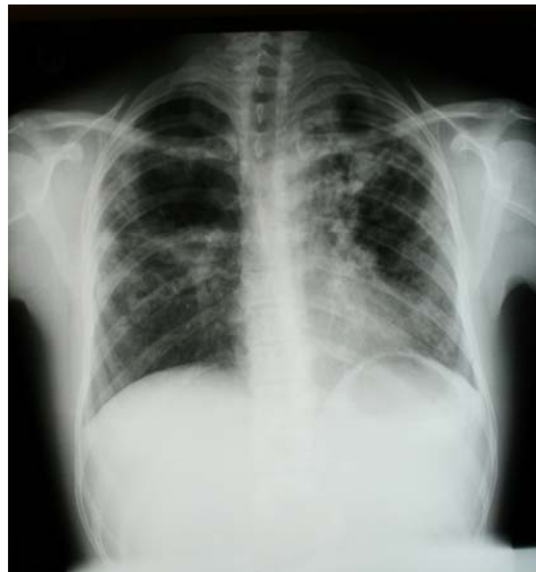
Harris County

HCPHES

Public Health & Environmental Services

Controlling Tuberculosis in Harris County

A Call to Action



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Introduction

Tuberculosis (TB) was once the leading cause of death in the United States. Drug therapies developed in the twentieth century led to improved health outcomes and a decline in infection rates. According to the Centers for Disease Control and Prevention (CDC), however, a reversal in the declining trend occurred in the 1980's due to the deterioration of the U.S. public health infrastructure for TB control; increased immigration from countries with high TB incidence; and the increased occurrence of multi-drug resistant TB, hospital-acquired TB infection and human immunodeficiency virus (HIV) infection.[1] Following an increase in resources targeted to TB control at the federal, state and local levels, the incidence of TB declined 44% from 1993-2003.[2]

In 2000, the Institute of Medicine (IOM) concluded that with increased levels of resources and effort, the elimination of TB in the United States is possible.[3] IOM published a comprehensive plan for the elimination of TB in the U.S., which included goals to:

1) adjust control measures to the declining incidence of the disease;
2) accelerate the decline in incidence by increasing targeted testing and treatment of LTBI [latent TB infection];
3) develop new tools for diagnosis, treatment and prevention;
4) increase U.S. involvement in global control of TB;
5) mobilize and sustain public support for TB elimination.[4]

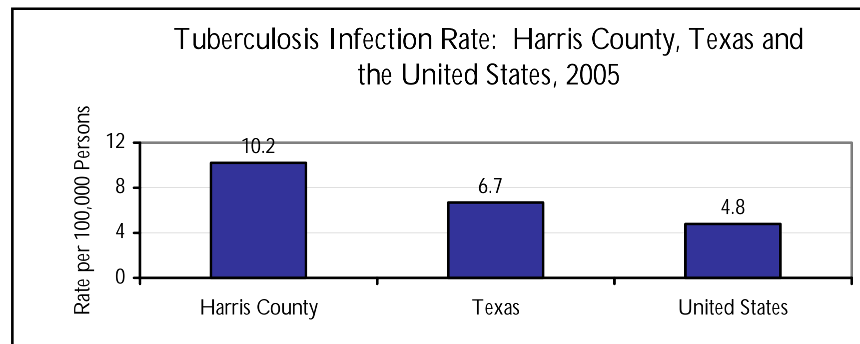
In November 2005 the American Thoracic Society, CDC and the Infectious Diseases Society of America published a report entitled *Controlling Tuberculosis in the United States*. The recommendations within this report, targeted to public and private stakeholders at the federal, state and local levels, are intended to "improve the control and prevention of TB in the U.S. and to progress toward its elimination."[5]

In keeping with this goal, in early 2006 Harris County Public Health and Environmental Services (HCPHES) conducted a review of local TB prevention and control activities. Utilizing recommendations found within the federal report, HCPHES developed objectives for the prevention and control of TB in Harris County, outlining the roles and responsibilities of all community stakeholders. HCPHES will use these objectives to guide departmental TB prevention and control activities and to inform collaborations with community partners.

[1] Centers for Disease Control and Prevention. Controlling Tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC and the Infectious Diseases Society of America. MMWR 2005;54(No.RR-12):2.
[2] Ibid.
[3] Institute of Medicine. Ending Neglect: The Elimination of Tuberculosis in the United States. Washington, DC: Institute of Medicine, National Academy Press; 2000.
[4] Ibid.
[5] CDC:1.

TB in Harris County

TB is a bacterial disease affecting the lungs that is spread from person to person through the air. Those in close and ongoing contact with a person with active, symptomatic TB are at greatest risk for exposure. According to the Texas Department of State Health Services, 379 new cases of TB were diagnosed in Harris County in 2005 – a rate of 10.2 per 100,000 persons, more than twice the national rate of 4.8 cases per 100,000 persons and 35% higher than the State rate of 6.7 cases per 100,000 persons.[6,7]



Texas Department of State Health Services, 2005; Centers for Disease Control and Prevention, 2005

Within the jurisdiction of HCPHES, 109 new cases were diagnosed in 2005 – a rate of 6.8 per 100,000 persons.[8] Approximately 7% of the cases diagnosed in 2005 were determined to be drug–resistant *M. tuberculosis*, with almost one-third of the drug-resistant cases being multi-drug resistant.

