

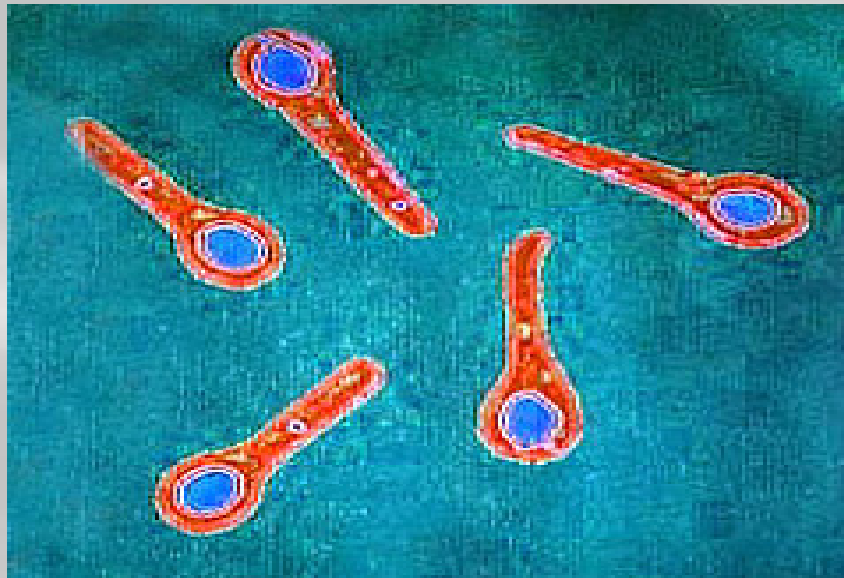
Tetanus

Bug of the Month In-service

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What is Tetanus?

- Tetanus is an acute and often fatal disease caused by an extremely potent neurotoxin produced by the bacillus *Clostridium tetani*.





Tetanus Toxoid introduced in 1940

Factors Associated with an Increased Risk of Tetanus

- Age
- Newcomers- birth outside of Canada
- Absence of Immunization records

We associate
tetanus with a
rusty nail!!!





Where is *C. tetani* Found?

- Spores of the bacteria *C. tetani* live in the soil.
- It can also live in the intestines and feces of many domestic and farm animals, as well as humans.
- In the spore form, *C. tetani* may remain inactive in the soil, but it can remain infectious for more than 40 years



Tetanus Infection

- **Infection begins when the spores enter the body through an injury or wound.**
- **The spores release bacteria that spread and make a poison called tetanospasmin.**
- **This poison blocks nerve signals from the spinal cord to the muscles, causing severe muscle spasms.**
- **The spasms can be so powerful that they tear the muscles or cause fractures of the spine.**



Incubation Period

- **Typically 3 to 21 days**
 - **The average incubation is 10 days with most cases occurring within 14 days.**
 - **The incubation period can range from 1 day to several months depending on severity of wound.**



Symptoms

- Often begins with mild spasms in the jaw muscles (lockjaw).
- The spasms can also affect the chest, neck, back, and abdominal muscles.
- Back muscle spasms often cause arching (called opisthotonos).



Symptoms (continued)

- **Other symptoms include:**
 - **Drooling**
 - **Excessive sweating**
 - **Fever**
 - **Hand or foot spasms**
 - **Irritability**
 - **Swallowing difficulty**
 - **Uncontrolled urination and defecation**

PREVENTION





How Can We Protect Ourselves from Tetanus?

- Tetanus is completely preventable by active tetanus immunization.
- To maintain immunity, tetanus boosters are recommended at 10 year intervals for adults.

Using Teachable Moments to Protect our Clients/Patients

- Encourage wearing of protective gloves, clothing, and footwear while renovating and gardening.
- Encourage safe practices when using tools that can cause injury or puncture the skin.
- Outline risks of self piercing and tattooing.
- Outline risks of injecting drugs with dirty needles.
- Always ask about immunization history to ensure it is up to date.
- When “newcomers” present for medical services check on their immunization history.

