a separate injection site, using a separate syringe, with the following antigens: diphtheria, tetanus, acellular pertussis, inactivated polio, Hib, hepatitis B, meningococcal conjugate C (men-C-C), measles, mumps, rubella (MMR) and varicella. Clinical trials demonstrated that the immune responses and safety profiles of these antigens were unaffected when given at the same time as Pevnar[®]13.

Q18: With the new 3-dose schedule for low-risk infants, this means that infants will receive 3 different 'pokes' and one additional antigen in their 12-month visit (pneu-C-13, MMR, and men-C-C vaccines) - is this safe?

A18: Yes, while there is one additional 'poke' in the 12-month visit, the 3-dose schedule for Pevnar[®]13 allows for one less injection in a child's overall immunization regime.

It is important to note the correct administration routes for each vaccine; the pneu-C-13 and men-C-C vaccines are administered intramuscularly and the MMR vaccine must be administered subcutaneously. All three vaccines can be administered during the same visit.

As indicated in the information above, Pevnar[®]13 remains safe and effective when given with MMR and men-C-C vaccines.

Q19: Who should **not** get the pneu-C-13 vaccine?

A19: Pneu-C-13 is contraindicated in individuals with known hypersensitivity to any component of the vaccine, including diphtheria toxoid.

Q20: What are the possible common side effects with the Pevnar[®]13 vaccine?

A20: Common side effects following immunization with Pevnar[®]13 are similar to those seen with Pevnar[®]: drowsiness, decrease in appetite, fever, irritability, and injection site reactions such as pain, redness, and swelling. These adverse events generally resolve within a few days. Severe reactions to the vaccine are rare and may include febrile and non-febrile convulsions, and allergic reactions.

Q21: How should the pneu-C-13 vaccine be stored?

A21: In order to ensure that infants and children receive optimal protection, the pneu-C-13 vaccine (like other vaccines) must be maintained at a temperature between +2°C to +8°C from the time of manufacture until the vaccines are administered to individuals. This temperature must be monitored and maintained at all times.

Q22: Who will administer the pneu-C-13 vaccine?

A22: The vaccine will continue to be offered through primary care physicians and nurse practitioners.

Q23: What is the vaccine ordering process?

A23: Health units are required to complete a vaccine order form. This form is available on the Ontario Forms Repository:
<http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf> Physicians and nurse practitioners order the vaccine through their regular vaccine supply source (i.e. local public health unit or Ontario Government Pharmaceutical and Medical Supply Service (OGPMSS)).

Q24: When routine immunization with Pevnar[®]13 begins November 2010, what should be done with our health unit's existing stock of Pevnar[®]7 and/or Synflorix[™] vaccine?

A24: As the Ministry of Health and Long-Term Care will receive credit for any unused pneumococcal conjugate vaccines, it is important that any unused Pevnar[®] (7-

valent) and/or Synflorix™ vaccine is returned to OGPMS when the routine pneu-C-13 program begins in November 2010.

Immunization providers in your jurisdiction should be instructed to return their existing stock of Prevnar® (7-valent) and/or Synflorix™ vaccine to your health unit. Please ensure that this vaccine as well as the stock remaining at your health unit is returned to OGPMS as non-reusable vaccine (not maintained under cold chain).

Q25: How should Prevnar®13 be recorded in the yellow immunization record and in the Immunization Record Information System (IRIS)?

A25: When checking off 'pneumo conjugate' vaccine on the yellow card, add '13' under the 'Vaccine brand name' column.
When recording the vaccine in IRIS, there will be an option to select 'pneu-13' in the list of vaccines.

Q26: What should be done for adverse events following immunization?

