

Epidemiologic Analysis of Latent Tuberculosis Infection in Maine: An Opportunity to Strengthen Cultural and Linguistic Awareness

Bonnie Lam MPH CPH^{1,2}, Amy Robbins MPH², Dalit Wolfe BSN RN MPH²

¹Council of State and Territorial Epidemiologists Applied Epidemiology Fellow, ²Maine Center for Disease Control and Prevention

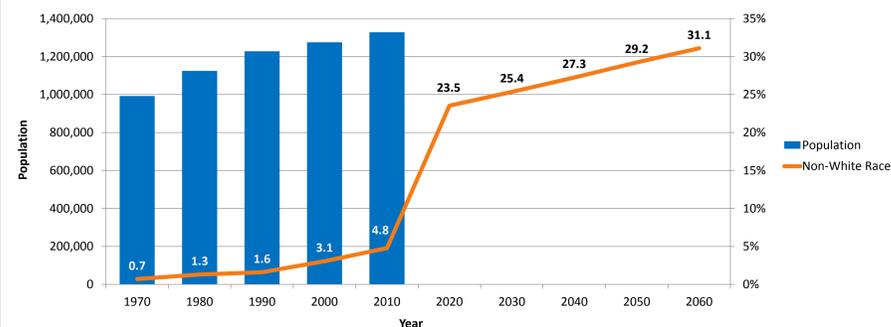
BACKGROUND

- Tuberculosis (TB) is caused by the bacteria *Mycobacterium tuberculosis*
- Persons with latent TB infection (LTBI) are infected with *M. tuberculosis*, but do not have active TB disease and are not symptomatic
- Without treatment, ~5 to 10% of persons with LTBI will develop active disease at some time in their lives¹
- LTBI is not a reportable condition in Maine
 - Providers are encouraged to refer LTBI cases so treatment can be covered and high-risk individuals can receive Public Health Nursing services

Maine Snapshot

- Low active-TB incidence state
- Relatively homogenous population
 - Low numbers of racial and ethnic minorities
 - Highest percentage of non-Hispanic White residents in the US
- Older population with a large number of baby boomers and relatively few children
 - Oldest median age in the US- 42.7 years in 2010
- Population growth is projected to come from migration from other states and abroad²
 - Will influence the growing percentage of non-White residents

Figure 1. Historical and Projected Population of Maine, 1970-2060^{3,4}



METHODS

- All cases of LTBI are reported by a provider through a referral form to TB Control
- Basic investigative data and medication information are recorded, including:
 - Basic demographic information
 - Applicable risk factors
 - Prescribed treatment regimen
 - Results from applicable TB diagnostics, chest x-rays, and liver function tests
- The TB Control Program expanded surveillance and began documenting complete LTBI reports in Maine's electronic surveillance NEDSS Base System (NBS) in January 2012
- SAS 9.3 was used for descriptive analysis of Maine's LTBI data for years 2012-2013

RESULTS

- A total of 433 cases of LTBI were captured in 2013, compared to 398 in 2012
- The most common age group is 25-44 at 46%, followed by 15-24 at 20.5%
- Figure 2 and Table 1 indicate the TB Program serves a significantly more diverse population of individuals with LTBI than makes up the general population of Maine
- 23 different languages and 68 countries (excluding the US) are represented