Saskatchewan Immunization Schedule

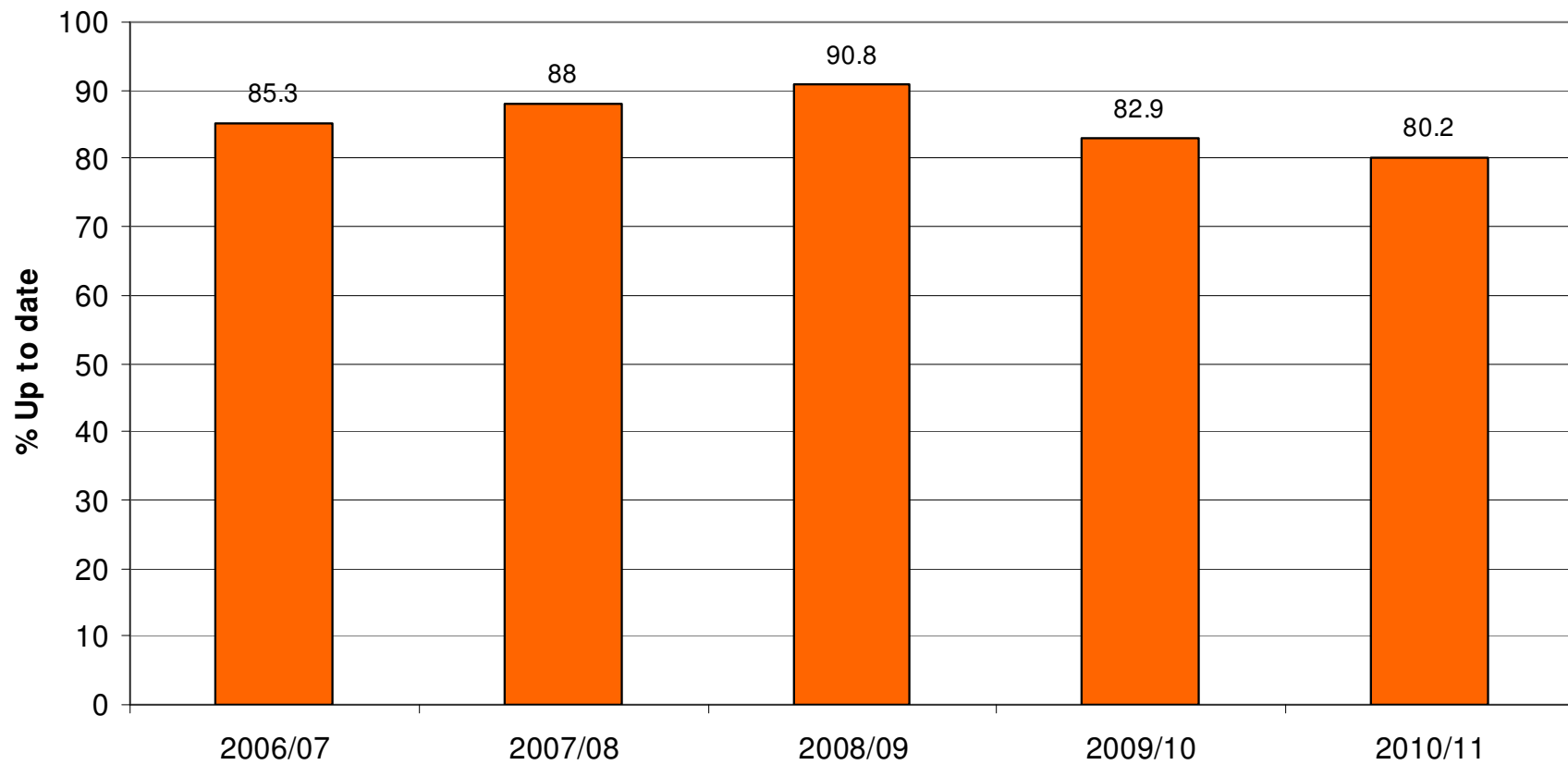


Routine Program for Infants and Children