A26: Under section 38 of the *Health Protection and Promotion Act, R.S.O. 1990*, physicians or other persons authorized to administer an immunizing agent, are required to inform the person who consents to immunization of the importance of immediately reporting to a physician any reaction that may be a reportable event. Local public health units should subsequently be notified of the adverse event, then report the event to the ministry. The Adverse Event Following Immunization (AEFI) reporting form can be found on the Public Health Agency of Canada website along with a User Guide at: <http://www.phac-aspc.gc.ca/im/ae-fi-form-eng.php>

References

1. Vaccine Product Monographs; Prevnar®13, ©Wyeth Canada, December 21, 2009. Available at :
http://www.wyeth.ca/en/products/Product%20Monographs%20PDFs/Prevnar_13_Product_Monograph_Dec_21_2009_EN.pdf
2. CDC. Emergence of antimicrobial-resistant serotype 19A *Streptococcus pneumoniae* — Massachusetts, 2001-2006. MMWR Oct 19, 2007, 56(41);1077-1080.
3. Pichichero ME, Casey JR. Emergence of a multiresistant serotype 19A pneumococcal strain not included in the 7-valent conjugate vaccine as an otopathogen in children. JAMA 2007;298(15):1772-1778.

Pneumococcal 13 valent Conjugate Vaccine (Pevnar[®] 13) Program

Questions and Answers for Health Care Providers

The Ministry of Health and Long-Term Care (the “ministry”) is replacing the current pneumococcal conjugate vaccine with **Pevnar[®] 13** for enhanced protection against invasive pneumococcal disease (IPD) for Ontario infants and children.

About the pneu-C-13 vaccine (Pevnar[®] 13):

Q1: What does the pneu-C-13 vaccine protect against?

A1: The newest pneumococcal conjugate vaccine, approved for use in Canada in December 2009, is Pevnar[®] 13. The vaccine is indicated for the active immunization against *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F which are responsible for causing invasive pneumococcal disease (including sepsis, meningitis, bacteraemic pneumonia, pleural empyema, and bacteraemia).

The vaccine provides protection against 6 additional serotypes than in Pevnar[®] (7-valent) (4, 6B, 9V, 14, 18C, 19F, 23F) and 3 additional serotypes than the coverage provided in Synflorix[™] (1, 5, 7F). Pevnar[®] 13 will not protect against serotypes that are not included in the vaccine.

Q2: What is the age indication for the Pevnar[®] 13 vaccine?

A2: Pevnar[®] 13 is approved by Health Canada for infants and children from 6 weeks to <6 years of age. In Ontario, it is currently publicly funded for infants and children as per the eligibility criteria outlined in Attachment A:

- Table 1: Routine pneumococcal conjugate immunization
- Table 2: Catch-up pneumococcal conjugate immunization

Q3: Where do I find more information about the vaccine such as common side effects, contraindications, storage recommendations, and where to inject the vaccine?

A3: Refer to the vaccine product monograph for Pevnar[®] 13

About the publicly funded program:

Q4: Why has the province had 3 different pneumococcal conjugate vaccines since the publicly funded program began and why are we switching pneumococcal vaccines again?

A4: The manufacturing of the pneumococcal conjugate vaccine has advanced to provide broader protection against emerging serotypes that cause invasive pneumococcal disease (IPD), such as 19A. Surveillance has identified an increase in the incidence of IPD due to serotype 19A, most notably in children one to two years of age. This serotype has been responsible for drug resistant disease^{2,3}. The ministry wants to ensure the best and most appropriate vaccine is available to protect Ontario infants and children through the publicly funded program.

Q5: What is the epidemiology and serotype distribution of IPD in Ontario?

A5: IPD became reportable in Ontario in 2002. From 2004 to 2008 an average of 987 cases were reported each year. In 2009, 1212 cases were reported in Ontario, up from 1065 cases in 2008. This increase in cases may be due in part to changes to the case definition starting in 2009. In the past 2 years, 2.2% of IPD cases have died.

Ninety distinct capsular serotypes have been identified worldwide, however, only a few serotypes produce the majority of invasive disease. In young children, studies have shown serotypes/groups 6 (A, B), 14, 18 (C), 19 (A, F) and 23 (F) are more common. Of the 1212 cases reported in 2009 in Ontario, serotype results were available for 64%. Serotype 19A was the most frequently reported serotype across all age groups (<2 years, 2-4 years, 5-64 years, 65+).

