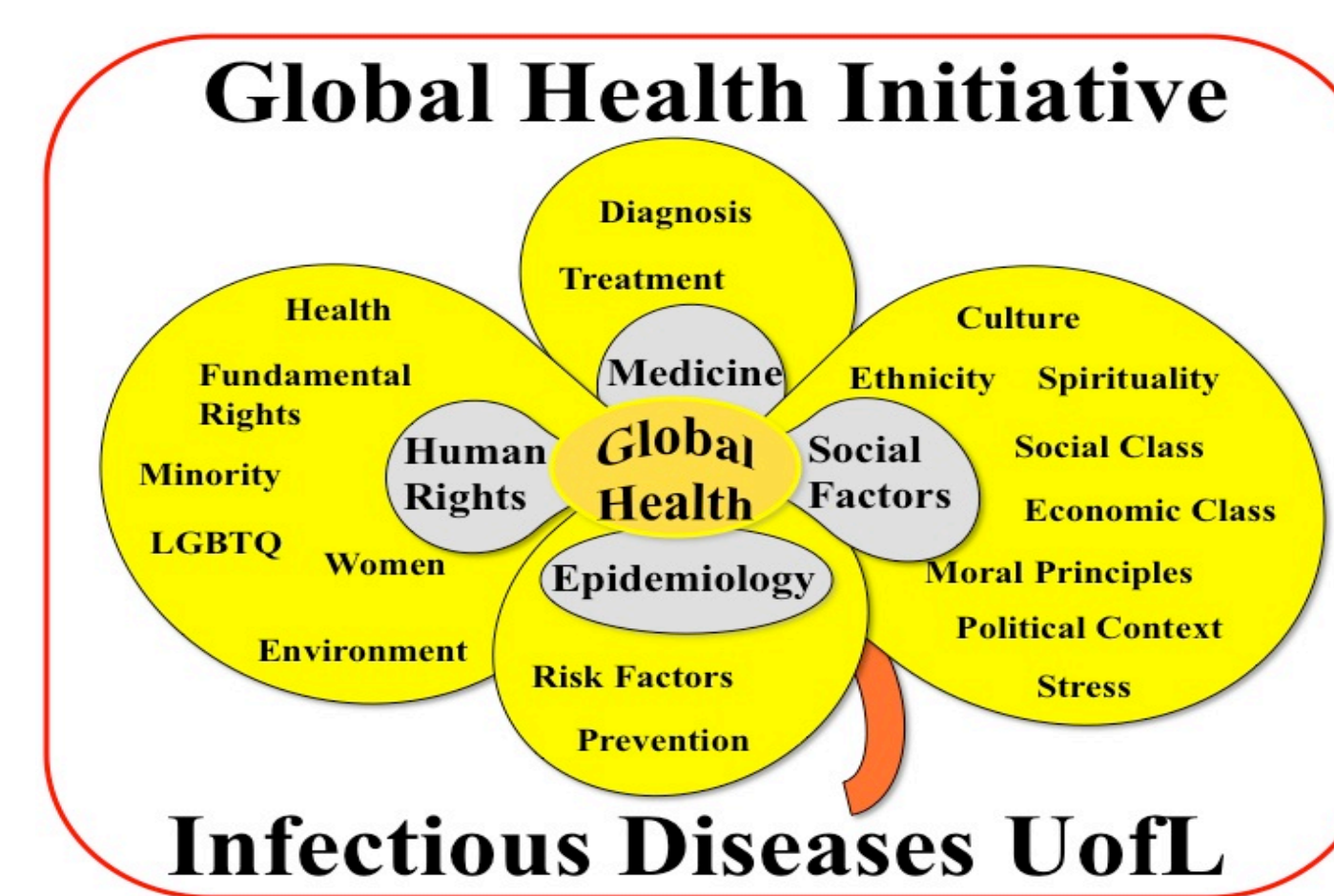


Global Health Initiative: Analysis of Latent Tuberculosis Infection and Treatment Adherence Among the Kentucky Refugee Population Seen at the 550 Clinic

