

Summer Student Research Program
Project Description

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PROJECT TITLE (200 Characters max):

Comparison of the epidemiology of tuberculosis among older residents of New Jersey by place of birth (US-born vs. foreign-born)

HYPOTHESIS:

In 2008, the foreign-born constituted 59% of reported TB in the United States (US), and the elderly make up the fastest growing US immigrant group. The majority of recent immigrants come from countries of high TB burden such as India and the Philippines, and these countries are well-represented in New Jersey's foreign-born population. While foreign-born TB cases are younger on average than US-born cases, published reports from the Centers for Disease Control & Prevention (CDC) show that immigrants from Asian countries of origin (including India and the Philippines) may be older on average than US-born cases. Of the total immigrant population in New Jersey in 2007, 9.3% were born in India, 6.7% in Mexico, and 5.3% in the Philippines. In contrast, the top three countries of birth in the United States (in descending order) are Mexico, Philippines and Vietnam. Understanding differences in the epidemiology of TB cases by country/region of origin in New Jersey, including age-related differences, is important for the design of effective TB control programs.

PROJECT DESCRIPTION (Include design, methodology, data collection, techniques, data analysis to be employed and evaluation and interpretation methodology)

The project concerns the statistical analysis of TB surveillance data collected by the New Jersey TB Program. Data to be analyzed will consist of all TB cases reported in New Jersey from the years 1990 through 2008 inclusive. Age-adjusted (direct and indirect) and age-specific TB rates as well as age-period-cohort analysis of foreign-born TB cases will be executed, where age = age at diagnosis, period = year of report, and cohort = year of entry to the United States. We will also execute Poisson regression analysis of TB case rates and their relationship to ecological covariates obtained from Census 2000. The main questions we will address are:

- What is the distribution of TB cases aged 55 and older by place of birth (US-born vs. foreign-born)? What is the distribution for TB cases aged 65 and older?
- Among foreign-born TB cases, is there a different distribution of countries of origin for older versus younger?
- Within New Jersey, what is the geographic distribution of older vs. younger foreign-born TB cases? Do they reside in areas where large numbers of their co-nationals reside? Do they live in urban, suburban or rural areas?
- What is the clinical presentation? Primary site of disease, smear and culture results, X-ray result.
- Treatment supervision at case report: private provider vs. health department.

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SPONSOR'S MOST RECENT PUBLICATIONS RELEVANT TO THIS RESEARCH:

Davidow AL, Katz D, Reves R, Bethel J, Ngong L. The Challenge of Multisite Epidemiologic Studies in Diverse Populations: Design and Implementation of a 22-Site Study of Tuberculosis in Foreign-Born People. Public Health Reports 2009; 124:391-399.

IS THIS PROJECT SUPPORTED BY EXTRAMURAL FUNDS?

Yes or No

(IF YES, PLEASE SUPPLY THE GRANTING AGENCY'S NAME)

THIS PROJECT IS: Clinical Laboratory Behavioral Other

THIS PROJECT IS CANCER-RELATED

Please explain Cancer relevance

THIS PROJECT IS HEART, LUNG & BLOOD- RELATED

Please explain Heart, Lung, Blood relevance: The proposed project is a study of tuberculosis epidemiology, and tuberculosis is a lung disease.

THIS PROJECT EMPLOYS RADIOISOTOPES

THIS PROJECT INVOLVES THE USE OF ANIMALS

PENDING APPROVED IACUC # _____ PROTOCOL # _____

THIS PROJECT INVOLVES THE USE OF HUMAN SUBJECTS

PENDING APPROVED IRB PROTOCOL # M _____

I have applied for expedited review.

THIS PROJECT IS SUITABLE FOR:

UNDERGRADUATE STUDENTS ENTERING FRESHMAN
SOPHOMORES ALL STUDENTS

THIS PROJECT IS WORK-STUDY: Yes or No

THIS PROJECT WILL BE POSTED DURING ACADEMIC YEAR

FOR INTERESTED VOLUNTEERS?: Yes or No

WHAT WILL THE STUDENT LEARN FROM THIS EXPERIENCE?

Students will learn about the epidemiology of tuberculosis in the United States and New Jersey, and various epidemiologic and statistical methods. Students will also learn how to use statistical software package such as SAS or SPSS.