

TICK BITE

SUBJECTIVE

History of tick bite
Recent outdoor exposure to tick-infected areas, note geographical site and time of year exposure occurred
Document age of victim; location of affected area(s) and date and time of bite if known
History of systemic response (i.e., fever $>100^{\circ}$; rash, headache, neck stiffness, confusion)

OBJECTIVE

Tick embedded in skin
May present with rash, fever, swollen lymph nodes, conjunctival injection (red eyes)
May complain of headache, nausea, vomiting, abdominal pain, muscle pain, lack of appetite

ASSESSMENT

Embedded tick or recent history of tick removal

PLAN

Tick removal:

Grasp tick with fine-tipped tweezers (or fingers, protected with gloves or tissue paper) as close to skin's surface as possible
Gently pull straight out without twisting motions.
Wash tick down drain
Wash hands and tick attachment site with soap and water
Advise use of OTC antibiotic ointment at site of attachment

Avoid folklore remedies such as "painting" the tick with nail polish or petroleum jelly, or using heat to make the tick detach from the skin.

HEALTH TEACHING

- Avoidance of tick-infected areas such as wooded and bushy areas with high grass and leaf litter.
- Wear light-colored clothes that cover the arms, legs, and other exposed areas. Pants should be tucked into boots or socks and long-sleeved shirts should be buttoned at the cuff.
- Use repellents that contain 20% or more DEET (N, N-diethyl-m-toluamide) on the exposed skin for protection that lasts up to several hours. Always follow product instructions.
- Insect repellents containing DEET should not be used on children under 2 months of age. Oil of lemon eucalyptus products should not be used on children under 3 years of age.
- When applying insect repellents to children, avoid their hands, around the eyes, and cut or irritated skin. Do not allow children to handle insect repellents. When using on

children, apply to your own hands and then put it on the child. After returning indoors, wash your child's treated skin or bathe the child. Clothes exposed to insect repellants should be washed with soap and water.

- Use products that contain permethrin to treat clothing and gear, such as boots, pants, socks and tents. It remains protective through several washings.

Find and Remove Ticks from Your Body

- Bathe or shower as soon as possible after coming indoors (preferably within two hours) to wash off and more easily find ticks that are crawling on you.
- Conduct a full body tick check upon return from tick-infested areas. Inspect children's bodies and clothing also. Special attention should be given to the exposed hairy regions of the body where ticks often attach. Parents should check their children for ticks, paying close attention to under the arms, in and around the ears, inside the belly button, behind the knees, between the legs, around the waist, and especially in their hair.
- Examine gear and pets. Ticks can ride into the home on clothing and pets, then attach to a person later, so carefully examine pets, coats, and day packs. Tumble clothes in a dryer on high heat for an hour to kill remaining ticks.

REFERRAL INDICATORS

Unable to remove tick

Seek medical attention promptly if symptoms of Rocky Mountain Spotted Fever (RMSF), Lyme disease or Ehrlichiosis occur. For information purposes, the incubation period and symptoms for these diseases are listed below:

Rocky Mountain Spotted Fever (RMSF)

Incubation: Approximately 1 week (range, 2-14 days)

Symptoms: typically begin 2-14 days after the bite of an infected tick and commonly include: sudden onset of fever and headache; nausea; vomiting; abdominal pain; muscle pain; lack of appetite; conjunctival injection (red eyes) and rash

About 90% of patients develop some type of rash about 2-5 days after fever, but sometimes not until late in the disease process. Approximately 10% of patients never develop a rash.

The classic rash may first appear 2-5 days after the onset of fever and present as small, flat, pink, non-itchy spots (macules) on the wrists, forearms, and ankles and spread to include the trunk and sometimes the palms and soles. Some people will have a rash that varies from this description and people who fail to develop a rash, or develop an atypical rash, are at increased risk of being misdiagnosed.

The red to purple, spotted (petechial) rash is usually not seen until the sixth day or later after onset of symptoms and occurs in 35-60% of patients with the infection and is indicative of progression to severe disease

Lyme Disease

Incubation: 1-32 days with a median, 11 days

Symptoms: Divided into 3 stages:

Stage One: Early localized stage (3-30 days post-tick bite)

Fatigue, chills, fever, headache, muscle and joint aches, and swollen lymph nodes

- Red, expanding rash called erythema migrans (EM) or “bull’s-eye” rash occurs in approximately 70-80% of infected persons. It begins at the site of a tick bite on average about 7 days after the bite. Rash gradually expands over a period of several days, and can reach up to 12 inches (30 cm) across. Parts of the rash may clear as it enlarges, resulting in a “bull’s-eye” appearance.
- Rash usually feels warm to the touch but is rarely itchy or painful.
- EM lesions may appear on any area of the body.
- Some people may get these general symptoms in addition to an EM rash, but in others, these general symptoms may be the only evidence of infection.



