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HEARTLand NATIONAL TB CENTER
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TBeat

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Reported Tuberculosis in the United States, 2006

The 2006 TB Surveillance Reports contain tabular and graphic information about reported TB cases collected from 59 reporting areas (the 50 states, the District of Columbia, New York City, U.S. dependencies and possessions, and independent nations in free association with the United States).

TB surveillance reports from past years are updated and corrected when new data are received and verified. The current 2006 surveillance report contains the updated summary data for all years.

The full report, ***Reported Tuberculosis in the United States, 2006***, can be found at http://www.cdc.gov/tb/surv/surv2006/pdf/FullReport.pdf. It contains the following sub-categories:

- Acknowledgements
- Preface
- Previous Statistical Reports in this Series
- State TB Statistics on the Internet
- Executive Commentary
- Technical Notes
- Morbidity Trends Tables, United States
- Morbidity Tables, United States, 2006
- Morbidity Tables, States, 2006
- Morbidity Tables, Reporting Areas, 2006 and 2004
- Morbidity Tables, Cities and Metropolitan Statistical Areas, 2006
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  - Appendix B: Recommendations for Counting Reported Tuberculosis Cases

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In addition to the report, slide sets were developed as an accompaniment to the above document. You can download the complete set (27 slides) in a PowerPoint format and a Slide Set Narrative document. The slide set is in the public domain. You may reproduce these slides without permission. You are also free to adapt and revise these slides; however, you must remove the CDC name and logo if changes are made.

Regional News

Heartland National Web Seminar: TB/HIV

The recent National Webinar; **TB/HIV: Managing the Co-Infected Patient**, sponsored by Heartland with Dr. Timothy Sterling, Vanderbilt University Medical Center, was recorded and the archived presentation is now available for viewing. It can be found on the Home page of the Heartland website (www.HeartlandNTBC.org) under the NEWS section. The handouts can also be found there. The recorded presentation is best viewed using Microsoft Media Player and has audio along with the PowerPoint. No continuing education credits will be awarded for viewing the recorded presentation.

For those who viewed the webinar in live format and desire continuing education credits (CME or CNE), they must mail their original *Sign In Sheet* to Heartland (mailing address on the form) AND complete an on-line evaluation survey (link to the survey can be found on the Home page of the Heartland website (www.HeartlandNTBC.org) under the NEWS section). The survey will be open until close of business on December 21, 2007. The *Sign In Sheet* must be mailed by that date too. A Certificate of Award will be emailed or mailed in January 2008 to the address provided on the on-line survey.

Please address any questions to Mary Long at mary.long@uthct.edu or 1-800-TEX-LUNG.

Heartland National TB Center Organizational Change

Anne Williamson, Director of Education and Training has resigned her position effective December 31, 2007. Anne will be leaving Heartland to return to school to obtain certification as a reading specialist.

Mary Long has been serving as the interim Director of Education and Training since November 1, 2007 while Anne continues to concentrate on the completion of products during this transition time. Please address any questions or concerns related to trainings to Mary Long by telephone at (210) 531-4545 or by e-mail at mary.long@uthct.edu.

We would like to thank Anne for her expertise and dedication to Heartland National TB Center and its Region. We wish Anne well in her new endeavors and welcome Mary as the Interim Director of Education and Training.

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TB*it*

The CDC Division of Tuberculosis Elimination (DTBE) has revised the **"Tuberculosis Facts"** fact sheet series (http://www.cdc.gov/tb/pubs/TBfactsheets.htm). These fact sheets provide basic TB Information in an easy-to-read format and are also available in PDF format for printing.

