

NOLA TB TIMES

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Hello from Wetmore Clinic

Tuberculosis (TB) now rivals AIDS as a leading cause of death worldwide per the WHO report released in October 2015. We had one death due to TB in an immunocompromised individual in August of this year. We currently have 10 new smear positive TB cases being treated at the TB clinic since the beginning of September. Many of them were treated with antibiotics for presumed pneumonia prior to being referred to us. High index of suspicion in such cases with prompt referral is important to prevent individual morbidity and to limit transmission in the community.

TB is a reportable disease in the state of Louisiana (LA) within 1 business day under Sanitary Code. See link; <http://new.dhh.louisiana.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/EpiManual/sancode042513.pdf>. It is classified as a class B disease—diseases of public health concern needing timely response because of potential of epidemic spread—report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known. HIV is one of the class B diseases as well. Please check LA Department of Health and Hospitals Infectious Disease Epidemiology Information under the Reportable Disease surveillance for further information (<http://new.dhh.louisiana.gov/index.cfm/page/299>). In fact reporting of suspected and confirmed cases of tuberculosis disease is mandated by law in all states. Latent TB infection is reportable in some states.

As I am going around meeting you all and learning about the comprehensive patient care you provide, I have been impressed by your questions pertaining to TB screenings. Most of you are aware that the Interferon Gamma Release Assays are available and reliable in anyone older than five years of age. However, due to cost constraints, TB skin test seems to be the general approach to TB screening. Many of you have realized that we are not routinely asking for TB risk factors in our population and screening them if those screening questionnaires* are positive. Aside from the funding issue to administer the test more globally, personnel and time constraints are inhibitory factors. I am glad to hear that some of you will be able to incorporate TB screening questions and testing without straining your resources too much. But for the rest of us including at the TB clinic, it remains challenging. With increasing numbers of refugees, legal and illegal immigrants, and rising immunodeficient population, team approach and standard guidance to TB screening is very much needed.

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*TB questionnaire include recent travel or birth in an endemic area, contact with a TB case, or a family member with a positive screening test; if you have time you could also ask especially in adolescent and adult patients smoking/drinking/drug use, incarceration, HIV test, homelessness, shelters, working in nursing homes and/or residential facilities (standard patient fill-out pre-doctor visit may help save time)



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

“Despite the gains, the progress against tuberculosis is far from sufficient.”

- Dr. Mario Raviglione

Director of WHO's Global Tuberculosis Program



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WHO Global TB Programme and the ERS in Sept. 2015 (see page 4)

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I hope you find this November issue of NOLA TB Times informative. With forthcoming out of country travels during holidays for your patients, keep TB in the back of your mind when they return. Happy Holidays!

Do not hesitate to contact us with any TB-related questions, comments, or cases.

Sincerely,
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Basics of TB

1. Bacteria-Myco**ba**cteria tuberculosis complex (which includes *M. tuberculosis*, *M. africanum*, and *M. bovis*)
2. Symptoms-chronic cough, shortness of breath, chest pain or shoulder pain, weight loss, fatigue, night sweats, fevers, chills, hemoptysis; in children, chronic cough and failure to thrive
3. Risk factors-exposure to recent TB contact, birth in endemic area, travel in an endemic area, living or working in residential facilities or prisons, health care workers seeing TB patients, drug use, smoking, alcoholism, immunodeficiency or being on immunosuppressive medications, chronic renal failure, diabetes mellitus, cancer
4. Contagiousness-airborne, highest in immediate close contacts, also depends on risk factors, type of exposure and length of exposure
5. Diagnosis-TB screening tests including TB skin test or blood interferon gamma release assays are performed, followed by chest X-ray in presumptive cases. Initially screening tests may be negative even in a smear positive case. Repeats in 6-8 weeks are recommended. Collection of sputum via induction and doing an acid fast bacillus (AFB) smear is standard for detection of bacteria. Most hospitals locally and the TB clinic are sending sputums for GeneXpert MTB/RIF testing which returns results quickly (from 2 hours to a few days depending on where sent). The culture may take up to 6 weeks. Waiting for the culture to treat patient in suspected cases is not recommended.
6. Manifestations-In healthy individuals, latent tuberculosis without any symptoms or major chest X-ray findings. Life time risk of development of TB disease in an adult exposed to TB is 10%. Preventive therapy is recommended in close contacts (especially children <4 years of age) and other healthy individuals with positive screening tests. Active tuberculosis is more likely to develop in first 2 years of exposure. Commonly in lungs but other body sites may be affected as well.
7. Treatment-It involves four drugs for long term treatment involving four drugs for 6 to 9-12 months depending on response to therapy, sensitivity of the organism, and body site involvement is recommended. Generally, smear positive cases and HIV patients would have to be on directly observed therapy (DOT) for the duration of the therapy. Generally, smear positive cases, children, patients with HIV infection, and patients with adherence issues are placed on DOT for the length of the treatment.

The latest WHO report on TB "should serve as a wake-up call that enormous work still needs to be done to reduce the burden of this ancient, yet curable disease."