Similar to national trends, within Harris County there are populations at high risk for TB infection. These populations include foreign-born persons, HIV-infected persons, homeless persons and persons in correctional facilities. In addition, because they are prone to rapid progression from TB infection to TB disease as well as to more severe forms of TB, infants and children in contact with persons with TB are considered a high-risk population.[9]

HCPHES conducts comprehensive TB control activities within its jurisdiction. These activities include case management that provides quality care and follow-up for an estimated 180-200 patients at any given time; clinic-based TB services at two clinic locations; epidemiological surveillance to monitor local TB trends; outreach to providers and infection control practitioners to provide education and technical assistance; extensive case detection and contact investigation activities, including mass screenings when warranted; and targeted community education.

[6] Texas Department of State Health Services. Tuberculosis Incidence Rates per 100,000 Population by County, Texas 2001-2005. Retrieved July 2006 from www.dshs.state.tx.us/idcu/disease/tb/statistics/default.asp.
[7] CDC. Trends in Tuberculosis, 2001-2005. MMWR 2006:55(11);305-308.
[8] For TB-related activities, the jurisdiction of HCPHES includes the unincorporated areas of Harris County as well as many municipalities within Harris County other than the City of Houston. This includes about 1.6 million persons.
[9] CDC. Controlling Tuberculosis in the United States:43.

Roles and Responsibilities for TB Control in Harris County

According to *Controlling Tuberculosis in the United States*, "the traditional model of TB control in the United States, in which planning and execution reside almost exclusively with the public health sector, is no longer the optimal approach during a sustained drive toward the elimination of TB." Further, "…success in controlling TB and progressing toward its elimination in the United States will depend on the integrated activities of professionals from different fields in the health sciences."[10]

HCPHES envisions a collaborative approach to TB prevention and control within Harris County, consisting of the following partners working together:

The Public Health Sector

Clinicians

Community Health Centers

Hospitals

Civil Surgeons

Academic Institutions

Medical Professional Organizations

Community-Based Organizations

Correctional, Detention and Holding Facilities

Pharmaceutical and Biotechnology Industry

[10] CDC:4.

The Public Health Sector

The public health sector, which consists of federal, state and local public health agencies such as HCPHES, maintains responsibility for TB control and prevention. According to IOM, the goal of public health is to "assure the conditions in which people can be healthy."[11] To accomplish this goal, public health agencies employ a variety of population-based strategies that are generally classified as assessment activities; policy development and education activities; and assurance activities.

Local public health agencies such as HCPHES apply these population-based strategies to prevent and control TB in their communities. The federal report identifies five core responsibilities for control of TB by local public health agencies. First, public health agencies conduct assessment to determine the extent and characteristics of TB in the jurisdiction through collection and analysis of epidemiologic and surveillance data. Second, public health agencies use assessment data to guide the development of policies, procedures and plans to control TB. Next, public health agencies assure diagnostic, clinical and preventive services related to TB control. Public health agencies monitor and evaluate the effectiveness of TB control activities and interventions. Finally, public health agencies inform and educate policymakers, health care providers, the public and other key stakeholders regarding the control of TB.[12]

When carrying out these roles and responsibilities, HCPHES will ensure the following:

HCPHES will enhance methods to support compliance with TB case reporting requirements among area health care providers, laboratories, hospitals and community sources.

- Policies and plans will be based upon local surveillance and epidemiologic data, local capacity for clinical and supportive TB services, availability of fiscal resources for TB control activities and ongoing evaluations of program performance. Written TB control plans will be updated on an ongoing basis and disseminated among community stakeholders.
- Data reporting, collection and analysis will remain a priority activity in order to develop and maintain a detailed understanding of TB in Harris County. Methods to support compliance with case reporting requirements among providers, laboratories, hospitals and other community sources will be enhanced, and compliance with case reporting will be monitored. Capacity to

[11] Institute of Medicine, Committee on Assuring the Health of the Public in the 21st Century, Board on Health Promotion and Disease Prevention. The Future of the Public's Health in the 21st Century. Washington, DC: The National Academies Press, 2003.
[12] CDC:23.

monitor trends in TB and LTBI among high-risk populations on an ongoing basis and detect new trends in TB disease will be enhanced. The use of a secure, automated data system will continue to be prioritized to maintain data related to suspect and confirmed cases of TB.

- Diagnostic and treatment services will be accessible for patients with suspect and confirmed TB and will meet national standards of care. Directly Observed Therapy (DOT) will be the initial strategy considered for treatment. Strategies for promoting adherence to treatment protocols will be considered as resources allow.
- Legal authorities to enforce confinement among persons who cannot or do not comply with medical protocols will be reviewed on an ongoing basis, and stakeholders involved with enforcing legal authorities will be informed and educated on their role.
- Contact investigation will remain a key component of TB control activities. Targeted testing and treatment of LTBI will be expanded as resources allow. Outreach activities to communities at high risk for TB will be enhanced.
- Ongoing training and education regarding the clinical and public health aspects of TB in Harris County will be provided to program staff, clinicians, the public, policymakers and other area stakeholders.
- Efforts to systematically monitor and evaluate program activities will be enhanced. A written evaluation plan will be developed, to include national objectives for program performance focusing on case detection, completion of therapy, contact investigation and interrupting transmission in high-risk settings; as well as other objectives such as compliance with TB reporting requirements, data quality and case management.
- Collaborations with clinicians, civil surgeons, community health centers, hospitals, academic institutions, medical professional organizations, community-based organizations, correctional, detention and holding facilities and pharmaceutical and biotechnology industries will be prioritized to coordinate community-wide TB control efforts.

