Tetanus Post-exposure Prophylaxis in Injury/Wound Management

Revision Date: February 10, 2015

Goals of tetanus post-exposure prophylaxis are as follows:

- Remove the source of toxin production by timely, thorough injury/wound cleaning.¹
- Neutralize any toxin that has been released through high circulating concentrations of tetanus antibody. Effective levels of neutralizing antibody concentrations are achieved by either prior completion of tetanus-containing vaccine series or the immediate administration of tetanus immune globulin (TIG).¹

Individual assessment to determine if prophylaxis is required as follows:

- Description of the injury/wound to determine if it is a tetanus-prone injury/wound. Tetanus-prone injury/wound (significantly contaminated with material likely to contain tetanus spores and/or the presence of necrotic tissue¹) as listed:
  - Including but not limited to, wounds contaminated with dirt, feces, soil and saliva; animal bites; puncture wounds; avulsions; and wounds resulting from missiles (gunshots), crushing, burns and frostbite.²
  - Wounds with devitalized tissue.³
  - Abscesses, cellulitis, chronic ulcers and other wounds in patients with diabetes mellitus or illicit injection drug use.³
  - Sustained more than six hours before surgical treatment of the wound/burn.
  - Clinical evidence of sepsis.

Note: Appropriate cleansing and debridement of the injury/wound is imperative.¹

Refer to Public Health Notifiable Disease Guidelines – Tetanus.⁴

- History of chronic immune compromising conditions especially those with humoral immune deficiency states (e.g., HIV infection, agammaglobulinemia or hypogammaglobulinemia).
- Number of previous doses of tetanus-containing vaccine received.
- Date of last dose of tetanus-containing vaccine.
- Previous reactions to tetanus-containing vaccines and/or tetanus immune globulin.

Recommended tetanus post-exposure prophylaxis:

**Tetanus immune globulin (TIG)**

- Required for tetanus-prone injury/wound in individuals with a history of receiving less than three doses of a tetanus-containing vaccine or those with an unknown tetanus immunization history. TIG should be administered as soon as possible following the injury/wound.⁵ See Biological Products - Tetanus Immune Globulin.
- TIG is needed to treat a tetanus-prone injury/wound in an inadequately immunized individual to ensure protection during the incubation period of tetanus (3 to 21 days; range one day to several months⁷).
- Individuals with humoral immune deficiencies including HIV may not respond adequately to tetanus-containing vaccine. Therefore, individuals with these conditions should be managed as unimmunized. They should receive TIG and the age-appropriate tetanus-containing vaccine regardless of time elapsed since the previous dose of tetanus-containing vaccine.¹

Note: Adults receiving TIG should also receive tetanus-containing vaccine and be referred to Public Health to complete the tetanus-containing vaccine series as indicated.¹ Children should be referred to Public Health to ensure that they receive the age-appropriate tetanus-containing vaccine.

See Table 1 on next page and Biological Products - Tetanus Immune Globulin.
Tetanus-containing vaccine

- A dose of age-appropriate tetanus-containing vaccine should also be recommended when TIG is indicated to ensure that the individual is protected against future exposure. The vaccine dose should be administered using a separate needle/syringe and at a different anatomical site than the TIG (when administered on the same day).

- A booster dose of the age-appropriate tetanus-containing vaccine is recommended for individuals with a tetanus-prone injury/wound who have received at least three previous doses of tetanus-containing vaccine and five years or more have elapsed since the last dose of tetanus-containing vaccine.

- A booster dose of tetanus-containing vaccine is recommended for all individuals presenting with an injury/wound if ten years or more have elapsed since the last dose of tetanus-containing vaccine.

Notes:

- Tetanus/diphtheria (Td or dTap) vaccine only will be stored in emergency rooms.
  - Children (17 years of age and younger) should receive the age-appropriate combined tetanus-containing vaccine through referral to Public Health Services
  - Adults (18 years of age and older) with an incomplete tetanus-containing vaccine series should be referred to Public Health to complete the series.

- Although tetanus is uncommon in people who have received a primary vaccine series but did not receive subsequent boosters every 10 years, cases have occurred in such circumstances.

- When immunization is provided in the emergency department/urgent care center, immunization information should be sent to Public Health Services to ensure documentation in the immunization registry.

See Table 1 on next page and Biological Products - Diphtheria and Tetanus-containing Vaccines.
Table 1: Guide to Tetanus prophylaxis in wound management

<table>
<thead>
<tr>
<th>History of tetanus immunization</th>
<th>Clean minor wounds</th>
<th>All other wounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tetanus-containing vaccine</td>
<td>TIG</td>
</tr>
<tr>
<td>Unknown or less than 3 doses in vaccine series</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>3 or more doses in a vaccine series and less than 5 years since last booster dose</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>3 or more doses in a vaccine series and 5 years but less than 10 years since last booster dose</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>3 or more doses in a vaccine series and 10 years or more since last booster dose</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

1 See Recommended Immunization for Infants, Children and Adults: Schedules for specific tetanus-containing vaccine recommendations based on age.
2 Administer at different injection sites using separate needles/syringes.
3 Yes, if known to have a humoral immune deficiency. Vaccine should be administered as well regardless of the time elapsed since the last dose of tetanus-containing vaccine.

References