Memorandum

Date: June 29, 2010

To: All Prehospital Personnel

From: Dan Burch, EMS Administrator

Subj.: Pertussis (whooping cough)

San Joaquin County Public Health Services and the California Department of Public Health (CDPH) are warning the public and healthcare workers of a current epidemic of pertussis (whooping cough) throughout California and San Joaquin County. According to CDPH California has experienced a four fold increase in pertussis cases since 2009, with five deaths of infants less than three months of age.

Children regularly receive a series of five vaccinations of DTP prior to starting kindergarten (2 months, 4 months, 6 months, 15-18 months, 4-6 years). The course of vaccination takes time to complete which makes newborns and infants extremely susceptible.

San Joaquin County Health Officer Karen Furst, M.D., is recommending that all healthcare providers, including all prehospital care personnel, receive a Tdap vaccination. Tdap was licensed in 2005, as a vaccination for adults to protect against tetanus, diphtheria, and pertussis. All EMS personnel should receive a Tdap vaccination even if you are up-to-date on your TD (tetanus, diphtheria) vaccination. Adults regularly receive a TD (tetanus, diphtheria) booster every 10 years, usually following a wound to protect against tetanus, however Tdap is given to a person only once as an adult.

EMS personnel are encouraged to make arrangements with their primary care physician or healthcare provider of choice to receive a Tdap vaccination as-soon-as-possible. The issue for EMS personnel is less about the danger of the illness to themselves, as otherwise healthy adults, as it is about the concern that EMS personnel who unknowingly carry pertussis may come in contact with infants or pregnant women in their third trimester or immediately after delivery. It is these patients who are most susceptible to serious illness and death from pertussis.

Attached for your review is the Health Advisory issued by San Joaquin County Public Health Services and a CDC fact sheet on Tdap vaccination.
Health Advisory
Pertussis Epidemic Declared in California

California is experiencing a peak year for pertussis (whooping cough), its worst since 2005. The California Department of Public Health (CDPH) reports a four fold increase in cases compared to 2009, with five infant deaths, all of whom were less than three months of age. In San Joaquin County there has also been an increase in pertussis. So far this year 19 cases have been reported, compared to only 6 cases for all of 2009. There have been no deaths in the county so far this year. On June 18, 2010 the State Health Officer, Dr Mark Horton, declared a pertussis epidemic in California.

The immunity provided by pertussis disease or vaccine is not lifelong. Children last immunized against pertussis at kindergarten entry are again susceptible by adolescence. In addition, immunization rates for the Tdap booster vaccine, first licensed in 2005, are low in both teens and adults. Therefore, a large proportion of Californians remain susceptible to pertussis resulting in peak disease years that occur every 2-5 years as the number of susceptible people in the population increases.

Medical providers should consider pertussis as a possible diagnosis in patients with compatible symptoms. Also, all adolescents and adults ≥10 years who have not received a dose of Tdap (tetanus, diphtheria and pertussis) vaccine should receive one. Vaccination with Tdap is especially important for close contacts to infants, pregnant women in their third trimester or immediately after delivery, and all health care workers.

Attached please find a Pertussis Quick Guide for Clinicians with information on clinical presentation, and guidance on reporting, infection control, testing, antibiotic treatment, and vaccination.
Pertussis (Whooping Cough)
A QUICK GUIDE FOR CLINICIANS

CLINICAL DISEASE

- Classic pertussis has 3 phases, usually lasting about 6-10 weeks:
  
  **Catarrhal stage:** Onset of cold-like symptoms and a mild cough that worsens;
  
  **Paroxysmal stage:** Spasms of severe cough followed by deep inspiration, which may be accompanied by a “whooping” sound. Infants may gag, gasp, or have apnea. Post-tussive emesis occurs at any age.
  
  **Convalescent stage:** Decreasing frequency and severity of coughing, whooping, and vomiting. Mortality is highest in infants < 6 months old. Adolescents and adults often have milder disease.

- Consider pertussis in any patient with cough lasting 2 or more weeks, especially those with paroxysmal cough, inspiratory “whoop,” or post-tussive emesis.

REPORT ALL SUSPECT AND CONFIRMED CASES WITHIN ONE WORKING DAY TO:
San Joaquin County Public Health Services (SJCPHS): Telephone: 209-468-3822; Fax: 209-468-8222

INFECTION CONTROL PRECAUTIONS

- Infectiousness begins from onset of catarrhal symptoms until 21 days after onset of paroxysmal cough (if no or partial treatment was given). Communicability ends after 5 days of appropriate antibiotic treatment.

- Use droplet precautions for all suspected cases: Isolate and provide a face mask for suspect patient to wear if can tolerate. Put the patient in a private room. Anybody entering the patient’s room should wear a surgical mask regardless of prior immunity.

- Advise patients to stay away from infants, young children, pregnant women and immunocompromised persons while infectious.

