

From: **STOP TB USA***

*Formerly the National Coalition for Elimination of Tuberculosis (NCET)

Do you have colleagues, policy makers, friends in the press, or other acquaintances who believe the disease is no longer a problem? Share the following reports with them.

These 47 TB-related reports (below) from 19 different states, the District of Columbia and Canada were taken from the Centers for Disease Control's TB-Related News and Journal Items Weekly Update and they all occurred in just the past 3 months (October - December, 2008). These are not all the TB reports and articles - just those that were identified. Some of these reports describe problems that present real challenges for health departments.

MINNESOTA: Ramsey County Sued Over Handling of Inmate with TB; Star Tribune; December 17, 2008, by Chris Havens.

A class action lawsuit filed by some former inmates of the Ramsey County Workhouse in Minnesota alleges that corrections staff did not properly test an inmate who had TB disease. As a result, the infection spread to other inmates. The suit claims that the corrections staff knew of and disregarded the risk to the health of the other inmates and acted with deliberate indifference in violation of the eighth and 14th amendments of the United States Constitution. According to the complaint, about 80 former inmates and 30 county employees later tested positive for TB infection. Assistant County Attorney Darwin Lookingbill said that the inmate was screened for TB, but did not test positive for infection. Lookingbill noted that when the symptoms showed up later and the disease was identified as TB, the inmate was isolated. According to the complaint, the inmate showed obvious signs and symptoms of TB. Inmates complained to staff about this person's health, and 20 people signed a complaint requesting that action be taken. The corrections staff response was that the inmate had a "smoker's cough." Of 300 persons (both inmates and corrections staff) tested by the county, six tested positive for active TB disease, and 104 tested positive for latent TB infection. The inmates are seeking unspecified financial damages and an order requiring changes in the policies and procedures of the workhouse regarding training of corrections and medical staff.

USA: Knowledge, Attitudes and Risk Perceptions about Tuberculosis: US National Health Interview Survey; The International Journal of Tuberculosis and Lung Disease. 2008 Nov; Marks, S.M., et al.

TB disproportionately affects the HIV-infected, foreign-born, Black, Hispanic, American Indian/Alaska Native, Asian, homeless, incarcerated, alcoholic, diabetic or cancer patients, males, those aged >44 years, smokers, and poor persons. The researchers present TB knowledge, attitudes, and risk perceptions overall and for those experiencing TB disparities from the 2000-2005 US National Health Interview Survey (NHIS). A total of 32% of respondents said TB is curable; 44% correctly recognized that TB is transmitted by air. Persons with less knowledge about TB transmission were aged 18-24 years, alcohol abusers, educated <12 years, Hispanics or males. Persons less likely to say TB is curable were aged 18-44 years, smokers, HIV-tested, uninsured, alcohol abusers or homeless/incarcerated. Only 28% of foreign-born persons from Mexico/Central America/the Caribbean said TB was curable. Knowledge about TB transmission and curability was low among a representative United States population. Renewed TB educational efforts are needed for all populations, but should be targeted to populations disproportionately affected, especially those who are HIV-infected, homeless/incarcerated, Black, alcohol abusers, uninsured or born in Mexico/Central America/the Caribbean.

USA & CANADA: Adherence to Treatment for Latent Tuberculosis Infection: Systematic Review of Studies in the US and Canada; The International Journal of Tuberculosis and Lung Disease. 2008 Nov; Hirsch-Moverman, Y., et. al.

There is renewed attention to the critical role of successfully treating latent TB infection in reducing the overall impact of TB. However, levels of treatment adherence are consistently low in industrialized countries such as the United States and Canada. A systematic review of studies in the United States and Canada was undertaken to analyze measurement of adherence to treatment of latent TB infection. Adherence and completion rates of LTBI are suboptimal across high-risk groups, regardless of regimen. Associations between adherence and patient factors, clinic facilities or treatment characteristics were found to be inconsistent across studies. Several adherence interventions have been developed to improve LTBI adherence in the United States and Canada; however, no single intervention has shown consistent effectiveness. LTBI must be effectively treated if the goal of TB elimination is to be realized. Consistently employing tools for measuring and improving adherence is fundamental. Identifying barriers to adherence and treatment completion will facilitate the development of effective, appropriate interventions. A “one-size-fits-all” approach to treatment for LTBI adherence is not likely to succeed across all settings. Innovative approaches can inspire future interventions and suggest solutions for the current problems facing LTBI programs and their patients.

MICHIGAN: TB Case Confirmed in Utica Schools; Students, Staff to Be Tested; Detroit News, December 9, 2008, by Charles E. Ramirez.

Macomb County Health Department officials are working with the local school district to identify and test students and staff whose contact with a student with TB may have put them at risk of the disease. The officials confirmed on Dec. 9 that a high school student has TB disease. In addition, the student attends classes at a high school in Shelby Township, which is also in the Utica district. Dr. Kevin Lokar, the health department’s medical director, said the risk to students and staff at both schools is believed to be low. Macomb County generally sees up to 20 TB cases a year, Lokar said.

ARIZONA: Local TB Cases Up in Arizona and Sonora Children; Yuma Sun; December 14, 2008, by Geovana Ruano.

At the 15th Binational Symposium on TB, Dr. Jose L. Munoz, Co-Chair, Binational Health and Environment Council, and Amanda Aguirre, Yuma County State Senator and President of the Regional Center for Border Health, were concerned about the increase in TB cases among children on both sides of the border. Senator Aguirre reported that the incidence of TB has been on the rise in Arizona, particularly in Hispanic children who emigrated from Mexico. She noted that the rate of TB cases in Yuma, Arizona, is 10 times higher than the national rate. Senator Aguirre also stated that the two Colorado cities of Sonora and San Luis Rio are collaborating closely to trace contacts and families of people who migrate in both directions. Dr. Munoz emphasized the importance of raising awareness of the disease in the population. The director of San Luis General Hospital, Marco Antonio Ramirez Wakamatzu, stressed that TB is curable and that the municipality is working with about 40 cases each year. He said that the disease is linked to social, cultural, and economic factors involving drug addiction, alcoholism, malnutrition, and social isolation. Cristian Miguel Tapia Flores, the coordinator for the Microbacteriosis Program in Sonora, said that Sonora reported 727 TB cases in 2007, and that 67 of its residents had died of TB in 2006. He noted that so far, the state has lost the battle against TB in eight patients who were resistant to traditional drug therapy, but another seven with drug resistance are still alive. He acknowledged that in Mexico, there is no access to second-line drugs to treat drug-resistant TB, and it is difficult to obtain them; however, because of the binational agreement, Arizona supplies these drugs.

MASSACHUSETTS: Grounds for Discovery: Students Examine Soil Samples to Find New Treatment for Tuberculosis; Daily News Tribune, December 16, 2008, by Jeff Gilbride.

