dTap
Diphtheria-Tetanus-Acellular Pertussis Combined Vaccine
Revision Date: November 16, 2018

Rationale for Update:
• Updated to include recommendation to offer dTap in every pregnancy. Implementation January 1, 2019.

Please consult the Product Monograph1,2 for further information about the vaccine.

<table>
<thead>
<tr>
<th></th>
<th>ADACEL®</th>
<th>BOOSTRIX®</th>
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<tbody>
<tr>
<td>Manufacturer</td>
<td>Sanofi Pasteur Limited</td>
<td>GlaxoSmithKline Inc.</td>
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<tr>
<td>Licensed use</td>
<td>Booster immunization for individuals four years of age and older.1,2</td>
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<tr>
<td>Off-license use</td>
<td>Primary immunization for individuals 7 – 17 years of age.3</td>
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<tr>
<td>Indications for use of provincially funded vaccine</td>
<td>Children 7 years up to including 17 years of age including:</td>
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<td></td>
<td>• Children initiating (unknown/uncertain or no history of a primary series) or completing a primary vaccine series.3</td>
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<td></td>
<td>Note: If polio vaccine is also indicated, diphtheria, tetanus, acellular pertussis and polio combined vaccine (dTap-IPV) should be used.</td>
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<td></td>
<td>• Grade 9 students reinforcing doses: routine immunization program.</td>
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<td></td>
<td>• Children who sustain a wound injury and have not received the age-appropriate number of tetanus vaccine doses. See Tetanus Post-exposure Prophylaxis in Injury/Wound Management.</td>
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<td>Adults 18 years of age and older including:</td>
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<td></td>
<td>• Individuals initiating (unknown/uncertain or no history of a primary series) or completing a primary vaccine series of tetanus/diphtheria who have not received an adult dose of dTap vaccine.3</td>
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<td></td>
<td>• Individuals presenting for a reinforcing dose of tetanus/diphtheria who have not received an adult dose of dTap vaccine.3</td>
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<td></td>
<td>• Candidates or recipients of solid organ transplantation (SOT). See Immunization for Adult Solid Organ Transplant Recipients.</td>
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<tr>
<td>Pregnant females</td>
<td>• Pregnant women in every pregnancy from 27 weeks up to and including 32 weeks gestation.3,4</td>
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<tr>
<td></td>
<td>✓ One dose of dTap should be offered in every pregnancy ideally from 27 weeks up to and including 32 weeks gestation irrespective of immunization history.</td>
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<tr>
<td></td>
<td>✓ dTap may, however, be provided from 13 weeks gestation up to the time of delivery.4</td>
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<tr>
<td></td>
<td>✓ If dTap was provided early in pregnancy (e.g. prior to recognition of pregnancy), it is not necessary to re-immunize for this pregnancy.4</td>
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</table>

1. Product Monograph
2. Manufacturer’s information
3. Polio Program
4. Intrauterine Immunization Program
Notes:


- Adults who are in contact or anticipating contact with infants (e.g., parents/guardians, grandparents, childcare providers) should be prioritized to receive one dose in adulthood (18 years of age and older).³

- Close contacts (e.g. household, classroom) of a diphtheria case should receive a dose of a diphtheria toxoid-containing vaccine as appropriate for age unless the contact is known to have been fully immunized for age and the last dose of diphtheria toxoid-containing vaccine was given within 10 years. The diphtheria toxoid-containing vaccine series should be completed for previously unimmunized or incompletely immunized contacts.³

For disease investigation, contact assessment and reporting requirements, refer to Public Health Notifiable Disease Guidelines – Diphtheria.⁵

- Carriers of diphtheria if not previously immunized and those of unknown immunization status, should receive immunization promptly and ensure completion of vaccine series.⁶ If a carrier has been immunized previously but has not received a booster of diphtheria toxoid within 10 years, a booster dose of a diphtheria toxoid-containing vaccine should be given.³

- Infection with diphtheria does not necessarily confer immunity; therefore, immunization should be given during convalescence from diphtheria disease.⁶

<table>
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<tr>
<th>Dose</th>
<th>0.5mL</th>
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<td>Route</td>
<td>Intramuscular injection</td>
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**Schedule**