DIAGNOSTIC TESTING

- Culture or PCR from a nasal aspirate or a nasopharyngeal swab are recommended. Sensitivity of culture decreases if collection is after start of antibiotic treatment or in the later part of the paroxysmal stage of illness. PCR is most sensitive and is best when collected ≤ 3 weeks after cough onset. When possible obtain both tests. Negative test results in cases with compatible symptoms do not rule out pertussis. (PCR is available at the SJCPHS Laboratory; for more information and to obtain collection kits call 209-468-3460.)

- Other tests – not recommended: Serology testing and DFA tests of direct smears are not reliable and not recommended.

- For more info on testing and collection of nasopharyngeal swabs see: http://www.cdph.ca.gov/programs/immunize/Documents/CDPH_Pertussis%20laboratory%20testing_March_2010.pdf

INITIATE ANTIBIOTIC TREATMENT FOR ALL SUSPECT CASES

- Do not wait for diagnostic testing results. Begin empiric antibiotic treatment immediately in suspects. For recommendations: http://www.cdph.ca.gov/HealthInfo/discond/Documents/Pertussisquicksheet.pdf

PROVIDE POST-EXPOSURE PROPHYLAXIS (PEP) TO EXPOSED CONTACTS

- Close contacts for PEP include household, childcare, healthcare contacts or others in close group settings.

- Highest priority contacts for PEP are infants <1 year old, 3rd trimester pregnant women, and persons who may expose them. PEP is recommended even if the contact is up-to-date with pertussis vaccine.

PREVENT DISEASE WITH IMMUNIZATION

- All adolescents and adults, 10 years and above, who have not received a dose of Tdap (tetanus, diphtheria and pertussis) vaccine should receive one.

- Vaccination with Tdap is especially important for close contacts to infants, pregnant women in their third trimester and all health care workers.

PATIENT EDUCATION

- Patient information fliers are available at: http://www.cdph.ca.gov/HealthInfo/discond/Pages/Pertussis.aspx.
WHAT YOU NEED TO KNOW

1 Why get vaccinated?
Children 6 years of age and younger are routinely vaccinated against tetanus, diphtheria and pertussis. But older children, adolescents, and adults need protection from these diseases too. Td (Tetanus, Diphtheria) and Tdap (Tetanus, Diphtheria, Pertussis) vaccines provide that protection.

TETANUS (Lockjaw) causes painful muscle spasms, usually all over the body.
  - It can lead to tightening of the jaw muscles so the victim cannot open his mouth or swallow. Tetanus kills about 1 out of 5 people who are infected.

DIPHTHERIA causes a thick covering in the back of the throat.
  - It can lead to breathing problems, paralysis, heart failure, and even death.

PERTUSSIS (Whooping Cough) causes severe coughing spells, vomiting, and disturbed sleep.
  - It can lead to weight loss, incontinence, rib fractures and passing out from violent coughing. Up to 2 in 100 adolescents and 5 in 100 adults with pertussis are hospitalized or have complications, including pneumonia.

These three diseases are all caused by bacteria. Diphtheria and pertussis are spread from person to person. Tetanus enters the body through cuts, scratches, or wounds.

The United States averaged more than 1,300 cases of tetanus and 175,000 cases of diphtheria each year before vaccines. Since vaccines have been available, tetanus cases have fallen by over 96% and diphtheria cases by over 99.9%.

Before 2005, only children younger than 7 years of age could get pertussis vaccine. In 2004 there were more than 8,000 cases of pertussis in the U.S. among adolescents and more than 7,000 cases among adults.

2 Td and Tdap vaccines
- Td vaccine has been used for many years. It protects against tetanus and diphtheria.
- Tdap was licensed in 2005. It is the first vaccine for adolescents and adults that protects against all three diseases.

Note: At this time, Tdap is licensed for only one lifetime dose per person. Td is given every 10 years, and more often if needed.

These vaccines can be used in three ways: 1) as catch-up for people who did not get all their doses of DtaP or DTP when they were children, 2) as a booster dose every 10 years, and 3) for protection against tetanus infection after a wound.

3 Which vaccine, and when?

Routine: Adolescents 11 through 18
- A dose of Tdap is recommended for adolescents who got DtaP or DTP as children and have not yet gotten a booster dose of Td. The preferred age is 11-12.
- Adolescents who have already gotten a booster dose of Td are encouraged to get a dose of Tdap as well, for protection against pertussis. Waiting at least 5 years between Td and Tdap is encouraged, but not required.
- Adolescents who did not get all their scheduled doses of DtaP or DTP as children should complete the series using a combination of Td and Tdap.