Students at Chapel Hill-Chauncy Hall School are participating in a nationwide project through the University of Pittsburgh and Howard Hughes Medical Institute. With the help of their biology teacher, Gwen Shipley, 44 students from four different classes are involved in a study to discover new viruses in the soil, which could be used to help treat TB. In the search for bacteriophages, viruses that kill bacteria, the students gather soil from the campus and surrounding areas, filter the soil samples, mix them with bacteria, and transfer the samples to petri dishes. The bacteria being used is a close relative of the TB bacteria. According to Shipley, if they find a virus that kills the relative, then they will send it to the University of Pittsburgh for further study, and the students get to name the virus. So far, the students have found nine possible viruses that they will study further to determine whether the viruses infect bacteria strains related to TB. If the soil samples pass a second test that involves infecting more soil to see if it kills the bacteria, they will be shipped to the university. After the viruses are sent to the University of Pittsburgh, their DNA will be sequenced, and they will be tested with actual TB bacteria.

MASSACHUSETTS: Forsyth Scientist Receives Major Grant to Support Rapid, Accurate, Affordable Test for Tuberculosis; Eurekalert (American Association for the Advancement of Science); December 15, 2008.

Dr. Antonio Campos-Neto, Head, Department of Cytokine Biology, Forsyth Institute, Massachusetts, has received a major grant from the Foundation for Innovative New Diagnostics (FIND) to continue his research into developing a new diagnostic test for TB. Dr. Campos-Neto is working on a rapid, sensitive, non-invasive, and accurate test to diagnose active TB disease. His work is modeled after a pregnancy test that would identify TB molecules in a patient's urine. Dr. Campos-Neto stated that his research is in the preliminary stages of establishing a methodology that would allow detection of minute traces of the TB antigens that are excreted in the urine of an infected patient. He explained that if successful, this project will be a tremendous contribution to controlling a disease that kills close to two million people every year. The research has already detected molecules in the urine of infected mice and humans. Studies have shown that an improved TB diagnostic test could save as many as 625,000 lives every year.

USA: Isoniazid-Monoresistant Tuberculosis in the United States, 1993 to 2003: Archives of Internal Medicine. 2008 Oct 13; Hoopes, A.J., ET AL.

Seven percent of TB cases reported to the UNITED STATES National TB Surveillance System in 2005 had TB isolates with resistance to at least isoniazid. The numbers of isoniazid-monoresistant TB cases increased from 303 (4.1%) in 1993 to 351 (4.2%) in 2005. The races/ethnicities of patients with isoniazid-monoresistant TB were significantly more likely to be US-born Asian/Pacific Islander, foreign-born Asian/Pacific Islander, foreign-born black non-Hispanic, or US-born Hispanic. Isoniazid monoresistance was also associated with failure to complete therapy within 1 year, a history of TB, and correctional facility residence. Isoniazid-monoresistant TB did not decline from January 1, 1993, through December 31, 2005, despite national downward trends observed in overall TB cases and in multidrug-resistant TB cases. Physicians must ensure completion of treatment for patients taking isoniazid as part of their TB or latent TB infection therapy. In addition, physicians should maintain heightened vigilance for isoniazid resistance when evaluating certain at-risk populations for TB and latent TB infection.

WEST VIRGINIA: State Ready to Offer Pinecrest TB Victims \$500K, Records Show; The Record; December 5, 2008, by Lawrence Smith.

Records indicate that the state of West Virginia is prepared to pay \$500,000 to 10 plaintiffs who sued Pinecrest Hospital last year, alleging that they contracted TB at the hospital between August 2001 and

September 2004. As a result of Pinecrest installing a through-the-wall air conditioning system in the TB ward in 2001, the negative air pressure units designed to prevent contaminated air from infiltrating other areas of the hospital were compromised. The plaintiffs were either visitors or employees of Pinecrest Hospital. Court records indicate that the parties agreed to mediation, which concluded with the hospital agreeing to pay all the plaintiffs the total amount of \$500,000 for full releases as well as the cost of mediation. An additional person will also be paid in the settlement in exchange for that person signing a covenant not to sue the hospital. So far, none of the parties involved have commented publicly about the settlement.

WASHINGTON, DC: MetroAccess Driver Has TB, 762 Riders Told; Washington Post, December 6, 2008, by Sandhya Somashekhar.

Officials of the Washington Metropolitan Area Transit Authority (Metro) reported on Dec. 5 that a driver who transported elderly and disabled patients has TB, and as many as 762 passengers may have been exposed to the disease. The sequence of events in the case was as follows.

On Oct. 14, Metro officials, suspecting the MetroAccess driver might be infected, took him off the road. On Oct. 29, the DC Department of Health notified Metro that the driver's condition was confirmed as TB. On Nov. 19, Metro sent letters informing 762 potentially exposed riders of the situation. Of the 762 passengers, about 100 are believed to have had sufficient exposure to the driver to be at risk. Yet even for those 100 people, even given that they may be ailing or elderly, the risk is low, said Shannon Hader, who runs the TB program for the DC Department of Health. Metro spokesperson Angela Gates said Metro was able to identify the 762 riders because MetroAccess customers are typically picked up at home, so their addresses are on file. MetroAccess provides door-to-door van and car service for about 20,000 mobility-challenged passengers. Some people questioned why three weeks passed after the driver's diagnosis before Metro began notifying riders. Gates said Metro was waiting for guidance from the DC officials leading the investigation. Hader, however, disputed that; she said it probably took Metro that long to find all the passengers' names and addresses. She said health departments in the District, Maryland, and Virginia are "aggressively" following up with potentially exposed passengers. Hader added that the man's TB disease is not drug-resistant. The driver is employed by MV Transportation, a California-based contractor that provides about 800 MetroAccess drivers; a spokesperson said the man is being treated and is expected to return to work.

MICHIGAN: Macomb County Student Subject of TB Investigation; Associated Press, December 6, 2008.

Macomb County health officials say they are trying to confirm or rule out whether a student at a high school may have TB disease. According to school spokesperson Hildy Corbett, the student also attends another high school in neighboring Shelby Township, about 20 miles north of Detroit. Corbett said the student has not attended school for several days. On Dec. 5, the school district sent letters home to parents notifying them of the suspected case. As many as 20 TB cases are reported in Macomb County each year.

NEW MEXICO: NM Health Officials Issue TB Alert; Chron.com; December 2, 2008.

The New Mexico Department of Health issued a TB alert to passengers of a commercial bus that traveled through the state on its way from Texas to Colorado in August. A person recently diagnosed with TB was a passenger on the bus on August 3, and August 9, 2008. The bus, chartered by El Paso-Los Angeles Limousine Express, Inc., left El Paso, Texas, on August 3. The passenger boarded the bus in Albuquerque on August 3, traveled to Greeley, Colorado, and returned to Albuquerque on the same bus line on August 9. Passengers who were on either of the two buses are being asked to contact their local health officials for instructions. Health officials note that although the risk of contracting TB from exposure on a bus is considered small, it is important for passengers to be evaluated.