Stage 2: Early disseminated stage (days to weeks post-tick bite)

Untreated, the infection may spread from the site of the bite to other parts of the body, producing an array of specific symptoms that may come and go, including:

- Additional EM lesions in other areas of the body
- Facial or Bell's palsy (loss of muscle tone on one or both sides of the face)
- Severe headaches and neck stiffness due to meningitis (inflammation of the spinal cord)
- Pain and swelling in the large joints (such as knees)
- Shooting pains that may interfere with sleep
- Heart palpitations and dizziness due to changes in heartbeat

Many of these symptoms will resolve over a period of weeks to months, even without treatment². However, lack of treatment can result in additional complications, described below.

Stage 3: Late disseminated stage (months-to-years post-tick bite)

Approximately 60% of patients with untreated infection may begin to have intermittent bouts of arthritis, with severe joint pain and swelling. Large joints are most often affected, particularly the knees³. Arthritis caused by Lyme disease manifests differently than other causes of arthritis and must be distinguished from arthralgias (pain, but not swelling, in joints).

Up to 5% of untreated patients may develop chronic neurological complaints months to years after infection⁴. These include shooting pains, numbness or tingling in the hands or feet, and problems with short-term memory.

Ehrlichiosis

Incubation: 5 to 10 days after a tick bite, median, 9 days

Symptoms: Commonly occur 1-2 weeks following a tick bite; fever, headache, chills, malaise, muscle pain, nausea/vomiting/diarrhea, confusion, conjunctival injection (red eyes), rash (in up to 60% of children, less than 30% of adults)

It is important to note that the combination of symptoms varies greatly from person to person.

Erythroderma is a type of rash that resembles a sunburn and consists of widespread reddening of the skin that may peel after several days. Some patients may develop a rash that resembles the rash of Rocky Mountain spotted fever making these two diseases difficult to differentiate on the basis of clinical signs alone.

REFERENCES

2012 Red Book: Report of the Committee on Infectious Diseases, 29th Edition, Larry K. Pickering, MD, FAAP, Editor

<http://www.fda.gov/Drugs/EmergencyPreparedness/ucm085277.htm>

http://www.cdc.gov/lyme/signs_symptoms/index.html

<http://www.cdc.gov/rmsf/symptoms/index.html>

Information about insect repellents can be found at the following sites:

The Environmental Protection Agency (EPA) regulates all pesticides and provides extensive information about insect repellents:

[Environmental Protection Agency Home Page](#)
[How to Use Insect Repellents Safely](#)

The Centers for Disease Control and Prevention (CDC) offers information about mosquito repellents:

[Insect Repellent Use and Safety](#)
[Updated Information Regarding Insect Repellents](#)

The American Academy of Pediatrics (AAP) has information about the use of mosquito repellents in children:

[Follow Safety Precautions When Using DEET on Children](#)
[DEET Alternatives Considered to be Effective Mosquito Repellents](#)
[Insect Repellents](#)

PREGNANCY TEST

GENERAL INFORMATION

Patients requesting pregnancy tests at the Health Department should be tested on that day and only deferred if absolutely necessary. Pregnancy testing must be performed according to the *Pregnancy Testing Guidelines* contained in the Family Planning Clinical Guidelines.

- Chlamydia and gonorrhea are STDs that can affect long term fertility and the health of any current pregnancy. Early detection and treatment can preserve fertility and improve pregnancy outcome.

Tennessee STD Program standards regarding the chlamydia/gonorrhea test at the time of the pregnancy test are as follows:

All women under age 30 reporting to clinic for a urine pregnancy test should be offered chlamydia and gonorrhea screening from their pregnancy test urine sample. Considering the sequelae that might occur in the mother and neonate if the infection persists, repeat testing is recommended 4 - 6 weeks after completion of therapy for all pregnant women to ensure therapeutic cure.

If the gonorrhea/chlamydia test is positive, refer to the treatment guidelines found in the PHN Protocol for Chlamydia and Gonorrhea and if needed, Partner Delivered Therapy for Chlamydia. Obtain informed consent and forward the record to the prenatal care provider.

- AAP recommendations for prenatal education includes guidelines for the prevention of sleep related deaths. See “ABC’s of Safe Sleep” handout.

SUBJECTIVE FINDINGS

Date of LMP

History of unprotected coitus since LMP

Symptoms of pregnancy and date symptoms appeared:

- Breast tenderness
- Fatigue
- Nausea
- Urinary frequency

History of STDs

Current family planning method if any

Use of over-the-counter and/or prescription drugs

Alcohol use and/or substance abuse

Is she smoking cigarettes, including e-cigarettes?

Does she want to be pregnant now?

When, if ever, would she like to be pregnant?

