Utah Department of Health & Human Services

Tetanus (Lockjaw)

Disease plan

Quick links

Last updated: June 16, 2022 by Jared Ripplinger.

Questions about this disease plan?

Contact the Utah Department of Health and Human Services, Office of Communicable Diseases: 801-538-6191.

Tetanus critical clinician information

Clinical evidence

Signs/symptoms

- Generalized
  - Muscle stiffness, first affecting jaw and neck
  - Generalized, convulsive muscle spasms
- Localized
  - Persistent muscle contractions in area of injury
- Cephalic
  - Cranial nerve involvement
- Complications
  - Difficulty breathing due to spasms of vocal chords or respiratory muscles
  - Fractures of spine or long bones resulting from sustained contractions and convulsions
  - Hypertension and/or abnormal heart rhythm resulting from hyperactivity of nervous system

Period of communicability

- Not transmitted person-to-person; no period of communicability

Incubation period

- Range 3–21 days; average about 10 days
- In neonatal tetanus, symptoms usually appear 4–14 days after birth, averaging about 7 days.

Mode of transmission

- Primarily through contaminated wounds (surgical, burns, puncture wounds, crush wounds, animal bites, etc.)
- Not transmitted person-to-person

Laboratory testing

Type of lab test/timing of specimen collection

- No confirmatory lab tests; diagnosis is based on clinical syndrome
- Culture of Clostridium tetani is difficult and not recommended for diagnosis or treatment

Treatment recommendations

Type of treatment

- Thoroughly clean wounds and remove necrotic tissue
- Evaluate the patient's immunization status
- Persons with wounds of any severity who have had fewer than 3 doses of tetanus toxoid-containing vaccine should receive age-appropriate tetanus toxoid vaccination
- Persons with clean, minor wounds who have not received a tetanus toxoid-containing vaccine in the last 10 years should receive age-appropriate tetanus toxoid vaccination
- Persons with all other wounds who have not received a tetanus toxoid-containing vaccine in the last 5 years should receive age-appropriate tetanus toxoid vaccination

- Tetanus immune globulin (TIG) is recommended for all persons with symptoms of tetanus, **AND** as part of routine wound management for any persons with fewer than 3 previous doses of tetanus toxoid-containing vaccinations with non-minor wounds
    - People with HIV infection or severe immunodeficiency should receive TIG regardless of of immunization history
    - The recommended dose of TIG is an intramuscular (IM) dose of 500 units, partially infiltrated around the wound if possible, for children and adults Intravenous immune globulin (IVIG) contains tetanus antitoxin and may be used if TIG is not available
- Provide supportive therapy and maintenance of adequate airway if tetanic spasms are occurring
- Refer to the treatment section for more information

Prophylaxis

- Antibiotic prophylaxis against tetanus is not recommended

Case and contact management

Isolation/quarantine of case: None

Case-contact management: None

Why is tetanus important to public health?

Tetanus is an acute, potentially fatal disease characterized by generalized increased rigidity and convulsive spasms of skeletal muscles. The muscle stiffness usually first involves the jaw (lockjaw) and neck, and later becomes more generalized. Tetanus is different from other vaccine-preventable diseases because it does not spread from person to person. The bacteria is usually found in soil, dust, and manure, and enters the body through breaks in the skin—usually cuts or puncture wounds caused by contaminated objects. Today, tetanus is uncommon in the U.S., with an average of 29 reported cases per year from 2016 through 2019. Nearly all cases of tetanus are among people who have never received a tetanus vaccine, or adults who don't stay up-to-date on their 10-year booster doses. Surveillance information is used to assess progress toward disease elimination goals and the information is also used to raise awareness of the importance of immunization.

Disease and epidemiology

Clinical description

Tetanus is an acute disease characterized by generalized rigidity and convulsive spasms of skeletal muscles. On the basis of clinical findings, 3 forms of tetanus have been described.

