DISTRICT HEALTH DEPARTMENT

EPI - NEWS

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Eight Possible SARS Cases Reported in China

On April 23, 2004, the Chinese Ministry of Health reported several new cases of possible SARS in Beijing and in Anhui Province, which is located in east-central China. As of April 26, the Ministry of Health had reported eight possible SARS cases: six in Bejing and two in Anhui Province. One of the patients in Anhui Province died. Nearly 1000 contacts of these patients with possible SARS are under medical observation, including 640 in Beijing and 353 in Anhui.

In addition, health authorities have reported that two doctors who treated one of the patients during her hospitalization in Anhui have developed fever. A person in close contact with one of the doctors has also developed fever.

To date, all diagnosed cases and cases under investigation have been linked to chains of transmission involving close personal contact with an identified case. There is no evidence of wider transmission in the community. For additional information on the SARS situation in China, see http://www.who.int/csr/don/2004_04_26/en/.

The U.S. Centers for Disease Control and Prevention (CDC) remains in close communication with the World Health Organization (WHO) about the reported cases of SARS in China and will provide additional information as it becomes available. At this time, CDC is not advising changes in the current U.S. SARS control measures other than the recommendations stated below.

CDC is recommending that U.S. physicians maintain a greater index of suspicion for SARS in patients who

1) **require hospitalization for radiographically confirmed pneumonia or acute respiratory distress syndrome (ARDS) AND**
2) **who have a history of travel to mainland China (or close contact with an ill person with a history of recent travel to mainland China) in the 10 days before onset of symptoms.**

When such patients are identified, they should be considered at high risk for SARS-CoV infection and the following actions should be taken:

- Patients should immediately be placed in appropriate isolation precautions for SARS (i.e., contact and airborne precautions along with eye protection).
- Patients should promptly be reported to the Washoe District Health Department by calling **(775) 328-2447**.
- Patients should promptly be tested for evidence of SARS-CoV infection as part of the diagnostic evaluation in consultation with the Washoe District Health Department (see Appendix 2, "Updated Guidelines for Collecting Specimens from Potential SARS Patients," in the CDC document, In the Absence of SARS-CoV Transmission Worldwide: Guidance for Surveillance, Clinical and Laboratory Evaluation, and Reporting. This document can be accessed at http://www.cdc.gov/ncidod/sars/absenceofsars.htm.
- Staff at the District Health Department will identify, evaluate, and monitor relevant contacts of the patient, as indicated. In particular, the health status of household contacts or persons who provided care to symptomatic patients will be assessed.

Health care providers are reminded to obtain a travel history for patients presenting with acute respiratory illness. In addition, this situation provides a reminder to all healthcare settings, especially physician offices, outpatient clinics, and emergency departments, of the importance of implementing infection control precautions at the point of first contact with patients who have symptoms of a respiratory infection. These include respiratory hygiene/cough etiquette, hand hygiene, and droplet precautions (i.e., masks for close patient contact). For additional information, see Respiratory Hygiene/Cough Etiquette in Healthcare Settings at http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm.

The reported new possible cases of SARS in China represent an evolving situation, and CDC will distribute updates as additional information is learned. For more about SARS and the current U.S. SARS control guidelines, see the CDC SARS website at http://www.cdc.gov/ncidod/sars/.

Please share this document with all physicians & staff in your facility/office.

Lab-Confirmed Pertussis Case Reported in Washoe County

One laboratory-confirmed case of *Bordetella pertussis* was recently reported in Washoe County. The case is a three-month-old child who had received one dose of pertussis-containing vaccine (DtaP). The case was appropriately treated, however, contacts of this case were noncompliant with recommendations for chemoprophylaxis. (See *CDC Protocol For Pertussis Treatment and Chemoprophylaxis*, Page 4).

