



Development of A Curriculum for Internal Medicine Residents On Latent and Active Pulmonary Tuberculosis: A Targeted Needs Assessment



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Background:

- Internal medicine (IM) residents have previously been shown to have significant knowledge and practice gaps in tuberculosis (TB) diagnosis,¹ but it is unknown if these gaps vary based on geography or TB incidence
- San Francisco has the highest TB incidence of any US city.² UCSF IM residents encounter TB throughout clinical training, but the residency program lacks a dedicated TB curriculum
- It is unknown if these TB knowledge gaps exist for UCSF IM residents
- There is limited published literature examining IM residents' preferences for the format and timing for delivering educational curricula

Aims:

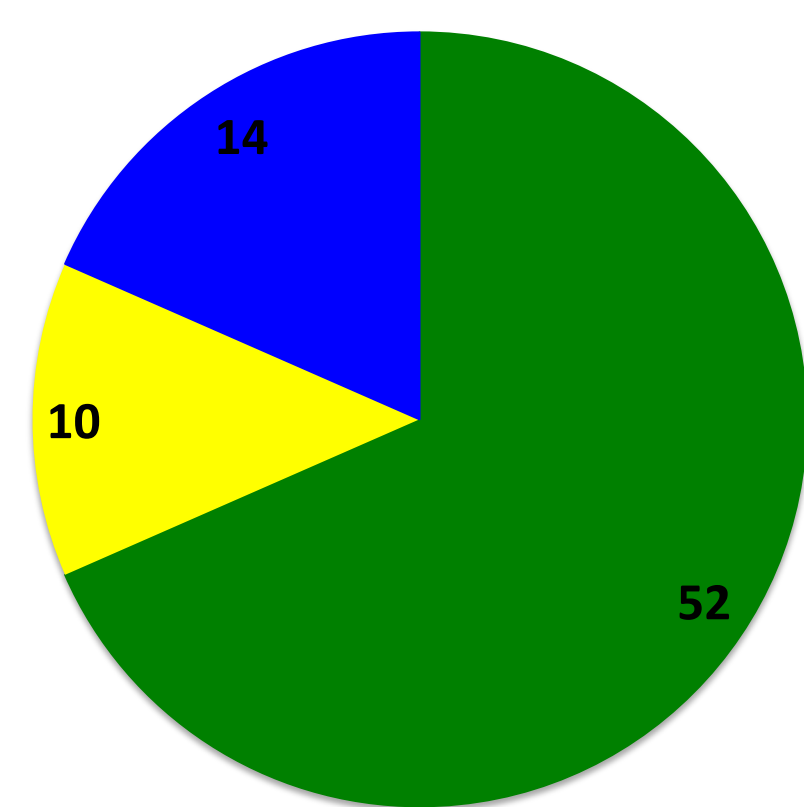
- Using the Kern model of curriculum development, we sought to conduct a targeted needs assessment of UCSF IM residents' (1) confidence in evaluating patients with suspected latent and active pulmonary TB and (2) preferences for the format and timing of a TB curriculum

Methods:

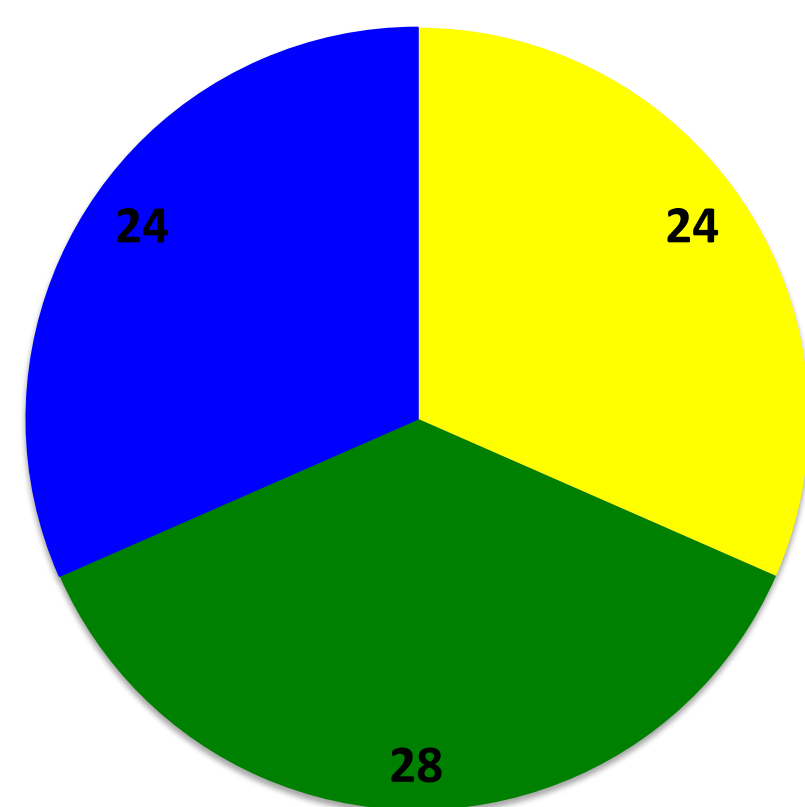
- An anonymous survey was distributed to UCSF IM residents in February 2020
- All questions utilized a 5 point Likert scale
- Chi-squared test was used to compare the confidence levels of residents and interns
- This study was approved by UCSF IRB