Clinicians

Clinicians outside of the public health sector play a crucial role in TB control. Medical practitioners are often the first point of care for persons with TB, and often provide ongoing management of TB disease. Therefore it is critical that clinicians maintain sufficient knowledge about TB, follow guidelines for reporting diagnoses to the appropriate public health department and follow recommended guidelines for treatment. Further, according to the federal report, "as TB elimination efforts continue, the role of medical practitioners will further expand because they provide access to populations that have been targeted for testing and treatment of LTBI."[13] In order to ensure TB control in Harris County, HCPHES recommends that local clinicians ensure the following, consistent with guidance found in the federal report:

- Clinicians should understand locally prevalent medical conditions of populations seen in their practice, including those that have public health implications such as TB.
- Clinicians should understand State of Texas statutes regarding reporting diseases to health authorities, and do so in a timely manner.
- Clinicians should understand the scope and availability of federal and state programs that support TB screening, diagnosis and treatment among populations at high risk. Clinicians should prioritize the prevention, diagnosis and treatment of TB.
- Clinicians should understand and carry out their responsibilities when TB is suspected in a patient under their care. These responsibilities include establishing a diagnosis promptly; using consultants and hospitalization if indicated; reporting the case to the jurisdictional public health department; cooperating with public health investigations; and developing a treatment plan that follows current guidelines and maximizes opportunities for completion of therapy.
- Clinicians should periodically review and ensure that they follow current guidelines for the diagnosis of TB, treatment of TB and targeted testing and treatment of LTBI.
- Clinicians should consider referring persons who are candidates for DOT to the local health department for case management.
- Clinicians should be able to accurately conduct tuberculin skin tests, rule out TB disease and appropriately treat and monitor LTBI.
- Clinicians caring for children and adolescents should screen all new patients for LTBI risk factors, followed by a tuberculin skin test when appropriate, and conduct tuberculin skin tests of family members if this service is not easily available elsewhere.
- Clinicians caring for persons with potentially suppressed immune systems should screen for risk factors of TB, followed by a tuberculin skin test when appropriate.
- Clinicians should ensure that recommended infection control practices are in place to protect patients and staff.

Clinicians should understand State of Texas statutes regarding reporting diseases to health authorities, and do so in a timely manner.

[13] CDC:24.

Community Health Centers

As defined by the federal report, community health centers "typically provide primary health care services to populations that encounter barriers to receiving those services at other sites in the health care system, such as low-income working persons and their families, immigrants and refugees, uninsured persons, homeless persons, the frail elderly and poor women with children."[14] Because community health centers often provide primary and emergency care for populations at high risk for TB, they play a key role in efforts to control TB. In order to ensure TB control in Harris County, HCPHES recommends that local community health centers ensure the following, consistent with guidance found in the federal report:

Community health centers should prioritize the prevention, diagnosis and treatment of TB.

- Community health centers should ensure that medical staff are equipped with the knowledge and skills needed to conduct TB risk assessments, and diagnose and initiate TB and LTBI treatment.
- Community health centers should ensure close collaborations with consultant clinicians, hospitals, laboratories and local public health agencies.
- Community health centers should promptly report suspect TB cases to the jurisdictional health department, ensure that appropriate diagnostic services are available and appropriately refer patients for diagnosis, treatment and hospitalization, if indicated.
- Community health centers should understand the scope and availability of federal and state programs that support TB screening, diagnosis and treatment among populations at high risk. Community health centers should prioritize the prevention, diagnosis and treatment of TB.
- Community health centers should collaborate with local public health agencies to provide education to patients regarding the personal and public health implications of TB and LTBI and encourage them to accept preventive services.
- Community health centers should ensure that recommended infection control practices are in place to protect patients and staff.

[14] CDC:27.

Hospitals

Hospitals provide a number of activities related to TB control, including outpatient and emergency treatment for populations at high risk for TB, laboratory diagnostic services and medical consultation for clinicians in the community. In addition, hospitals are vital to the detection of TB, as TB cases are often first diagnosed during hospitalization at acute-care facilities. In order to ensure TB control in Harris County, HCPHES recommends that area hospitals ensure the following, consistent with guidance found in the federal report:

- Hospitals that provide inpatient TB care should ensure policies for isolation for patients that may have a contagious form of TB. Appropriate infection control measures should be implemented.
- Hospitals should promptly report suspect TB cases to the jurisdictional health department.
- Hospitals should collaborate with local public health departments to develop a written policy for discharging patients with TB. To ensure continuity of care, policies should include steps to contact and consult with the jurisdictional health department prior to discharge. If possible, the hospital and public health department should jointly approve discharge plans. Hospitals should discharge patients with a standard anti-TB regimen and a follow-up plan that includes DOT.

