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Heartland 2008 Training Topics

Heartland National TB Center is finalizing dates for our upcoming 2008 training calendar. The following courses are currently planned for regional participation (ABC order by title):

• **Contact Investigation**

This course is an interactive, skill-building program designed to improve the knowledge and skills of staff who conduct contact investigation as part of their TB responsibilities. The goal of the course is to assist staff in conducting appropriate and thorough contact and outbreak investigations in a culturally appropriate manner. The course covers updated information on the new contact investigation guidelines released by the Centers for Disease Control and Prevention including: decisions to initiate a contact investigation; investigating the index patient and sites of transmission; assigning priorities to contacts; diagnostic and public health evaluation of contacts; medial treatment for contacts with Latent TB Infection (LTBI); when to expand a contact investigation; communicating through the media; data management and evaluation of contact investigations; confidentiality and consent in contact investigations; staffing and training for contact investigations; contact investigations in special circumstances; and source-case investigations.

Location and tentative date:

- July 2008: South Dakota

• **Multi Drug Resistant TB: A Primer to Patient Care and Treatment**

This course is designed for physicians and nurse experts who are actively engaged in the management of patients with, or at risk of, multi-drug resistant tuberculosis (MDR TB). The goal of the conference is to enhance the expertise of providers to improve the prevention, treatment, and management of patients with MDR TB through lecture and interactive case studies. Upon completion of the training, participants will be able to: explain the definition of MDR TB, how it develops in the TB patient and adequate control measures; describe the laboratory's role in the diagnosis and management of the MDR TB patient; and discuss the management and treatment of MDR TB disease.

Location and date:

- February 20, 2008: Phoenix, Arizona

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• Nurse Case Management

This is an intensive course that provides an in-depth training experience covering knowledge and skills essential for the nurse with primary responsibility for TB case management. It will cover the evaluation, treatment and case management of medically and psychosocially difficult to treat patients. The workshop is designed to go beyond the basic TB curriculum and enhance the participant's ability to be accountable for facets of case management by capturing the experience and competencies of expert TB public health nurses now working in field settings throughout the Heartland region. Topics included in the course are: partnering with the community; planning and conducting contact investigations; monitoring responses to treatment; performing toxicity assessments; implementing measures to reduce TB transmission; identifying and managing foreign-born persons at risk for TB; diagnosing and managing pediatric TB and TB in HIV and other high risk patients; performing case review and quality assurance; balancing responsibilities for public health with the patient's needs and preventing non-compliance through daily observed therapy and enablers; and improving communication and cultural sensitivity skills.

Locations and tentative dates:

- February 20-22, 2008 (registration opens January 7th): Phoenix, Arizona
- May 2008: Wisconsin
- Tentatively Summer 2008: New Mexico
- October 2008: Norman, Oklahoma

• Preventing Tuberculosis on College Campuses

This conference targets public health departments and college campus workers involved in implementing tuberculosis prevention policies on a college campus. This training will provide information and education on the implementation of a model policy on college campuses that will serve as a TB elimination strategy. It will emphasize the importance of screening, testing, and evaluating students on college campuses as a primary means of TB control through the use of the following subject matter: the public health threat of TB and drug-resistant TB worldwide and on US campuses; strategies for implementing model TB prevention and control practices on participant's home campus; and overview of the roles local, state, and federal public health agencies play in the prevention and control of TB.

Location and tentative date:

- Spring 2008: Illinois

• Outbreak Preparedness

Participants will be equipped with the knowledge and skills to appropriately assess, handle and evaluate a TB outbreak within their community. The course will provide information on

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The VISION of the Heartland is to provide *excellence, expertise, and innovation* in training, medical consultation, and product development to reduce the impact of tuberculosis in our region.

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- **Outbreak Preparedness continued**

coordinating activities between public health departments, hospitals and private health entities that play a significant role in preparedness for public health emergencies. After completion of the training, participants will be able to: describe the roles and responsibilities of the various public and private health partners; explain the general applicability of administrative, environmental and personal protective measures used in TB control; describe the role of genotyping as a tool in outbreaks; discuss data management and contact investigation protocols; and develop a preliminary outbreak response plan for their community.

Location and tentative date:

- June 2008: North Dakota
- Fall 2008: San Antonio, Texas

- **TB 101 with Facilitator Training**

The goal of the TB 101 course is to enhance the expertise of TB personnel to train others through the use of the "Teach Back" method. The training will start with an overview of the basics of TB and adult learning techniques and end with a practicum training session. It is targeted to public health nurses, program managers, TB focal points and other supervisory personnel who are actively engaged in providing training to new staff or community providers in the event of TB exposure or an outbreak. Interactive lectures, case studies and role playing with skill building exercises will enhance the learning experience. Participants will be required to conduct a "teach back" session to the other members of the group on the following topics: epidemiology transmission and pathogenesis of TB; testing for disease and infection; skin test administration and reading; treatment of LTBI and TB disease; infection control; contact investigation principles; and adult learning techniques.