- Dr. Grania Brigden

Interim Medical Director of Médecins Sans Frontières

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National TB Statistics

Per national data from Centers for Disease Control and Prevention (CDC), we had 9,421 cases of tuberculosis reported in US, a case rate of 3.0 per 100,000 in 2014. TB case numbers were highest in Asians, Hispanic/Latino, Blacks/African Americans and Whites in that order. TB was seen in 66% foreign-born and 34% US born persons. The countries with individuals from highest number of TB cases include Mexico (21*), Philippines (12*), India (171*), Vietnam (144*), and China (70*) (see Figure 1, <http://www.who.int/tb/country/data/profiles/en/>). In US, case rates were highest in Hawaii (9.6*), Alaska (8.4*), California (5.5*), Texas (4.7*), New York (4*), and New Jersey (3.4*) in that order (Louisiana with a case rate of 2.6* was ranked 17th in 2014, down from 10th in 2013). Case rates in Region 1 in 2014 were similar to those in California. There were 23 cases of MDR-TB in the US in 2014, all in foreign-born individuals. TB continues to be more common in US born individuals in Louisiana but may be rising in foreign born individuals (see Figure 2, <http://www.cdc.gov/tb/statistics/surv/surv2014/slides/surv16.htm> Accessed 10.22.15; other interesting surveillance slides available on the CDC website).

*rates are per 100,000 persons

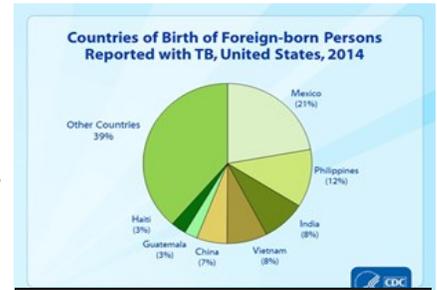


Figure 1

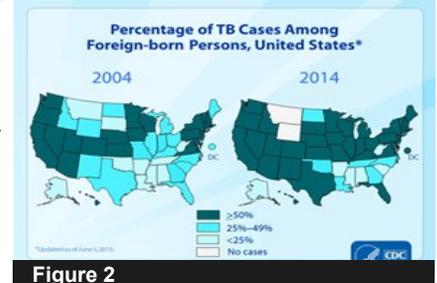


Figure 2

Global Perspective

On a more global level, there were 9 million people who fell ill with TB and 1.5 million had died of TB in 2013. TB is the number one cause of death worldwide due to a single infectious agent per new WHO report. In 2013, an estimated 550,000 children became ill with TB and 80,000 HIV-negative children died of TB. There are close to 500,000 cases of drug-resistant TB (<http://www.who.int/medicentre/factsheets/fs104/en/> Accessed 10/22/2015).

The WHO Global TB Programme and the European Respiratory Society (ERS) in September 2015 met to discuss effective strategies to end TB worldwide. One major discussion point was use of digital technology in helping us achieve the goal. Dr. Mario Raviglione, director of the WHO Global TB Programme stated, "Information and communication technology are powerful tools and will be vital in helping us reach our ambitious new global targets in both low- and high-income settings." There are over 7.5 billion mobile connections globally and over 40% of the world population is using the internet. In the 1990s, directly observed therapy (DOT) was instituted to end global TB emergency. Digital technology is already being used in various forms to conduct "eDOT" to virtually observe therapy, via text messaging to follow up treatment, to provide incentives via mobile banking, by surveillance and monitoring through electronic mapping and linking patients to local clinics, through programmatic management such as keeping track of medicine stocks (QuanTB software available online free of charge), by allowing mobile access to patient records, and lastly by adding a dimension of e-learning for providers and community workers and patients.

Large scale TB surveillance data is maintained on an electronic database in China. Per WHO, this database captures 90% of incident TB cases. Since 2005, an average of 1 million active TB cases have been registered in this electronic system (http://www.who.int/tb/features_archive/digitalhealth_tb/en/ accessed 10/22/2015).

Fortunately, Louisiana State has been maintaining such a database known as LA TB since 2008, which includes information on all the patients evaluated through 9 regional TB clinics in the state. Currently, we are reviewing data available through LA TB in over 1200 children ≤ 10 years of age who were seen from 2009 to 2014 in all of Louisiana regional TB clinics. Perhaps expanding this database to include community data with direct feeding of cases into database by the community provider would eliminate many steps in the middle and improve long-term surveillance

and facilitate ongoing quality improvement.

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Controlling TB in China



Coalition for TB Free India



World Health Organization

India is using its large network of information and communication technology to reach over 600,000 providers who take care of TB patients through various self-learning toolkits. We could consider implementing something similar at various clinics and teaching hospitals. Most of our patients who come in for TB treatment generally have minimal knowledge of TB as a disease and its lengthy and involved management. Residents and students who rotate through the TB clinic do not see many TB patients in their practices. Providing an option to participate in E-Learning TB modules (such as the ones available through CDC, http://www.cdc.gov/tb/education/_ssmodules/default.htm, accessed 10/22/2015) could be quite useful in preparing the patients for TB treatment and remove some of the myths and stigmas associated with the diagnosis. And the future health care providers will be more aware of TB diagnosis in their fields, of new TB diagnostics and therapeutic approaches as they become available.

I believe that we should be able to apply new digital technology to facilitate TB management in our resource-poor areas of Region 1 (in Jefferson, Orleans, St. Bernard, and Plaquemines parishes). Providing DOT to patients who are living in remote and rural areas of these parishes is becoming more and more difficult with shortage of staff and other resources. Providing virtually observed therapy may be a more effective option in those situations. The data on the mobile medical applications are limited but coming in near future. The WHO Agenda for Action advises us, "It would be a missed opportunity if the adoption and largescale roll out of such technological advances is put on hold until suitable studies have been devised and completed." (http://www.who.int/tb/areas-of-work/digital-health/Digital_health_EndTBstrategy.pdf?ua=1, Accessed 10/22/2015).



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Contact Us

Send us your updates, TB vignettes, and thoughts.
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Helpful links:
dhh.louisiana.gov/index.cfm/page/1005

www.medschool.lsuhsu.edu/tb
www.cdc.gov/tb/
www.who.int/tb/en/

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