Pertussis, or whooping cough, is an acute infectious disease caused by the bacterium *Bordetella pertussis*. Outbreaks of pertussis were first described in the 16th century, and the organism was first isolated in 1906. Prior to the availability of vaccine, pertussis was one of the most common childhood diseases and a major cause of childhood mortality in the United States. In the early 1940s, an average of 175,000 cases of pertussis were reported annually (incidence of approximately 150 cases per 100,000 population).

Following introduction of vaccine in the 1940s, pertussis incidence gradually fell, reaching 15,000 reported cases in 1960 (~8 per 100,000 population). By 1970, annual incidence was <5000 cases per year, and from 1980-1990, an average of 2,900 cases per year were reported (~1 per 100,000 population).

Pertussis incidence has been gradually increasing since the early 1980s. A total of 9,771 cases was reported in 2002, the largest number since 1964. The reasons for the increase are not clear, but may be a reflection of the 3-5 year cyclicity observed with the disease.

The District Health Department urges health care providers to consider pertussis in the diagnosis of patients who present with symptoms **and** to collect appropriate specimens. The **clinical case definition of pertussis** as defined by CDC is:

> ***A cough illness lasting ≥ 2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop," or post-tussive vomiting, without other apparent cause.***

The incubation period of pertussis is commonly 7-10 days, with a range of 4 to 21 days; and rarely may be as long as 42 days. The clinical course of the illness is divided into three stages: catarrhal, paroxysmal and convalescent, as outlined below. Pertussis is highly communicable. Persons with pertussis are most infectious during the catarrhal period and the first two weeks after cough onset (i.e., approximately 21 days). Fever is generally minimal throughout the course of pertussis.

Symptoms of Pertussis	
Catarrhal stage	Insidious onset of coryza (runny nose), sneezing, low-grade fever and mild, occasional cough, similar to the common cold. The cough gradually becomes more severe, and after 1-2 weeks, the second, or paroxysmal stage, begins.
Paroxysmal stage	It is during this stage that the diagnosis of pertussis is usually suspected. Characterized by paroxysmal violent cough episodes, inspiratory whoop, apnea, and cyanosis. Post-tussive vomiting is common. The paroxysmal stage usually lasts 1-6 weeks but may persist for up to 10 weeks. Infants < 6 months of age may not have the strength to have a whoop, but they do have paroxysms of coughing.
Convalescent stage	Cough becomes less paroxysmal and disappears in 2 to 3 weeks. However, paroxysms often recur with subsequent respiratory infections for many months after the onset of pertussis.

Older persons *(i.e.,* **adolescents and adults**), and those partially protected by the vaccine may become infected with *B. pertussis*, but usually have milder disease. Pertussis in these persons may present as a persistent (>7 days) cough, and may be indistinguishable from other upper respiratory infections. Inspiratory whoop is uncommon. Adults with symptoms of pertussis are often initially diagnosed with bronchitis. *B. pertussis* is estimated to account for up to 7% of cough illnesses per year in older persons.

Although pertussis may be milder in older persons, these infected persons may transmit the disease to other susceptible persons, including unimmunized or underimmunized infants. Adults are often found to be the first case in a household with multiple pertussis cases.

Laboratory criteria for diagnosis include isolation of *B. pertussis* from a clinical specimen or positive polymerase chain reaction (PCR) for *B. pertussis*. The standard and preferred laboratory test for diagnosis of pertussis is isolation of *B. pertussis* by culture of a nasopharyngeal specimen. Success in isolating the organism declines with prior antibiotic therapy effective against pertussis or delay in specimen collection beyond the first three weeks of illness. PCR testing of nasopharyngeal swabs or aspirates is a rapid, sensitive, and specific method of testing. PCR, once validated, should be used **in addition to culture, NOT as a replacement for culture, because bacterial isolates may be required for evaluation of antimicrobial resistance, or for molecular typing.**