Hospitals should collaborate with local public health agencies to develop a written policy for discharging patients with TB.

- Hospitals should ensure written policies and plans for the prevention of nosocomial TB transmission, following guidance published by CDC.
- Hospitals should ensure ongoing education and training of staff in the diseases prevalent in the populations they serve, such as TB. Education should include current epidemiologic information, current diagnostic and treatment information, measures for infection control and responsibilities regarding case management.

Civil Surgeons

Civil Surgeons are physicians certified by the U.S. Citizenship and Immigration Service to provide health screening exams required when foreign-born persons living in the U.S. apply for permanent residency. Because they work with populations that may be at high risk for TB, civil surgeons play a vital role in identifying persons with TB and facilitating their entrance into the system of care. HCPHES recommends that civil surgeons practicing locally ensure the following, consistent with guidance found in the federal report:

- Civil surgeons should periodically review and ensure that they follow current guidelines for the diagnosis of TB and treatment of TB and LTBI.
- Civil surgeons should report TB cases promptly to the jurisdictional public health department.
- Civil surgeons should ensure that referral mechanisms are developed and followed for the evaluation of TB disease and LTBI for persons seeking a change in immigration status.

Academic Institutions

Academic institutions such as schools of medicine, nursing and public health play a key role in ensuring that future health professionals are equipped to conduct TB control activities. In addition, academic institutions can provide continuing education about TB to professionals currently in practice. In order to ensure TB control in Harris County, HCPHES recommends that local academic institutions ensure the following, consistent with guidance found in the federal report:

- Academic institutions should serve as a source of current information and expertise regarding TB control for public health professionals, clinicians and health care workers.
- Academic institutions should collaborate closely with public health departments to improve TB control in the community. Academic institutions and public health agencies can both benefit from additional sites for education, training and opportunities for research.
- Academic institutions should ensure that professional school curricula incorporate appropriate and timely instruction regarding TB, and support the development and implementation of fellowship training programs and practica.
- Academic institutions should lead research efforts regarding TB diagnostics and treatment.

Medical Professional Organizations

Because of their influence upon medical practice, research, education and policy, medical professional organizations are uniquely positioned to impact TB control practices. In order to ensure TB control in Harris County, HCPHES recommends that local medical professional organizations ensure the following, consistent with guidance found in the federal report:

- Medical professional organizations should provide opportunities for continuing education about risk assessment, diagnosis, treatment, control and prevention of TB.
- Medical professional organizations should participate in the development, endorsement and dissemination of clinical practice guidelines related to TB control.
- Medical professional organizations should advocate for appropriate funding for TB control and research.

Medical professional organizations should provide opportunities for continuing education about risk assessment, diagnosis, treatment, control and prevention of TB.

Community-Based Organizations

According to the federal report, because many community-based organizations work closely with populations that may be at high risk for TB, they "...can be particularly effective in providing information and education on TB to their constituencies. As part of the communities they serve, such organizations are often highly regarded..., and their messages might be accepted more positively than those delivered by the jurisdictional health department."[15] In order to ensure TB control in Harris County, HCPHES recommends that local community-based organizations that work with populations at high risk for TB ensure the following, consistent with guidance found in the federal report:

- Community-based organizations that serve populations at high risk for TB should collaborate with local public health departments and providers of medical care to ensure access for their constituents to TB prevention, diagnostic and treatment services. When feasible, community-based organizations should assist TB control efforts by supporting individuals in the completion of treatment protocols.
- Community-based organizations should serve as advocates for TB issues, including supporting adequate funding for TB control and participating in local planning coalitions.
- Community-based organizations should partner with local public health departments and academic institutions to ensure that services and educational materials are culturally and linguistically appropriate.

Community-based organizations should partner with local health departments and academic institutions to ensure that TB services and educational materials are culturally and linguistically appropriate.

[15] CDC:30.

Correctional, Detention and Holding Facilities

Because they are common sites for the transmission of TB due to their communal living arrangements, facilities such as prisons, jails, detention camps and holding stations must ensure that detainees and staff are protected from exposure. Transient populations and short lengths of stay compound challenges to ensure TB control within these facilities and the community. In order to ensure TB control in Harris County, HCPHES recommends that local correctional, detention and holding facilities ensure the following, consistent with guidance found in the federal report:

Correctional, detention and holding facilities should promptly report suspect TB cases to the jurisdictional public health department.

- Facilities should collaborate with the jurisdictional public health department to ensure an accurate and up-to-date epidemiologic profile of TB in the detainee population.
- Facilities should promptly report suspect TB cases to the jurisdictional health department.
- Facilities should ensure written policies and procedures for ensuring TB screening, prompt response upon case detection, targeted testing and treatment for LTBI and ongoing education of staff regarding TB.
- Facilities should ensure that referral mechanisms are in place for persons undergoing treatment for TB and LTBI.
- Facilities should ensure that recommended infection control measures are in place to protect detainees, staff and visitors from exposure to TB.

Pharmaceutical and Biotechnology Industries

According to the federal report, "because of their essential role in developing new diagnostics, drugs and vaccines, the pharmaceutical and biotechnology industries are partners in TB control."[16] Although their contributions towards efforts to eliminate TB may be considered in a national or global context, HCPHES believes that the pharmaceutical and biotechnology industries can contribute to local TB control efforts. In order to ensure TB control in Harris County, HCPHES recommends that pharmaceutical and biotechnology industries support continuing education and training efforts for local professionals carrying out TB control activities and support efforts to educate the public regarding TB.

