

HEALING HANDS



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Tuberculosis & Homelessness: Metaphor for Our Time

In 1924, German author Thomas Mann, in his novel *The Magic Mountain*, used tuberculosis as an extended metaphor for the illness and decay of European civilization prior to the rise of fascism in Italy and Nazi Germany.¹ At the end of the twentieth century in America, Mann's metaphor again seems apt.

Tuberculosis is communicable though preventable and potentially fatal though treatable. Its case rate is a measure of the socio-economic well-being of our most vulnerable populations and, by reflection, the state of social justice in this country.²

Edward A. Nardell, MD, and Philip W. Brickner, MD

Through the nineteenth century and beyond, active tuberculosis was often a terminal illness. Aggressive public health efforts to isolate and control active cases, coupled with the advent of effective antibiotic therapy in the late 1940's and early 1950's, transformed this highly communicable disease into a curable illness in countries with effective public health controls and access to modern medicine. Consequently, during three succeeding decades (1953–84), the incidence of TB declined dramatically in the United States — from 53 to 9.4 cases per 100,000 population (from 84,304 to 22,255 total cases). This steady decline was followed by an unexpected resurgence in 1985.^{3,4}

Between 1985 and 1992, the number of cases of infectious tuberculosis in the United States increased by 20.1%, and the national case rate increased to 10.5 per 100,000. The largest increases occurred in New York (84.4%), California (54.2%) and Texas (32.7%), primarily in urban areas. In New York City, the TB case rate climbed to 52 per 100,000.⁵ Reported cases increased among the foreign born and in every racial/ethnic group except Caucasians and Native Americans. Hospitals, prisons, jails, nursing homes and homeless shelters were the most likely sites of transmission.

The resurgence was attributed to the following factors:^{2,4,5}

- greater occurrence of TB among growing numbers of HIV-infected persons and immigrants from areas where the disease is common, particularly Latin America and Southeast Asia;
- primary transmission of TB within and beyond these groups in congregate areas, including homeless shelters;
- a decline in public health services and decreased funding for TB prevention and control;
- limited access to medical care for persons at highest risk of TB infection; and
- the emergence of multidrug-resistant (MDR) TB secondary to failure to complete therapy.

Tuberculosis is predominantly a disease of poverty and crowding. Homeless shelters, where individuals live cheek by jowl, often for months on end, have been described as the equivalent of nineteenth-century tenements.² Their residents can be unwitting vectors of airborne pathogens such as *Mycobacterium tuberculosis*.



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In the mid-1980's, the prevalence of active tuberculosis was estimated to be 150 to 300 times higher among homeless adults than in the general population. Latent (clinically asymptomatic) TB infection was reported among 18% to 51% of homeless people at selected

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clinics and shelters. A five-fold increase in active TB cases among homeless persons was reported by 109 HCH projects, 1989–1991; 17% of these cases were children 14-years-old or younger.^{4,6}

This upward trend peaked in 1992. Since then, both TB case numbers and case rates have continued to decline in much of the nation, as a result of aggressive outreach efforts and enforced treatment compliance programs spearheaded by the Public Health Service.⁴ The latest TB surveillance data indicate a national case rate of 7.4 cases per 100,000 population (19,851 active cases) in 1997, down 26% from 1992. Substantial decreases occurred in six states reporting 57% of the total number of U.S. cases in 1997 — California, New York, Texas, Florida, Illinois and New Jersey. The incidence of MDR TB also decreased, particularly in New York City.⁷

Nevertheless, tuberculosis infection rates remain unacceptably high among homeless people, and shelters are still major sites of transmission.^{2,9} The risk of contracting and spreading the active disease there is compounded by other health conditions common to homeless people, which suppress the immune system and complicate treatment compliance — HIV infection, malnutrition, untreated diabetes, chronic pulmonary disease and substance abuse.⁴

Without aggressive and sustained preventive measures, it is only a matter of time before these reservoirs of latent infection and active disease engulf our major cities once again. Ironically, access to preventive services and health care remains limited for much of the growing homeless population in America. Thus despite significant progress in the control of infectious tuberculosis since 1992, the underlying causes of the resurgence in the late 1980's and early 1990's remain unchanged.² ■

Combating TB among Homeless People

Elizabeth Shilkret, RN, is a TB Nurse Specialist at the Philadelphia Health Management Corporation, a federal HCH grantee for 13 years. She works as a tuberculosis case manager in a small, nurse-managed clinic, and serves as a consultant to physician assistants, nurse practitioners and community health nurses who provide on-site care at emergency shelters.