Fact Sheets in the series:

- TB Can Be Treated
- Exposure to TB
- TB and HIV/AIDS
- You Can Prevent AIDS
- Testing for TB

TB Notes Newsletter, Issue No. 4 2007 is now available from the CDC Division of Tuberculosis Elimination (DTBE) (http://www.cdc.gov/tb/notes/TBN_4_07/tbn407.pdf). This issue contains the following:

- **Director's Letter**
- **Highlights from State and Local Programs**
  - Delaware's Lang TB Clinic Team Selected as Finalist for 2006 Team Excellence Award
  - New Tools Available to Help With Program Evaluation
- **TB Education and Training Network Updates**
  - Member Highlight
  - Second Annual Focal Points Meeting
  - Seventh Annual Conference Highlights
- **TB ETN Cultural Competency Workgroup Update**
- **Data Management and Statistics Branch Update**
  - Public Health Information Network (PHIN) Conference Held in August 2007
- **Surveillance, Epidemiology, and Outbreak Investigations Branch Updates**
  - 11th Semiannual Meeting of the TB Epidemiologic Studies Consortium
  - CDC Team Teaches TB/HIV Operational Research Course in Kiev, Ukraine
- **2006 Annual Surveillance Report**
- **New CDC Publications**
- **Personnel Notes**
- **Calendar of Events**

Upcoming Trainings

Heartland Regional Web Seminars

Nontuberculous Mycobacterial (NTM) Lung Disease

Thursday, December 13, 2007

11:00 am – 12:00 pm MT, 12:00 – 1:00 pm CT

Presented by:

David Griffith, MD

Assistant Medical Director, Heartland National TB Center

Professor of Medicine, University of Texas Health Center at Tyler

This webinar is intended for TB program staff and clinical personnel including physicians, nurses and healthcare workers who treat and manage patients with pulmonary infectious diseases. Priority registration will be given to personnel from the Heartland region.

Upon completion of this training, participants will be able to:

- List the spectrum of NTM respiratory pathogens
- Describe the clinical manifestations of NTM lung disease and the diagnostic criteria for determining infection
- Discuss the current treatment recommendations for NTM lung pathogens and the role of drug susceptibility testing

Register on-line at http://www.heartlandntbc.org/training.asp#webinar. Continuing Education Credits for nurses will be offered. For questions, please contact the Heartland National TB Center; BY EMAIL: mary.long@uthct.edu or BY PHONE: 1-800-839-5864.

Próximo evento en nuestra Región

Presentado en español

Tuberculosis: Un Vistazo General para Trabajadores de la salud

Lunes Diciembre 17, 2007

11:00 a.m. – 12:00 p.m. MT, 12:00 – 1:00 p.m. CT

Presentado por:

Catalina Navarro, RN

Nurse Consultant, Heartland National TB Center

Dirigido principalmente al personal de enfermería así como a otros profesionales del área de la salud comprometidos en la lucha contra la tuberculosis, en donde la tecnología (Video conferencia Web) resulta ser un medio valioso para incrementar la cobertura y difusión del conocimiento sobre esta enfermedad.

Al finalizar la conferencia los participantes estarán en la capacidad de:

- Entender la transmisión y patogénesis de la tuberculosis
- Diferenciar entre Tuberculosis Latente y Tuberculosis Activa
- Describir el diagnostico de la Tuberculosis
- Explicar el tratamiento de la Tuberculosis
- Identificar la importancia de la Terapia Directamente Observada (TDO)
- Explicar la resistencia al tratamiento antituberculoso
- Identificar las medidas de control para el contagio
- Conocer los requerimientos necesarios para reportar los casos de TB al Departamento de Salud

La Inscripción y participación es totalmente GRATIS. Para registrarse vía Internet por favor entre a nuestra página Web. http://www.heartlandntbc.org/training.asp#webinar. Se Ofrecerán Créditos de Educación Continuada. Cualquier informacion adicional por favor contactarse con Heartland National TB Center; BY EMAIL: catalina.navarro@uthct.edu or BY PHONE: 1-800-839-5864.