[16] CDC:31.

Priority Objectives for the Control of TB in Harris County

According to *Controlling Tuberculosis in the United States,* "the five most important challenges to successful control of TB in the Unites States are 1) prevalence of TB among foreign-born persons residing in the United States; 2) delays in detecting and reporting cases of pulmonary TB; 3) deficiencies in protecting contacts of persons with infectious TB and in preventing and responding to TB outbreaks; 4) persistence of a substantial population of persons living in the United States with LTBI who are at risk for progression to TB disease; and 5) maintaining clinical and public health expertise in an era of declining TB incidence."[17]

In addition, HCPHES has identified several local challenges to successful control of TB in Harris County, including the existence of a stigma associated with TB among certain populations, which results in infected persons not complying with contact investigation activities; misconceptions among health providers about federal regulations regarding the reporting of health information (e.g. TB cases) to the jurisdictional public health department; a lack of awareness and knowledge about TB among community members and policymakers; shortfalls in resources dedicated to TB control activities; and the lack of a comprehensive database with which statistical reports summarizing local TB data can be easily generated.

To address these challenges and enhance ongoing TB prevention and control activities within Harris County, HCPHES recommends that area stakeholders ensure the following, consistent with objectives found in the federal report:

Ensuring Accurate and Timely TB Laboratory Services

Ensuring Efficient and Comprehensive TB Case Detection

Conducting Thorough Contact Investigations and Outbreak Prevention and Response

Conducting Targeted Testing and Treatment of Latent TB Infection

Ensuring TB Control among High-Risk Populations and Settings

Conducting Research to Identify Areas of Need

[17] CDC:3.

Ensuring Accurate and Timely TB Laboratory Services

There are currently two public laboratories in Harris County that conduct comprehensive TB diagnostic services. In addition, several private laboratories conduct limited TB diagnostic services. In order to ensure timely case detection and reporting:

- Local laboratories, clinicians and public health officials should work together to develop standard protocols to ensure timely laboratory testing and information flow among laboratories, health care providers and public health departments.
- Local laboratories should ensure ongoing education of laboratory staff, clinicians and public health officials about effective uses of clinical microbiologic laboratory services.
- Local laboratories should ensure compliance with standard turnaround times from date of specimen collection to date when results are reported.
- Local laboratories should ensure that certain laboratory results are reported immediately to both the responsible clinician and the jurisdictional public health department. These results include positive smears for Acid-fast bacilli and the subsequent culture of that specimen; identification of *M. tuberculosis* complex in any specimen; and drug susceptibility results, especially when isolates are drug resistant.

Local laboratories, clinicians and public health officials should work together to develop standard protocols to ensure timely laboratory testing and information flow.

Ensuring Efficient and Comprehensive TB Case Detection

HCPHES currently conducts comprehensive TB case detection activities within its jurisdiction. To enhance these ongoing activities:

> *HCPHES will work with clinicians who evaluate persons with suspected TB to ensure that they have access to accurate, timely and up-to-date diagnostic services.*

- HCPHES will expand partnerships with academic institutions and community-based organizations that represent high-risk populations in order to implement steps recommended by IOM intended to improve public knowledge and awareness about TB.
- HCPHES will collaborate with medical professional organizations to ensure continuing education about TB to their membership, focusing on providers serving high-risk populations.
- HCPHES will work with clinicians who evaluate persons with suspected TB to ensure that they have access to accurate, timely and up-to-date diagnostic services.
- Local primary care providers, emergency care settings and hospital facilities should ensure that practitioners follow guidelines for detection of TB cases; HCPHES will collaborate with these entities to ensure that current guidelines are available.
- HCPHES will continue to prioritize screening for TB cases during TB contact and outbreak investigations as well as during the evaluation of immigrants and refugees with Class A/B1/B2 notification status.[18]
- As resources allow, HCPHES will expand current activities to identify and prioritize TB screening opportunities in high-risk populations, such as in congregate settings. HCPHES will conduct ongoing evaluation to determine the effectiveness of targeted screening activities.

In addition to addressing these recommendations based upon objectives put forth in the federal report, HCPHES will provide ongoing education to local clinicians who evaluate persons with suspected TB regarding case reporting requirements, to include education about federal regulations regarding the release of health information to the jurisdictional public health department.

[18] Class A notification status refers to infectious TB, Class B1 notification status refers to clinically active, not infectious TB and Class B2 notification status refers to TB that is not clinically active.