OBJECTIVE FINDINGS

Positive or negative pregnancy test

ASSESSMENT

Pregnancy test positive, pregnancy intended

Pregnancy test positive, pregnancy unintended

Pregnancy test negative, pregnancy desired

Pregnancy test negative, pregnancy not desired

PLAN OF CARE

- Inform client that pregnancy cannot be accurately diagnosed, nor gestational age determined, through laboratory testing alone. A diagnosis of pregnancy consists of a history, pregnancy test, and physical examination, including pelvic examination.
- Discuss test results clearly and objectively.
- If pregnancy test is negative, repeat the pregnancy test if no menses in two weeks.
- Maintain and provide current county specific resource list for referrals.
- Inform the client that chlamydia and gonorrhea are STDs that can affect long term fertility and the health of any current pregnancy. Early detection and treatment can preserve fertility and improve pregnancy outcome.

OPTIONS COUNSELING

Explore the client's feelings about the pregnancy test result and provide **Options Counseling**. If the client is sure of her choice, focus on that choice and provide appropriate **Options Counseling** outlined below.

If the pregnancy test is negative and pregnancy is not desired:

- Discuss contraception options and emergency contraception
- Provide condoms.
- If the client is an adolescent, encourage her to discuss contraceptive use with parent(s) or another responsible family member.
- If possible, admit the client to the family planning program that day, especially if she is an adolescent. If a clinic opening is not available that day, waive the physical exam and if there are no contraindications in her medical history, give up to 3 months supply of birth control method. Schedule a physical exam within 3 months. See PHN Protocol for the method of choice.
- Consider creating a tickler file (manual or PTBMIS) for at risk clients and follow-up as needed for an appropriate period of time (nursing judgment).

If the pregnancy test is negative and pregnancy is desired:

- Provide pre-conception counseling including:
 - Menstrual cycle and fertile days
 - Nutrition and the importance of folic acid
 - The importance of dental care to good pregnancy outcomes
 - The impact of smoking (including e-cigarettes) during and after pregnancy
 - The importance of early prenatal care

- The impact of alcohol and substance abuse during pregnancy
- The impact of prescription and over-the-counter medication use during pregnancy
- The impact of sexually transmitted diseases on pregnancy
- Review services available at the local health department including WIC, presumptive eligibility for TennCare, and the HUGS home visiting program.
- Encourage an adolescent to discuss their desire for pregnancy with a parent or another responsible family member; explore why they want to be pregnant.
- Consider creating a tickler file (manual or PTBMIS) for the at-risk adolescent and follow-up as needed for an appropriate period of time (nursing judgment).

If the pregnancy test is positive and the pregnancy is desired:

- Discuss the importance of early prenatal care.
- Enroll eligible clients for presumptive eligibility for TennCare.
- Find a prenatal care resource if no private insurance and not TennCare eligible.
- Enroll or refer eligible clients for WIC.
- Enroll or refer eligible clients for HUGS.
- Discuss nutrition, prenatal vitamins, and the importance of folic acid.
- Discuss the importance of dental care to good pregnancy outcomes and refer if applicable.
- Discuss the impact of smoking (including e-cigarettes) during and after pregnancy.
- Discuss the impact of alcohol and substance abuse during pregnancy.
- Discuss the impact of prescription and over-the-counter medication use during pregnancy
- Discuss the impact of sexually transmitted diseases on pregnancy.
- Review danger signs of pregnancy, including signs and symptoms of a threatened miscarriage or ectopic pregnancy:
 - Bleeding
 - Spotting
 - Lower abdominal pain
- Provide infant care information/counseling
 - Discuss prevention of sleep related deaths and SIDS. Discuss and provide “ABC’s of Safe Sleep” handout included at the end of this protocol. Encourage parents to share ABC’s with all other caregivers of the newborn.
 - Discuss day care needs if returning to school or employment.
 - Explore family support system.
 - Explore the daily needs of a newborn and its impact on lifestyle.

If the pregnancy test is positive and the pregnancy is not desired:

- Provide factual, non-biased counseling for all available options:
 - parenting
 - adoption
 - termination
- Provide a list of area and community resources **for those options requested by the patient.**
- All clients need the information regarding good health practices in pregnancy (listed under test positive/pregnancy desired) until their decision regarding the pregnancy is made. Give complete information as seems appropriate for the given client. Offer her the

opportunity to return for further counseling; discuss the possibility of her bringing in her partner, a friend, or a family member.

- Encourage adolescents to speak with a parent or other responsible family member as soon as possible.
- Abortion is a legal option however there are no state or federal funds available
- Discuss the timetable for decision-making (obtaining pregnancy termination during the first trimester).
- Consider whether or not a mental health referral is needed.
- Consider creating a tickler file (manual or PTBMIS) for these at risk clients and follow-up for an appropriate period of time (nursing judgment).