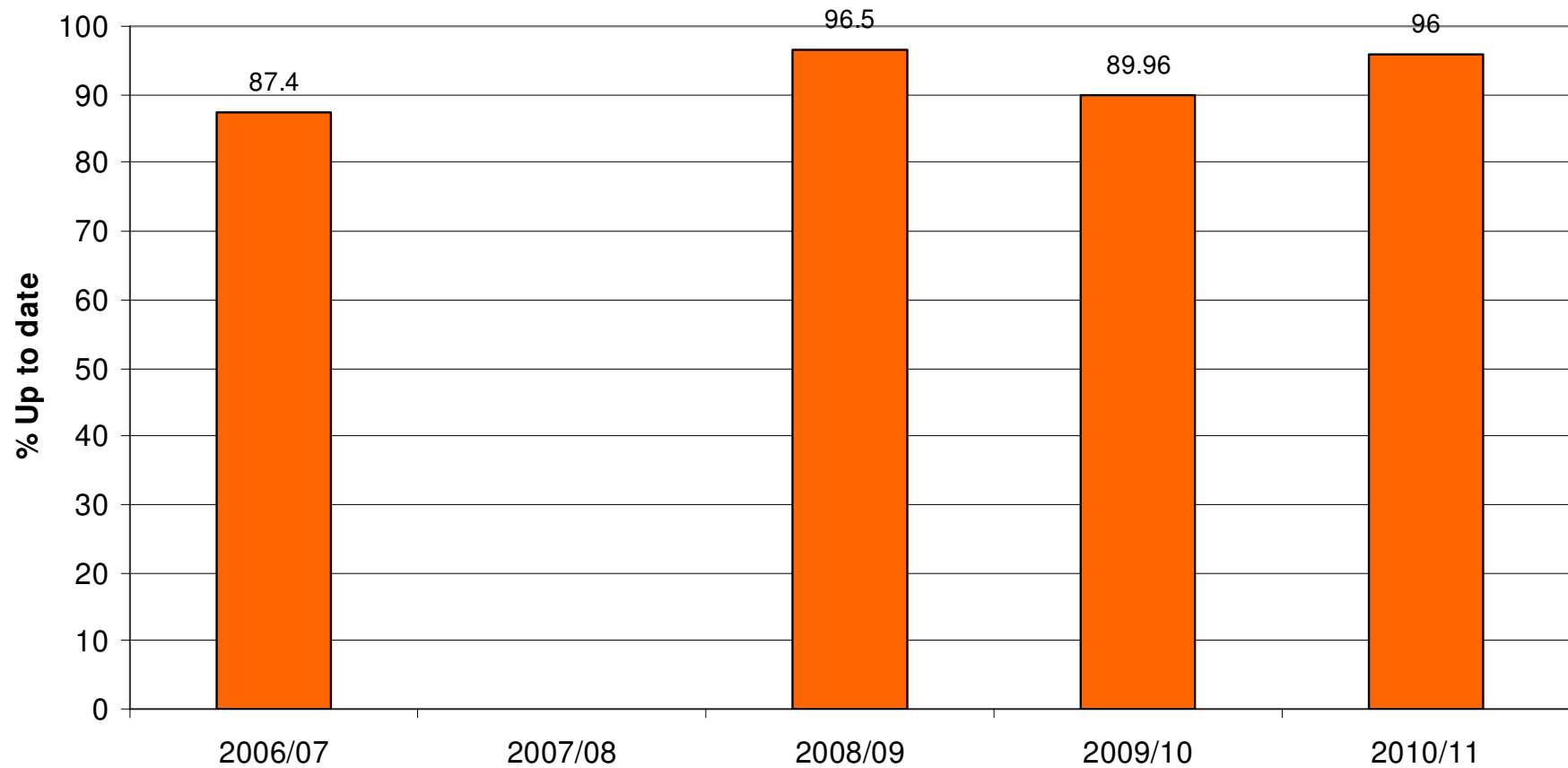
Saskatchewan Immunization Schedule Routine Program for Infants and Children