Location and tentative date:

- April 2008: Texas

- **TB in Correctional Facilities**

This course will be designed to assist county health departments and county jails/state prisons and others working in correctional facilities to complete a thorough contact investigation and follow-up on persons identified as active TB cases or those that have been identified as LTBI patients. Participants will be able to: describe the steps in a contact investigation in a correctional facility; discuss appropriate timelines for a contact investigation; identify high-priority contacts to an active TB case; describe the importance of documentation in a contact investigation; illustrate the tools utilized to ensure completion of the contact investigation; and list the appropriate treatment and management of TB disease and LTBI patients in a correctional setting.

Location and tentative date:

- November 2008: San Antonio, Texas

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- **TB Intensive**

This course is designed to enhance the expertise of providers who are actively engaged in the management of patients with, or at risk of, tuberculosis. It strives to improve the skills of physicians and nurse experts who work treating and managing TB patients and contacts. Through interactive lectures and case studies, participants will be able to: describe the current epidemiology of TB in the USA and globally; identify LTBI; demonstrate the immunologic tools for diagnosis of LTBI and their application in the management of TB; implement CDC guidelines for treatment of LTBI; describe current laboratory methods for the detection, identification, genotyping and drug susceptibility testing of *M. tuberculosis*; discuss the role of the public health lab in the diagnosis and management of TB; identify and implement measures to eliminate transmission of TB in a medical facility; recognize the presentation of TB disease in various clinical settings; discuss antituberculous drugs including common side effects; and implement CDC guidelines for therapy of TB disease.

Locations and tentative dates:

- Tentative Spring 2008: Tyler, Texas
- September 2008: Minneapolis, Minnesota
- December 2008: Tyler, Texas

- **TB Program Managers Course**

This course is targeted to the mid-level and higher tuberculosis program managers at the state, regional/district or local level and is intended to provide advanced knowledge on the following topics: TB surveillance and epidemiology as it relates to program development and evaluation; overviews of national and individual program TB elimination goals; infection control; case management for TB disease and LTBI; partnership building; monitoring and evaluating contact investigations; conducting outbreak investigations; program evaluation and supporting paperwork; TB case reporting; and resource/staff development.

Location and tentative date:

- Summer 2008: San Antonio, Texas

- **TB Updates**

Two courses will be conducted this year in conjunction with regional TB Controller meetings. Subject matter will be designed to provide informational updates on current TB treatment and/or control issues, any new guidelines or high-risk populations; Heartland will work closely with each partner group to select topics that meet current needs. As a curriculum is selected, revisions to this course listing will be published.

Locations and tentative dates:

- Early October 2008, Upper Midwest TB Controllers Meeting: Minneapolis, Minnesota
- October 27, 2008; Four Corners TB Controllers Meeting: Arizona

NOTE: Please refer to Heartland's website (www.HeartlandNTBC.org) for the most current information and dates. Registration dates and course brochures will be posted there as trainings are finalized.

Heartland Customer Survey

The Heartland National TB Center is conducting a short customer satisfaction survey to determine the effectiveness of our training courses and products. We are asking those who have attended one or more of our courses and/or used any of our educational training products in the past two years to please fill out an online survey. This survey should take no more than 10 minutes to complete and your answers will be confidential. The Center will use the results to better serve our region in the future and to target our courses and products to more fully meet our partner's needs. Your assistance in completing this questionnaire by no later than **December 31, 2007** is most appreciated. If you have any questions or concerns, please do not hesitate to call us at 1-800-TEX-LUNG (839-5864) or contact Mary Long at mary.long@uthct.edu.

Click here to take the survey: <http://www.zoomerang.com/survey.zgi?p=WEB227A29TBE8K>

Regional News

We are pleased to announce the **Recorded** versions of **HEARTland** 2007 webinars



Tuberculosis: Un Vistazo General para Trabajadores de la salud *Presentado en español*

Lunes Diciembre 17, 2007

Presentado por: Catalina Navarro, RN

The recording of Heartland's regional webinar has been placed on our website (www.HeartlandNTBC.org). Please click on the link below to go directly to the recording.

- [Presentation](#) (WMV □ 60 min. □ 5.99 MB)
- [Handouts](#) (PDF □ 514 KB)

Nontuberculous Mycobacterial (NTM) Lung Disease

Thursday, December 13, 2007

Presented by: **David Griffith, MD**

The recording of Heartland's regional webinar has been placed on our website. Please click on the link below to go directly to the recording.