SHELTER SCREENING PROGRAM. Shilkret follows TB cases identified by these outreach clinicians, leads contact investigations, and serves as a resource for case managers and intake workers at emergency shelters who administer a standard TB symptom questionnaire to all shelter residents. This facilitates early identification and referral of infected clients for appropriate medical care. The objectives are to transfer active TB cases as soon as possible to an intensive treatment setting (usually a hospital) until they are no longer contagious, and to prevent latent cases from becoming active.

“Most homeless people with active TB are not diagnosed in shelters,” she says. “They tend to go directly to hospital emergency rooms.” (This observation was recently confirmed by clinicians in Los Angeles.⁸) Nevertheless, because TB symptoms are easily confused with those of other medical conditions, it's easy to miss people in early stages of the disease, explains Shilkret. “To be sure we are not missing anyone with TB,

our best line of defense has been a citywide symptom screening program, involving all public shelters in Philadelphia.”

Shelter intake workers survey all clients before placement and fax the results to Shilkret. They ask about typical TB symptoms — prolonged cough, fever, night sweats, weight loss — and whether clients have taken medications to prevent or treat tuberculosis. If the answer is “Yes” to any of these questions, the interviewer calls Shilkret, who immediately refers all such respondents to the emergency room, to a doctor's office or to the health department, depending on the severity of their symptoms.

DIRECTLY OBSERVED THERAPY. The health department's TB control unit runs a DOT Center where homeless people are referred for treatment. Centrally located with easy access to transportation, clients go there on the way to work or other activities to get their meds, have blood work done for monitoring, and see a physician periodically throughout the course of treatment.

Two alcoholic clients recently finished TB therapy. On the street for weeks at a time, they always went to the DOT Center for their meds. “It's a warm, comfortable place

Effective TB care requires an established network of providers who consult with one another frequently to ensure that the client is adhering to therapy and receiving appropriate care.

Beth Shilkret, RN

where clients get coffee and snacks. Having somebody at the door who is friendly is a real bonus,” says Shilkret. “Getting consistent, positive reinforcement makes clients want to go back.”

Not all clients are this compliant. Shilkret describes a TB-infected IV drug user whose shelter stays were erratic following hospital discharge. “He came in when he was feeling bad, and returned to the streets when he felt better. An outreach worker from the TB infection control unit followed him around the city to make sure he took his meds. We tracked him for six months until he completed treatment.”

Shilkret practices aggressive prevention of pediatric TB by administering meds in shelters to homeless children with positive skin tests and negative chest X rays, who can develop the disease quickly. Prophylactic DOT is also recommended for HIV-positive persons with TB infection.¹¹

“Managing clients with TB must be a cooperative effort among the practitioner, the infectious disease specialist and the health

department,” stresses Shilkret. “Sputum smears must be monitored and medication regimens fine-tuned; when patients leave the shelter system, programs should follow them into the community or involve a local resource who can, such as the health department.”

Philip W. Brickner, MD, has authored a number of publications on the etiology and prevalence of TB in homeless populations cited in this article.^{2,3,6} Dr. Brickner is Medical Director and Chairman of the Department of Community Medicine at St. Vincent's Hospital and Medical Center in New York City, where he serves homeless clients. He has been personally involved in TB control efforts that resulted in dramatically reduced case numbers and case rates in New York City since 1992.

Nevertheless, New York and other major cities in the US with large immigrant populations continue to demonstrate inordinate-

ly high levels of tuberculosis infection among homeless persons — over 40% of those screened, Brickner reminds us. To address this chronic problem, he is engaged in a six-year, national field study (1997–2002) to reduce the transmission of tuberculosis in emergency shelters.⁹

ULTRAVIOLET GERMICIDAL IRRADIATION.

Brickner is principal investigator for The National TB Project, designed at St. Vincent's and the Harvard School of Public Health, to conduct a controlled field trial of the effect of short wavelength upper room UVGI and ventilation in preventing the spread of TB among homeless shelter residents and staff.

The project will also test UVGI equipment and collect field data at participating shelters in six US cities — New York, Birmingham, New Orleans, Houston, South Texas (Brownsville, Corpus Christi and Harlingen) and Los Angeles — to develop

and refine guidelines for its use.

During the first year of the study, UVGI equipment and ventilation were installed at selected shelters in pilot cities. During the second phase (years 2–6), consenting shelter clients and staff with negative TB skin tests are to be followed at three-to-six-month intervals to document TB skin test conversion rates for time periods with and without upper room UVGI. To date, four of the six pilot cities have completed Phase 1, and three have begun Phase 2.

