A brief refresher on tetanus.

Basically, any wound other than a 'clean minor wound' is considered to be tetanus prone. However, it is difficult to find literature anywhere to say where the term 'clean, minor wound' came from and what it actually means. It is possible to get the *Clostridium tetani* bacteria in through any break in the skin and in one third of confirmed cases of tetanus there has been no history of a wound or portal of entry.

High risk wounds would be classed as compound fractures, bites, penetrating wounds, wounds that contain foreign bodies, burns, any superficial wound that is obviously contaminated with soil, dust or horse manure (especially if topical disinfection is delayed more than 4 hours) and reimplantation of an avulsed tooth.

The bottom line for this part is that we should ask about immunisation status for all patients with a potential portal of entry.
Antibiotics do not prevent or treat tetanus. Around 1 in 10 people who get the disease will die from it. In 2006-07 there were 6 notifications of tetanus in Australia. Four of these people were unvaccinated. One of them was partially vaccinated for age and the other had unknown immunisation history. One of the 6 people in this year died.
The best course of action is prevention through vaccination. Immunity fades over time so we need booster doses to make sure we stay protected.
On the National Schedule tetanus vaccines are given to:

- children at 2, 4 and 6 months of age
- children at 18 months of age
- children at 4 years of age

We are considered immune if we have had these 3 or more doses and then a booster (or 6th dose) is given 9-10 years later to:

- adolescents in first year of secondary school (or age equivalent)

Among children who get all five doses of DTaP on schedule, effectiveness is high but not perfect. The vaccine protects nearly all children (98 in 100) within the year following the last dose. Five years after getting the last DTaP dose, the vaccine fully protects about 7 in 10 children.

If a child presents to the ED with a wound and they are over the age of 9 then we will probably need to give them Boostrix (tetanus, diphtheria, pertussis) because it will likely have been 5 years or longer since their last dose. If we give just ADT (absorbed diphtheria tetanus) we have missed the opportunity to cover them for pertussis however some parents may only want to give minimal coverage because they have concerns about certain vaccines.

If the child has not had 3 doses of tetanus containing vaccine (because they have fallen behind the schedule or are under age 6mths with a wound) then they are not considered

immune and they will need a dose of tetanus immune globulin (TIG) if they get a tetanus prone wound. TIG is a blood product (not a vaccine) and contains tetanus antibodies that can assist the body to fight the bacteria. If this is needed, we must source it from Blood Bank. It requires some discussion and consent from families/patients because it is a blood product.

Depending on the dose of TIG required and the size of the child the dose may need to be divided into 2 injections to give IM. It is very viscous and will need to be given slowly with a 23G needle.

TIG does not last very long in our system so needs to be coupled with a tetanus containing vaccine. This means that a child may potentially require 3 injections if they are not sufficiently immunised and get a wound.

There has been a case of a 4-year-old being given a dose of Boostrix because they had not had their 4 year vaccines yet. The product information for Boostrix states that this vaccine is for use in people aged ≥4 years for booster doses only. Best practice for this child would be to give Infanrix IPV so that they are covered for polio and their schedule would have been complete (also Boostrix is 'reduced antigen' unlike the other vaccines which we get at the beginning of the schedule).

Several other children have been given Boostrix when their records show that they had already had Boostrix in the past 12mths at school. It is a good idea to give tetanus coverage if the child or family is unsure of what vaccines they have had but generally they have had tetanus if they got a vaccine in their first year of high school and did not 'conscientiously object' to any of them. There doesn't appear to be any strong evidence to suggest that there is anything particularly bad about giving more than 1 booster dose very close together, only some advice about how you may be more likely to get a more significant local site reaction with the second injection.

The guide to tetanus prophylaxis in wound management is easily found online or in hard copy of the Australian Immunisation Handbook.

The Immunisation Hotline can be called from 0800 to 1630 Monday to Friday to find out a person's immunisation history (1800 671 811) or I can help get access if I'm on shift.

There is also a guideline available on the Children's Health Queensland Hospital and Health Service website: -
https://www.childrens.health.qld.gov.au/wp-content/uploads/PDF/ams/gdl-01023.pdf