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ABSTRACT

Tuberculosis is a transmittable airborne disease that causes burden to patients and their contacts. Latent tuberculosis infection (LTBI) is a condition where a person is infected with *Mycobacterium tuberculosis* but does not have active tuberculosis disease. An estimated 10 to 15 million people in the United States have LTBI and about 5 to 10 percent of these people are at risk of progressing to active disease. The advancement of technology and research has permitted new diagnostic modalities to test for LTBI. Now the global challenge is bridging the gap between disease identification and treatment. Untreated groups of refugees are at risk of developing active TB, therefore we aim to assess and define the percentage of refugees at the 550 clinics who were diagnosed with TB infection and completed treatment. Refugees arriving in Kentucky who received TB screening at the 550 Clinic from September 2013 through June 2014 were evaluated. Data collected were entered into REDCap and analyzed using SPSS. A total of 229 refugees were screened with twenty-five (10.9%) testing positively for LTBI. Of those, 68% had follow up chest x-rays. All chest x-rays were negative for active TB. Thirteen (52%) refugees were treated for latent TB. Twelve (48%) refugees were not treated for LTBI. One (4%) refugee declined treatment. Understanding barriers at a local level and working with medical staff, public health workers, case coordinators and the individual patient is essential to providing a cultural context of care that results in successful treatment and completion of therapy

INTRODUCTION

- Tuberculosis is a transmissible airborne disease that causes significant burden to patients, their contacts and society. Latent tuberculosis infection (LTBI) is a condition where a person is infected with *Mycobacterium tuberculosis* (TB), but does not have active tuberculosis disease.¹
- An estimated 10 to 15 million people in the United States have LTBI.² Five to 10 percent of these people are at risk of progressing to active disease.¹ Identification and treatment of LTBI is therefore essential for the elimination of tuberculosis.
- Screening and treatment are recommended for high-risk individuals, including immigrants and refugees from third world countries.³
- The advancement of technology and research has brought forth new diagnostic modalities to test for LTBI and, over time, we have become adept at identifying people with this dormant infection. Now, the global challenge has become bridging the gap between disease identification and disease treatment.
- It is this untreated group of people who pose the greatest risk to develop and convert to active TB.

OBJECTIVES

The objectives of this project were to: (1) define the percentage of refugees seen at the 550 Clinic that were found to have latent TB infection (LTBI), and (2) define the percentage of refugees identified with LTBI who treated.

MATERIALS AND METHODS

The Refugee Health database, an ongoing data collection tool for the standardized Refugee Health Assessment for all refugees resettled in Kentucky, was used.

Refugees arriving in Kentucky who received TB screening at the 550 Clinic from September 2013 through June 2014 were evaluated. Data collected were entered into REDCap, a research database, and analyzed using SPSS and Tableau.

RESULTS

- Figure 1 shows a total of 229 of refugees that were screened at the 550 Clinic. Twenty-five refugees (10.9%) tested positive to LTBI, 64% had follow up chest x-rays. Thirteen (52%) refugees were treated for latent TB. Twelve (48%) refugees were not treated for LTBI.
- Of the Cubans who tested positive for LTBI, 64% followed up with the health department.
- Of the Africans that tested positive for LTBI, 85% followed up with the health department
- 17 (68%) refugees had follow up chest x-rays done. All chest x-rays were negative for active TB.
- 13 (52%) refugees were treated or LTBI with 1(4%) refugee declining treatment and 11 (44%) lost to follow-up.