Figure 2. Countries of Birth of Reported LTBI Cases – Maine, 2012-2013

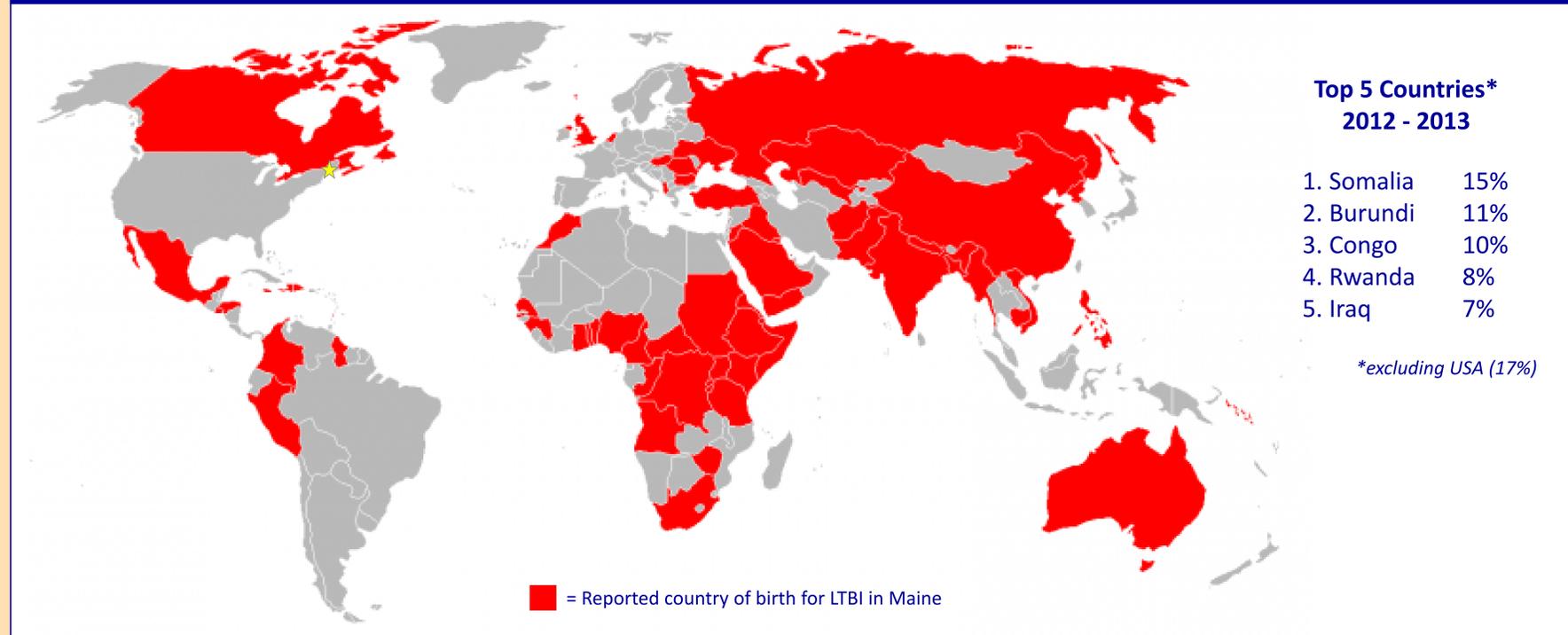


Table 1. Languages of Reported LTBI Cases – Maine, 2012-2013[†]

Acholi	0.1%	French	19.1%	Russian	0.6%
Amharic	0.1%	Kinyarwanda	2.7%	Somali	16.3%
Arabic	8.2%	Kirundi	3.0%	Spanish	1.7%
Burmese	0.1%	Korean	0.1%	Swahili	0.3%
Cambodian	0.3%	Kurdish	0.1%	Tagalog	0.2%
Chinese	0.8%	Lingala	0.3%	Tigrinya	0.2%
Dari	0.1%	Pashto	0.2%	Vietnamese	0.2%
English	42.4%	Portuguese	2.6%		

[†] Languages not mutually exclusive

CONCLUSIONS

- The country of birth and language results highlight a need for a more culturally competent response to tuberculosis prevention, such as:
 - Target and create appropriate educational materials
 - Increase provider understanding of core cultural values
- As more data is collected in the Maine NBS, it will be possible to better characterize the burden of LTBI in Maine
- Additional opportunities to explore associations in the data include:
 - If there is a correlation between languages spoken and treatment completion
 - Whether a certain treatment regimen is associated with higher completion rates (i.e. INH vs. Rifampin)

Limitations

- Data collected is limited to reports submitted by providers since it is not a reportable condition
- Populations who do not undergo TB testing may be overlooked (testing is generally targeted to high risk populations and special situations including contact investigations, employee screenings, and all primary refugees)

SOURCES

- 1 CDC: Division of Tuberculosis Elimination fact sheets. Atlanta, GA: CDC. Retrieved May 19, 2014, from: <http://www.cdc.gov/tb/publications/factsheets/general/ltbiandactivetb.htm>.
- 2 Rector, A. Maine Population Outlook to 2030. Augusta, Maine: Governor's Office of Policy and Management. Retrieved May 19, 2014, from: <http://www.maine.gov/economist/projections/pub/Population%20Outlook%20to%202030.pdf>
- 3 Maine - Race and Hispanic Origin: 1790 to 1990. Washington, DC: US Census Bureau. Retrieved May 19, 2014, from: <http://www.census.gov/population/www/documentation/twps0056/twps0056.html>
- 4 Population Projections to 2060 by Sex, Race and Hispanic Origin. Washington, DC: US Census Bureau. Retrieved May 19, 2014, from: <http://www.census.gov/population/projections/files/summary/NP2012-T5.xls>