- **Localized tetanus:** Localized tetanus is an uncommon form of the disease in which patients have persistent muscle contractions in the same anatomical area as the injury. These contractions usually occur for several weeks before subsiding. Sometimes localized tetanus will precede generalized tetanus.
- **Cephalic tetanus:** Cephalic tetanus is a very rare form of the disease that involves the cranial nerves, especially in the facial area. Cephalic tetanus can result from a head injury or from the presence of C. tetani in the normal flora of the middle ear.
- **Generalized tetanus:** Generalized tetanus accounts for roughly 80% of all reported tetanus cases. Onset is usually gradual; muscle stiffness first affects the jaw (trismus or lockjaw) and neck. Severe, generalized muscle spasms will follow and can continue for 3–4 weeks. Complete recovery can take several months.
    - **Neonatal tetanus** is a type of generalized tetanus that results from infection of the unhealed umbilical stump. It is common in developing countries, but extremely rare in the U.S.

Complications associated with tetanus infection include breathing difficulties due to spasms of the vocal cords or respiratory muscles, fractures of the spine or long bones resulting from sustained contractions and convulsions, and hypertension and/or abnormal heart rhythm resulting from hyperactivity of the autonomic nervous system.

Causative agent

Tetanus is caused by a potent exotoxin produced by the bacterium *Clostridium tetani. C. tetani* is a gram-positive, anaerobic bacillus capable of forming spores. The exotoxin that causes the clinical manifestations of tetanus is a neurotoxin called tetanospasmin, and is one of the most potent toxins known.

Differential diagnosis

Differential diagnosis includes hypocalcemic tetany, phenothiazine reaction, strychnine poisoning, epilepsy, rabies, and bacterial meningitis.

Laboratory identification

Tetanus is a clinical syndrome without confirmatory laboratory tests. A tetanus diagnosis is made clinically by excluding other causes of tetanic spasms. Attempts to culture C. tetani are associated with poor yield, and a negative culture does not rule out disease. C. tetani is recovered from the wound in only 30% of cases, and is sometimes isolated from patients who do not have tetanus.

Treatment and prophylaxis

All wounds should be thoroughly cleaned and necrotic tissue and foreign material should be removed. Antibiotic prophylaxis against tetanus is neither practical nor useful in managing wounds; proper immunization plays the more important role. Cases of tetanus rarely occur in individuals who are up-to-date on tetanus toxoid-containing vaccine.

If tetanic spasms are occurring, supportive therapy and maintenance of an adequate airway are critical. Tetanus immune globulin (TIG) is recommended for persons with tetanus. TIG can only help remove unbound tetanus toxin. It cannot affect toxin already bound to nerve endings.

- A single intramuscular dose of 500 units is generally recommended for children and adults, with part of the dose infiltrated around the wound if it can be identified. The previous recommendation was 3,000 to 6,000 units, but 500 units appears to be as effective as higher doses and may cause less discomfort.
- TIG has not been approved for IV administration. Intravenous immune globulin (IVIG) contains tetanus antitoxin and may be used if TIG is not available. This treatment can be considered when TIG isn't available in a dose of 200 to 400 mg/kg. The Food and Drug Administration (FDA) has not licensed IGIV for this purpose.
- TIG may be obtained at local area hospitals or pharmacies.

Persons with wounds that are neither clean nor minor, and who have had fewer than three doses of tetanus toxoid, or have an uncertain history of prior doses, should receive TIG as well as tetanus toxoid-containing vaccine. This is because early doses of tetanus toxoid-containing vaccine may prime the immune system but not induce immunity. TIG provides temporary immunity by directly providing antitoxin. This ensures that protective levels of antitoxin are achieved, even if an immune response has not yet occurred.

Tetanus prophylaxis with TIG in routine wound management				
Vaccination history	Clean, minor wounds		All other wounds*	
	DTaP, Tdap, or Td†	TIG§	DTaP, Tdap, or Td†	TIG§
Unknown or <3 doses	Yes	No	Yes	Yes
≥3 doses	No¶	No	No**	No

*Such as, but not limited to, wounds contaminated with dirt, feces, soil, or saliva; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

†DTaP is recommended for children younger than age 7 years. Tdap is preferred to Td for persons age 11 years or older who have not previously received Tdap. Persons age 7 years or older who are not fully immunized against pertussis, tetanus, or diphtheria should receive one dose of Tdap (preferably the first) for wound management and as part of the catch-up series; if additional tetanus toxoid-containing doses are required, either Td or Tdap vaccine can be used.

