

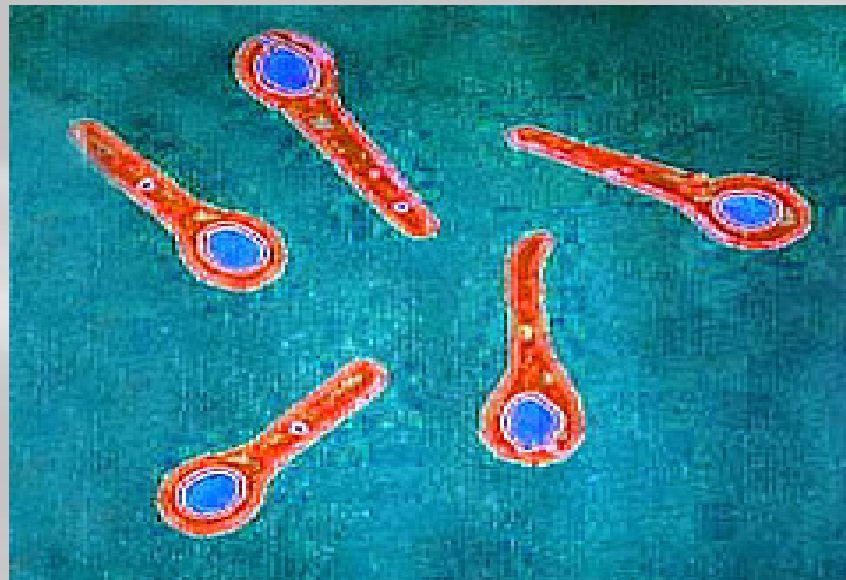
Tetanus

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*.





- **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**





- http://www.youtube.com/watch?v=cPG8_6bvGKk&feature=related

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.**



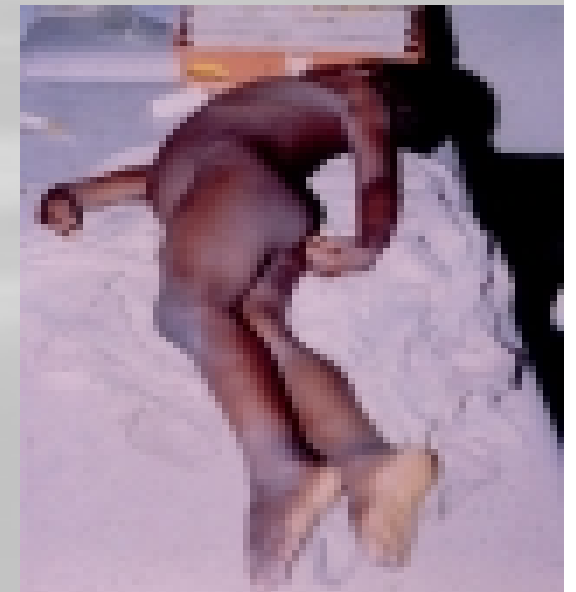
Incubation Period

- **The time between infection and the first sign of symptoms (incubation period) is 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**

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 given
- Most children with minor wounds who have been kept up to date with immunizations will not need a tetanus booster.
- 2009/10 – SCHR immunization coverage rate for tetanus was 90% for 7 year olds.