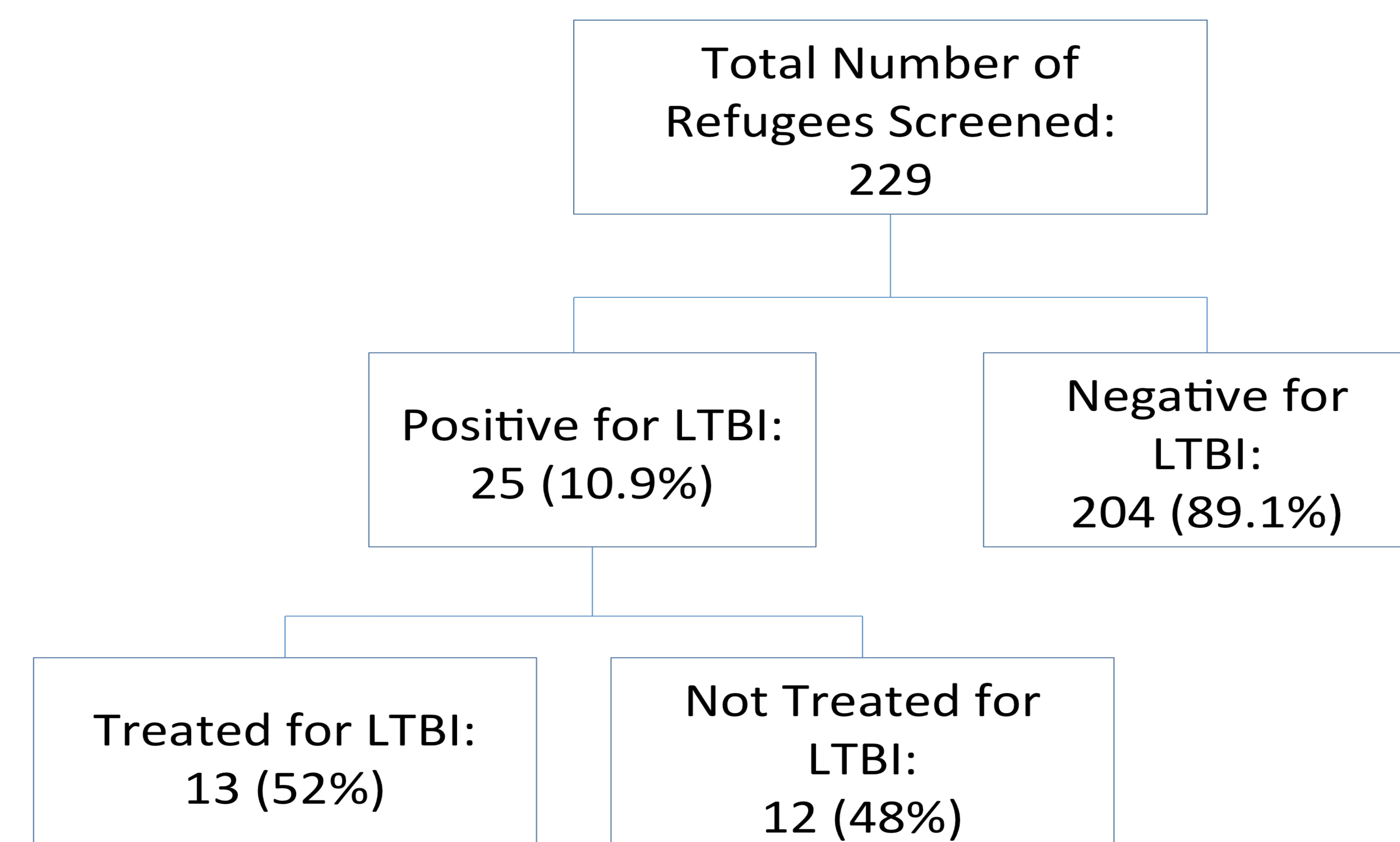


Figure 1. Refugees Screened for TB September 2013-June 2014 in the 550 Clinic

CONCLUSIONS

Adherence to treatment for LTBI has been a long-standing problem. Some studies have found adherence to LTBI therapy among high-risk groups to be around 62%. Extrapolating our data nationally, we found that approximately 70,000 refugees came to the United States in 2013. Of those refugees, 9,000 would be positive for latent TB and about 7,000 would continue to represent a risk of a reactivated form of untreated LTBI. Tuberculosis is an important global health burden with more than 1 billion people infected with latent TB, resulting in approximately 9.2 million new active cases and 1.5 million deaths per year.⁴ Approximately 80% of active TB cases in the United States are the result of reactivated latent infection, especially among individuals born outside of the United States.⁵ Most of these cases can be prevented by appropriate treatment. Refugees and immigrants are one of the high-risk population groups who bring with them cultural and language barriers. Therefore, it is not only important that refugees are screened for LTBI but new ways to bridge the gap to secure appropriate access to treatment and ensure adherence to therapy need to be found. Understanding these barriers at a local level and working with the community including medical staff, public health workers, case coordinators and the individual patient is essential to provide a unique cultural context of care that sets the platform for successful treatment adherence and completion of therapy.⁶ This lack of understanding is an important public health burden we need to address if we are to prevent and eradicate future disease and transmission of TB.

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