Conducting Thorough Contact Investigations and Outbreak Prevention and Response

HCPHES currently conducts comprehensive TB contact investigations and outbreak prevention and response activities. To enhance these ongoing activities:

- HCPHES will continue to prioritize contact investigation as a key component of TB control.
- HCPHES will continually update and refine its comprehensive contact investigation program, incorporating updates in best practices and standards of care in order to identify contacts of infectious TB cases. HCPHES will provide contacts with access to adequate care and ensure that contacts complete appropriate therapy.
- HCPHES will continually update and refine its protocol for conducting contact investigations, ensuring that persons responsible for each step of the investigation are identified and processes intended to maximize efficiency and effectiveness are outlined.
- HCPHES will continually update and refine its procedures for voluntary HIV counseling and testing of the contacts of infectious TB cases. Procedures will include prioritization of populations based on local epidemiological data regarding TB and HIV infection.
- HCPHES will continually update and refine protocols for prioritizing tuberculin skin testing among contacts based upon risk of progressing from LTBI to TB disease. Risk will be determined based on transmission risk assessment and presence of risk factors for progressing, including age and immunocompromising conditions.
- As resources allow, HCPHES will consider DOT for all contacts. HCPHES will continue to prioritize high-risk contacts for DOT.
- HCPHES will continue to apply appropriate State of Texas statutes regarding the control of communicable diseases to contacts who do not comply with examination requirements.
- HCPHES will continually update and refine guidelines regarding the release of confidential information related to conducting contact investigations. Such guidelines will maintain compliance with the Texas Medical Privacy Act.
- HCPHES will continue to conduct ongoing evaluations of the effectiveness and impact of contact investigation activities. HCPHES will develop interventions to improve performance when indicated.
- HCPHES will continually update and refine outbreak response protocols. These protocols include indications for initiation of outbreak response activities, notification procedures, composition of the response team, plans for follow-up and treatment of contacts and indications for requests for assistance from state and/or federal partners. Methods for evaluating outbreak response activities will be incorporated.

HCPHES will provide TB case contacts with access to adequate care and ensure that contacts complete appropriate therapy.

Conducting Targeted Testing and Treatment of Latent TB Infection

Due to two key factors, HCPHES currently conducts targeted testing and treatment of LTBI among high-risk populations and settings on a limited basis. First, budget constraints limit the scope of these resource-intensive activities. Second, a relatively "young" TB surveillance dataset limits the capacity of HCPHES to appropriately target testing. However, several community partners currently conduct additional targeted testing and treatment of LTBI, focusing primarily upon homeless populations and shelters. To enhance these activities:

- HCPHES will support targeted testing activities conducted by community partners. To the extent possible, this support may include provider training and education, clinical consultation, provision of needed equipment and supplies and technical assistance with patient tracking and data management systems.
- HCPHES will continue to build its TB surveillance dataset in order to appropriately identify populations and communities at high risk for LTBI and establish priority populations and settings for targeted testing and treatment of LTBI. HCPHES will prioritize populations and communities based on the expected impact and effectiveness of targeted testing.
- As resources allow, HCPHES will expand current targeted testing and treatment activities. These activities will be planned and conducted with consultation from community stakeholders, such as community-based organizations, community coalitions and community leaders.
- As resources allow, HCPHES will ensure that targeted testing and treatment activities maximize patient convenience and acceptance. To the extent possible, HCPHES will ensure that service hours are flexible, staff persons reflect the populations being served, translation/interpretation services are available, staff display cultural awareness and sensitivity, service locations are accessible, services are free of charge and incentives and enablers are utilized.
- HCPHES will evaluate targeted testing and treatment activities to determine effectiveness, efficiency and impact.

HCPHES will continue to build its TB surveillance dataset in order to establish priority populations and settings for targeted testing and treatment of LTBI.

Ensuring TB Control among High-Risk Populations and Settings

HCPHES currently targets TB control efforts among high-risk populations and settings, and collaborates with stakeholders that work with high-risk populations and within high-risk settings to provide education and assistance regarding TB control. To enhance these activities among the following high-risk populations and settings:

Children and Adolescents

> *HCPHES will continue to consider DOT to be the standard of care for treatment of TB in children and adolescents, and employ comprehensive case management to support children and families through TB treatment protocols.*

- HCPHES will continue to employ case detection and primary prevention strategies among children and adolescents that prioritize timely reporting of suspect cases of infectious TB; the identification of children with LTBI who are at high risk of progressing to primary TB; the determination of drug susceptibility among children with TB disease or source cases for children with LTBI; and the clinical evaluation of children under age five years who are contacts of persons with infectious TB.
- HCPHES will continue to consider DOT to be the standard of care for treatment of TB disease in children and adolescents, and employ comprehensive case management to support children and families through TB treatment protocols.
- HCPHES will continue to recommend appropriate disease containment strategies for children and adolescents with primary, adult-type and congenital pulmonary TB.
- HCPHES will continue to conduct contact investigations among adults who accompany and visit children with TB in health care settings, as well as household and other close contacts of children under age four years with LTBI.
- HCPHES will prioritize targeted testing of foreign-born children from countries with a high incidence of TB.
- As resources allow, HCPHES will consider DOT the preferred means of treatment for LTBI among newborns, infants, child and adolescent contacts of persons with recent cases and immunocompromised children and adolescents, as they are at highest risk for progression to TB disease.