Routine: Adults 19 and Older
- All adults should get a booster dose of Td every 10 years. Adults under 65 who have never gotten Tdap should substitute it for the next booster dose.
- Adults under 65 who expect to have close contact with an infant younger than 12 months of age (including women who may become pregnant) should get a dose of Tdap. Waiting at least 2 years since the last dose of Td is suggested, but not required.
- Healthcare workers under 65 who have direct patient contact in hospitals or clinics should get a dose of Tdap. A 2-year interval since the last Td is suggested, but not required.
- New mothers who have never gotten Tdap should get a dose as soon as possible after delivery. If vaccination is needed during pregnancy, Td is usually preferred over Tdap.

Protection After a Wound
A person who gets a severe cut or burn might need a dose of Td or Tdap to prevent tetanus infection. Tdap may be used for people who have never had a dose. But Td should be used if Tdap is not available, or for:
  - anybody who has already had a dose of Tdap,
  - children 7 through 9 years of age, or
  - adults 65 and older.

Tdap and Td may be given at the same time as other vaccines.

4 Some people should not be vaccinated or should wait
- Anyone who has had a life-threatening allergic reaction after a dose of DTP, DtaP, DT, or Td should not get Td or Tdap.
- Anyone who has a severe allergy to any component of a vaccine should not get that vaccine. Tell your provider if the person getting the vaccine has any severe allergies.
Anyone who had a coma, or long or multiple seizures within 7 days after a dose of DTP or DTaP should not get Tdap, unless a cause other than the vaccine was found (these people can get Td).

Talk to your provider if the person getting either vaccine:
- has epilepsy or another nervous system problem,
- had severe swelling or severe pain after a previous dose of DTP, DTaP, DT, Td, or Tdap vaccine, or
- has had Guillain Barré Syndrome (GBS).

Anyone who has a moderate or severe illness on the day the shot is scheduled should usually wait until they recover before getting Tdap or Td vaccine. A person with a mild illness or low fever can usually be vaccinated.

What are the risks from Tdap and Td vaccines?

With a vaccine (as with any medicine) there is always a small risk of a life-threatening allergic reaction or other serious problem.

Getting tetanus, diphtheria or pertussis would be much more likely to lead to severe problems than getting either vaccine.

Problems reported after Td and Tdap vaccines are listed below.

**Mild Problems**
(Noticeable, but did not interfere with activities)

**Tdap**
- Pain (about 3 in 4 adolescents and 2 in 3 adults)
- Redness or swelling (about 1 in 5)
- Mild fever of at least 100.4°F (up to about 1 in 25 adolescents and 1 in 100 adults)
- Headache (about 4 in 10 adolescents and 3 in 10 adults)
- Tiredness (about 1 in 3 adolescents and 1 in 4 adults)
- Nausea, vomiting, diarrhea, stomach ache (up to 1 in 4 adolescents and 1 in 10 adults)
- Chills, body aches, sore joints, rash, swollen glands (uncommon)

**Td**
- Pain (up to about 8 in 10)
- Redness or swelling (up to about 1 in 3)
- Mild fever (up to about 1 in 15)
- Headache or tiredness (uncommon)

**Moderate Problems**
(Interfered with activities, but did not require medical attention)

**Tdap**
- Pain at the injection site (about 1 in 20 adolescents and 1 in 100 adults)
- Redness or swelling (up to about 1 in 16 adolescents and 1 in 25 adults)
- Fever over 102°F (about 1 in 100 adolescents and 1 in 250 adults)
- Headache (1 in 300)
- Nausea, vomiting, diarrhea, stomach ache (up to 3 in 100 adolescents and 1 in 100 adults)

**Td**
- Fever over 102°F (rare)

**Tdap or Td**
- Extensive swelling of the arm where the shot was given (up to about 3 in 100).

**Severe Problems**
(Unable to perform usual activities; required medical attention)

**Td**
- Two adults had nervous system problems after getting the vaccine during clinical trials. These may or may not have been caused by the vaccine. These problems went away on their own and did not cause any permanent harm.

**Tdap or Td**
- Swelling, severe pain, and redness in the arm where the shot was given (rare).

A severe allergic reaction could occur after any vaccine. They are estimated to occur less than once in a million doses.

What should I look for?
Any unusual condition, such as a high fever or behavior changes. Signs of a severe allergic reaction can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness.

What should I do?
- Call a doctor, or get the person to a doctor right away.
- Tell the doctor what happened, the date and time it happened, and when the vaccination was given.
- Ask your provider to report the reaction by filing a Vaccine Adverse Event Reporting System (VAERS) form. Or you can file this report through the VAERS website at www.vaers.hhs.gov, or by calling 1-800-822-7967.

VAERS does not provide medical advice.

The National Vaccine Injury Compensation Program

A federal program exists to help pay for the care of anyone who has a serious reaction to a vaccine.

For details about the National Vaccine Injury Compensation Program, call 1-800-338-2382 or visit their website at www.hrsa.gov/vaccinecompensation.

How can I learn more?
- Ask your provider. They can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call 1-800-232-4636 (1-800-CDC-INFO) or
  - Visit CDC’s website at www.cdc.gov/vaccines.