§People with HIV infection or severe immunodeficiency who have contaminated wounds (including minor wounds) should also receive TIG, regardless of their history of tetanus immunizations. Prophylactic dosing of TIG is 250 IU given intramuscularly (IM).

¶Yes, if ≥10 years since the last tetanus toxoid-containing vaccine dose.

**Yes, if ≥5 years since the last tetanus toxoid-containing vaccine dose.

Case fatality

The case fatality rate of tetanus ranges from 10% to more than 80% depending on age, the quality of care available, and the length of the incubation period. Case fatality rates for neonatal tetanus are highest, exceeding 80% among those with short incubation periods. Higher case fatality rates are also observed in persons older than age 60 years and persons who are unvaccinated.

Reservoir

The spores of C. tetani are ubiquitous in nature—most often found in soil and in the intestines and feces of many animals.

Transmission

There is no person-to-person transmission of tetanus. Transmission primarily occurs through contaminated wounds, both major and minor. In recent years, a higher proportion of cases have had minor wounds, probably because severe wounds are more likely to be properly managed. Tetanus may follow elective surgery, burns, deep puncture wounds, crush wounds, otitis media, dental infections, animal bites, abortion, and pregnancy.

Susceptibility

Anyone can get tetanus, however the disease is now rare in the U.S. because of routine immunization and improved wound management. Tetanus disease does not result in immunity due to the extreme potency of the toxin.

Incubation period

The incubation period—time from exposure to illness—is usually between 3 and 21 days (average 10 days), although it may range from one day to several months, depending on the kind of wound. Most cases occur within 14 days. In general, shorter incubation periods are seen with more heavily contaminated wounds, more serious disease, and a worse outcome (prognosis). In neonatal tetanus, symptoms usually appear from 4–14 days after birth, averaging about seven days.

Period of communicability

Because tetanus is not transmitted from person-to-person, it has no period of communicability. Tetanus is the only vaccine-preventable disease that is infectious but not contagious.

Epidemiology

A marked decrease in mortality from tetanus occurred from the early 1900s to the late 1940s. In the late 1940s, tetanus toxoid was introduced into routine childhood immunization and tetanus became nationally notifiable. At that time, 500 to 600 cases (approximately 0.4 cases per 100,000 population) were reported per year.

After the 1940s, reported tetanus incidence rates declined steadily and remain low today. From 2016 to 2019, the last years for which data have been compiled, a total of 116 tetanus cases were reported nationally; an average of 29 cases per year. Utah reported one probable, non-fatal case in that time period in an individual who had a puncture wound from a rusty, manure-contaminated wire.

Nearly all reported cases of tetanus are in persons who have either never been vaccinated, or who completed a primary series but have not had a booster in the preceding 10 years. Heroin users, particularly persons who inject themselves subcutaneously, appear to be at high risk for tetanus. Quinine is used to dilute heroin and may support the growth of C. tetani.

Neonatal tetanus is rare in the U.S., with only two cases reported since 1989. Neither of the infants' mothers had ever received tetanus toxoid.

Tetanus is sporadic and relatively uncommon in most industrialized countries, but is more common in agricultural regions and in areas where contact with animal excreta is more likely, and immunization is inadequate. The majority of cases reported worldwide are in newborn babies and mothers who are not up-to-date on vaccinations. In 2015, approximately 34,000 newborns died from neonatal tetanus. This is a 96% reduction since 1988, largely due to expanded immunization programs.

Public health control measures

Public health responsibility

- Investigate all suspect cases of disease.
- Fill out and submit appropriate disease investigation forms.
- Provide education to the general public and clinicians about disease transmission and prevention.