	2 Months	4 Months	6 Months	12 Months	18 Months	4-6 Years	Grade 6	Grade 8	Grade 12
DTaP-IPV-Hib:	X	X	X		X				
Diphtheria, Tetanus, Pertussis, Polio, <i>Haemophilus Influenzae</i> type b									
Pneumo-C-13: Pneumococcal Conjugate 13-valent	X ¹	X ¹		X ¹					
MMRV:				X	X ²				
Measles, Mumps, Rubella, Varicella									
MMR:							X ³	X ³	X ³
Measles, Mumps, Rubella									
Men-C-C: Meningococcal-C conjugate				X					
Men-C-ACYW-135: Meningococcal conjugate ACYW-135							X		
DTaP-IPV:									
Diphtheria, Tetanus, Pertussis, Polio						X			
Var: Varicella							X ⁴		
HB: Hepatitis B							X		
HPV-4: Human Papillomavirus							X (Girls ONLY)		
Tdap:								X	
Tetanus, Diphtheria, Pertussis									
Inf: Influenza			X ⁵	→	→	→			

SCHR UTD Tetanus Immunization Coverage Rates 2 Year Old Children, 2006-2011



SCHR UTD Tetanus Immunization Coverage Rates 7 Year Old Children, 2006-2011



Important to Remember

- Most children with minor wounds who have been kept up to date with immunizations will **not** need a tetanus booster.
- 2010/11 – SCHR immunization coverage rate for tetanus was 96% for 7 year old children.
- Some adults may have had recent boosters with the introduction of the pertussis “strategy” in the province (cocooning / routine adult booster).

Tetanus Prophylaxis in Wound Management

Assessing the Need for Tetanus Post-exposure Prophylaxis

- Assess type and extent of wound.
- Refer to immunization records and previous doses of tetanus given.
- Time period since last dose received.
- Ask about adverse events following previous tetanus containing vaccine or tetanus immune globulin.
- Does the client have significant humoral immune deficiencies.

Providing Appropriate Prophylactic Management

- Refer to Saskatchewan Immunization Manual: Tetanus Prophylaxis in Wound management.
<http://www.health.gov.sk.ca/sim-chapter5>
- Refer to Canadian Immunization Guide, 7th Edition: http://www.phac-aspc.gc.ca/publicat/cig-gci/pdf/cig-gci-2006_e.pdf-- page 315



Tetanus Prophylaxis in Wound Management

1. History

Assess the patient's immunization history:

- » Determine the number of doses of tetanus vaccine previously received.¹
- » Determine when the last dose was given.
- » Ask about adverse events following previous tetanus-containing vaccines or Tetanus Immune Globulin (TIG).

¹All adults ≥ 18 years of age are recommended to receive 1 (one) dose of tetanus-diphtheria-pertussis (Tdap) vaccine in their *lifetime* to replace a Td booster.

2. Treatment

	Tetanus Toxoid Immunization History	For Clean Minor Wounds	For All Other Wounds ²
0 - 6 Years	Incomplete or no tetanus toxoid immunization	Refer to Public Health	Refer to Public Health
	Up-to-date tetanus toxoid immunization	No immunization required	No immunization required
7 Years and Older	At least 3 previous doses of tetanus toxoid, with the most recent 10 years ago or longer	Give Td or Tdap ¹	Give Td or Tdap ¹
	At least 3 previous doses of tetanus toxoid, with the most recent between 5 and 10 years ago	No immunization required	Give Td or Tdap ¹
	At least 3 doses of tetanus toxoid, with the most recent 5 years ago or less	No immunization required	No immunization required
	Fewer than 3 doses of tetanus toxoid	Give Td or Tdap ¹ Refer to Public Health ³	Give Td or Tdap ¹ and TIG Refer to Public Health ³
	Uncertain number of doses of tetanus toxoid	Give Td or Tdap ¹ Refer to Public Health ³	Give Td or Tdap ¹ and TIG Refer to Public Health ³
	No previous tetanus toxoid immunization	Give Td or Tdap ¹ Refer to Public Health ³	Give Td or Tdap ¹ and TIG Refer to Public Health ³

Treatment recommendations are based on the Canadian Immunization Guide, 2006, p. 315. Adapted from Nova Scotia Public Health Services.

