

International Student TB Screening in a University Setting

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INTRODUCTION

Oregon State University (OSU) Student Health Services routinely performs targeted TB screening on newly enrolled international students from TB burdened countries (20 cases/100,000).

Data trends for years 2010-2016:

- International student enrollment has risen from 56% from 2010 (n = 1,548) to 2016 (n = 3,529).
- International student percent of total OSU enrollment has risen from 6.5% to 11.6%.
- Percentage of international students from TB burdened countries- 29.5%.
- Latent tuberculosis infection (LTBI) prevalence rate- 4.9%.
- Initiation rate (IR) for LTBI treatment – 35.0%.
- Number of active tuberculosis disease cases diagnosed - 10 (60.0% of Benton County cases).

In the academic year 2016-2017, we implemented new changes in our counseling and tracking process with goal of increasing the LTBI treatment initiation rate (IR) and completion rate (CR).



International students graduate at Oregon State University

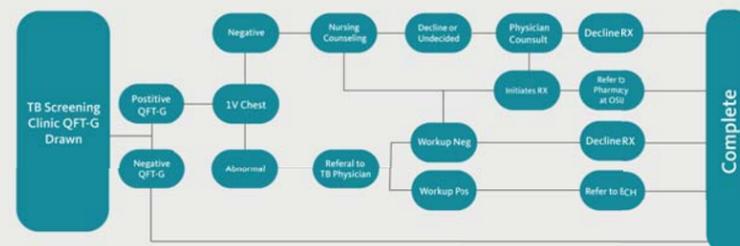
OSU TB SCREENING TEAM:

Brittney Holcomb, MA- Health Compliance Coordinator | Mark Hornabrook, MT(ASCP), SSB, MHA- Laboratory Director | Charmaine Abrams, RT(R) - X-ray Manager | Patti Irvine, RN- Nursing Clinical Manager | Leslie Kaye, LMT2- TB Screening Tracking Coordinator | Jennifer Davis, PharmD – OSU Pharmacy Director | James Koski, MD, MPH- OSU TB Controller

METHODS (RED FONT INDICATED NEW PROCESS CHANGES)

- Health compliance coordinator identifies newly enrolled students from TB burdened countries.
- Mandatory TB screening/immunization clinics are set up monthly where blood QuantiFERON-TB Gold (QFT-G) is drawn.
- Students with positive QFT-G undergo a 1V chest x-ray.
- If screening chest x-ray is abnormal, then patient is referred to physician for further workup.
 - **Counseling nurses received training that “Decision to Test is a Decision to Treat”.**
 - Student provided language educational materials regarding LTBI treatment options.
- If the student does not complete the mandatory TB screening and LTBI counseling, a registration hold is placed on their university account.
- **If student is undecided or declines treatment, a mandatory appointment with physician is scheduled for additional LTBI treatment counseling.**
- **If student chooses LTBI treatment, then they are referred to OSU pharmacy for medication administration and monitoring.**
- **A staff person has been designated to be our TB screening tracking coordinator who the monitors screening and LTBI treatment process with use of an Excel spreadsheet.**
- Completion letter along with copy of chest x-ray is given to patient upon completion of treatment.

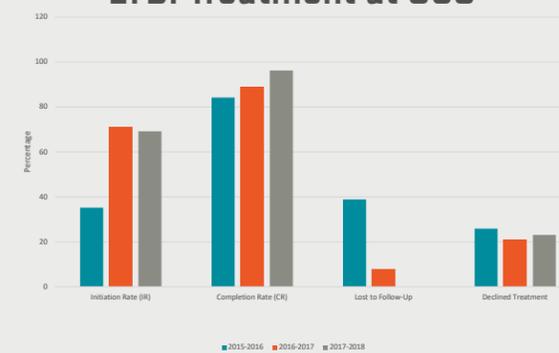
International Student TB Screening at Oregon State University Student Health Services



RESULTS

- In comparison to the academic year 2015-2016, the new counseling/tracking process implemented in 2016-2017 resulted in:
 - A significant improvement in IR from 35.2% to 71.1% (*Fisher's exact test, p = 0.0013*), and a t change in CR 84.2% to 88.9% (*Fisher's exact test, p = 0.6796*).
 - The improvement in IR resulted from a significant reduction in students who were lost to follow-up 38.9% to 7.9%, (*Fisher's exact test, p < 0.0007*).
 - There has been no significant change in the number of students who decline LTBI treatment [25.9% to 21.0%, (*Fisher's exact test, p = 0.6289*)].
- Similar trends have been maintained in academic year 2017-2018 through April 2018 as IR is 69.2%, lost to follow-up 0.0%, undecided 7.7% and declined treatment 23.1%.

LTBI Treatment at OSU



DISCUSSION

Targeted tuberculosis screening in a university student health services is an important means of identifying a subset of latent tuberculosis infection (LTBI) and active tuberculosis disease (TB) in the United States.

KEY INTERVENTIONS

- Require a second LTBI counseling session if undecided or declined treatment.
- Use The BCG World Atlas and The Online TST/IGRA Interpreter as counseling tools.
- Utilize a TB screening coordinator to track students through the screening, counseling, and treatment process.
- Offer shorter treatment regimens such as 12 week DOT/INH and 4 month Rifampin.
- Use eMocha Mobile Health software for video self-administration of LTBI treatments while on vacation.

CONCLUSION

The international student population from TB burdened countries represent an important subset of active TB disease and latent TB infection in the United States. Simple procedural changes in TB screening at a university student health services resulted in a significant increase in LTBI treatment initiation rates from 35.2% to 71.1% while maintaining a high completion rate at 88.9% over the course of one year.