Specimen Collection Guidelines for Pertussis Culture (Culture is preferred over PCR)	
Preferred specimen	Nasopharyngeal swab (Dacron or calcium alginate swab on flexible wire is preferred) Cotton swabs are not acceptable.
Minimum requirement	One Dacron or calcium alginate swab
Specimen container	♦ One tube 0.5 ml Casamino Acids (for < 4 hour transport) or ♦ One tube Regan-Lowe semi-solid transport with cephalxin (for > 4 hour transport)
Specimen identification	Label transport tube with patient's first and last names and date and time of collection.
Specimen collection	Guide the flexible swab into the contour of the nares and into the nasopharynx. Leave swab in place for 30 seconds while rotating swab. Remove swab. Immerse swab into center of transport tube so media surrounds the tip of the swab. For < 4 hour transport use Casamino Acid and for > 4 hour transport use Regan-Lowe transport medium.
Storage and Shipping	Transport to laboratory immediately at 4° C.
Turn-around-time	Incubation time can take up to nine days before being considered negative. *B. pertussis* organisms usually grow within three to four days.
NOTE:	♦ When transport is short (few hours), the temperature is not critical. ♦ When transport is over several hours, ship at 4° C.

The Nevada State Public Health Laboratory is the only lab in Nevada capable of PCR testing for *B. pertussis*. For more information on culture or PCR testing, please call the Nevada State Public Health Laboratory at (775) 688-1335.

Specimen Collection Guidelines for PCR Pertussis Testing	
Preferred specimen	Nasopharyngeal swab (dacron swab on a flexible wire is preferred)
Other acceptable specimens	Nasopharyngeal swab (cotton or rayon on flexible wires may also be used). Calcium alginate is not acceptable.
Minimum requirement	One dacron swab (two swabs, one from each nares, is recommended)
Specimen container	Two sterile dry transport tubes
Specimen identification	Label transport tube with patient's first and last names and date and time of collection. Label left and right nares.
Specimen collection	Guide the flexible swab into the contour of the nares and into the nasopharynx. Leave swab in place for 30 seconds while rotating swab. Remove swab. Place swab in sterile dry transport tube without media and transport to lab within 24 hours. For longer periods, store frozen at -20° C or below. Repeat procedure. **Two swabs are recommended**.
Storage and Shipping	Store and ship refrigerated at 2-8° C. Transport to lab as soon as possible.
Turn-around-time	48 hours

For detailed information regarding pertussis outbreaks, please refer to the CDC publication, *Guidelines for the Control of Pertussis Outbreaks* at the following website address:
http://www.cdc.gov/nip/publications/pertussis/guide.htm

Nevada State law (NAC 441A) requires confirmed cases of *B. pertussis* be reported to the Washoe District Health Department (WDHD). Although reporting of a suspect case of pertussis is not required by Nevada State law, reporting is encouraged to enable timely investigation and contact follow-up. To report, please call (775) 328-2447 or fax information to (775) 328-3764.

References:

Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46:(No. RR-10).

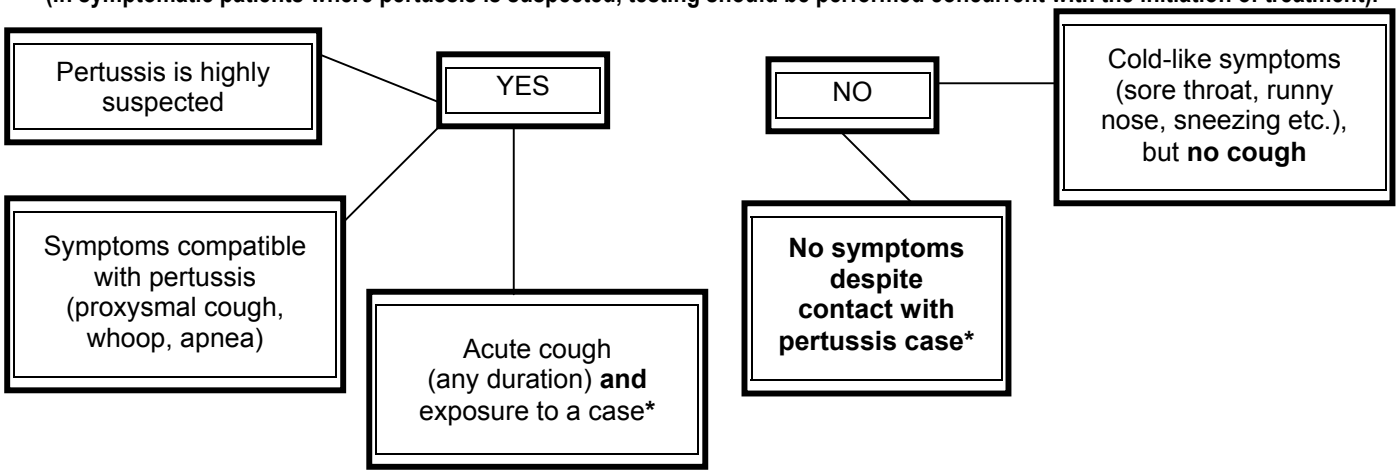
Epidemiology and Prevention of Vaccine-Preventable Diseases, 8th Edition, February 2004, CDC.