WISCONSIN: Court Order Confines Man with Tuberculosis to Hospital; WEAU (TV), December 1, 2008, by Kelly Schlicht.

A patient has been ordered confined to an Eau Claire, Wisconsin, hospital for TB treatment because of his nonadherence to home treatment. The health department contends that the patient had to be confined to protect public health; to protect the health of his five young children, including an eight-month old; and to save his life. The 65-year-old man was diagnosed with TB in August. According to a public health nurse, he refused to adhere to treatment because of adverse side effects, despite education and other interventions. The nurse reported that he had indicated on many occasions that he did not think he had TB. In a court appearance via phone conference, the patient commented that his side effects had lessened in the hospital. The health department stated that the children have been tested and are fine. Nurses had recommended preventive treatment for the baby, but the family stopped the treatment because of the side effects.

TEXAS: Mexican with Tuberculosis Allowed into Texas 20 times in 2007; Foxnews.com, December 1, 2008.

According to a report in the *El Paso Times*, a Mexican citizen with multidrug-resistant TB (MDR TB) was allowed to cross the border into El Paso, Texas, at least 20 times in 2007. The report blamed poor communication between government agencies for the problem. A report from the US Government Accountability Office stated that Customs and Border Protection (CBP) officials at the Bridge of Americas waited 14 days to notify Department of Homeland Security officials that the US Centers for Disease Control and Prevention (CDC) had requested the CBP's assistance in the case. Because of the delay, the Mexican citizen continued to travel from Juarez, Mexico, to El Paso for business. The patient also did not surrender his travel visa in response to his doctor's request. Dr. Miguel Escobedo, Medical Officer, CDC Quarantine Station, El Paso, said that new procedures have been instituted for all local and federal agencies involved in monitoring international patients who have TB.

RHODE ISLAND: The Antiquity and Persistence of Tuberculosis; Providence Journal-Bulletin, Editorial, November 10, 2008, by Stanley M. Aronson.

TB, paleontologists tell us, has been with us since prehistoric antiquity. Many epidemiologists assert that TB, through the last millennium, has affected more humans, and killed more, than any other known contagious agent. Until recently, the United States could take pride in its gradual conquest of TB. The development of healthier housing and the various aggressive public health measures to identify early TB and rapidly segregate its victims into institutions called sanatoria diminished the major source of TB contagion. The incidence of TB then fell precipitously even before the introduction in the late 1940s of streptomycin, the first antibiotic agent capable of curing TB. Toward the end of the 20th century, however, the incidence of active, clinically apparent TB rose dramatically in the United States. In the New York City borough of the Bronx, during the 1990s, public health officials were confronted with three critical problems increasing the spread of TB: first, an increase in strains of TB now resistant to the customary antibiotic drugs; second, the crowded tenements of the region were becoming increasingly congested with newly arriving Caribbean and Asiatic immigrants; and third, an epidemic of HIV infection spreading rapidly within this inner city community. What was taking place in the Bronx also occurred in numerous other impoverished enclaves of the United States. The problem has not reached a level of national anxiety largely because the recrudescence of TB has been confined to our immigrant and poverty-stricken population. The rates of TB among established, middle-class communities have stayed at a very low level. And in the rest of the world? Drug-resistant TB is now increasing dramatically in the new urban centers of South Africa, India, and China, often coincident with their flourishing industrialization, and wherever major levels of HIV infection have appeared, as in sub-Saharan Africa, so

too has TB returned to become a major public health threat. HIV and TB now co-exist, in synergy, to create an evil confederacy.” The author is Dean of Medicine Emeritus, Brown University.

LOS ANGELES: Study Chronicles Drug-Resistant TB; Los Angeles Times, November 12, 2008, by Mary Engel.

Cases of extensively drug-resistant TB (XDR TB) in the United States declined sharply from a high of 18 in 1993 to just two in 2007, a new report shows. At least 83 US cases of the hardest-to-treat form of TB have been diagnosed in the last 15 years, according to the most thorough accounting to date of TB’s national impact. The declining trend of XDR TB diagnoses in the United States contrasts with what is happening in much of the developing world, where the disease is on the march. “Not to diminish the concern, but those numbers are very positive, said Dr. Michael Iseman of Denver’s National Jewish Medical and Research Center. “They’re testament to the quality of TB control in America. The report showed approximately 3,000 cases of multidrug-resistant TB (MDR TB) were confirmed during the 15-year period. California and New York have the highest levels of drug-resistant TB in the country, according to CDC. TB was once a leading cause of death in the United States, though cases began steadily dropping with the advent of antibiotics in the 1940s and 1950s. But cases resurged from 1985 to 1992, coinciding with the emergence of the country’s HIV/AIDS epidemic. The resurgence also came at a time of increased immigration from developing countries and with federal cuts in public health funding, noted study author Dr. J. Peter Cegielski of CDC. Drug-resistant TB emerged in part due to patients’ failure to complete treatment. Regular TB requires patients to comply with an antibiotic regimen that can last six to nine months. Treatment for drug-resistant TB can take two years. For the rarer XDR TB, half of patients do not survive - about the same mortality of regular TB in the pre-antibiotic era. The study, “Extensively Drug-Resistant Tuberculosis in the United States, 1993-2007, was published in the *Journal of the American Medical Association*

CANADA: Tuberculosis a Social Problem; Northern News Services, November 17, 2008, by Herb Mathisen.

Gail Turner, a director of health with the Nunatsiavut government, commented that the current rate of TB among the Inuit people in Canada is unacceptable, as Inuits have a rate of TB 90 times higher than the national average. About 100 delegates from more than 60 countries met in Toronto, Ontario, Canada, from November 12 to 14 to discuss the high rates of TB among aboriginal peoples in the world and what can be done to solve the problem. Turner stated that the realization that came out of this conference was that the solutions are not medical, but social, noting that TB rates were higher in aboriginal populations because of their social conditions. Cheryl Case, a department of health and social services communicable disease specialist, said that the disease is prevalent in the Northwest Territories (NWT) because of the way it spreads. She noted that four communities in the NWT, including Yellowknife, have reported TB this year, and NWT has a centralized TB program that is improving every year. Turner said aboriginal people have to be involved in creating solutions to problems affecting their communities. The Global Stop TB initiative hopes to decrease the incidence of TB among aboriginal people by 50 percent in 2015 from 1990 levels.

CANADA: Rifampin May Be Better Tolerated than Isoniazid for Latent Tuberculosis; Medscape, November 17, 2008, by Laurie Barclay.

A multicenter trial showed that treatment with four months of rifampin for latent TB infection (LTBI) resulted in fewer adverse events and better adherence than treatment with nine months of isoniazid. The study compared the frequency of side effects and treatment completion for patients on the two different LTBI treatment regimens. Trials were conducted at university hospital TB clinics in Canada, Brazil, and Saudi Arabia, with 847 patients being treated for LTBI and in whom rifampin was not contraindicated.