- [Presentation](#) (WMV □ 64 min. □ 5.1 MB)
- [Handouts](#) (PDF □ 1.3 MB)

TB Medications: Recognizing and Responding to Adverse Drug Reactions **Monday, December 10, 2007**

Presented by: **Jamey "Todd" Braun, RN, BSN, MPH**

The recording of Heartland's national webinar has been placed on our website. Please click on the link below to go directly to the recording.

- [Presentation](#) (WMV □ 64 min. □ 5.79 MB)
- [Handouts](#) (PDF □ 376 KB)

TB/HIV: Managing the Co-Infected Patient

Tuesday, November 27, 2007

Presenter: **Timothy Sterling, M.D.**

The recording of Heartland's national webinar has been placed on our website. Please click on the link below to go directly to the recording.

- [Presentation](#) (WMV □ 73 min. □ 6.45 MB)
- [Handouts](#) (PDF □ 269 KB)

These recorded presentations can be viewed in Windows Media Player

**Continuing Education Credits will be NOT be available
for viewing recorded sessions.**

Question: please contact the Heartland National TB Center

BY EMAIL: mary.long@uthct.edu

BY PHONE: 1-800-839-5864

These webinars were presented in collaboration with the Centers for Disease Control and Prevention.

Case Presentation

Tuberculosis in an Adoptee

Case History:

A 6-year-old girl presented to her pediatrician with decreased hearing acuity found by routine elementary-age screening. She had been adopted from a Korean orphanage at 9 months of age and had a history of poor growth there. She had scarlet fever and pneumonia prior to the age of 4, but no other recent significant illnesses since adoption. Adoption records did not indicate vaccination with BCG and she had no vaccination scar. She had four documented Tine tests (multi-puncture test for TB infection) during the adoption process, all of which were negative. She had a Tine test at a community hospital prior to presenting to her physician, results of which are unknown.

In response to her abnormal hearing test, she underwent bilateral irrigations to remove wax. Smears and cultures of the drainage fluid were negative. For the next two years she continued to suffer recurrent mild to moderate hearing loss, and was finally referred to an otolaryngologist, who performed bilateral myringotomy and placement of tympanostomy tubes four years after first presenting with hearing problems. Mucopurulent fluid was noted in the middle ear. Because of persistent drainage, cortisporin drops were begun. Tobradex drops were begun 2 weeks later. After one month on treatment, drainage had subsided in the right ear with cortisporin and Tobradex drops and suctioning; drainage persisted in the left ear. Audiology testing showed progressive hearing loss and testing 2 months later revealed hearing loss with very viscid mucus or possible scar bands. Treatment with topical and oral antibiotics continued. However, hearing loss and drainage persisted, despite intermittent treatment with topical tobramycin, gentamicin and amoxicillin. An allergist diagnosed allergic rhinitis and atopic dermatitis, and an antihistamine was administered. Hearing loss persisted, and otorrhea continued in the right ear.

Six months later (December), right tympanomastoidectomy and ossiculoplasty with tympanic membrane reconstruction and left ear exploration were performed. Postoperative diagnoses were right chronic otorrhea and mastoiditis, right hearing loss and incus erosion, and left hearing loss with middle-ear granulomas. All cultures were negative for bacteria, acid-fast bacilli and fungus. The pathology report mentioned granulation tissue. A left tympanomastoidectomy was performed 4 months later and a ventilating tube was placed. Biopsy of the left ear was reported as cholesteatoma. Further consultation demonstrated no evidence of immune deficiency or autoimmune disease.

In April of the next year, earaches and hearing loss were still reported. The middle ear tubes were completely crust covered, and were replaced. The middle ear fluid grew acid-fast bacilli. A TST gave a reading of 20 mm induration. Chest radiograph demonstrated a 3 cm extrapleural paraspinal abscess in the left lung apex and calcified lesions of healed primary tuberculosis cervical spine x-ray demonstrated tuberculous spondylitis at C7 and T1 with spine compression and marked gibbus formation. Isoniazid, rifampin, pyrazinamide and ethambutol were initiated on May 18. The initial culture of ear drainage eventually grew pansensitive *Mycobacterium tuberculosis*. Marked improvement in the appearance of the ears was found. A hearing aid greatly improved her ability to function in school. A pediatric orthopedist recommended surgical stabilization of the spinal deformities.

Teaching Points:

- TB is the most prevalent infectious disease in the world. In the United States, TB screening and treatment of foreign-individuals has been a key strategy in the prevention and control

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of TB in the United States for the last several decades. Adopted children from TB endemic countries are of particular concern, since children are more likely to be adopted from resource-poor, state-run orphanages that employ low-income workers at greater risk for active TB. All adopted children should undergo Tuberculin skin testing (TSTs) by the Mantoux method. Because of the risk for recent exposure to an adult with active TB in institutional settings in their country of origin, consider repeating the TST in 2 – 3 months. Children with a TST induration ≥ 10 mm should be considered positive. Clinicians may want to consider TST indurations ≥ 5 mm positive depending on the circumstances of adoption and the likelihood of recent exposure to an active case of TB. (Mandalakas, Kirchner et al. 2007) (Barnett 2005). In this case, the child was not screened for TB properly until she was already exhibiting signs of disease many years later. Unfortunately, adequate TST screening and latent TB infection treatment with Isoniazid for 9 months would have likely prevented disease and subsequent hearing loss in this child.

