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LTBI screening cascade for non-US-born persons in a large health system assessed using EMR data

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Background

- 70% of active tuberculosis (TB) cases in the US are in persons born outside the US[1]
- Guidelines recommend screening non-US-born (nUSb) persons from TB-endemic areas for latent TB infection (LTBI) and treating if positive.[2,3]
- We used electronic medical record (EMR) data to assess completion of LTBI screening & treatment guidelines in primary care in a large academic medical system

Methods

- EMR data from UW Medicine primary care clinics reviewed. *Place of birth not reliably captured.*
- **Primary language** routinely captured; region of origin inferred hierarchically from language, place of birth if available, race/ethnicity if available.

Definitions:

- **nUSb status**: Non-English primary language
- **Eligible for LTBI screening**: nUSb persons entered care, attended ≥1 primary care visits 4/2016-4/2021
- **Screened for LTBI**: documentation of TST or IGRA lab result in EMR
- **Positive for LTBI**: positive result of TST or IGRA documented
- EMR prescription records reviewed for LTBI treatment; active TB treatment excluded

References

[1]CDC, Reported Tuberculosis in the United States, 2020. https://www.cdc.gov/tb/statistics/reports/2020/default.htm

[2]USPSTF, Latent tuberculosis infection: screening, 2016

[3]ATS/IDSA/CDC Clinical Practice Guidelines: Diagnosis of tuberculosis in adults and children. *CID* 2017.

Results

Table 1. nUSb Patient Characteristics (2016-2021)

		LTBI not tested N(%)	LTBI tested N(%)
Gender	Female	2801 (68)	592 (59)
	Male	1335 (32)	420 (41)
Age	Median (IQR)	40 (30-57)	43 (33-59)
Race	Asian/Pac Isl	1581 (38)	299 (30)
	Black/Afr Amer	565 (14)	367 (36)
	Other or >1 race	183 (4)	37 (4)
	White	1760 (43)	272 (23)
	Unknown	47 (1)	37 (4)
Ethnicity	Hispanic/Latino	1466 (35)	188 (19)
	Not Hisp/Latino	2182 (53)	651 (64)
	Unknown	488 (12)	173 (17)

Figure 1. Cascade of LTBI screening & treatment in nUSb

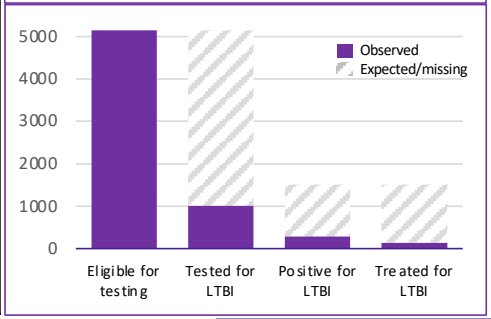


Figure 2. Proportion of nUSb patients screened for LTBI, by clinic type

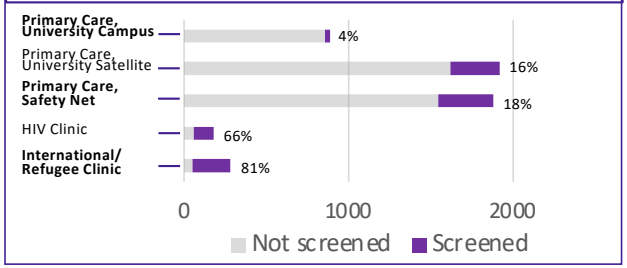


Figure 3. Detailed LTBI cascade, by testing method (2016-2021)

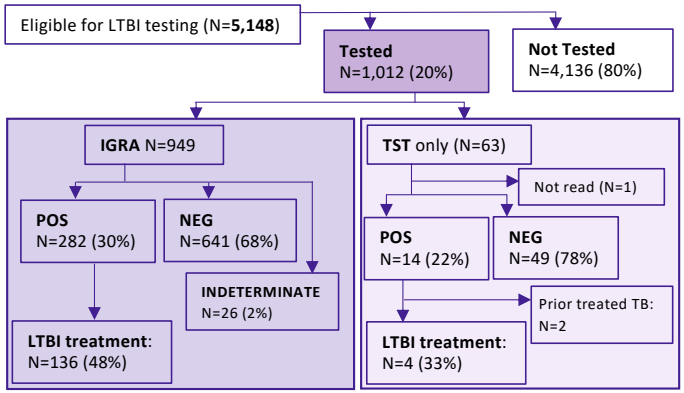
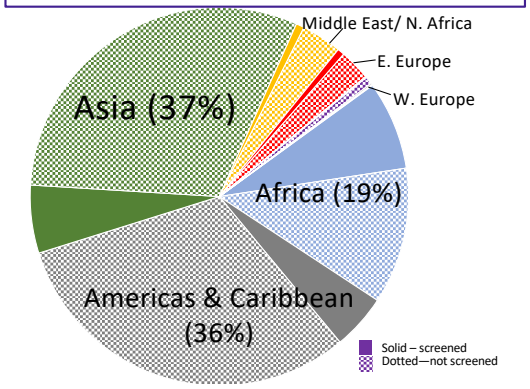


Figure 4. Geographic origin and LTBI screening status of nUSb patients entering care, 2016-2021 (N=5148)



Abbreviations: **EMR**: electronic medical record; **nUSb**: non-US-born; **LTBI**: latent tuberculosis infection; **IGRA**: interferon-gamma release assay; **TST**: tuberculin skin test (PPD)

Conclusions

- In a large primary care system, **80%** of people identified by EMR as eligible for LTBI screening **did not receive screening**.
- **Less than 50%** of nUSb patients screening positive for LTBI **received LTBI treatment**.
- Limitations: methods underestimate persons eligible for screening (e.g. nUSb persons w/ English as primary language); LTBI screening/treatment prior to entering primary care in this system may not be captured.
- **Systematic capturing of *place of birth* in EMR could facilitate LTBI screening.**
- **EMR could facilitate LTBI treatment by alerting if positive LTBI test result.**