The subjects were randomly assigned to receive four months of daily rifampin therapy or nine months of daily isoniazid therapy. Of 422 participants on isoniazid therapy, Grade 3-4 adverse events occurred causing drug discontinuation, compared to 7 of 418 on rifampin. Also, both groups of patients had similar frequency of Grade 1 or 2 adverse events. Of the patients in the rifampin group, 78 percent completed treatment, compared to 60 percent in the isoniazid group. The authors conclude that based on these results, a large-scale trial to compare the efficacy of both drugs is justified. The study was reported in the November 18 issue of the *Annals of Internal Medicine*.

USA: The Epidemiology of Tuberculosis in the United States; Seminars in Respiratory and Critical Care Medicine. 2008 Oct; Burzynski, J., Schluger, N.W.

Effective control of TB requires an understanding of the changing epidemiology of the disease. An understanding of the epidemiology is needed for public health departments to respond with appropriate program-planning decisions. Following a marked decline in the incidence of TB in the United States over several decades, the incidence escalated dramatically and peaked in 1992. The resurgence of TB reflected several factors, including deteriorating social conditions, dismantling of the public health infrastructure, dwindling support for TB clinics and services, the new epidemic of HIV/AIDS with highly susceptible individuals at risk, and immigration of individuals from countries with high rates of TB. Since 1992, there has been a substantial decline in new cases. The success in reducing the TB burden reflects several factors, including improved public health efforts, physician and patient education, infection control measures, and the use of directly observed therapy. By 2006, cases of TB in the United States had reached historic lows. Currently, a majority of cases of TB occur in foreign-born individuals, reflecting immigration from countries with high endemic rates of TB. Future efforts to curtail the incidence of TB will require vigilant public health efforts, improving education of patients and health care personnel, identifying mechanisms and routes of transmission, and assuring adequate treatment and prophylactic regimens among infected individuals.

NEW YORK: Med School Receives Gates Grants; The Cornell Daily Sun, November 7, 2008, by Ben Gitlin.

Two grants in the amount of \$100,000 have been awarded recently to Weill Cornell Medical College by the Bill and Melinda Gates Foundation. The grants are part of the Foundation's Grand Challenges Explorations initiative and will go to two major researchers in the college, Dr. Carl Nathan, Chairman of the Department of Microbiology and Immunology and Dr. Anne Moscona, a professor of Pediatrics. Dr. Nathan's research is focused on finding a solution to the problem of why certain people become infected with TB after being exposed to the bacteria, and at what point it can be prevented. He believes he can find a solution by studying the genetic mechanism by which TB emerges from a latent to an infectious state and how the mycobacterium resumes replication. Dr. Moscona's research focuses on acute respiratory infections such as croup, bronchitis, and pneumonia which are responsible for 20 percent of deaths in young children each year.

CALIFORNIA: UC Davis Professor Receives Grant from Gates Foundation; California Aggie, November 12, 2008, by Erica Lee.

Jay Solnick, Professor of Medicine at the University of California, Davis (UCD), has received a grant of \$100,000 from the Bill and Melinda Gates Foundation's Grand Challenges Explorations Initiative. Professor Solnick and colleagues will use the grant to continue research on latent TB. According to Solnick, understanding why latent TB occurs is a vital step in the ultimate search for a cure to the disease. The researchers have proposed that one explanation for the occurrence of latent TB may be an enhanced immune response caused by infection with *Helicobacter pylori*, a bacterium that has been linked to ulcers and stomach cancer. Julie Parsonnet, Professor of Medicine at Stanford University, who has worked with

Solnick, explained that the scientists found that when individuals are exposed to TB, those with helicobacter were far more likely to develop latent TB. The researchers plan to do further human studies in Pakistan and the Gambia to confirm their hypothesis. The team will also conduct experiments using samples of non-human primates from studies conducted by JoAnne Flynn, Professor of Immunology, University of Pittsburgh, who is a former UCD alumna.

LOUISIANA: Treatment Adherence of the Latently Infected Tuberculosis Population (post-Katrina) at Wetmore TB Clinic, New Orleans; The International Journal of Tuberculosis and Lung Disease; 2008 Oct; Bieberly, J., et al.

This study conducted a survey of those working in the New Orleans Wetmore TB Clinic and evaluated and analyzed the follow-up data of the patient population diagnosed with latent TB infection (LTBI). The total survey population in this data analysis consisted of 380 latent TB infection patients. Of the patients with latent TB infection, 43 % displayed at least one of these risk factors. Adherence rates for latent TB infection treatment were low, at 19%. Post-Katrina New Orleans presents a challenging environment for TB control. This study forms a basis for further planning, provision, and evaluation of services to this population. Its results and conclusions could be reflective of similar issues pertaining to public health TB clinics in other cities where displacement of patients, movement of migratory transient workers, and disbanded infrastructure due to natural or man-made disasters could pose a problem.

CANADA: The Epidemiology of Tuberculosis in Ottawa, Canada, 1995-2004; The International Journal of Tuberculosis and Lung Disease, 2008 Oct; Kim, J., et al.

In Ottawa (population 774,072), active TB disease cases are reported to Ottawa Public Health. There has been no comprehensive local epidemiological analysis to date. Researchers reviewed TB cases reported to the Reportable Disease Information System from 1995 to 2004 to determine epidemiological characteristics, drug resistance, use of directly observed therapy, and rates of HIV coinfection. A total of 584 TB cases (79% foreign-born) were analyzed (average annual incidence 7.5/100,000). Anatomical site of disease followed national trends, with 58% being pulmonary TB. Directly observed therapy was applied in 49% of total cases. Culture results were available for 385 (66%) and resistance was found in 46 (12%) cases. HIV testing results were available for only 139 cases: 24% were positive. Overall, Ottawa TB rates are slightly higher than national rates, yet they reflect national trends. The surveillance data were imperfect, with poor or no recording of aboriginal origin, adverse events, and treatment outcomes. Reported resistance patterns may be underestimated, as only 66% had cultures. HIV testing was underutilized. Given the high mortality with TB-HIV coinfection, testing should be routine. Correcting these limitations will improve surveillance data and TB control in the future.

TEXAS: Tarrant Health Officials Zeroed In on Tuberculosis Outbreak; Fort Worth Star-Telegram, November 2, 2008, by Gene Trainor.