Foreign-Born Persons

- HCPHES will continue to enhance surveillance methods to provide detailed information about the local epidemiology of TB among foreign-born persons. HCPHES will continue to conduct efforts to distinguish imported TB cases present at the time of entry from cases that arise while residing in the U.S.; to distinguish TB cases among persons granted temporary entry into the U.S. from cases among foreign-born permanent residents; and to distinguish TB cases identified from targeted testing activities from cases identified by the presence of symptoms of active TB.
- As resources allow, HCPHES will engage community groups in the development and implementation of educational campaigns regarding TB targeted to foreign-born persons at high risk. The goal of such campaigns will be to reduce stigma associated with TB; provide information about available TB-related services; and explain methods for prevention, treatment and control.
- HCPHES will continue to establish and enhance liaisons with individuals and entities that provide health care for foreign-born persons at high risk in order to provide ongoing education regarding the local epidemiology of TB and best practices for the prevention, treatment and control of TB.
- HCPHES will continue to prioritize the follow-up of immigrants with Class A TB waivers and Class B1 and B2 TB notification status.
- HCPHES will continue to ensure culturally appropriate case management services for foreign-born persons with TB, including translation and interpretation services. HCPHES will ensure linguistic and cultural competence to the extent possible, and will collaborate with community groups that work with foreign-born persons to support these priorities.
- HCPHES will continue to prioritize contact investigations of foreign-born persons with TB, ensuring that protocols are culturally sensitive and appropriate.
- As epidemiologic data indicate and resources allow, HCPHES will conduct targeted testing and treatment of LTBI among foreign-born persons at high risk, prioritizing activities based on the level of access to the target populations and the likelihood of success. In addition, if targeted testing and treatment activities are indicated, HCPHES will prioritize the testing foreign-born children at high risk. HCPHES will collaborate with community providers and groups that work with target populations to conduct testing and treatment activities.
- As resources allow, HCPHES will consider DOT the preferred method of treatment for LTBI among foreign-born persons.

As resources allow, HCPHES will engage community groups in the development and implementation of educational campaigns regarding TB targeted to foreign-born persons at high risk.

HIV-Infected Persons

- HCPHES will continue to offer voluntary HIV counseling and testing for all patients with TB, as well as contacts of HIV-infected TB cases. Through risk assessment activities HCPHES will offer voluntary HIV counseling to all contacts of TB cases as well as persons with LTBI. HCPHES will continue to equip staff with ongoing education and training regarding current concepts and methods for HIV counseling, testing and referral.
- HCPHES will assess the feasibility of conducting routine, periodic cross-matches with jurisdictional HIV and TB case registries to ensure completeness of reporting.
- HCPHES will continue to assure that standards of care are followed regarding testing for TB infection and LTBI among persons newly diagnosed and living with HIV.
- HCPHES will continue to engage HIV control programs, clinical practitioners and staff, community-based organizations, homeless shelters, correctional facilities and housing facilities that serve persons with HIV in order to ensure appropriate awareness and education about TB.
- Local health care facilities, social service agencies and worksites that serve persons with HIV infection should establish referral protocols for persons with respiratory symptoms.
- HCPHES will facilitate referral of expertise to provide guidance to community stakeholders regarding managing HIV-related TB.
- HCPHES will continue to provide comprehensive case management for persons co-infected with TB and HIV, considering DOT as the standard of care for treatment. As resources allow, HCPHES will ensure that care is integrated and includes a multidisciplinary team of providers and supportive resources.

Local health care facilities, social service agencies and worksites that serve persons with HIV infection should establish referral protocols for persons with respiratory symptoms.

- HCPHES will continue to prioritize contact investigations of persons with TB and known/suspected co-infection with HIV, as well as those conducted in circumstances in which persons with HIV could have been exposed to a person with infectious TB.
- HCPHES will offer a full course of treatment for LTBI for persons with HIV who have contact with a patient with infectious pulmonary TB, regardless of initial results of tuberculin skin testing once active TB has been ruled out.
- Local providers of HIV medical care should ensure targeted testing and treatment of LTBI at the time of diagnosis for HIV infection; as well as annual tuberculin skin testing for all HIV-infected persons whose initial skin test is negative.
- HCPHES will prioritize DOT among HIV-infected persons with LTBI.
- Local providers of HIV medical care and case management services should advise HIV-infected persons that certain occupations, settings and activities may increase the likelihood of exposure to TB.

Homeless Persons

> *HCPHES will engage providers of medical care for homeless persons and facilities that serve homeless persons to provide ongoing education about practices and procedures to identify, diagnose, isolate and report suspected TB cases.*

- HCPHES will continue to assess and document housing status for each reported TB case, and develop methods for utilizing this data to determine the importance of homelessness in local TB morbidity.
- HCPHES will collaborate with entities that work with homeless populations, including providers of shelters, housing, health care, substance abuse treatment and social services to ensure comprehensive and coordinated strategies for controlling and preventing TB in homeless persons.
- HCPHES will enhance methods to monitor the circumstances related to diagnosis of TB in homeless persons in order to inform development of control strategies.
- HCPHES will engage providers of medical care for homeless persons and facilities that serve homeless persons to provide ongoing education about practices and procedures to identify, diagnose, isolate and report suspected TB cases.
- HCPHES will increase efforts to ensure access to an inpatient facility for the isolation and induction phases of therapy of homeless persons with infectious TB. As resources allow, HCPHES will collaborate with community partners to identify and designate such a facility.
- HCPHES will ensure enhanced screening and case detection efforts among homeless populations.
- HCPHES will ensure that case management for homeless persons with TB is structured to encourage treatment adherence, involving proven strategies for compliance and linkages with needed services.
- HCPHES will conduct ongoing evaluations of its methodology for conducting contact investigations for cases of TB among homeless persons.
- HCPHES will prioritize targeted testing and treatment of LTBI among homeless populations, to include repetitive testing if resources allow.
- Organizations that provide shelter and housing for homeless persons should develop and implement institutional TB-control protocols, following guidelines published by CDC.