Investigation of Communicable Diseases Manual, October 2001, Washoe District Health Department Communicable Disease Program.

CDC PROTOCOL FOR PERTUSSIS TREATMENT AND CHEMOPROPHYLAXIS

Should you test?

(In symptomatic patients where pertussis is suspected, testing should be performed concurrent with the initiation of treatment).



Should you treat or prophylax?

(In symptomatic patients where pertussis is suspected, testing should be performed concurrent with the initiation of treatment).

TREATMENT**

Initiate treatment and exclude from work, school, child care, etc. for 5 days.

Persons with any of the following:

- Symptoms compatible with pertussis
- Acute cough AND exposure to case*
- Acute cough AND PCR-positive
- Positive culture result

Persons aged >1year: treat within 3 weeks of cough onset

PROPHYLAXIS**

Initiate antimicrobial prophylaxis and exclude from work, school, child care, etc. for 5 days.

- All close contacts to a case* (especially in high risk settings such as hospitals, nursing homes, households with infants, etc.)
- Prophylaxis of additional contacts may be warranted in some settings
- Persons aged >1year: prophylax within 3 weeks of exposure to infectious case

*NOTE: A PCR-positive result in a person without a cough is **NOT** a case.
**See table below for treatment/prophylaxis recommendations.

Pertussis Treatment/Prophylaxis Recommendations

Drug	Category	Child	Adult
Erythromycin[1]	Drug of choice	40 to 50 mg/kg per day PO divided into 4 doses/day for 14 days (maximum: 2 g/day)	250-500 mg PO QID for 14 days
Trimethoprim-Sulfamethoxazole[2] (TMP-SMX), Bactrim, Septra, Cotrimoxazole	Alternative choice	8 mg TMP/40 mg SMX/kg/day PO divided into 2 doses/day for 14 days (maximum: 320 mg TMP/1600 mg SMX per day)	160 mg TMP/800mg SMX PO BID for 14 days
Clarithromycin[3]	For those unable to tolerate erythromycin	15-20 mg/kg per day PO divided into 2 doses/day for 7 days (maximum: 1 g/day)	500 mg PO bid for 7 days
Azithromycin[3]	For those unable to tolerate erythromycin	10-12 mg/kg per day PO in 1 dose for 5 days (maximum: 600 mg/day)	500 mg PO qd for 5 days

[1] Some authorities prefer the estolate preparation for children but recommend avoiding its use in adults. Do not delay prophylaxis if this is not readily available.

[2] Not recommended for use in children < 2 months of age or pregnant women.

[3] The optimal duration of therapy has not been defined for these new macrolides. Studies suggest that the usual 5-day (azithromycin) to 7-day (clarithromycin) courses currently used may be effective, but this has not yet been definitively proven. These macrolides are not recommended for use in children < 6 months of age or pregnant women. (American Academy of Pediatrics recommendation).