Florida HEALTH Seminole County

EPI-GAZETTE

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The Florida Department of Health in Seminole County
WWW.SEMINOLECOHEALTH.COM

Best Practices for Clinician Diagnosis of Pertussis

Introduction
Central Florida has seen an increase in pertussis (whooping cough) cases the last couple of years with Seminole, Lake, Osceola and Orange Counties reporting 25 cases total year-to-date (1/1/14-5/29/14) compared to 29 in 2013 and 13 in 2012. With the continuing resurgence of pertussis, health care professionals will see more patients with suspected pertussis.

Symptoms
Pertussis has an insidious onset with catarrhal symptoms that are indistinguishable from those of minor respiratory tract infections. The cough, which is initially intermittent, becomes paroxysmal. In typical cases paroxysms terminate with inspiratory whoop and can be followed by posttussive vomiting. Paroxysms of cough, which may occur more at night, usually increase in frequency and severity as the illness progresses and typically persist of 2 to 6 weeks or more.

The illness can be milder and the characteristic "whoop" absent in children, adolescents and adults who were previously vaccinated. After paroxysms subside, a nonparoxysmal cough can continue for 2 to 6 weeks or longer. Unvaccinated or incompletely vaccinate infants younger than 12 months of age have the highest risk for severe and life-threatening complications and death. In infants, the cough may be minimal or absent, and apnea may be the only symptom.

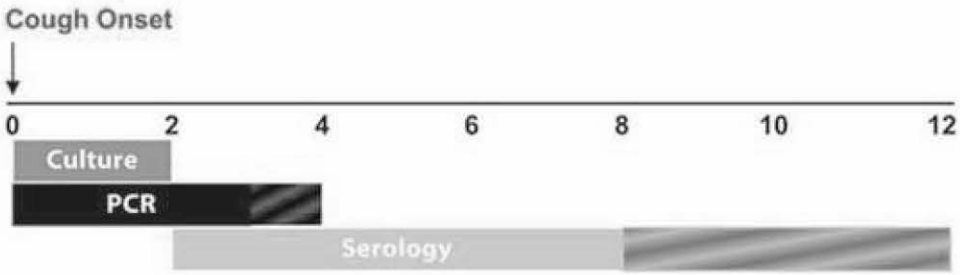
Testing
Patients with signs and symptoms consistent with pertussis should be tested to confirm the diagnosis. Several tests are available to test for Bordetella pertussis. Culture is considered the gold standard because it is the only 100% specific method for identification. Other tests that can be performed include polymerase chain reaction (PCR) and serology. Nasopharyngeal swabs should be utilized for the culture and PCR testing. Clinicians may consult with their local health department with any testing questions.

Treatment
Early treatment of pertussis is very important. **Clinicians should strongly consider treating prior to test results if clinical history is strongly suggestive or patient is at risk for sever or complicated disease (e.g. infants).** The antimicrobial agents of choice for treatment or chemoprophylaxis of pertussis are azithromycin, clarithromycin and erythromycin.

Reporting
Pertussis is reportable immediately by phone with a positive lab result, however, clinically diagnosed cases in high risk settings (i.e. childcare, schools, group homes, healthcare settings) should be reported to the local health department so that investigation and prevention measures may be initiated prior to laboratory confirmation.

Also in this issue:

Optimal Timing for Diagnostic Testing (weeks)



Additional Information on pertussis clinical presentation, diagnosis, treatment, and laboratory testing can be found at the following link:

http://www.cdc.gov/pertussis/clinical/index.html

Testing for Tuberculosis Infection

Targeted tuberculosis (TB) testing is used to focus program activities, provider practices, and financial resources on groups at the highest risk for latent tuberculosis infection (LTBI). Once TB disease has been ruled out, those who would benefit from treatment of LTBI should be offered this option regardless of their age.

Every effort should be made to test only those persons at the highest risk, interpret tuberculin skin test (TST) reactions and TB blood test results accurately, and ensure appropriate treatment and completion of the recommended regimen.

Who Should Get Tested for TB

Tuberculosis (TB) is a challenging disease to diagnose, treat, and control. It is critical to target prevention and control efforts to certain populations so as to reduce disparities related to TB, and further reduce TB rates both in the United States and worldwide.

Targeted testing is focused on: African-Americans, correctional facilities, the homeless, healthcare workers. immunocompromised persons, substance abusers, and recent immigrants.

TB tests are generally not needed for people with a low risk of infection with TB bacteria.

Choosing a TB Test

Choosing which TB test to use should be done by the person's health care provider. Factors in selecting which test to use include the reason for testing, test availability, and cost. Generally, it is not recommended to test a person with both a TST and an Interferon Gamma Release Assay (IGRA).