A 2002 TB outbreak concentrated in homeless shelters around Fort Worth's East Lancaster Avenue has now been nearly eliminated, said Gerry Drewyer, TB Division Manager, Tarrant County Public Health Department. The important thing is that we continue to do it, Drewyer said of the county's six-year TB elimination effort. The outbreak came to the attention of health officials when the addresses of persons with TB were entered into computers at the University of North Texas (UNT) Computational Epidemiology Research Laboratory. When researchers analyzed cases from Jan. 1, 1993, through Dec. 31, 2000, they found the ZIP code where the shelters are located had a TB case rate of 94.3 per 100,000 people. That compares to the county average of 5.9 cases per 100,000. The investigation focused primarily on the largest area shelter, with some 700 clients. However, county officials worked to eliminate TB at all the shelters, said Drewyer. Except for those over age 55, people staying at the particular shelter must leave during the day. After studying the data, the researchers saw a higher rate of

TB cases among those who remained in the shelter compared to those who left daily. The difference was caused by the amount of exposure to someone with active TB disease. In all, 17 cases were identified and treated by the health department. Part of the problem had to do with the shelter's air flow system, said Patrick Moonan, a health department epidemiologist who now works for CDC. Along with new air filters, ultraviolet lights that kill TB have since been installed, he said. In addition, the shelters adopted a policy, still in place today, which restricts admission to persons who produce a card indicating they have been screened for TB.

TENNESSEE: Scientists Discover Bacterial Pathway to Pave the Way for TB Treatment;
Thaindian, www.Thaindian.com, November 3, 2008.

Peter Murray, Ph.D. at St. Jude Children's Research Hospital in Memphis, Tennessee, and Thomas Wynn, Ph.D. have discovered how disease-causing bacteria avoid a host's immune system, survive, and grow in cells that are meant to destroy them. Specialized white blood cells called macrophages fight disease-causing bacteria by making compounds like free radical nitric oxide (NO), which can kill pathogens. However, there are harmful bacteria called intracellular pathogens that live inside cells and can survive and replicate in macrophages by resisting the attack by NO. Macrophages make a natural NO inhibitor called arginase, which steals and degrades the material required to make NO and limits how much NO is made. It was found that intracellular pathogens increase levels of arginase, thus reducing the amount of NO the macrophages produce and enabling the intracellular pathogens to live. To determine how arginase production induced by intracellular bacterium causes TB, the researchers generated mice lacking the arginase gene in their macrophages. When the mice were infected with bacteria that had not been killed by NO, the scientists found that the lack of arginase did not affect the macrophages ability to clear the infection. According to Wynn, this suggests that targeting arginase may be helpful in treating chronic intracellular bacterial and parasitic infections. The scientists are working to determine what other parts of the immune system are affected when arginase is blocked. The discovery may pave the way for new treatments and vaccines for TB and other chronic bacterial and parasitic infections. The study was published in the journal *Nature Immunology*.

WASHINGTON STATE: King County Hit 30-Year High in Cases of Active TB in 2007; Seattle Post-Intelligencer, October 30, 2008, by Vanessa Ho.

The annual TB report for King County, Seattle, Washington, shows that active TB disease cases in the county were at a 30-year high in 2007, with 161 newly diagnosed cases. According to the report, 80 percent of the people with active TB disease were low-income, were from communities of color, or were foreign born, with more than 75 percent being foreign born. The outbreak among people in the local Marshall Islands community was partly responsible for the increase. About 16 percent of the persons with TB in 2007 were resistant to at least one type of antituberculosis drug. Despite the statistics in the report, the county budget includes severe cuts for public health, including the TB-control program. The TB program will be funded through June of 2009, to give the public health agency time to find other funding. According to TB control officer Masa Narita, even without the funding cuts, controlling the disease is a challenge, as there are roughly 100,000 latent infections in the county.

CALIFORNIA: Tuberculosis Cases among Santa Clara, Calif., Asian Community Increasing; AsianWeek Reports - Kaiser Network, November 4, 2008.

According to *Asian Week*, the number of TB cases among Asians and Pacific Islanders in Santa Clara County, California, in 2007, was almost 10 times that of the general US population. Santa Clara County had a 5.7 percent increase in TB cases in 2007, with 13.4 TB cases per 100,000 persons, compared with 7.2 cases in the state and 4.4 cases in the country. Julie Higashi, Deputy Health Officer and TB Controller for Santa Clara County TB Prevention and Control Program, said that 68 percent of TB cases in the

county for 2007 were in Asian Americans. *Asian Week* noted that one-third of the TB cases were in foreign-born persons. The County TB Prevention and Control Program statistics state that 26 percent of persons with TB were born in Vietnam, 22 percent in the Philippines, 14 percent in India, 10 percent in Mexico, 10 percent in the United States, and six percent in China. Twelve percent of the county's case load was among persons born in other countries. An infectious disease specialist of Santa Clara County, Dan Shin, estimated that 90 percent of his patients with TB are Asian, and both he and Higashi emphasized the importance of TB screening for Asian Americans in the county.

GEORGIA: Gwinnett School Cautious on TB; Atlanta Journal-Constitution, October 22, 2008, by Craig Schneider.

Earlier this month, a Meadowcreek High School student's positive test for TB prompted health authorities to perform skin tests on 170 students and five staff members who had been in close contact with the infected youth. Twenty-five students tested positive for TB infection, though none showed symptoms of active disease. All 25 agreed to undergo a chest X-ray. So far, 17 have been X-rayed, and all the results were negative. Eight have yet to be X-rayed. All 25 are expected to take a regimen of TB medication as a precaution, said Vernon Goins, Gwinnett Health Department spokesperson. In December, the department plans to retest all the students and staff tested previously.

CALIFORNIA: New Prize Will Stimulate Search for Improved Methods of TB Diagnosis; TropIKA.net: Tropical Diseases Research to Foster Innovation & Knowledge Application October 28, 2008.

An educational non-profit foundation that defines its mission as creating radical breakthroughs for the benefit of humanity has received a planning grant from the Bill & Melinda Gates Foundation. The X Prize Foundation says it will use the grant to stimulate more effective ways of diagnosing TB in the developing world. Bard Geesaman, Executive Director of the X Prize Foundation Life Sciences Group, stated, Tuberculosis is the second most deadly infectious disease in the world and primarily afflicts developing countries with limited resources to manage the disease and prevent its spread. The great unmet need is effective tools and practices for determining who is infected and needs to be treated. The most widely used TB diagnostic method, smear microscopy used in developing countries, fails to accurately and efficiently diagnose TB. Smear microscopy can only be conducted in microscopy centers with trained technicians, even though its sensitivity is approximately 40%. Consequently, many people, especially those who have latent TB, are in the early stages of infection, are coinfecting with HIV, or suffer from extrapulmonary TB, are underdiagnosed and undertreated, resulting in significant death, suffering, and the continued spread of disease. The X Prize Foundation says there will be many complex issues in using this grant to stimulate more effective ways to diagnose TB. The Foundation will gather experts from the TB and public health community with financial and economic experts to work together on the research.

CALIFORNIA: New Tuberculosis Vaccine Safer, More Effective Than BCG Vaccine for HIV-Positive People; News-Medical.Net, October 28, 2008.