IM resident responses (total #):

Program:



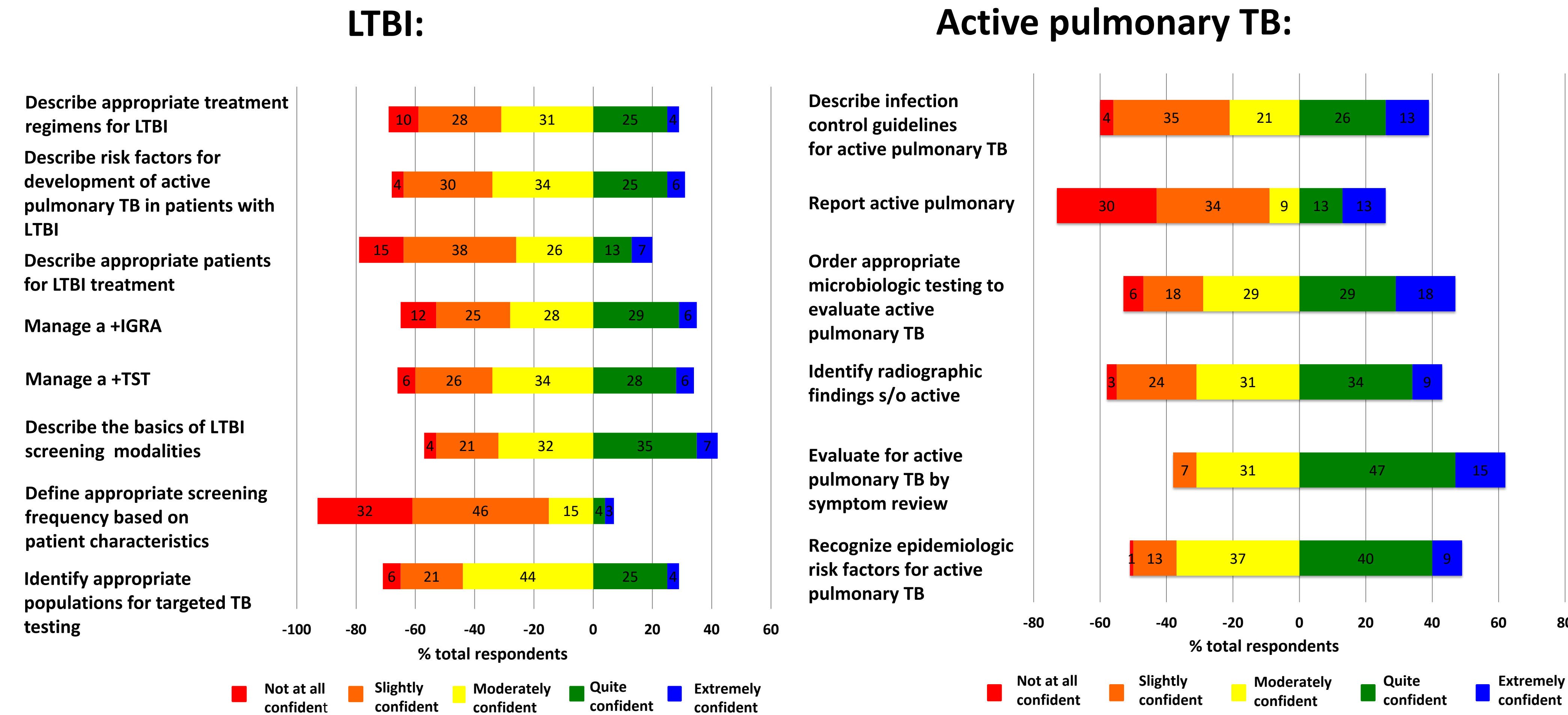
Year in training:



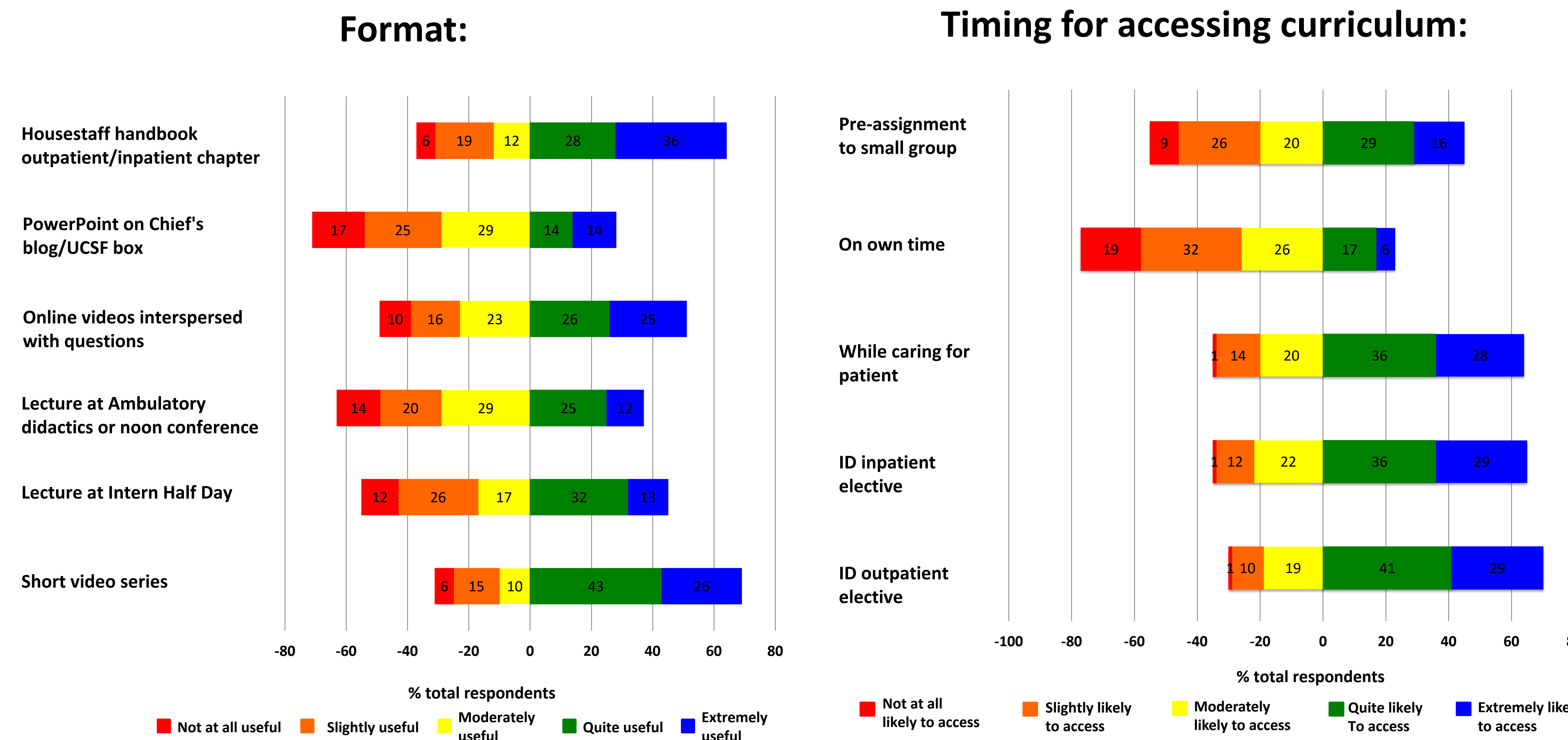
■ Categorical ■ SFPC ■ UCPC

■ PGY1 ■ PGY2 ■ PGY3

Confidence of IM Residents:



Preferences for Curriculum Delivery:



Results:

- 75 IM residents (41% of IM residency; 32% interns and 68% residents) completed the survey
- More than 50% of IM residents reported they were quite or extremely confident in only 1 of 14 domains assessed in the diagnosis and management of latent and active pulmonary TB
- Residents were more likely than interns to report quite or extremely confident in only 4 of 14 domains: managing +TST (8% vs 48%, p=0.001), managing +IGRA (17% vs 45%, p=0.018), describing appropriate populations for LTBI treatment (4% vs 30%, p=0.013), and identifying radiographic features suggestive of active pulmonary TB (21% vs 55%, p=0.007)
- IM residents felt a TB curriculum would be more useful as short video series, online videos with interspersed questions, and housestaff handbook chapter, and less useful as lecture or PowerPoint slides
- IM residents felt that they would be more likely to access the material during ID inpatient/outpatient electives or while caring for patients on wards, and less likely on own time

Discussion:

- Consistent with previous literature, UCSF IM residents demonstrated lack of confidence across multiple domains in the diagnosis and management of latent and active pulmonary TB
- Confidence did not markedly improve between interns and residents despite increased experience in a high TB incidence clinical setting, highlighting the need for a TB curriculum to address this gap
- While lectures are an incredibly common teaching method, IM residents felt this format was less useful for the delivery of curricular content
- TB curriculum should be implemented during relevant clinical time, such as wards or ID rotations, when IM residents would be most likely to utilize the curriculum

Conclusions:

Residents would benefit from further TB curriculum given lack of confidence in multiple areas in the diagnosis and management of LTBI and active pulmonary TB. This curriculum should avoid lecture format and be integrated within relevant clinical time to maximize utility for residents.

References:

- Chida, Natasha, Christopher Brown, Jyoti Mathad, Kelly Carpenter, George Nelson, Marcos C. Schechter, Natalie Giles et al. "Internal medicine residents' knowledge and practice of pulmonary tuberculosis diagnosis." In Open forum infectious diseases, vol. 5, no. 7, p. ofy152. US: Oxford University Press, 2018.
- Centers for Disease Control and Prevention (CDC). *Reported Tuberculosis in the United States, 2018*. Atlanta, GA: US Department of Health and Human Services, CDC; 2019. <https://www.cdc.gov/tb/statistics/reports/2018/default.htm>