Prevention

Vaccination is the best method to prevent infection. Tetanus vaccines are recommended for people of all ages, with booster shots throughout life. Immediate and proper wound care can also help prevent infection.

Recovery from tetanus may not result in immunity; second attacks can occur and primary immunization is indicated after recovery.

Chemoprophylaxis

There is no chemoprophylaxis for tetanus.

Vaccine

Tetanus toxoid is available as a single-antigen preparation, combined with diphtheria toxoid as pediatric DT or adult Td, and with both diphtheria toxoid and acellular pertussis vaccine as DTaP or Tdap. It is also available in varying combinations with vaccines for Hepatitis B, polio, and Haemophilus influenzae type B (Hib). Tetanus toxoid is included in the routine vaccinations recommended for children. Recommendations are included below but can also be found here: https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/dtap.html.

Childhood Immunizations

Dose	Age
Primary 1	2 months
Primary 2	4 months
Primary 3	6 months
Primary 4[#]	15-18 months
Primary 5*	4-6 years
Tdap Booster	11-12 years

[#]Administered at least 6 months after 3rd dose & not before 12 months.
*The fifth dose is not necessary before entering kindergarten or elementary school if the fourth dose is administered on or after the fourth birthday.

Recommended schedule and intervals for diphtheria, tetanus, and pertussis vaccines for persons < 7 years							
Vaccine type	Vaccine	Brand (1)	Age for approved use in the routine schedule (2)				
			2 mos	4 mos	6 mos	15-18 mos	4-6 yrs (3)
DTaP	DTaP (4)	Daptacel	X	X	X	X	X
	DTaP (4)	Infanrix	X	X	X	X	X
Combination vaccines with DTaP	DTaP-HepB-IPV (4, 5)	Pediarix	X	X	X		
	DTaP-IPV/Hib (4, 6)	Pentacel	X	X	X	X	
	DTaP-IPV-Hib-He	Vaxelis	X	X	X		

	pB (4, 7)						
	DTaP-IPV (8)	Kinrix					X
	DTaP-IPV (8)	Quadracel					X
DT	DT (4, 9)	None	X	X	X	X	X

(1) The use of brand names is not meant to preclude the use of other comparable licensed vaccines.
(2) Minimal intervals: Dose 1 to 2: 4 weeks. Dose 2 to 3: 4 weeks. Dose 3 to 4: 6 months. Dose 4 to 5: 6 months. For more information on age for use in catch-up immunization schedules please see: https://www.cdc.gov/vaccines/schedules/hcp/imz/catchup.html
(3) The fifth dose is not necessary if the fourth dose was given after the fourth birthday.
(4) FDA-approved for use in infants as young as 6 weeks.
(5) FDA-approved for use through age 6 years (prior to 7th birthday). The combined DTaP-HepB-IPV vaccine may be used when any component of the combination is indicated, and if the other components are not contraindicated. Approved for the primary series only (Doses 1-3). For adequate immune response, the last dose of hepatitis B vaccine should be given at ≥24 weeks of age and therefore this combination vaccine should not be administered as a complete primary series on an accelerated schedule at 4-week intervals for prevention of pertussis.
(6) FDA-approved for use through age 4 years (prior to 5th birthday). The combined DTaP-IPV/Hib vaccine may be used when any component of the combination is indicated, and if the other components are not contraindicated. Approved for the primary series and first booster dose (Doses 1-4). The combined DTaP-IPV/Hib vaccine is not indicated for children 5 years of age and older.
(7) FDA-approved for use through age 4 years (prior to 5th birthday). The combined DTaP-IPV-HibHepB vaccine may be used when any component of the combination is indicated, and if other components are not contraindicated. Approved for the primary series only (Doses 1-3). For adequate immune response, the last dose of hepatitis B vaccine should be given >24 weeks of age and therefore this combination vaccine should not be administered as a complete primary series on an accelerated schedule at 4-week intervals for prevention of pertussis.
(8) The combined DTaP-IPV vaccines may be used when any component of the combination is indicated, and if the other components are not contraindicated. Only approved for the booster dose at age 4 through 6 years. Earlier doses should use another vaccine.
(9) Use diphtheria and tetanus toxoids vaccine if encephalopathy not attributable to another identifiable cause occurs within 7 days of administration of previous dose of pertussis-containing vaccine.