A new TB vaccine could be safer and more effective than the currently available BCG vaccine, particularly for HIV-infected people, according to a study to be published in the November issue of *Infection and Immunity*, IANS/Times of India reports. For the NIH-funded study, Marcus Horwitz, a microbiologist from UCLA, and colleagues created a recombinant BCG vaccine, called rBCG (mbtB)30. The researchers increased the BCG vaccine's potency and immune response strength. The researchers secured the safety of the vaccine by making sure that it could replicate a few times after immunization. To attain this, the researchers blocked the vaccine's ability to obtain iron, an essential ingredient for bacterial replication, from the host. The study found that the new vaccine protected guinea pigs from TB more effectively than the BCG vaccine. Also, the new vaccine is safer than the BCG vaccine when

administered to mice with severely compromised immune systems. Although the new vaccine can be administered to anyone, it is specifically designed for HIV-infected infants and adults with relatively intact immune systems, including people receiving antiretroviral treatment. According to the scientists, the next step will be to conduct vaccine trials among humans, but the vaccine might not be available for several years. Ulrich Fruth of the WHO's Initiative for Vaccine Research added that although TB is a major concern for HIV-infected people, the existing BCG vaccine is problematic because it is a health risk by itself when administered to HIV-infected people. Fruth also stated that it would be wonderful news if the new vaccine is "shown to be safe and efficacious in people with HIV.

WASHINGTON DC: Novel Drug Shows Power in MDR-TB; MedPage Today, Michael Smith, October 27, 2008.

A new investigational compound aimed at TB is safe and well tolerated, said Andreas Diacon, M.D., University of Stellenbosch, South Africa. The compound, TMC207, appeared to cause a sharp increase in the number of patients who became culture-negative after eight weeks of therapy. The apparent efficacy is impressive because the study was intended mainly to look at safety and dosing levels, Dr. Diacon told the Interscience Conference on Antimicrobial Agents and Chemotherapy, held jointly with the Infectious Diseases Society of America meeting. TB remains a major public health problem in many parts of the world, but no new drugs have been developed in several decades. However, at this meeting, there were reports of at least two drugs being developed, of which TMC207 was the most advanced. The drug is a highly targeted molecule that interferes with synthesis in *Mycobacterium tuberculosis* cells. Dr. Diacon stated that the drug does not affect the ATP molecules of even closely related bacteria. The effect of inhibiting ATP, researchers conclude, is to reduce the energy available to the TB bacteria. No serious adverse events were related to the study drug, and there were no discontinuations due to adverse events, he said. Dr. Andy Pavia, MD, University of Utah, Salt Lake City, who heads the Infectious Diseases Society of Americas Public Health Committee, stated that new drugs for TB could not have come at a better time, as more and more countries are reporting cases of XDR TB, strains that are even more difficult to treat than MDR TB. He said that while most of those cases are seen in the developing world, nobody is immune and it will reach developed countries.

CALIFORNIA: Extensively Drug-Resistant Tuberculosis in California, 1993-2006; Clinical Infectious Diseases, 2008 Aug 15; Banerjee, R., et al.

Extensively drug-resistant (XDR) TB is a global public health emergency. Researchers investigated the characteristics and extent of XDR TB in California to inform public health interventions. XDR TB was defined as TB with resistance to at least isoniazid, rifampin, a fluoroquinolone, and 1 of 3 injectable second-line drugs (amikacin, kanamycin, or capreomycin). Pre-XDR TB was defined as TB with resistance to isoniazid and rifampin and either a fluoroquinolone or second-line injectable agent but not both. TB case reports submitted to the state TB registry for the period 1993-2006 were analyzed. Local health departments and the state TB laboratory were queried to ensure complete drug susceptibility reporting. Among 424 multidrug-resistant (MDR) TB cases with complete drug susceptibility reporting, 18 (4.2%) were XDR, and 77 (18%) were pre-XDR. The proportion of pre-XDR TB cases increased over time, from 7% in 1993 to 32% in 2005 ($P = .02$). Among XDR TB cases, 83% of cases involved foreign-born patients, and 43% were diagnosed in patients within 6 months after arrival in the United States. Mexico was the most common country of origin. Five cases (29%) of XDR TB were acquired during therapy in California. All patients with XDR TB had pulmonary disease, and most had prolonged infectious periods; the median time for conversion of sputum culture results was 195 days. Among 17 patients with known outcomes, 7 (41.2%) completed therapy, 5 (29.4%) moved, and 5 (29.4%) died. One patient continues to receive treatment. XDR TB and pre-XDR TB cases comprise a substantial fraction of MDR TB cases in California, indicating the need for interventions that improve surveillance, directly observed therapy, and rapid drug susceptibility testing and reporting.

CONNECTICUT: Latent Tuberculosis among Latino Migrant Farmworkers in Connecticut; Connecticut Medicine, 2008 Aug; Trapé-Cardoso, M., et al.

It is estimated that the prevalence rate of latent TB infection for the United States general population is less than 5%. The prevalence of latent TB infection among Connecticut migrant workers has not been reported. This study determined the prevalence of a positive tuberculin skin test, a potential measure of latent TB infection in migrant workers, at one Connecticut farm. Seventy-nine male workers were recruited from a population of approximately 200. Of these, 57 consented to the first-step testing, and 26% tested positive. Over 96% of the 57 tested workers were from Mexico. None had symptoms or signs of active TB disease. This study suggests that a high percentage of asymptomatic Connecticut Latino migrant farmworkers have latent TB infection. This finding has public health implications for TB control strategies in the state.

LOS ANGELES: TB Funding Drop Could Hurt AIDS Fight; Los Angeles Times, October 15, 2008, by Mary Engel.

The global economic crisis could push aside the world's TB fight as a priority and consequently jeopardize millions of HIV/AIDS patients, warned a Pasteur Institute researcher and a recent winner of the 2008 Nobel Prize for medicine on October 14. We are at the period of success with antiretroviral treatment for HIV, said Francoise Barre-Sinoussi, who shared the Nobel honor for first identifying HIV with her Institute colleague Luc Montagnier. But we have an epidemic of multi-resistance to tuberculosis treatment, which is really alarming. About 11 million people with HIV worldwide also have TB, Barre-Sinoussi said. HIV ravages the immune system, leaving it vulnerable to opportunistic infections like TB. In parts of the world where there is the most HIV, TB is what kills most patients, said Dr. Richard Chaisson, Director of TB Research, Johns Hopkins University. In sub-Saharan Africa, TB incidence has quadrupled in the last 15 years, he added. The majority of Africans are not getting antibiotic treatment for TB, according to the World Health Organization. Multidrug-resistant TB now accounts for 5 percent of new TB infections globally, and 15-22 percent of new cases in the former Soviet Union and China. For the rarer extensively drug-resistant TB (XDR TB), half of those treated do not survive, Chaisson said. Before the financial meltdown, neither HIV nor TB was discussed at July's Group of Eight summit, said Barre-Sinoussi. We are even more worried than before, she said.