Data from the Toronto Invasive Bacterial Diseases Network indicated cases of serotype 6B and 14 decreased for children less than two years old after the introduction of the pneumococcal conjugate vaccine in January 2005; however, since 2004 cases of the non-vaccine strain 19A emerged, although the overall incidence of IPD was lower than the pre-vaccine period.

Ontario serotype data for 2008 and 2009 shows that there was an increase in reporting for serotypes 19A, 3 and 7F and for one to four year olds from 2008 to 2009 with the greatest increase in one and two year olds.

Q6: Who is eligible to receive the publicly funded pneumo-C-13 vaccine and when should they receive it?

A6: The Ministry of Health and Long-Term Care is now offering Prevnar[®] 13 through the publicly funded program as per the eligibility criteria outlined in Attachment A:

- Table 1: Routine pneumococcal conjugate immunization
- Table 2: Catch-up pneumococcal conjugate immunization

Q7: When routine immunization with Prevnar[®]13 begins in November 2010, how should a child complete their series if they have started their pneumococcal immunization series with Prevnar[®]7 or Synflorix[™]?

A7: Prevnar[®]13 should be given for the next and subsequent scheduled dose(s).

Q8: What are the detailed schedules for infants and children who have not completed or have not started their pneumococcal conjugate immunization series?

A8: See detailed schedules for Prevnar[®]13 outlined in Attachment A:

- Table 3: Prevnar[®] 13 schedules for low risk children
- Table 4: Prevnar[®] 13 schedules for high risk children

Q9: If a child missed their opportunity to receive their publicly funded dose(s), can they receive Prevnar[®]13 vaccine at a later date?

A9: Yes, children who were previously eligible to receive Prevnar[®] 13 as outlined in Attachment A (refer to table 1 and table 2) but missed their opportunity to receive the vaccine will continue to be eligible to receive the vaccine (in the age-appropriate number of doses) up to 59 months of age (<5 years old).

Q10: What is the vaccine ordering process?

A10: Order the vaccine through your regular vaccine supply source (i.e. local public health unit or Ontario Government Pharmaceutical and Medical Supply Service (OGPMSS)).

Q11: When routine immunization with Prevnar[®]13 begins in November 2010, what should be done with our existing stock of Prevnar[®]7 and/or Synflorix[™]?

A11: As the ministry will receive credit for any unused pneumococcal conjugate vaccines, it is important for you to return any unused Prevnar[®] (7-valent) and/or Synflorix[™] vaccine to your vaccine supply source (i.e. public health unit or OGPMSS) when the routine pneumo-C-13 program begins in November 2010.

Q12: How should Prevnar[®]13 be recorded in the yellow immunization record?

A12: When checking off 'pneumo conjugate' vaccine, write 'Prevnar[®]13' under the 'Vaccine brand name' column.

Q13: What should be done for adverse events following immunization (AEFIs)?

A13: Under section 38 of the ***Health Protection and Promotion Act, R.S.O. 1990***, physicians or other persons authorized to administer an immunizing agent, are required to inform the person who consents to immunization of the importance of immediately reporting to a physician any reaction that may be a reportable event. Local public health units should subsequently be notified of the adverse event. The AEFI reporting form can be found on the Public Health Agency of Canada website along with a User Guide at: <http://www.phac-aspc.gc.ca/im/ae-fi-form-eng.php>. Send the completed form to your local public health unit. A list of health units can be found at: http://www.health.gov.on.ca/english/public/contact/phu/phuloc_mn.html.

References:

1. Vaccine Product Monograph; Prevnar[®]13, ©Wyeth Canada, December 21, 2009. http://www.wyeth.ca/en/products/Product%20Monographs%20PDFs/Prevnar_13_Product_Monograph_Dec_21_2009_EN.pdf
2. CDC. Emergence of antimicrobial-resistant serotype 19A *Streptococcus pneumoniae* — Massachusetts, 2001-2006. MMWR Oct 19, 2007, 56(41);1077-1080.
3. Pichichero ME, Casey JR. Emergence of a multiresistant serotype 19A pneumococcal strain not included in the 7-valent conjugate vaccine as an otopathogen in children. JAMA 2007;298(15):1772-1778.