Vaccines containing tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis antigens recommended for use in persons ages 7–18 Years	
Vaccine type	Brand
Tdap (1, 2, 3, 4)	Adacel
	Boostrix
Td (4, 5)	Tenivac
	TDVAX

(1) The use of brand names is not meant to preclude the use of other comparable licensed vaccines.
(2) Persons ages 11–18 years should receive a single dose of Tdap, preferably at a preventive care visit at ages 11–12 years.
(3) Catch-up immunization: Persons ages 7–18 years who have never been vaccinated against pertussis, tetanus, or diphtheria should receive a series of three tetanus and diphtheria toxoid-containing vaccines, which includes at least 1 dose of Tdap. The preferred schedule is a dose of Tdap, followed by a dose of either Td or Tdap at least 4 weeks afterward and another dose of either Td or Tdap 6 to 12 months later. Persons ages 7–18 years who are not fully immunized against pertussis, tetanus, or diphtheria should receive 1 dose of Tdap (preferably the first) in the catch-up series; if additional tetanus toxoid-containing doses are required, either Td or Tdap vaccine can be used. The catchup schedule and minimum intervals between doses are available at https://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
(4) Adolescents who are pregnant should receive Tdap, regardless of past history of Tdap receipt. Tdap should be administered from 27 through 36 weeks' gestation, preferably during the earlier part of this time period, although it may be administered at any time during pregnancy. If an adolescent did not receive Tdap during her current pregnancy and did not receive a prior dose of Tdap ever, then Tdap should be administered immediately postpartum. If an adolescent did not receive Tdap during her current pregnancy but did receive a prior dose of Tdap, she should not receive a dose of Tdap postpartum.
(5) Tetanus prophylaxis for wound management: A tetanus toxoid-containing vaccine is indicated as part of wound management if more than five years have passed since the last tetanus toxoid-containing vaccine dose. If a tetanus toxoid-containing vaccine is indicated for persons ages ≥11 years, Tdap is preferred for persons who have not previously received Tdap or whose Tdap history is unknown. If a tetanus toxoid-containing vaccine is indicated for a pregnant woman, Tdap should be used. For nonpregnant persons with documentation of previous vaccination with Tdap, either Td or Tdap can be used if a tetanus toxoid-containing vaccine is indicated.
(6) Td should be used if encephalopathy not attributable to another identifiable cause occurs within 7 days of administration of a previous dose of pertussis-containing vaccine.

Adult immunizations

Adults who have never received tetanus and diphtheria toxoid-containing vaccine should receive a series of three vaccinations. The preferred schedule is a dose of Tdap, followed by Tdap or Td at least4 weeks after Tdap, and another dose of Td or Tdap 6-12 months after the last Td or Tdap. Tdap may substitute for Td for any one of the three doses in the series, but Tdap is preferred as the first dose. After a primary series of vaccine, adults should receive a Td or Tdap dose every 10 years throughout life. Adults 19–64 years of age should substitute a single dose of Tdap to replace a single dose of Td for booster immunization if they have not received Tdap previously. Tdap may be given at a shorter interval than 10 years since the receipt of the last tetanus-toxoid containing vaccine to protect against pertussis. The safety of intervals as short as two years between administration of Td and Tdap is supported. All travelers should have current tetanus immunization (e.g., within the last 10 years prior to travel).

In October 2012, the Advisory Committee on Immunization Practices (ACIP) voted to recommend that healthcare personnel administer a dose of Tdap during each pregnancy regardless of the patient's prior history of receiving Tdap (or Td). This strategy not only helps protect the mother from getting and passing pertussis on to her infant, but also provides passive immunity to the infant. Postpartum Tdap administration only provides protection to the mother—it does not provide immunity to the infant.