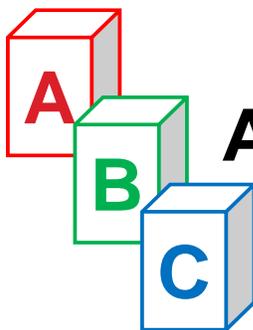
REFERENCES

Tennessee Department of Health, "Family Planning Clinical Guidelines", January 2011.

U.S. Department of Health and Human Services, Public Health Service, Health Service Administration, Bureau of Community Health Services Program, *Program Guidelines For Project Grants For Family Planning*, 2001.

U.S. Department of Health and Human Services, Public Health Service, Standards of Compliance for Abortion-Related Services in Family Planning Service Projects, *Federal Register* 58(23), February 5, 1993.

American Academy of Pediatrics, "AAP Expands Guidelines for Infant Sleep Safety and SIDS Risk Reduction. October 18, 2011.



ABC's of Safe Sleep

Babies should sleep...

Alone

- Not with an adult, another child, or pets
- Not with pillows or stuffed toys
- Not with crib bumpers
- Room-sharing* is recommended

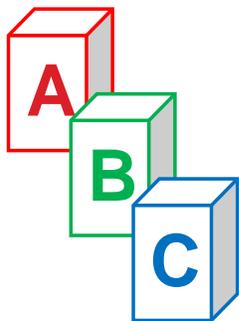
On their Back

- Not on their side
- Not on their stomach

In a Crib

- Not in an adult bed
- Not on a couch or sofa
- Not in a chair

*The American Academy of Pediatrics recommends having the infant sleep in the same room as the parent(s) on a separate sleep surface (crib or other similar surface). Evidence suggests that this arrangement decreases the risk of Sudden Infant Death Syndrome (SIDS) by up to 50%.



El ABC del sueño seguro

Los bebés deben dormir...

A solas

- No con un adulto, ni con otro niño, ni con una mascota
- Sin cojines ni muñecos de peluche
- Sin protectores en la cuna
- Se recomienda compartir la habitación*

Boca arriba

- No de lado
- No boca abajo

En una Cuna

- No en la cama de un adulto
- No en un diván, ni en un sofá
- No en una silla

HEPATITIS A, CASE OR PRESUMPTIVE

BACKGROUND

Hepatitis A virus (HAV) is acquired primarily by mouth through fecal-oral transmission by either person-to-person contact or ingestion of contaminated food or water. Humans are the only natural reservoir of the virus. The incubation period is approximately 28 days with a range of 15-50 days. Blood test for HAV infection becomes positive about 5 days before symptoms appear and remains positive for about 6 months after infection. Once infected with hepatitis A virus, it is not possible to become infected again.

SUBJECTIVE

Initial symptoms of hepatitis A usually include:

Fatigue	Malaise
Nausea	vomiting
Lack of appetite	Fever (greater than 100.4°F or 38°C)
Abdominal pain (right side under the ribs)	

Other symptoms that may develop as illness progresses:

Jaundice	Dark colored urine
Itchy skin	Light colored stools

OBJECTIVE

Viral shedding persists for 1 to 3 weeks. Infected persons are most likely to transmit HAV 1 to 2 weeks before the onset of illness, up to 1 week after illness onset.

Symptoms usually last less than 2 months, although 10%–15% of symptomatic persons have prolonged or relapsing disease for up to 6 months.

Management should be considered for:

Hepatitis A confirmed by laboratory (note: hepatitis A IgM testing is not recommended for patients without symptoms of acute hepatitis illness due to the risk of false positive hepatitis A IgM test results).

If hepatitis A is strongly suspected

Epidemiological contact to confirmed case of Hepatitis A

Groups at increased risk for Hepatitis A or its complications include:

International travelers

Men who have sex with men

Users of injection and non-injection illegal drugs

Persons with clotting factor disorders

Persons working with nonhuman primates susceptible to HAV infection

ASSESSMENT

There is no specific treatment for hepatitis A virus infection. Treatment and management are supportive.

PLAN

Institute fecal-oral precautions

Determine if post-exposure prophylaxis is indicated (refer to PHN Protocol 3.220 Hepatitis A Post-exposure).

Hepatitis A is a reportable condition under Tennessee Reportable Disease Regulations. Notify nursing supervisor and communicable disease investigator; complete appropriate case investigation forms

Notify environmentalist if food or water borne transmission is suspected

Refer to the Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use PHN Protocol 2.170 for contraceptive management during an acute illness,

Health Teaching

Instruct on proper hand washing techniques. Advise to wash for 15 to 20 seconds using antimicrobial soap and water. Rinse well and dry hands on a SINGLE USE TOWEL.

Hands should be washed before and after preparing food and eating, after going to the bathroom(or changing a diaper) and/or handling garbage, dirty laundry or any soiled item.

