Methods. We propose to: (1) Develop educational pamphlets for the physicians and community. (2) Screen 10,000 members of the target birth-cohort during their routine clinical visits for 1 year, using T-SPOT.*TB*. County health officers, the partners of Arkansas Department of Health, will enroll physicians in their jurisdictions to participate in TB screening. LTBI prevalence in the birth cohort will be determined, and TB complications will be compared among cohort TB cases that were screened to those not previously screened. (3) Incorporate LTBI and birth-cohort status in patient medical forms.

Results. In our preliminary study, for the period 2009–2014, 142 of 326 TB cases (43.6% of all US-born TB cases) were reported from the target birth-cohort; 72.6% of the cases had unique genotype strains.

Conclusion. If the LTBI prevalence in this birth cohort exceeds 8–10%, we recommend a nation-wide screening program for this birth-cohort. Even without treatment, we believe that screening and noting diagnosis of LTBI in the patient record will impact delayed diagnosis and mortality.

Disclosures. All authors: No reported disclosures.

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757. Community Prevalence of Bacteriologically Confirmed Pulmonary Tuberculosis: A 7-Year Retrospective Study

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Background. It is estimated that about 40% of the Indian population is infected with *Mycobacterium tuberculosis* (TB), the vast majority of whom have latent TB. However, asymptomatic pulmonary carriage of the TB bacteria contributes to sustenance of the disease in the community and subsequent transmission. The present study was carried out to see the prevalence of culture positive pulmonary tuberculosis in apparently asymptomatic individuals from the community.

Methods. The study population consisted of individuals wishing to migrate to the USA/UK/Canada/Australia and submitting for the mandatory health check prior to obtaining the Visa. Chest X-ray was the initial screening test for diagnosis of tuberculosis. Individuals with any X-ray abnormalities were directed to submit three sputum samples for microscopy and culture which was done on automated culture systems (BacTALERT and MGIT). First-line drug susceptibility (INH, Rifampicin, Pyrazinamide, Ethambutol, Streptomycin) testing data were retrieved wherever available. Data were obtained for a period of 7 years from August 2010 to July 2017.

Results. A total of 140,499 individuals presented for the health check. Of these, 1,002 (0.7%) were further investigated using sputum microscopy and culture based on chest X-ray findings. Of these, 42 (0.4%) individuals were sputum culture positive for *Mycobacterium tuberculosis*. Except two, none had any respiratory complaints. Eleven (27.5%) of them were smear positive for acid fast bacilli. Most of the patients (30%) belonged to the age group of 18–25 years. Eighty-four percent had no prior history of tuberculosis or treatment for TB. Fifty-nine percent isolates were sensitive to all first-line drugs (Isoniazid, rifampicin, pyrazinamide, ethambutol and streptomycin). Twenty-seven percent were resistant to pyrazinamide alone. Fourteen percent were resistant to more than one first-line drug. There were no cases of multidrug resistance.

Conclusion. This is a unique large-scale study which assesses prevalence of culture positive pulmonary tuberculosis in the urban Indian community. It stresses the need for more stringent public health measures to curb transmission of the disease in such a high endemic region such as India.

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758. Tuberculosis Recurrence in New York City: A Retrospective Study

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Background. Tuberculosis (TB) recurrence has been difficult to determine due to diverse definitions. Without knowledge of recurrence rates or associated risk factors, patients with highest likelihood of recurrence may not be identified, contributing to continued morbidity and disease transmission. We aimed to determine the recurrence rate for TB cases, associated clinical findings and patient characteristics.

Methods. We conducted a retrospective study evaluating 7,755 New York City TB cases from 2005 to 2014 for recurrence after appropriate treatment completion through 2017. Demographic, clinical, drug susceptibility testing (DST), and genotype data were collected during routine care. Adjusted odds ratios (aOR) were calculated to estimate associated risk factors for recurrence.

Results. A total of 73 cases were identified with ≥ one recurrence, a rate of 0.9%. Median time to recurrence after treatment was 516 days (IQR 165–1,256). In univariate analysis, pulmonary or combination of pulmonary and extrapulmonary disease, human immunodeficiency virus (HIV) infection, culture positive disease, alcohol abuse, intravenous drug use, and homelessness in the 12 months prior to diagnosis were associated with recurrence ($P < 0.05$). In adjusted analysis, HIV infection (aOR 2.04 95% CI 1.13–3.67), pulmonary disease (aOR 9.03 95% CI 2.19–37.12), and having both pulmonary and extrapulmonary disease (aOR 17.19 95% CI 4.0–74.0) were independently associated with recurrence. Of 67 cases with positive culture and DST, 10 had additional drug resistance and 14 had new disease sites. Among 36 cases with complete genotyping information, data suggested relapse in 27 (75%) cases and re-infection in two (5.5%). Re-infection could not be ruled out in seven (19%) cases.

Conclusion. The recurrence rate for this period was lower than expected compared with other studies. HIV infection continues to be associated with recurrence despite availability of effective antiviral medication. Those with pulmonary or disseminated TB were more likely to have recurrence compared with only extrapulmonary TB. A notable number of recurrent cases demonstrated new drug resistance or disease manifestations, which should be considered in later treatment regimens and follow-up evaluation.

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759. Molecular Characterization and Epidemiology of Multidrug-Resistant *Mycobacterium tuberculosis* (MDR-TB) and Identification of Possible Cases of Local Transmission of MDR-TB in Kuwait

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Background. Increasing incidence of multidrug-resistant tuberculosis (MDR-TB) is hampering efforts to control TB. Kuwait is a low (25/100,000) TB incidence country and ~1% of *Mycobacterium tuberculosis* strains are resistant to rifampin, RIF and isoniazid, INH (MDR-TB). Analysis of resistance conferring mutations in seven genes was combined with spoligotyping for detecting local transmission of MDR-TB in Kuwait.

Methods. MDR-TB strains (n = 131) from 88 TB patients and 50 susceptible strains were used. Susceptibility testing was done by MGIT 960 system, gMTBDRplus assay and PCR-sequencing of three regions of *rpoB*, *katG* codon 315 (*katG315*) + *inhA* regulatory region, *embB* (*embB306/embB406/embB497* regions), *rpsL* + *rrs*-500–900 regions and *pncA* for RIF, INH, ethambutol (EMB), streptomycin (SM) and pyrazinamide (PZA), respectively. Sequencing data were used to construct phylogenetic tree by MEGA7 software. Spoligotypes were identified by SITVIT2 and phylogenetic tree was made by MIRU-VNTRplus software.

Results. Mutations were detected in most isolates in *rpoB*, *katG+inhA*, *embB*, *rpsL+rrs* and *pncA* which confer resistance to RIF, INH, EMB, SM and PZA, respectively. Phylogenetic analysis of multi-locus concatenated sequences showed unique patterns for 51 patient's isolates while 37 patient's isolates grouped in 14 clusters. Spoligotyping identified 35 patterns (19 unique patterns and 69 patients's isolates in 16 patterns) including 11 orphan patterns. Sixteen isolates yielded six clusters (each containing two to five isolates) by both fingerprinting methods.

Conclusion. Our study provides the first insight into molecular epidemiology of MDR-TB in Kuwait and identified six potential cases of local transmission of MDR-TB involving two to five subjects (including five Kuwaiti patients) which had escaped detection by routine surveillance studies. Prospective detection of resistance conferring mutations thus identifies possible cases of local transmission of MDR-TB in low TB incidence countries.

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