Questions often arise about the interpretation of TST results in persons with a history of Bacille Calmette-Gurin (BCG) vaccine, HIV infection, and recent contacts to an infectious TB case.

BCG vaccine is currently used in many parts of the world to protect infants and children from severe TB disease, especially TB meningitis. It does not confer lifelong immunity, and its significance in persons receiving the TST causes

confusion in the medical and lay community.

History of BCG vaccine is NOT a contraindication for tuberculin skin testing, TST reactivity caused by BCG vaccine generally wanes with time, if more than 5 years have elapsed since administration of BCG vaccine, a positive TST reaction is most likely a result of *M. tuberculosis* infection. Persons who are HIV infected have a much greater risk for progression to TB disease if they have LTBI. Individuals with HIV infection may be unable to mount an immune response to the TST and may have false-negative TST results: however, usefulness of anergy testing in TST-negative persons who are HIV infected has not been demonstrated

Persons with a positive TST result who are contacts of an individual with infectious TB should be treated regardless of age. Some TST-negative persons should also be considered for treatment (i.e., young children, immunosuppressed).

What Are False-Positive Reactions?

Some persons may react to the TST even though they are not infected with M. tuberculosis. The causes of these false-positive reactions may include, but are not limited to, the following:

Infection with nontuberculosis mycobacteria, previous BCG vaccination, incorrect method of TST administration, incorrect interpretation of reaction, incorrect bottle of antigen used

What are the advantages of IGRAs?

Requires a single patient visit to conduct the test, results can be available within 24 hours, does not boost responses measured by subsequent tests, prior BCG (Bacille Calmette-Guérin) vaccination does not cause a false-positive IGRA test result.

Considerations for Programs

- Because of administrative and logistic difficulties associated with the TST, IGRAs are attractive diagnostic aids for detecting *M. tuberculosis* infection. Unlike TSTs, IGRA results can be available within 24 hours without the need for a second visit. As laboratory-based assays, IGRAs are not subject to the biases and errors associated with TST placement and reading.

- The cost for an IGRA is slightly more than that for a TST. However, this additional cost might be offset by decreases in the number of persons testing positive and the associated costs of evaluating and treating persons with positive test results.

- Use of an IGRA might increase acceptance and compliance of treatment for LTBI.

- Using both a TST and an IGRA also might be useful when the initial test is positive in the following situations:

1) when additional evidence of infection is required to encourage compliance (e.g., in foreign-born health- care workers who believe their positive TST result is attributable to BCG).

2) in healthy persons who have a low risk for both infection and progression. In the first situation, a positive IGRA might prompt greater acceptance of treatment for LTBI as compared with a positive TST alone. In the latter situation, requiring a positive result from the second test as evidence of infection increases the likelihood that the test result reflects infection.

For more information visit the following CDC websites:

http://www.cdc.gov/tb/publications/guidelines/Testing.htm

Updated Guidelines for Using Interferon Gamma Release Assays to Detect *Mycobacterium tuberculosis* Infection — United States, 2010
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm?s_cid=rr5905a1_e

Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection

Thank You For Your Participation!

The Epidemiology Program would like to thank the following healthcare providers for their diligence in timely reporting from Florida's "List of Reportable Diseases/Conditions":

Shirley Tucker, RN, Central Florida Regional Hospital
Veronica Butler, RN, Florida Hospital
Sandra Delahoz, RN, South Seminole Hospital

For more information about Florida's List of Reportable Diseases/Conditions, please contact Tania Slade, MPH at 407-665-3266

Selected Diseases/Conditions Reported to the DOH-Seminole	2014 through Week 17	2013 through Week 17	2012 through Week 17	2011–2013 Average through Week 17
AIDS*	10	16	12	13.7
Animal Bite to Humans**	**7**	7	3	**4.3**
Animal Rabies	0	3	2	2.3
Campylobacteriosis	10	10	19	13.7
Chlamydia	430	469	477	498.7
Cryptosporidiosis	1	1	2	1.3
Cyclosporiasis	1	1	2	1.3
Dengue	0	0	0	0
E. coli Shiga toxin-producing	3	2	6	3.0
Giardiasis	3	5	4	4.3
Gonorrhea	96	94	116	92.0
Haemophilus influenzae (invasive)	1	5	1	2.7
Hepatitis A	0	0	2	1
Hepatitis B (acute and chronic)	**21**	13	19	**16.3**
Hepatitis C (acute and chronic)	**151**	74	76	**80.3**
Hepatitis B in Pregnant Women	0	1	0	1.3
HIV*	**20**	13	13	**16**
Lead poisoning	1	0	7	2.7
Legionellosis	**2**	3	0	**1.7**
Lyme Disease	0	0	2	1.3
Meningococcal Disease	1	0	5	2.0
Pertussis	**4**	4	1	**2.0**
Salmonellosis	13	16	13	15.3
Shigellosis	2	1	23	6.3
S. pneumoniae – drug resistant	2	3	4	4.0
Syphilis	11	8	13	10.7
Tuberculosis	1	3	3	4.3
Varicella	5	10	10	10.0