Wash raw fruits and vegetables thoroughly before eating

REFERENCES

CDC. Hepatitis A Information for Health Professionals, Centers for Disease Control and Prevention, Division of Viral Hepatitis, August 2011

<http://www.cdc.gov/hepatitis/HAV/HAVfaq.htm>

Cheney, CP, Patient Information: Hepatitis A (Beyond the Basics), In: UptoDate, Baron, EB(Ed.) Waltham, MA, 2013

Epidemiology and Prevention of Vaccine Preventable Diseases, Department of Health and Human Services, Centers for Disease Control and Prevention 12th Edition, May 2011

Ferri, FF. (2010), Ferri's Clinical Advisor, Philadelphia, PA: Mosby Elsevier

**TETANUS, DIPHTHERIA, AND PERTUSSIS VACCINE
TETANUS, DIPHTHERIA, AND ACELLULAR PERTUSSIS
(Tdap) VACCINE FOR CHILDREN AND ADOLESCENTS
(7 through 18 years)
(ADACEL™ OR BOOSTRIX™)**

GENERAL INFORMATION

Tdap vaccine is inactivated and contains no live organisms. The vaccine protects against tetanus (“lockjaw”), diphtheria, and pertussis (“whooping cough”). Like tetanus and diphtheria, immunity to pertussis wanes following childhood immunization or disease. Two Tdap vaccines were licensed in 2005 by the U.S. Food and Drug Administration (FDA) as a **ONE-TIME DOSE**:

ADACEL™ (Sanofi Pasteur) is licensed **for ages 11 through 64 years**.

BOOSTRIX™ (GlaxoSmithKline) is licensed **for ages 10 years and older**.

Tdap is currently recommended by the Advisory Committee on Immunization Practices (ACIP) for routine use in adolescents aged 11 through 18 years. Subsequent routine Td BOOSTERS are recommended every 10 years (see Td protocol).

Tdap vaccine may be given at the same time as other immunizations, including meningococcal vaccine. It may be given before or after meningococcal vaccine if both vaccines cannot be given simultaneously.

With the exception of pregnant women, Tdap should be given only one time. It should be given if the patient is unable to verify or recall whether they have had Tdap.

Note: The CDC published ACIP recommendations in January 2011 that differ from the current manufacturers’ package inserts on age and dose intervals. ACIP guidelines for the use of vaccines take priority and should be followed as written below.

ACIP Recommendations for Use (updated May 2013):

Tdap may be used **ONE TIME** either as a routine **BOOSTER** dose, **OR** as one of a **PRIMARY** vaccine series, **OR** for tetanus **PROPHYLAXIS** in accordance with standard guidelines for wound management.

Tdap is recommended during EACH pregnancy and is preferred during the third trimester, regardless of Tdap vaccination history. Vaccination during pregnancy passes protective antibodies to the unborn child. A woman who has not had Tdap before and who does not receive it during pregnancy should be vaccinated immediately post-partum; however, a post-partum dose does not help the newborn and is not recommended if she has had Tdap previously.

Timing: Administer regardless of interval since last tetanus- or diphtheria- containing vaccine. Note: A “complete” primary series of pertussis vaccine in childhood is typically defined as 5 doses of DTaP. Four doses of DTaP is considered complete when the 4th dose is given after the 4th birthday.

Children (7 through 10 years) who have not had a complete primary series of pertussis

vaccine as defined above: give one dose of Tdap. Use Td for any additional doses necessary to complete the primary series of tetanus immunization.

Adolescents (11 through 18 years) who had a complete primary series of tetanus-containing vaccine in childhood - A single dose of Tdap is routinely recommended and should be given to **all children** between ages 11-12 years; administer at ages 13-18 years to any child that has not already received a Tdap.

Adolescents (11 through 18 years) who have not had a primary series of tetanus-containing vaccine - A single dose of Tdap should be **substituted for one Td** in the 3-dose primary series; it is preferred as the first dose.

Every pregnant adolescent who had a complete primary series of tetanus containing vaccine in childhood should be given Tdap during each pregnancy preferably during the third trimester, unless contraindicated. Previously unimmunized adolescents who fail to receive Tdap before or during pregnancy should receive a dose immediately post-partum.

REFERRAL INDICATORS (PER ACIP)

Contraindications to giving the vaccine include the following:

- History of an immediate severe allergic reaction (anaphylaxis) to any of the three components of Tdap (i.e., tetanus, diphtheria, or pertussis vaccines) or to any combination vaccine containing Tdap components
- History of encephalopathy (e.g., coma, prolonged seizures) within 7 days of administration of a pertussis-containing vaccine that is not attributable to another identifiable cause; tetanus/diphtheria vaccine (Td) should be used instead of Tdap in such patients.