“If TB spread can be reduced in the most difficult settings of homeless shelters by these means, then the technology can be applied broadly,” Brickner hypothesizes. “Clinics, prisons, long-term care facilities, schools, transportation centers and public transport, including air travel, offer obvious opportunities to establish similar prevention programs.” ■

BEST PRACTICES FOR HCH PROJECTS:

- **First priority of TB control:** Promptly identify persons with TB, initiate appropriate therapy, and ensure its completion.¹⁰ [*For basic information about TB diagnosis and treatment, see reference 10; for new treatment guidelines for HIV-infected persons, see reference 11.*]
- **Improve health care access for homeless people** through aggressive outreach and elimination of geographic, financial, cultural and linguistic barriers to care.⁴
- **Conduct routine, consistent TB screening of clients and staff** at homeless shelters and clinics; use a master computer database to facilitate case tracking, and on-site X rays for immediate follow-up to positive skin tests; have a high index of suspicion for TB infection in HIV-positive clients.^{4,6,11}
- **Maintain linkages with hospitals and specialty clinics** that provide appropriate pulmonary care; develop special protocols to expedite medical services for homeless people.⁴
- **Use Directly Observed Therapy** for all clients with active TB and those who are at high risk for the disease (especially HIV-infected persons); use incentives to encourage adherence to therapy.^{4,11}
- **Provide appropriate case management services** to help infected individuals find housing and apply for benefits.⁴
- **Educate shelter providers and homeless persons** about proper infection control measures; provide tissues in homeless settings.^{4,10}
- **Eliminate or reduce exposure risks in shelters:** provide permanent, affordable housing; install adequate ventilation and Ultraviolet Germicidal Irradiation (UVGI) in emergency shelters.^{4,6}
- **Use specialized respite care programs** as an alternative to emergency shelters for continuing TB therapy after hospital discharge.^{4,6}
- **Cooperate closely with local health departments** for ongoing TB prevention and control.^{4,6,10}

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- ⁴ National Health Care for the Homeless Council. *Combating Tuberculosis and Homelessness: Recommendations for Policy and Practice*. May 1994, 3–28.
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- ⁶ Bricker PW, McAdam JM and Scharer LL. “Tuberculosis in Homeless Populations,” in *Tuberculosis: A Comprehensive International Approach*, Reichman and Herschfield, Eds. New York: Marcel Dekker, Inc., 1993, 436–449.
- ⁷ Division of Tuberculosis Elimination/CDC/DHHS. 1997 TB Surveillance Report. <http://www.cdc.gov/nchstp/tb/surv/surv97/surv97.htm>.
- ⁸ Asch S, et al. “Tuberculosis in Homeless Patients: Potential for Case Finding in Public Emergency Departments,” *Ann Emerg Med*, Aug 1998; 32(2): 144–7.
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- ¹⁰ CDC. “Essential Components of a Tuberculosis Prevention and Control Program.” *MMWR* 1995, 44(RR–11), 1–16; Miller B, et al. “Tuberculosis Control in a Changing Health Care System: Model Contract Specifications for Managed Care,” *Clinical Infectious Diseases* 1998; 27: 677–86; CDC. “Prevention and Control of TB among Homeless Persons...,” *MMWR* 1992, 41(RR–5), 13–23.
- ¹¹ CDC. “Prevention and Treatment of TB among Patients infected with HIV: Principles of Therapy and Revised Recommendations.” *MMWR* 1998, 47(RR–20), 1–43.

OSHA Standards Update

We are still awaiting a final decision by the Occupational Safety and Health Administration (OSHA) regarding a new standard on occupational exposure to tuberculosis. The National Health Care for the Homeless Council submitted comments on the proposed regulation, along with numerous other homeless advocates and service providers, urging OSHA to develop a separate proposal, directed specifically at TB exposure in homeless settings. HCH clinicians reported that the initial proposal was both economically and operationally unrealistic for homeless clinics and shelters. The new rule is expected to be promulgated sometime in late 1999 or early 2000. We'll keep you posted. ■

Mark Your Calendars

Plan to attend the National Health Care for the Homeless Conference and the HCH Policy Symposium, Thursday morning, April 29, through Saturday noon, May 1, in Washington, DC. Both events will be held at the Hyatt Regency Hotel near Capitol Hill.

The HCH Clinicians' Network will again present its popular HCH 101 course. We hope to see you at the Network's Annual Membership meeting, Friday, April 30, at 3:00 p.m. Watch your mail for the registration brochure with program details. ■

IN MEMORIAM

Velma Scott, LMSW, Director of the E. James Ivory Homeless Clinic, Jackson-Hinds Comprehensive Health Center, Jackson, Mississippi, was killed in an automobile accident on November 13, 1998.

She was on her way to a presentation about homelessness, accompanied by her sister-in-law and a family friend, both of whom were also killed.

One year ago, Scott succeeded the Clinic's long-time director, James Ivory, after his death following a long illness.

A member of the HCH Clinicians' Network, she had recently agreed to serve as a Network Ambassador.

The Network extends condolences to Scott's family and to her former colleagues at the homeless clinic.

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