* HIV data includes those cases that have converted to AIDS. These HIV cases cannot be added with AIDS cases to get combined totals since the categories are not mutually exclusive. Current AIDS/HIV data are provisional at the county level.

** Animal bite to humans by a potentially rabid animal resulting in a county health department or state health office recommendation for post-exposure prophylaxis (PEP), or a bite by a non-human primate.

Reported cases of diseases/conditions in **Bold** are >10% higher than the previous three year average for the same time period.

MERS-CoV Clinician Guidance

In the last month the Florida Department of Health (DOH) has been actively investigating a MERS-CoV case, dozens of contacts to MERS cases, and numerous patients under investigation for MERS. The first cases of MERS in the United States, a summary of the global case count, and current CDC guidelines were summarized in an MMWR article published last week (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6319a4.htm?s_cid=mm6319a4_w).

Since Florida is an international travel destination, DOH expects to be contacted by numerous providers concerned about patients who might have MERS. The recent cases identified in Indiana and Florida have greatly increased MERS awareness and many inquiries about MERS and requests for MERS testing are being fielded by healthcare partners, the public health laboratory, and epidemiology staff. It is important that county health department (CHD) epidemiology staff and all hospital's infection control, infectious disease, and laboratory staff are aware of how to determine if testing for MERS coronavirus is warranted and if so how to respond to each patient. It is important to consider that other common respiratory pathogens or conditions are the most likely cause of illness in these patients.

The Bureau of Epidemiology has developed documents (see the links below) to assist CHDs and providers in identifying patients who meet criteria to be consider a person under investigation (PUI) for MERS.

Please remember the following:

- Health care providers and facilities can take key actions now to enhance preparedness for **MERS-CoV infection control**.

  www.cdc.gov/coronavirus/mers/preparedness

- Health care professionals should immediately report to their local county health department any person being evaluated for MERS-CoV infection as a patient under investigation (PUI). A **triage screening tool** is available from the DOH website at the following link:

  http://www.floridahealth.gov/diseases-and-conditions/mers/_documents/Clinician%20MERS%20screening%20tool%205-21-14.pdf

- As soon as MERS-CoV infection is suspected, a mask should be placed on the patient and the evaluation should continue after the patient has been placed on standard, contact, and airborne precautions to prevent any additional exposures.

ADDITIONAL RESOURCES

FDOH MERS Key Points for Healthcare Workers
http://www.floridahealth.gov/diseases-and-conditions/mers/_documents/MERS-Key%20Points-Healthcare%2005_23_14.pdf

FDOH MERS CHD Guidance Summary
http://www.floridahealth.gov/diseases-and-conditions/mers/MERS%20CHD%20Guidance%20Summary-2014-1%20FINAL.pdf

CDC MERS-Cov Main Page
http://www.cdc.gov/CORONAVIRUS/MERS/INDEX.HTML

The Florida Department of Health in Seminole County

Health Officer	Dr. Swannie Jett, DrPH., Health Officer
Environmental Health Manager	Nancy Smith, BA, RS
Community Health Director	Donna J. Walsh, RN, BSN, MPA
Epidemiology Program Manager	Tania Slade, MPH

Epidemiology	Peggy Booth, RN, BSN	(407) 665-3294	(407) 665-3214 (FAX)
AIDS	Willie Brown, BS	(407) 665-3690	(407) 665-3265 (FAX)
ADAP	Barbara Sevon, HSR	(407) 665-3289	(407) 665-3265 (FAX)
STD/HIV	Preston Boyce, BS	(407) 665-3698	(407) 665-3295 (FAX)
Immunizations	Bertie Barber, RN, BSN	(407) 665-3299	(407) 665-3255 (FAX)
Tuberculosis	Patrice Boon, RN	(407) 665-3298	(407) 665-3279 (FAX)

Our mission is to protect, promote, and improve the health of all people in Florida through integrated state, county, and community efforts

We're on the web!
WWW.SEMINOLECOHEALTH.COM

Florida Department of Health
Seminole County
400 West Airport Boulevard
Sanford, FL 32773