Detainees and Prisoners

- Local correctional facilities should implement TB case detection activities for detainees and prisoners entering the facility and those who become ill during incarceration. Case detection strategies may include symptom surveys, testing for *M. tuberculosis* infection followed by chest radiography for persons with a positive test and universal chest radiography for persons in jails.
- Local correctional facilities should ensure ongoing education and training for health care program staff regarding clinical and public health aspects of TB.
- Local correctional facility health care program staff should place detainees/prisoners who exhibit symptoms suggestive of TB in respiratory isolation until infectious TB is ruled out.
- Local correctional facility health care program staff should employ case management strategies such as DOT and incentives allowable by institutional policy to ensure compliance with therapy among detainees/prisoners with TB.
- Local correctional facility health care program staff should ensure that when detainees/prisoners receiving therapy for TB are released or transferred, responsibility for case management is transferred to the appropriate facility or agency, and the jurisdictional public health department is notified.
- Local correctional facility health care program staff should consider contact investigations of infectious TB cases in correctional facilities as equal priority to case detection as a means to preventing and controlling TB outbreaks. Written protocols and adequate resources should be available to ensure appropriate contact investigations, and consultation with the jurisdictional public health department should be ongoing.
- Local correctional facilities should implement treatment programs for LTBI in order to prevent transmission of TB within the facility. Treatment regimens should be designed to maximize compliance; a modified LTBI regimen should be considered when appropriate. Correctional facilities should assure community follow-up of released persons undergoing treatment for LTBI.
- Local correctional facilities should ensure implementation of effective infection control programs that include risk assessment; staff training; screening and treatment of LTBI; isolation of inmates with infectious TB; treatment and discharge planning; and contact investigation.
- Because of the increased risk for transmission of *M. tuberculosis* within dedicated housing units for detainees with HIV infection, local correctional facilities should not segregate HIV infected detainees/prisoners together in a separate facility unless institutional control programs following current guidelines have been established and are effective in preventing TB transmission.

> *Local correctional facility staff should ensure that when detainees receiving therapy for TB are released or transferred, responsibility for case management is transferred to the appropriate facility or agency, and the jurisdictional public health department is notified.*

Health Care Facilities

- Local health care institutions and other sites at high risk for transmission of *M. tuberculosis* should ensure that TB infection control programs are in place and include procedures to promptly identify, isolate and manage/refer persons with suspected and confirmed infectious TB. TB infection control measures should follow a hierarchy of administrative controls, engineering controls and respiratory protection.
- Local health care institutions and settings that serve populations at high risk for TB should train employees who have first contact with patients to detect persons who may have infectious TB.
- Health care settings that serve patients at high risk for TB, as well as those in geographic areas where prevalence of TB is high, should maintain a very high index of suspicion for TB. For persons suspected of having TB, facilities should ensure that arrangements are available to promptly establish a diagnosis and, if warranted, initiate therapy.
- Local health care facilities and other high-risk settings should test employees for *M. tuberculosis* infection upon employment, and conduct a risk assessment to determine the frequency of subsequent testing. For health care workers and employees within high-risk settings with no other risk factors for TB, the cut-off to define a positive baseline tuberculin skin test at initial employment should be 15mm of induration. An increase of 10mm in reaction size should be considered a positive test on subsequent testing unless the employee is a contact of a TB case of has HIV infection or otherwise immunocompromised, in which case a result of 5mm should be considered positive.
- Local health care facilities and other high-risk settings should ensure that employees determined to have *M. tuberculosis* infection receive a chest radiograph to exclude TB disease and are evaluated for treatment of LTBI. Employees for whom there is indication for treatment of LTBI should be encouraged to initiate and complete therapy.
- Local long-term care facilities should ensure testing for *M. tuberculosis* infection among all residents upon admission, as well as evaluation for the signs and symptoms of TB. Facilities should offer treatment if indicated, ensuring careful monitoring for drug toxicity.

Health care settings that serve patients at high risk for TB, as well as those in geographic areas where prevalence of TB is high, should maintain a very high index of suspicion for TB.

- In order to ensure prompt diagnoses in an era of declining rates and awareness of TB, local health care institutions should prioritize and conduct ongoing education programs for health care workers, including physicians in training, regarding the recognition, diagnosis and treatment of TB.

Conducting Research to Identify Areas of Need

HCPHES supports the recommendation put forth by the federal report to develop a comprehensive TB research plan for the United States, and proposes that stakeholders with federal, state and local perspectives participate in the development of this plan. In addition, HCPHES supports the following priority research areas identified by the federal report:

- The development of improved diagnostic tests and therapies for LTBI
- The development of a new and effective TB vaccine
- The development of models and practices for TB control based on clinical, operational, behavioral and economic evidence

**The photo on page 15 is courtesy of CDC.*

Harris County

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