¹ All adults ≥ 18 years of age are recommended to receive 1 (one) dose of tetanus-diphtheria-pertussis (Tdap) vaccine in their lifetime to replace a Td booster.

² Individuals with this type of wound who have a significant humoral immune deficiency state should be given TIG even if they are fully immunized.

³ After receiving this dose, patients 7 years and older who have a history of incomplete or no immunizations should be referred to Public Health Services to complete their immunization series.

3. Reporting

- » All immunizations must be reported to Public Health for entry into the Saskatchewan Immunization Management System (SIMS).

Tetanus Post-Exposure Prophylaxis for Wound Management

History of tetanus immunization	Clean, minor wounds		All other wounds	
	Td or Tdap*	Tlg**	Td or Tdap*	Tlg
Uncertain or < 3 doses of an immunization series	Yes	No	Yes	Yes
≥ 3 doses received in an immunization series	No (Yes if > 10 years since last booster) ‡	No	No (Yes if > 5 years since last booster)§	No¶

Notes - Table 13

- * **Adult-type combined tetanus and diphtheria toxoids or a combined preparation of diphtheria, tetanus and acellular pertussis. If the patient is < 7 years old, a tetanus toxoid-containing vaccine is given as part of the routine childhood immunization.**
- ** **Tetanus immune globulin, given at a separate site from Td (or Tdap)**
- † **The immunization series for tetanus is described in the text (see [Schedule and Dosage](#)).**
- ‡ **Yes, if > 10 years since last booster.**
- § **Yes, if > 5 years since last booster. More frequent boosters not required and can be associated with increased adverse events. The bivalent toxoid, Td, is not considered to be significantly more reactogenic than T alone and is recommended for use in this circumstance. The patient should be informed that Td (or Tdap) has been given.**
- ¶ **Yes, if individuals are known to have a significant humoral immune deficiency state (e.g., HIV, agammaglobulinemia), since immune response to tetanus toxoid may be suboptimal.**

Potential Reactions to Tetanus Vaccines?

- **Common reactions to the vaccine may include soreness, redness and swelling at the injection site.**
- **Some individuals may experience fatigue, headache, mild fever or dizziness.**
- **These reactions are mild and generally last 1 to 2 days**

Treatment of Tetanus Disease

- Treatment may include:
Antibiotics, bedrest, TIG, muscle relaxants, sedatives, debridement of wound (to remove poison)
- Breathing support with oxygen, a breathing tube, and a breathing machine may be necessary.

Educational Resources Available

- **“Protect yourself Against Tetanus”**
posters and pamphlets can be ordered at
Canadian Coalition for immunization
Awareness and Promotion (CCIAP) site:
<http://www.immunize.ca/en/default.aspx>



YOU HAD ME, MOM. A VACCINATION WON'T HURT AS MUCH.

GET YOURSELF VACCINATED. DON'T GIVE YOUR BABY A POTENTIALLY FATAL DISEASE.¹

Pertussis, also known as whooping cough, can be a deadly disease to infants and is still a major problem. Even though babies are immunized against pertussis, they may not be fully protected until their third or fourth dose. And studies have found that when the source of pertussis has been identified, parents were the cause in nearly half of the infant cases.^{2,3} That's why the CDC (Centers for Disease Control and Prevention) recommends a booster for everyone 11 through 64 years of age.⁴ Getting yourself and your family immunized should be the first step in helping to protect your baby. Talk to your doctor and learn more about the importance of getting a pertussis booster at DoltForYourBaby.com

HEAR WHAT WHOOPING COUGH SOUNDS LIKE AT DoltForYourBaby.com

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Questions