Precautions which may require referral include the following:

- History of Arthus-type hypersensitivity reactions (extensive painful limb swelling within hours of injection) following prior tetanus vaccination; such patients should not be given any tetanus-containing vaccine more frequently than every 10 years
- A current progressive neurologic disorder, uncontrolled epilepsy, or progressive encephalopathy; defer vaccination with pertussis-containing vaccine until treatment regimen is established and condition is stabilized, Td may be used
- History of a severe allergic reaction (anaphylaxis) to latex¹
- Guillain-Barre syndrome (GBS) within 6 weeks after a previous dose of a tetanus toxoid-containing vaccine
- Patient has an acute moderate-to-severe illness, with or without fever; vaccination should be deferred until illness has resolved

PLAN

Provide current Vaccine Information Sheet (VIS) about Tdap and the benefits of vaccination
 Counsel regarding benefits, side effects, and management
 Shake the vial well, administer 0.5 ml of vaccine INTRAMUSCULARLY
 Remind that tetanus/diphtheria vaccine boosters are recommended every 10 years
 If pregnant, recommend Tdap for any unimmunized household members or infant caregivers.

¹ Boostrix™ pre-filled syringes contain latex. Adacel™ products and Boostrix™ single dose vials do not contain latex; there is no precaution against the use of these products in patients with latex allergy.

Advise to wait in clinic 20 minutes after injection

Record manufacturer and lot number of the vaccine administered, date, name, address and title of the person administering vaccine

Instruct patient to contact Health Department if adverse reaction occurs (complete appropriate form)

Referral Indicators:

History of an immediate severe allergic reaction (anaphylaxis) to prior tetanus, diphtheria, or pertussis vaccines

History of encephalopathy (e.g., coma, prolonged seizures) within 7 days of administration of a pertussis-containing vaccine

Refer for precautions as indicated

Follow-up:

Return for Td booster in 10 years, or for the next scheduled dose if administering a catch-up primary series.

Return for wound management as required

REFERENCES

Advisory Committee on Immunization Practice (ACIP) Votes to Recommend Routine Use of Combined Tetanus, Diphtheria and Pertussis (Tdap) Vaccines for Adolescents, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), Atlanta, GA 30333, June 30, 2005

Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (ADACEL™) Vaccine package insert, Sanofi Pasteur (Aventis Pasteur), June 2005

Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine, Adsorbed (BOOSTRIX™) Prescribing information, GlaxoSmithKline, May 2005, revised January 2009. http://us.gsk.com/products/assets/us_boostrix.pdf

Centers for Disease Control and Prevention, Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis (Tdap) Vaccine from the Advisory Committee on Immunization Practices, 2010. MMWR. <http://www.cdc.gov/mmwr/pdf/wk/mm6001.pdf> Last accessed January 14, 2011.

Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) in Pregnant Women — Advisory Committee on Immunization Practices (ACIP), 2012. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm>. Last accessed June 3, 2013.

**TETANUS, DIPHTHERIA, AND PERTUSSIS VACCINE
TETANUS, DIPHTHERIA, AND ACELLULAR PERTUSSIS
(Tdap) VACCINE FOR ADULTS (19 and up)
(ADACEL™ OR BOOSTRIX™)**

GENERAL INFORMATION

Tdap vaccine is inactivated and contains no live organisms. The vaccine protects from tetanus (“lockjaw”), diphtheria, and pertussis (“whooping cough”). Immunity wanes following childhood immunization. With pertussis, adults may suffer prolonged coughing illness and may infect others, including infants at risk for severe complications.

ADACEL™ (Sanofi Pasteur) was licensed in 2005 by the U.S. Food and Drug Administration (FDA) for ages **11 through 64 years** as a **ONE-TIME DOSE**.

BOOSTRIX™ (GSK) is licensed **for ages 10 years or older** as a **ONE-TIME DOSE**.

The Advisory Committee on Immunization Practices (ACIP) recommends providers should not miss an opportunity to vaccinate persons aged 65 years and older with Tdap, and may administer the vaccine that they have available. When feasible, for adults aged 65 years and older, Boostrix should be used; however, either vaccine product administered to a person aged 65 years and older provides protection and is considered valid.

Tdap is routinely recommended by the ACIP for any person age 11 years or older who has not yet had Tdap, regardless of interval since last tetanus booster. (See the Tdap protocol for adolescents for recommendations ages 7 through 18 years). **Subsequent routine Td BOOSTERS are recommended every 10 years** (see Td protocol).

Tdap vaccine may be given at the same time as other immunizations, including meningococcal vaccine. It may be given before or after meningococcal vaccine if both vaccines cannot be given simultaneously.

Tdap is approved only as a ONE TIME dose; however, Tdap SHOULD be given if there is no documentation of a previous dose of Tdap and during each pregnancy.

Tdap is especially important for pregnant women, healthcare personnel and persons who care for or live with infants under age one, in order to help prevent exposing the infant to pertussis disease (“cocooning”)

Tdap is recommended during EACH pregnancy and is preferred during the third trimester, regardless of Tdap vaccination history. Vaccination during pregnancy passes protective antibodies to the unborn child. A woman who has not had Tdap before and who does not receive it during pregnancy should be vaccinated immediately post-partum; however, a post-partum dose does not help the newborn and is not recommended if she has had Tdap previously.