**Ministry of Health
and Long-Term Care**

**Ministère de la Santé
et des Soins de longue durée**

Chief Medical Officer of Health

Médecin hygiéniste en chef

Public Health Division
11th Floor, Hepburn Block
Queen's Park
Toronto ON M7A 1R3

Division de la santé publique
Édifice Hepburn, 11e étage
Queen's Park
Toronto ON M7A 1R3

Telephone: (416) 212-3831
Facsimile: (416) 325-8412

Téléphone: (416) 212-3831
Télécopieur: (416) 325-8412

November 9, 2010

MEMORANDUM

TO: Health Care Providers

RE: Introducing Prevnar[®]13 for Immunization Against Invasive Pneumococcal Disease (IPD) for Infants and Children

This letter is to inform you that a new pneumococcal conjugate vaccine known as Prevnar[®]13 is now available and is publicly funded in Ontario for infants and children. The vaccine was approved for use in Canada in December 2009 and provides broader protection against invasive pneumococcal disease (IPD).

The Vaccine

Prevnar[®]13 is a 13-valent pneumococcal conjugate vaccine indicated for active immunization against *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F, which are responsible for causing invasive pneumococcal disease.

The vaccine provides protection against 6 more serotypes (1, 3, 5, 6A, 7F and 19A) than the serotype coverage provided in the Prevnar[®] (7-valent) vaccine and 3 more serotypes than the coverage provided in the Synflorix[™] vaccine.

The unique serotypes contained in Prevnar[®]13 which are not in either Prevnar[®] (7-valent) or Synflorix[™] are **3, 6A and 19A**.

Background

In 2005, Ontario introduced a publicly funded pneumococcal conjugate immunization program with Prevnar[®] (7-valent) vaccine for all infants and children < 2 years of age to protect against pneumococcal serotypes 4, 6B, 9V, 14, 18C, 19F and 23F. In 2009, Synflorix[™] vaccine replaced Prevnar[®] (7-valent) to provide protection against 3 additional serotypes (1, 5 and 7F).

Since the introduction of the pneumococcal immunization program in Ontario, there has been a dramatic shift in the epidemiology of IPD. While there has been a decline in the incidence of pediatric IPD caused by serotypes contained in the Prevnar[®] (7-valent) vaccine, the incidence of IPD caused by non-vaccine serotypes has increased, particularly for one and two-year old children. Across Canada and the United States, the incidence of disease due to non vaccine strains, in particular serotypes 3 and 19A that are now contained in Prevnar[®] 13, have increased.

Please refer to the following attachments and links for additional information:

- Eligibility criteria and detailed schedules for Prevnar[®]13 (Attachment A):
 - Table 1: Routine pneumococcal conjugate immunization
 - Table 2: Catch-up pneumococcal conjugate immunization
 - Table 3: Prevnar[®] 13 schedules for low risk children
 - Table 4: Prevnar[®] 13 schedules for high risk children
- Qs & As for Health Units (Attachment B)
- Qs & As for Health Care Providers (Attachment C)
- Fact sheet on pneumococcal conjugate vaccine and invasive pneumococcal disease
http://www.health.gov.on.ca/english/public/pub/immun/pnem_conjugate.html
- Publicly Funded Immunization Schedules for Ontario
<http://www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf>
- Prevnar[®]13 product monograph
http://www.wyeth.ca/en/products/Product%20Monographs%20PDFs/Prevnar_13_Product_Monograph_Dec_21_2009_EN.pdf

Kindly share this information with appropriate staff in your practice. Should you or your staff have any questions, please contact your local public health unit. A list of health units can be found at: http://www.health.gov.on.ca/english/public/contact/phu/phuloc_mn.html.

We thank you for your continued support with and commitment to the publicly funded immunization program and protecting our children against vaccine preventable diseases.

Sincerely,

Original signed by Dr. David Williams

David Williams, MD, MHSc, FRCPC
Associate Chief Medical Officer of Health, Health Protection & Prevention

Attachments

c: Vaccine Preventable Diseases Managers, Ontario Public Health Units