**Children 7 years up to and including 17 years of age**

**Primary Series:**
- Dose 1: day 0
- Dose 2: 4 – 8 weeks after dose 1
- Dose 3: 6 – 12 months after dose 2

**Reinforcing dose:**
- Grade 9 students or other children (12-17 years of age) when a reinforcing dose is indicated.³

**Adults 18 years of age and older**
- One dose as an adult

**Pregnant women**
- One dose of dTap should be offered in every pregnancy from 27 weeks up to and including 32 weeks gestation irrespective of immunization history.⁴
- dTap may, however, be provided from 13 weeks gestation up to the time of delivery.⁴
- If dTap was provided early in pregnancy (e.g. prior to recognition of pregnancy), it is not necessary to re-immunize after 13 weeks of gestation.⁴

**Notes:**
- Students, who have received a dose of Td prior to the Grade 9 booster, should receive a dose of dTap regardless of the interval since the previous Td dose.⁷
• Students, who have received a dose of dTap at 12 years of age or older, do not require the routine booster in Grade 9.7,8
• Eligible Grade 9 students, who missed the booster (dTap) in Grade 9, should receive the vaccine if they present to public health.
• Candidates and recipients of solid organ transplantation seven years of age and older. See *Immunization for Children Expecting Solid Organ Transplant after 18 Months of Age (Catch-up Schedule)* and *Immunization for Adult Solid Organ Candidates and Recipients*.
• Adults needing a primary series of tetanus/diphtheria vaccine (Td) should receive one dose of dTap replacing the first dose of Td in the series.3
• Adults presenting for a Td booster, should receive a one-time reinforcing dose of dTap if they have not received a dose of dTap in adulthood.3

**Contraindications**

• Known severe hypersensitivity to any component of the vaccine.
• Anaphylactic or other allergic reaction to a previous dose of vaccine containing tetanus, diphtheria or pertussis antibodies.
• Encephalopathy of unknown etiology, occurring within 7 days following previous vaccination with pertussis containing vaccine.1,2

**Precautions**

• Frequent booster doses of tetanus and diphtheria toxoids may lead to severe local and systemic reactions and may be associated with high levels of circulating antitoxin.3

**Possible reactions**

**Common:**
• Pain, redness, swelling and induration at the injection site.1,2
• Irritability, somnolence, anorexia, dizziness, fever, headache, malaise, fatigue, nausea, vomiting, diarrhea, rash.1,2

**Uncommon:**
• Upper respiratory tract infection, pharyngitis, increased hyperhidrosis, arthralgia, myalgia, joint and musculoskeletal stiffness, pruritus, conjunctivitis and lymphadenopathy were reported.1,2

**Rare:**
• Severe local reactions occur rarely and may be associated with high levels of circulating tetanus antitoxin.3
• Extensive swelling of the vaccinated limb, asthenia, angioedema, convulsions (with or without fever), urticaria.1,2
• Anaphylaxis.1,2

**Post-Marketing Surveillance:**

• The following adverse events have been reported from post-marketing surveillance: angioedema, convulsions (with or without fever), urticaria, extensive swelling of the injected limb, asthenia, allergic reaction and anaphylactoid reactions.1,2

**Note:** DAT/TAT level testing may be recommended for some. See *Adverse Events Following Immunization Policy for Alberta Immunization Providers* - Interpretation of Diphtheria Antitoxin Levels (DAT) and Tetanus Antitoxin Levels (TAT).5
Pregnancy

Immunization with dTap has been shown to be safe in pregnant women and allows high levels of antibody to be transferred in utero that are protective to newborns during the first two months of life when the morbidity and mortality from pertussis infection is highest.³

Lactation

Breastfeeding woman who are due for the vaccine may be safely immunized.³

Program Notes

- 2004 September 1 – dTap replaced Td as routine grade 9 booster
- 2009 February 2 – One lifetime dose of dTap vaccine recommended for individuals 65 years of age and older when presenting for Td booster.
- 2012 January 1 – dTap one-time adult booster dose replacing Td (not needed if dTap at age 12 years or older).
- 2012 February 1 – dTap was implemented for the following adult population:
  o HCWs providing care to children under 12 months of age.
  o Adults who have not received an adolescent or adult dose of dTap vaccine.
- 2014 March 2 – dTap given as a one-time adult booster dose replacing Td if have not already received dose of dTap in adulthood.
- 2019 January 1 – dTap offered in every pregnancy. (through public health or pharmacy).

Historical Notes:

- 1930-1994 August 1 – Diphtheria toxoid became available.

References