- To maximize the passive antibody transfer to the infant, Tdap should be administered during the early part of gestational weeks 27 through 36.
- Pregnant women should receive Tdap anytime during pregnancy if it is indicated (e.g., wound care, during a community pertussis outbreak).

Isolation and quarantine requirements

Tetanus is not transmitted from person-to-person. Therefore, there are no isolation and quarantine requirements.

Case investigation

Reporting

Tetanus should be reported within three working days of identification to the local health department or the Utah Department of Health and Human Services. Report any illness to public health authorities that meets any of the following criteria:

1. An illness with generalized or local muscle spasms, or hypertonia in a person diagnosed by a medical professional to have tetanus.

2. An illness in a person whose death certificate lists tetanus as a cause of death or a significant condition contributing to death.

Other recommended reporting procedures:

- All cases of tetanus should be reported.
- Reporting should be on-going and routine.
- Frequency of reporting should follow the state health department's routine schedule.

Criteria for reporting tetanus (CSTE)

Criterion	Reporting
Clinical presentation	
Muscle spasms	O
Hypertonia	O
Diagnosis of tetanus by a healthcare professional	N
Death certificate lists disease due to tetanus as a cause of death or a significant condition contributing to death	S

Notes:
S = This criterion alone is sufficient to report or confirm a case.
N = This criterion in conjunction with all other "N" and any "O" criteria in the same column is required to report or confirm a case.
O = At least one of these "O" criteria in each category in the same column (e.g., clinical presentation and laboratory findings)—in conjunction with all other "N" criteria in the same column—is required to report or confirm a case.

Case definition (CSTE 2010)

In the absence of a more likely diagnosis, an acute illness with muscle spasms or hypertonia and diagnosis of tetanus by a healthcare provider; or death, with tetanus listed on the death certificate as the cause of death, or a significant condition contributing to death.

Case classification

Note: there is no definition for "confirmed" tetanus.
Probable:

- In the absence of a more likely diagnosis, an acute illness with
    - muscle spasms or hypertonia; AND

    - diagnosis of tetanus by a healthcare provider; or
- Death, with tetanus listed on the death certificate as the cause of death, or a significant condition contributing to death.

Criteria for Case Classification of Tetanus (CSTE)

Criterion	Probable
Clinical presentation	
Muscle spasms	O
Hypertonia	O
Diagnosis of tetanus by a healthcare provider	N
Death, with tetanus listed on the death certificate as the cause of death or a significant condition contributing to death	S

Notes:
S = This criterion alone is sufficient to report or confirm a case
N = This criterion in conjunction with all other "N" and any "O" criteria in the same column is required to report or confirm a case.
O = At least one of these "O" criteria in each category in the same column (e.g., clinical presentation and laboratory findings)—in conjunction with all other "N" criteria in the same column—is required to report or confirm a case.

Case investigation process

Interview the case and others who may be able to provide pertinent information.

A. Evaluate the diagnosis and assist with securing tetanus Immune Globulin (TIG):
    - Assess the clinical presentation (e.g., lockjaw, rigidity, spasms), risk factors (e.g., gardening, farm work, injection drug use), and immunization history for the patient.
    - TIG may be obtained at local area hospitals/pharmacies or ordered through the manufacturer.
B. Identify source of infection. Ask about the following exposures in the 3–21 days prior to onset:
    - Minor or major injury, particularly if contaminated with soil or manure,
    - Exposures to soil or manure,
    - Injection drug use, and
    - Use of alternative medicine treatments, e.g., for newborn umbilical stump.
C. Identify potentially exposed persons, noting outbreaks are extremely rare:
    - Collect name, age, onset date, and contact information for anyone reported to have a similar illness.
D. Environmental evaluation:

- An environmental evaluation is rarely needed since tetanus spores are found everywhere in the environment, and the source of the infection is rarely determined with certainty. Contact the Utah Department of Health and Human Services or local health department if you have high suspicion for a source of infection, such as potentially contaminated heroin.

Outbreaks

In the rare case of an outbreak, search for the source, especially contaminated street drugs or other common-use injections.