Introducing

2007 Technical Instructions for Tuberculosis Screening and Treatment for Panel Physicians

View the 2007 Technical Instructions for Tuberculosis Screening and Treatment [PDF 338 KB, 33 pages]

View a comparison of the 1991 and 2007 Technical Instructions [PDF 97 KB, 4 pages]

The Technical Instructions for Tuberculosis Screening and Treatment for Panel Physicians, as part of requirements for immigration to the United States, have been revised. The previous screening algorithms were issued in 1991. To prevent applicants with smear-positive tuberculosis from traveling to the United States, the 1991 system relies on chest radiograph findings and sputum smears among overseas foreign national applicants 15 years of age or older. The 1991 system misses applicants with smear-negative but culture-positive tuberculosis, as well as tuberculosis in applicants <15 years of age. Moreover, the 1991 requirements do not provide guidance specifying the quality of treatment applicants with tuberculosis should receive prior to travel.

The Division of Global Migration and Quarantine (DGMQ), along with the CDC Division of Tuberculosis Elimination, has updated the Technical Instructions. Scientific literature was reviewed, including published recommendations from the U.S. tuberculosis community, and representatives of the U.S. tuberculosis community were invited to provide input.

Significant changes in the 2007 Technical Instructions for Tuberculosis Screening include requiring:

- Tuberculin skin tests (TST) for applicants <15 years of age in countries with a World Health Organization (WHO)-estimated tuberculosis incidence rate >20 per 100,000.
- All applicants <15 years of age with TST ≥5 mm will be required to have a chest radiograph.
- Mycobacterial cultures for applicants with chest radiographs suggestive of tuberculosis disease.
- Treatment under a directly observed therapy (DOT) program.
- Completion of treatment prior to immigrating to the United States, according to American Thoracic Society/CDC/Infectious Diseases Society of America guidelines.
- New TB classifications for all applicants with suspected latent *Mycobacterium tuberculosis* infection and for contacts for cases of tuberculosis disease.

Implementation of the 2007 Technical Instructions is expected to increase detection of tuberculosis overseas, decrease importation of tuberculosis, help prevent development of drug resistance overseas among persons applying for U.S. immigration, and contribute to global tuberculosis control efforts.

DGMQ is working with the CDC Division of Tuberculosis Elimination, the Department of State, the International Organization for Migration, panel physicians, and other organizations to implement these changes. The Technical Instructions are being implemented first in priority countries as determined by immigration patterns and tuberculosis burden. State and local

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2007 Technical Instructions *continued from page 5*

health departments will be notified when the new instructions begin to be applied to specific populations.

As the instructions are phased in, the DGMQ website will provide information on countries where the instructions are being utilized.

Implementation

The following table displays applicants for U.S. immigration being screened according to the 2007 Technical Instructions for Tuberculosis Screening and Treatment by country, population, and start date.

Country	Population	Start date
Thailand	Refugees (includes Burmese and Hmong refugees)	April 9, 2007
Mexico	All applicants	October 1, 2007
Philippines	All applicants	October 1, 2007

All other applicants for U.S. immigration are being screened according to the 1991 Tuberculosis Technical Instructions.

From the CDC Division of Global Migration and Quarantine, http://www.cdc.gov/ncidod/dq/panel_2007.htm, web page last modified 28, 2007.

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

Click on a picture to go directly to that Center's website

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.

The MISSION of Heartland National TB Center is to build capacity with our partners. We will share expertise in the treatment and prevention of tuberculosis by: developing and implementing cutting-edge trainings, delivering expert medical consultation, providing technical assistance, and designing innovative educational and consultative products.

Case Presentation
Primary Tuberculosis Following Exposure

Case History:

A twenty year old woman was evaluated as a contact of a patient who had extensive smear positive pulmonary tuberculosis (drug susceptible isolate). She denied any symptoms of cough, weight loss, fatigue, night sweats or fever. She weighed 86 pounds. A TST was positive with a 20 mm induration. A chest x-ray (CXR) showed opacification of the lower half of the left hemithorax reflective of a moderate size left pleural effusion and/or atelectasis. She had normal laboratory values. She was not able to provide a sputum specimen.