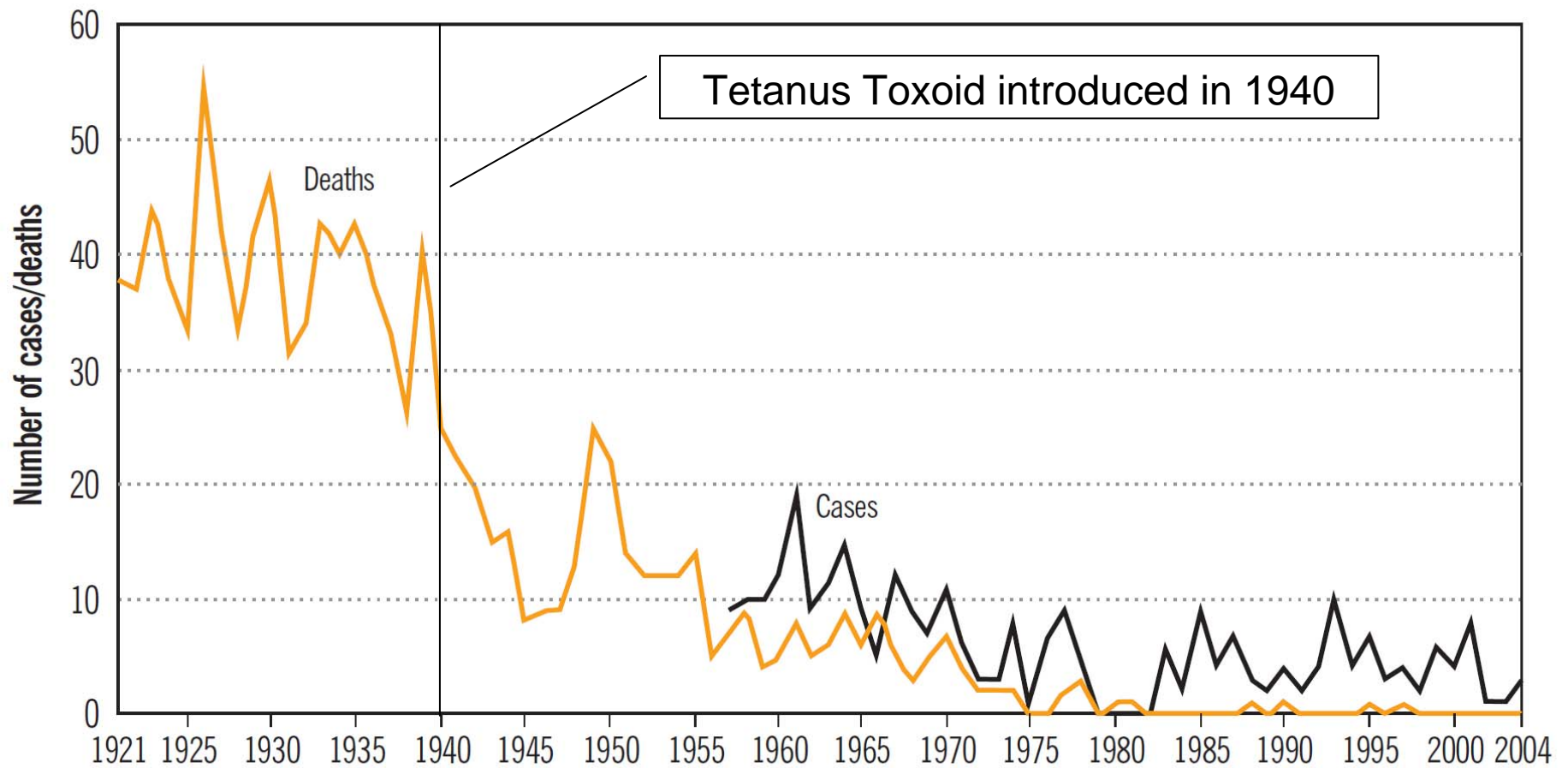
Post-Exposure Prophylaxis

- PREVENTION is key!!
- How long can one wait before starting tetanus post-exposure prophylaxis?
 - depends on injury and history
- If any doubt about the vaccine history then Tetanus Immune Globulin (TIG) is given depending on type of wound – see Canadian Immunization Guide

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.

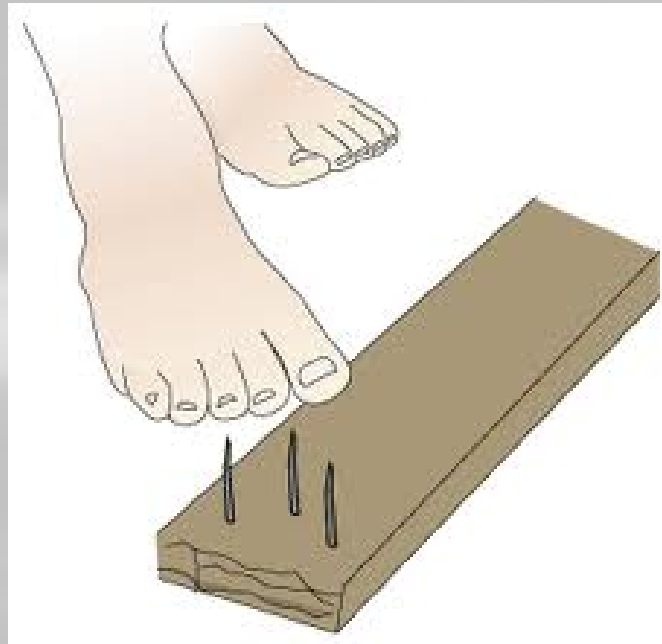
Figure 15. Tetanus – Number of Cases and Deaths, Canada, 1921–2004



Tetanus Deaths on Vancouver Island

- **In 2008, 4 tetanus cases, including three deaths on Vancouver Island and a non-fatal case in the Fraser Valley, have public health officials urging adults to get their 10-year booster vaccinations if they aren't up to date.**
- **Before these cases B.C. had not had any reports of tetanus since 2001 when there were 5 cases.**

■ You **can not** get tetanus from a rusty nail!!!



PREVENTION





PREVENTION

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

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									
Pneumococcal Conjugate 13	X	X	X		X				
MMRV:				X	X ¹				
Measles, Mumps, Rubella, Varicella									
MMR:					X ²		X ²	X ²	
Measles, Mumps, Rubella									
Meningococcal-C Conjugate				X			X ³		
DTaP-IPV:						X			
Diphtheria, Tetanus, Pertussis, Polio									
Varicella							X ⁴		
Hepatitis B							X		
HPV							X ⁵ (Girls ONLY)		
Tdap:								X	
Tetanus, Diphtheria, Pertussis									
Seasonal Influenza			X ⁶	→	→	→			



Tetanus Prophylaxis in Wound Management



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**



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 DoItForYourBaby.com

HEAR WHAT WHOOPING COUGH SOUNDS LIKE AT DoItForYourBaby.com

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Questions