Note: The ACIP now recommends Tdap for all adults who have not previously had a dose of Tdap, regardless of the interval since the recipient's last Td. These ACIP recommendations differ from the manufacturer package insert and take priority over information contained in the package insert.

ACIP Recommendations for Use:

Tdap may be used **ONE TIME** either as a routine **BOOSTER** dose, **OR** as one of a **PRIMARY** vaccine series, **OR** for tetanus **PROPHYLAXIS** in accordance with standard guidelines for wound management:

Adults (19 and older): A single dose of Tdap is routinely recommended to any adult who has not had a dose of Tdap. Adults who have completed a primary series of tetanus containing vaccine in the past are routinely recommended to have a booster dose of tetanus containing vaccine every 10 years. The next tetanus booster would be due 10 years after the dose of Tdap.

Adults (19 and older) WITHOUT A COMPLETE PRIMARY SERIES of Td-containing vaccine - A single dose of Tdap should be **substituted for one Td** in the primary series; it is preferred as the first dose.

Adults (19 and older), REQUIRING TETANUS PROPHYLAXIS FOR WOUND MANAGEMENT - A single dose of Tdap should be given, if available, if the patient has not had Tdap before (See Protocol for Wound Management); otherwise, Td should be used.

PREGNANCY: Tdap may be given at any time during pregnancy. Unless contraindicated, **Tdap should be given to each pregnant woman, preferably during the third trimester, during EACH pregnancy, regardless of her history of Tdap vaccination.** . Immunization during pregnancy passes protective antibodies from the mother to the unborn child and can help prevent illness in both mother and newborn. Women who have not previously had a dose of Tdap and fail to receive Tdap during pregnancy should receive a dose immediately post-partum. Post-partum immunization does not protect the newborn, so it is not recommended for every pregnancy, but only if the woman is previously unimmunized with Tdap.

DOSING INTERVALS since last tetanus vaccine dose: Tdap should be given regardless of the interval since the last tetanus-containing vaccine.

REFERRAL INDICATORS (PER ACIP)

Contraindications to giving the vaccine include the following:

History of an immediate severe allergic reaction (anaphylaxis) to any of the three components of Tdap (i.e., tetanus, diphtheria, or pertussis vaccines) or to any combination vaccine containing Tdap components

History of encephalopathy (e.g., coma, prolonged seizures) within 7 days of administration of a pertussis-containing vaccine that is not attributable to another identifiable cause; tetanus/diphtheria vaccine (Td) should be used instead of Tdap in such patients

Precautions which may require referral include the following:

- History of Arthus-type hypersensitivity reactions (extensive painful limb swelling within hours of injection) following tetanus vaccination administered <10 years previously; such patients should not be given any tetanus-containing vaccine more frequently than every 10 years
- A current unstable neurologic disorder, uncontrolled epilepsy, or progressive encephalopathy; defer vaccination with pertussis-containing vaccine until treatment regimen is established and condition is stabilized; Td may be used
- Guillain-Barre syndrome (GBS) within 6 weeks after a previous dose of a tetanus toxoid-containing vaccine
- Defer immunization if the patient has an acute moderate-to-severe illness, with or without fever, until illness has resolved

PLAN

- Provide current Vaccine Information Sheet (VIS) about Tdap and the benefits of vaccination
- Counsel regarding benefits, side effects, and management
- Shake the vial well, administer 0.5 ml of vaccine INTRAMUSCULARLY
- Remind that tetanus/diphtheria vaccine boosters are recommended every 10 years
- If pregnant, recommend Tdap for any unimmunized household members or infant caregivers.
- Advise to wait in clinic 20 minutes after injection
- Record manufacturer and lot number of the vaccine administered, date, name, address and title of the person administering vaccine
- Instruct patient to contact Health Department if adverse reaction occurs (complete appropriate form)

Referral Indicators:

- History of an immediate severe allergic reaction (anaphylaxis) to prior tetanus, diphtheria, or pertussis vaccines
- History of encephalopathy (e.g., coma, prolonged seizures) within 7 days of administration of a pertussis-containing vaccine
- Refer or defer immunization for precautions as indicated

Follow-up:

- Return for Td booster in 10 years (or for next dose, if completing a primary series)
- Return for wound management as required

REFERENCES

- Centers for Disease Control and Prevention. Preventing Tetanus, Diphtheria, and Pertussis Among Adults: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Recommendations of the Advisory Committee on Immunization Practices (ACIP) and Recommendation of ACIP, supported by the Healthcare Infection Control Practices Advisory Committee (HICPAC), for Use of Tdap Among Health-Care Personnel. MMWR 2006;55(No. RR-17).

Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (ADACEL™) Vaccine package insert, Sanofi Pasteur (Aventis Pasteur), June 2005. Revised 2/22/2012.

Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine, Adsorbed (BOOSTRIX™) Prescribing information, GlaxoSmithKline, July 2011, revised March 2012. http://us.gsk.com/products/assets/us_boostrix.pdf

Centers for Disease Control and Prevention. FDA Approval of Expanded Age Indication for a Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine. MMWR 2011;60(No. 37): pp. 1279-1280.

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ACIP provisional recommendations for adults aged 65 years and older on use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap) and guidance on use of Tdap products for adults aged 65 years and older. <http://www.cdc.gov/vaccines/recs/provisional/Tdap-feb2012.htm>. Last accessed March 22, 2012.

Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) in Pregnant Women — Advisory Committee on Immunization Practices (ACIP), 2012. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm>. Last accessed May 23, 2013.

HEPATITIS B, Case or Presumptive

BACKGROUND

Hepatitis B virus infection is an established cause of acute and chronic hepatitis and cirrhosis. Chronic hepatitis also increases the risk of developing liver cancer. The virus has an average incubation period of 90 days with a range of 60 to 150 days. In some instances, the virus has been shown to remain infectious on environmental surfaces for more than 7 days at room temperature. HBV is transmitted through the mixing of bodily fluids. Humans are the only known host. Acute hepatitis B infection and chronic or acute hepatitis B infection of a woman during each pregnancy is a reportable disease under Tennessee Reportable Disease regulations.

Risk factors for becoming infected include:

- Sexual contact with infected person
- Contaminated needles – this can be from sharing drug needles or syringes or from contaminated needles used for tattooing, acupuncture or piercings.
- Sharing toothbrushes, razors or other personal items with an infected person.
- Persons who live in the household of an infected person.
- Persons with diabetes

Hepatitis B can be passed from mother to infant, especially in the absence of proper prophylaxis of the infant at delivery. Perinatal transmission has the highest likelihood of chronic infection and subsequent liver disease in the infant.

SUBJECTIVE

May be asymptomatic

Non-specific symptoms characterized by insidious onset of malaise, anorexia, nausea, vomiting, right upper quadrant abdominal pain, fever, headache, muscle pain or tenderness, and dark urine beginning 1 to 2 days before the onset of jaundice.

OBJECTIVE

Confirmation is by serologic testing, the presence of HBsAg, IgM anti-HBc, or HBeAg. Some patients may present with a hepatitis B viral load or positive DNA test.

ASSESSMENT

Hepatitis B, confirmed or strongly suspected, requires reporting to the local health department by physician's office, laboratory or hospital treating the patient under state reportable disease rules.

PLAN

If pregnant, notify nursing supervisor, communicable disease director or medical director, and the region's designated Perinatal Hepatitis B Prevention Coordinator (if not one of the above) (see Tennessee Department of Health, Perinatal Hepatitis B Prevention Program guidelines for further information)

The suspected or confirmed acute case or chronic case (in the case of any pregnant woman) must be reported by appropriate staff in the National Electronic Disease Surveillance System.

Discuss blood and body fluid precautions until HBsAg disappears and anti-HBs appears.

Interview household and sexual contacts and others who may have contact with blood or secretions e.g., intravenous drug users (for contacts see PHN Protocol 5.080 Hepatitis B, All Other Contacts, Post Exposure)

Offer complete hepatitis B vaccine series at no cost to unvaccinated household or sexual contacts as well as any contacts that share drug paraphernalia. Advise that their contacts just need to notify the office staff that they are a contact of a hepatitis B case (whether chronic or acute).

Offer condoms and encourage use with each sexual contact

Offer testing/ counseling for other STD's, HIV and syphilis

If case is pregnant, inform that the regional Perinatal Hepatitis B Prevention Program Coordinator will follow up to provide additional education and postnatal case management assistance to ensure timely prophylaxis and vaccination for the baby to minimize the risk of transmission of infection to the baby.

REFERENCE

CDC . Hepatitis B Information for Health Professionals, Centers for Disease Control and Prevention, Division of Viral Hepatitis, January 2012

<http://www.cdc.gov/hepatitis/HBV/HBVfaq.htm>

Epidemiology and Prevention of Vaccine-Preventable Diseases, Department of Health and Human Services, Centers for Disease Control and Prevention, 12th Edition, May 2011

Ferri. FF. (2010), Ferri's Clinical Advisor, Philadelphia, PA; Mosby Elsevier.

Lok, ASF, Patient Information: Hepatitis B (Beyond the Basics), In: UpToDate, Esteban, R(Ed), UpToDate, Waltham, MA 2013

Tennessee Department of Health, Perinatal Hepatitis B Prevention Program Guidelines, Revised 2012, available at <http://health.state.tn.us/ReportableDiseases/> under the "Public Health" tab of the reportable condition listed as "Hepatitis, viral, HBsAg+ Pregnant Female".