- Children, particularly those less than 4 years of age, are more likely to have extrapulmonary disease. Adopted children should receive a chest x-ray (CXR) and thorough medical examination to rule out dissemination. When reading chest radiographs, special attention to recognizing the typical presentations of pediatric TB is needed (i.e. intrathoracic adenopathy, mid- and lower lung zone infiltrates and the absence of cavitation). (CDC, American Thoracic Society et al. 2003). Aural TB is uncommon ($< 1\%$ of all reported TB cases annually) and difficult to diagnose. Aural TB typically presents as any other suppurative otitis media, but should be suspected in the presence of granulation tissue, hearing loss, disseminated disease, and particularly in patients with risk factors for TB and/or a positive TST. Up to 50% of aural TB patients will have evidence of pulmonary disease on chest x-ray and 10% may have bony sequestrum (Nalini and Vinayak 2006). In this case, the adoptee had signs and symptoms of aural TB for three and a half years until diagnosis, illustrating the difficulties in diagnosing extrapulmonary TB in children, particularly in the absence of an accurate TST result.
- It should be noted that malnourishment is quite prevalent among adoptees. Mandalakas et al found 5% of adopted children had signs of acute malnutrition and 28% had chronic malnutrition. Malnutrition in children can cause a false-negative TST, so clinicians should exercise caution in interpreting a TSTs in an at-risk and malnourished child. TSTs may be repeated after the child's nutrition status has improved. (Mandalakas, Kirchner et al. 2007) Secondly, if the child is diagnosed and treated for active TB, weight gain should be watched carefully, as lack of weight gain is a significant risk factor for relapse and treatment failure in adults (Khan, Sterling et al. 2006). It is possible that the child described in this study with a history of "poor growth" was suffering from chronic malnutrition, further exacerbating the inherent inaccuracies of TSTs, leading to false negative results. Tuberculin skin testing is often falsely negative on malnourished person. A Tine test on any child is more likely to give false negative result. Tine tests should not be used.
- While the child in this case did not have a history or evidence of BCG vaccination, BCG vaccinations are common in TB endemic countries. BCGs are typically given at birth, and may or may not leave a scar as evidence of vaccination. *Mycobacteria bovis* can cross react with the TST and cause a false-positive result in some cases. Blood assay tests, such as QuantiFERON-Gold (QFT), do help control for cross reaction with BCG; however, current recommendations are to use and interpret QFT results in children with caution as there are no data on QFT sensitivity in persons < 17 years old (Mazurek, Villarino et al. 2003). If a TST is used to screen adoptees for TB, the TST should be interpreted according to guidelines, regardless of whether or not the child has been vaccinated with BCG.

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Case Presentation, *Continued from page 7*

- Epidemiological studies of disease incidence consistently show immigrants with latent TB infection from high-incidence to low incidence areas are at increased risk for progressing to active TB disease within the first 2 years of arrival. While this phenomenon is not completely understood, TB epidemiologists theorize that immigration-related stress, malnutrition, and targeted screening all contribute to increased incidence among this risk group (Cohen and Murray 2005). It is likely that the patient was infected with TB in her country of origin. There were no adults identified as the child's source of disease and she subsequently progressed to TB disease after arrival.

References:

Barnett, E. D. (2005). "Immunizations and infectious disease screening for internationally adopted children." *Pediatric Clinics of North America* **52**(5), pp. 1287-309.

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Khan, A., T. R. Sterling, et al. (2006). "Lack of weight gain and relapse risk in a large tuberculosis treatment trial.[see comment]." *American Journal of Respiratory & Critical Care Medicine* **174**(3), 344-8.

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Nalini, B. and S. Vinayak (2006). "Tuberculosis in ear, nose, and throat practice: its presentation and diagnosis." *American Journal of Otolaryngology* **27**(1), pp. 39-45.

Related Links

- [Division of TB Elimination, CDC](#)
- [TB Education & Training, National Prevention Information Network](#)
- [TB Education & Training Resources](#)
- [World Health Organization, Tuberculosis](#)
- [Division of Global Migration & Quarantine, CDC](#)
- [Global Health Facts on TB](#)
- [Tuberculosis Research Today](#)
- [Stop TB Partnership](#)
- [American Lung Association](#)
- [International Union against Tuberculosis and Lung Disease](#)
- [Office of Refugee Resettlement](#)
- [AIDS Education and Training Centers](#)



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