Four months prior to the contact investigation, she delivered a healthy infant. An evaluation during the 20th week of gestation noted her weight at 100 pounds; the patient reported her normal, non-pregnant weight at 98 pounds. Her child had not yet been evaluated as a contact but was reported as "healthy".

This patient emigrated from the Marshall Islands to the United States in 2001. She denied any exposure to tuberculosis prior to this contact investigation. She had a TST placed during her prenatal care with a reading of 0 mm induration.

Further evaluation included induced sputums which were AFB smear negative but grew *M. tuberculosis* susceptible to all first line drugs. A CT scan revealed hilar adenopathy, volume loss, pleural thickening and a moderate pleural effusion on the left, and patchy infiltrates in the right middle and right upper lobe. A repeat CXR done on the same date as the CT scan was interpreted as a normal chest.

The infant had a normal physical exam and CXR. The TST was 0 mm.

Teaching Points:

- Primary tuberculosis can happen in any part of the lung. It is often in the lower lobes and associated with a pleural effusion and/or hilar adenopathy. In children hilar adenopathy alone is the most frequent abnormality found. The most common radiographic appearance of primary tuberculosis however, is a normal CXR. In immunosuppressed patients, a miliary pattern may be noted, especially by CT scan. Cavitation is rarely seen.
- In patients with a pleural effusion, an associated infiltrate is commonly noted by CT scan although in plain films this is obscured by the fluid. If a thoracentesis is performed and a repeat CXR taken, then the infiltrate may be visible once the fluid is removed. Pleural effusions are almost always unilateral unless the patient has a serious immune deficiency. Bilateral effusions when due to tuberculosis usually represent miliary disease.
- The natural history of pleural effusions is to gradually resolve and disappear. They need to be differentiated from those due to congestive heart failure, carcinoma, and other types of infections. Pleural fluid analysis may help to identify tuberculosis. Typically, the protein is significantly elevated (>4 grams/dL) which identifies the fluid as an exudate and differentiates it from congestive heart failure. Carcinomas may also have elevated protein, but usually have abnormal cytology. A low pleural fluid glucose (<30 mg/dL) is common in tuberculosis but rare in malignancy. An elevated adenosine deaminase (ADA) is frequently found in tuberculous effusions but is rare in carcinoma. The cell count shows increased white blood cells and is usually lymphocytic. Very early in the illness, a neutrophilic predominance can be seen. Smears of the pleural fluid are usually AFB negative but cultures can be positive in half the cases. A pleural biopsy adds considerably to the diagnosis.

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Case Presentation *continued from page 7*

- Sputum smears are usually negative in these types of patients but cultures are positive up to 40% of the time. It is important to always order three sputum specimens for smears and cultures and to induce if needed.
- CT scan of the chest can help to define the extent of the disease. A plain film of the chest can be misleading and in the case of this patient the repeat film was reported as normal despite the significant abnormalities noted on the scan. Be cautious of a CXR report that shows rapid resolution of previous abnormal findings. Ask to view the film if at all possible.
- Patients identified with active tuberculosis during contact investigations are asymptomatic up to 50% of the time. This is one of the great benefits of a contact investigation—early identification of TB disease. Early detection of TB disease when smears are negative and the patient is not coughing is an important goal of TB programs. The lack of symptoms should not be used to rule out TB disease. HIV positive patients may have negative smears, a negative TST, a normal CXR and be asymptomatic but still grow *M. tuberculosis*. That is why sputum collection and culture should be done for any HIV infected individual who is a contact of a TB case.
- The infant was exposed to not only his mother but also the initial active case. He was started on window period prophylaxis pending a repeat TST to be done when he reached six months of age and had a 10 – 12 week break in contact with his mother. The mother was treated with the standard four drug regimen for tuberculosis. In the early postpartum period (usually identified as 3 months) there is an increased risk of hepatotoxicity. Liver enzymes remained normal during treatment.
- The clinical presentation of exposure to a smear positive case, TST skin test conversion, CXR showing a pleural effusion, and weight about 10 pounds less than normal is a classic presentation of active TB in a contact.

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