GEORGIA: 25 of 175 Tested at School Had Positive Readings; Associated Press, October 11, 2008.

Results from recent TB testing performed at Meadowcreek High School in Gwinnett County, Georgia, found 25 of 175 students and staff had positive readings for infection and now must have a chest X-ray. County spokesperson Sloan Roach said the skin test results indicate these people have been exposed to TB at some point in their lives, but none showed signs or symptoms of TB disease. According to the school system, those who were tested were identified as people who may have been in close and continuous contact with an 11th grader who had a suspected case of TB.

MISSOURI: TB Vaccine in the Pipeline; St. Louis Business Journal, October 21, 2008.

Researchers at St. Louis University are one step closer to finding a better TB vaccine. Tests show that the new vaccine protected against TB better than the one produced more than 75 years ago. Dr. Daniel Hoft, Director, Division of Immunobiology, St. Louis University School of Medicine, lead author of the study, said that it is critical to find a better vaccine. TB strikes developing nations hardest and infects one in three people worldwide. Nearly 8 million new cases of TB develop each year. Two million persons die from TB each year.

WASHINGTON, DC: USAID Awards Grants for Development of New Tuberculosis Drugs, Diagnostics, and Management Approaches; MarketWatch, October 14, 2008.

The US Agency for International Development (USAID) has announced that new grants have been awarded to the Global Alliance for TB Drug Development (Global Alliance) and to the International Union Against TB and Lung Disease (the Union). These grants will support late-stage clinical trials for new drugs, diagnostics, and approaches to improve detection and management of TB, TB/HIV, and drug-resistant TB. The grant to the Global Alliance will support trials for new drugs that offer the potential to shorten the length of TB treatment, work against drug-resistant TB, and be safely administered with antiretrovirals to people with HIV/AIDS. USAID has provided US \$3 million for the first year of this grant; over five years, the total could reach up to \$40 million. The grant to the Union will focus on field evaluations of diagnostic techniques for TB, clinical trials and operations research to improve patient management and treatment efficacy, and infection control measures for TB and multidrug-resistant TB. The grant will highlight the translation of research results into global and national policy. The grant award from USAID for the first year is \$3.7 million, with the total award over five years possibly reaching up to \$80 million.

TEXAS: UTB Professors Find Link Between Diabetes and Tuberculosis; The Monitor, October 19, 2008, by Kevin Sieff.

Researchers from the University of Texas, Brownsville (UTB) and the Texas Southmost College (TSC) have found a link between diabetes and TB. Three UTB-TSC studies have determined that patients with Type 2 diabetes may be at a higher risk of contracting TB due to a weakened immune system, resulting in life-threatening lung infections that are hard to treat. Both of these diseases are prevalent in the Rio Grande Valley and northern Mexico. In the Rio Grande Valley, diabetes is three times more common than in the United States as a whole. TB is about 2.5 times more common in the region than in the rest of the United States. Blanca Restrepo, Assistant Professor, Epidemiology, UTB-TSC School of Public Health, stated, After looking at HIV, drug use, alcohol use, and other factors traditionally associated with TB, we established that diabetes is the single greatest risk factor for TB. This study will no doubt cause physicians to re-evaluate their treatment of both diseases in the Rio Grande Valley and worldwide. The link established by the UTB-TSC study has ramifications for India, where an endemic diabetes problem might increase the risk of TB. TB, especially in its drug-resistant form, could be a serious threat to entire populations, where a workable TB vaccine is not available. Restrepo stated that typically the most susceptible people were young, incarcerated males. Now older females are at risk as well. The link between the two diseases could also explain why patients do or do not respond to treatment. In the October issue of the American Journal of Tropical Medicine and Hygiene, the researchers discuss one of the studies in which the diabetic patients with TB took longer to clear the disease's bacteria during treatment than did non-diabetic patients. Restrepo states that these problems with immune response can be extrapolated to other diseases with a potential link to diabetes.

NEW JERSEY: A New Class of Antibiotics Could Offer Hope Against TB; Time magazine, October 17, 2008, by Laura Blue.

In the October issue of the journal *Cell* scientists at Rutgers University describe a group of antibiotic compounds first isolated decades ago from naturally occurring antibacterial substances in soil. A compound called myxopyronin is among these antibiotic compounds, and it shows great potential. Myxopyronin has been synthesized in the laboratory and has been shown to be safe in animal trials. The drug hasn't been tested in humans yet, but cell-based experiments suggest that it is potent enough to kill a wide range of stubborn bugs, including a drug-resistant strain of tuberculosis and the deadly type of staph known as MRSA. In the developing world, health workers report an increase of extensively drug-resistant TB (XDR TB) and multidrug-resistant TB (MDR TB), against which some of the current first-line

antibiotics, rifamycins, developed in the 1960s, have become useless. Zhenkun Ma, head of research at the Global Alliance for TB Drug Development, who is not involved in this new study, states that “we use really old drugs to fight a very new disease. TB evolves every day. So do all other bacteria, and increasingly, the old antibiotics are losing power. Richard Ebright, a Howard Hughes Medical Institute investigator at Rutgers and a co-author on this new study, hopes that myxopyronin will be especially useful in the battle against drug-resistant TB, a disease for which doctors have never had a perfect therapy. With this new biochemical understanding of how myxopyronin functions, as well as the detailed models of its behavior inside bacterial cells, researchers say drug development is possible at long last. Ebright states that the drug could be in clinical human trials within five years.

CALIFORNIA: Wilson High TB Tests Come Up Negative; Press-Telegram (Long Beach), October 7, 2008, by Kevin Butler.

Testing carried out recently at a high school in Long Beach, California, after one person was diagnosed with TB has found no additional cases of the disease. About 350 students who may have been directly exposed were tested. Chest X-rays performed on students whose initial skin tests were positive indicated that none had TB. The initial patient is receiving treatment and has not been in school since mid-September.

CALIFORNIA: Rare Case of TB in Fresno County; Fresno Bee, October 7, 2008, by Barbara Anderson.

A man now hospitalized in medical isolation has Fresno County’s first-ever case of extensively drug-resistant TB (XDR TB). Dr. Kenneth Bird, Fresno County TB Control and Deputy Health Officer, said the man is from a group at high risk for TB, which can include immigrants and homeless persons. King said the patient is not homeless. The man was diagnosed with TB in early August, but he had gone a long time undiagnosed with TB. By the time it was diagnosed, it had advanced, King said. Late in September, doctors diagnosed the man’s TB strain as extensively drug-resistant. County health workers have been contacting everyone potentially exposed to the patient. Test results so far indicate that only one person, a child in the man’s home, has been infected. The health department has not yet confirmed whether it has advanced to TB, and if so, whether the strain is XDR TB. While much more difficult to treat, XDR TB is no more contagious than common TB strains, Bird said. California has up to three XDR TB cases each year, according to Dr. Jennifer Flood, Chief of Surveillance and Epidemiology, California Department of Public Health, TB Control Branch. This represents less than one percent of the nearly 3,000 TB cases recorded annually in the state. California has had 20 XDR TB cases since 1993. The patient seems to be improving, Bird said, but will remain contagious for weeks or months and will need treatment for at least two years.