Identification of case contacts

Since tetanus is not spread from human contact, identification of case contacts is not needed.

Case contact management

No contact follow-up is needed since tetanus is not transmitted from person-to-person.

References

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Version control

V.02.16: General update to document format and revisions of thematic order. Added importance to public health section. Added narrative reporting information. Update to transmission. Update to case fatality. Update to immunizations and outbreaks. Reviewed CTSE case definition. Added UT-NEDSS minimum/required fields. Added case investigation process.

V.12.16: Updated CSTE case definition and verified references.

V.03.18: Added Critical clinician information and rules for entering test results sections.

V.09.18: Updated treatment, epidemiology, childhood and adult immunization, vaccine, and case investigation process sections.

V.06.22: Minor grammatical changes throughout, updated treatment recommendations in CCI, gave neonatal tetanus its own bullet in disease and epidemiology, updated treatment recommendations to reflect current guidance, updated tetanus prophylaxis table, updated epidemiology with worldwide, national, and Utah data, updated vaccine section with combination vaccines available, updated childhood immunizations section with current recommendations from ACIP and added table for recommended schedule for children under 7, added table with recommended vaccines for persons 7-18, added references to Tdap under adult immunizations, reformatted table under case classification to reflect current CSTE formatting, updated references to Utah Department of Health throughout to be Utah Department of Health and Human Services, updated UT-NEDSS minimum/required fields. Updated references to conform to APA 7th edition citation style..

UT-NEDSS minimum/required fields by tab

Demographic

- Area code
- Phone number
- Birth xex
- Street number
- Street
- Unit number
- ZIP code
- City
- County
- State
- Date of birth
- Ethnicity
- Race
- Last name

Clinical

- Date diagnosed
- Date of death
- Died
- Disease
- Disease onset date
- Was the patient vaccinated prior to injury?
- Date of last vaccination:
- Does the patient have diabetes?
- Hypertonia
- Muscle spasms
- Date the wound occurred
- Environment where the wound occurred
- Principal anatomical site of the wound
- Is infection related to IV drug use?
- If vaccinated, list vaccine type

Laboratory

- Organism
- Specimen source
- Test result

Epidemiological

- Daycare associated
- Imported from

Reporting

- Date first reported to public health

Administrative

- Outbreak name
- State case status
- Outbreak associated

Electronic laboratory reporting processing rules

Tetanus rules for entering laboratory test results

The following rules describe how laboratory results reported to public health should be added to new or existing events in UT-NEDSS. These rules have been developed for the automated processing of electronic laboratory reports, although they also apply to manual data entry.

Test-specific rules

Test specific rules describe what test type and test result combinations are allowed to create new morbidity events in UT-NEDSS, and what test type and test result combinations are allowed to update existing events (morbidity or contact) in UT-NEDSS.

Test type	Test result	Create a new event	Update an existing event
Culture	Positive	Yes	Yes
	Negative	No	Yes
	Other	No	Yes
IgG antibody	Positive	Yes	Yes
	Negative	No	Yes

Whitelist rules

Whitelist rules describe how long an existing event can have new laboratory data appended to it. If a laboratory result falls outside the whitelist rules for an existing event, it should not be added to that event, and should be evaluated to determine whether a new event (CMR) should be created.

Tetanus morbidity whitelist rule: If the specimen collection date of the laboratory result is 60 days or less after the event date, the laboratory result should be added to the morbidity event.

Tetanus contact whitelist rule: Never added to a contact event.

Graylist rule

We often receive laboratory results through ELR that cannot create cases, but can be useful if a case is created in the future. These laboratory results go to the graylist. The graylist rule describes how long an existing event can have an old laboratory result appended to it.

Tetanus graylist rule: If the specimen collection date of the laboratory result is 30 days before to seven days after the event date of the morbidity event, the laboratory result should be added to the morbidity event.

Other electronic laboratory processing rules

If an existing event has a state case status of “not a case,” ELR will never add additional test results to that case. New labs will be evaluated to determine if a new CMR should be created.