CANADA: Only Eight of 27 Passengers on Bus with TB-Infected Rider Have Come Forward; Canadian Press. October 9, 2008.

So far, among 27 passengers being sought by health authorities because they may have been exposed to TB on a Greyhound bus, only eight have come forward. Bus number 0367 traveled from Toronto to Detroit on Aug. 31. When the bus arrived at the US border, a woman known by US authorities to have TB disease was refused entry into the country. The passengers still on the bus at that time are being evaluated by US and Ontario public health officials. The 27 persons being sought got off the bus earlier, in Windsor, Ontario. The eight who have contacted authorities so far are being evaluated to see if they need a TB skin test, said Mark Nesbitt, spokesperson for the health ministry. Nesbitt said he is not worried that only eight of the 27 have presented to authorities so far. Generally it’s going to take three to eight weeks for a skin test to be worthwhile doing. It takes that long for any sort of antibodies to build up to be able to detect [TB], he said. The TB patient is now in isolation; her strain of TB is not drug-resistant. The health

ministry is asking the other 19 passengers to contact their local health department or telephone 866-532-3161.

USA: Global Alliance for TB Drug Development Receives Pledge of Up to \$40 Million for USAID; Businesswire, October 13, 2008.

The Global Alliance for TB Drug Development (TB Alliance) announced a new grant and pledge of up to \$40 million over the next five years from the United States Agency for International Development (USAID). The grant will be used to fund research and development of new drugs to treat both drug-susceptible and drug-resistant strains of TB. Research will focus on late-stage clinical trials for the most advanced drug candidates. USAID has committed \$3 million for the first year of the grant. Funding will vary in future years, based on the progress of TB Alliance drug programs and the availability of funds for USAID's international TB programs. At present, two of TB Alliance's drug candidates are in clinical trials. Moxifloxacin-containing regimens are being tested in a Phase III trial at four sites, with 16 more sites approved for enrollment. Also PA-824 is in Phase II clinical development and shows potential to be effective against drug-susceptible and drug-resistant strains of TB. Another TB Alliance drug candidate may enter clinical trials in 2009.

MARYLAND: Tuberculosis Control in a Large Urban Jail: Discordance between Policy and Reality; Journal of Public Health Management and Practice. 2008 Sep-Oct; Rutz, H.J.

This study evaluated adherence to TB control guidelines, published by the Centers for Disease Control and Prevention (CDC) in 1996, in a large urban jail. Jails are a critical locale because of high risk for TB transmission in a congregate setting. Symptom screening at intake into the facility was systematically observed. Medical records were reviewed to measure timing of tuberculin skin testing (TST) and chest radiograph (CXR) screening. Isolation records were examined for airborne infectious isolation practices. Contact investigation practices were evaluated for ease of data retrieval and adherence to CDC guidelines. A TB symptom screening question was asked correctly during 28/97 of intake health interviews. Median time from intake to TST was 3 days for men and 2 days for women. Median time from referral to CXR was 2 days for men and 7 days for women. Delays were noted in diagnostic testing of 51 detainees isolated for suspected TB. Contact investigations lacked comprehensive procedures, data collection forms, and databases for managing information. Findings were used to refine protocols for TB control. This evaluation illustrated the need for ongoing assessment of adherence to TB control protocols in short-term correctional settings to prevent the spread of TB.

GEORGIA: Meadowcreek High to Test for TB Exposure; Atlanta Journal-Constitution, October 7, 2008.

On October 8, East Metro Health District nurses visited a high school in Gwinnett County, Georgia, to administer TB tests to 186 students and seven faculty who were in contact with a student who tested positive for TB. Vernon Goins, the health district's public information officer, said a physician reported the student's test result October 2, and the Gwinnett School District was notified October 3. Anyone who was not contacted about the testing but feels he or she may have been exposed should come to the health department at 455 Grayson Highway in Lawrenceville for testing, Goins said.

OHIO: TB Bacterium Uses Sugar Coat to Become Attractive to Lung Cells: Top News India, October 6, 2008.

Researchers at Ohio State University have reported that *Mycobacterium tuberculosis* coats itself with the sugar mannose, which is attractive to cells in the lungs. According to findings presented at the First International Congress, Mycobacteria: A Challenge for the 21st Century, in Bogota, Colombia, the

bacteria is then absorbed by the lung cells, where it can live for the long term. Larry Schlesinger, Professor of Internal Medicine and Director, Division of Infectious Diseases, Ohio State, described this as a good example of the concept of host adaptation. He said that at the point of infection in the lung, the bacteria are eaten by a macrophage (antigen-presenting cell). The macrophage activates specific molecules that make pieces of bacteria visible to infection-fighting T cells. An acquired immune response is necessary to activate T cells that are specifically designed to help macrophages kill TB bacteria. However, the sugar coating delays activation of the acquired response, and the bacteria remain alive but inactive in the macrophages creating a latent infection. He further explained that if the immune response fails to prompt macrophages to kill the TB bacteria, the bacteria eventually multiply so much that the infected cells burst and release bacteria into the lungs, leading to active disease. Schlesinger noted that the lab found that *Mycobacterium tuberculosis* has evolved to be attractive to the macrophages in the lungs. He also announced the discovery of two different strains of TB from patients that interact in completely different ways with macrophages. These strains do not coat themselves with sugar and have a harder time finding their way into macrophages in the lungs. The scientists believe these strains have not been living in humans for very long and do not know how to get into the lung and sleep into latency. The scientists also believe that the discovery indicates that TB bacterium evolved in relative isolation in different parts of the world.

CANADA: Bus Passengers Fail to Show for TB Testing; Canada.com, October 7, 2008, by Windsor Star.

None of the 27 people who may have been exposed to TB on a Greyhound bus in August of 2008 have shown up so far for testing. Dr. Allen Heimann, Medical Officer of Health, said that the Windsor-Essex County Health Unit received calls from three individuals who may have been on the bus, but they have not come forward for the test. Health officials issued an alert for the passengers, who got off the Greyhound Bus Number 0367 in Windsor on August 31, to contact their local health units and get tested for TB. This alert was issued because a female passenger with TB disease was found to have traveled on the bus. The bus left Toronto at 12:30 p.m. on August 31, for Detroit, Michigan. Anyone who was on the bus is asked to call 1-866-532-3161 or the Windsor-Essex County Health Unit at 519-258-2146.

If you wish to receive the **STOP TB USA** messages at a different e-mail address, or if you no longer wish to receive these messages, please reply to jseggerson@tbcoalition.com

John Seggerson
Executive Director
STOP TB USA
Tel: 202-494-2448