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RESULTS
Using Latent Class Analysis (LCA), we estimated that 6.9% of the adolescents were symptomatic of pulmonary TB, characterized mainly by chronic non-productive cough, chest pain, weight loss, and night sweats. Unexpectedly, further examination of symptom profiles uncovered a higher proportion of adolescents (10.5%) who were symptomatic of other respiratory tract infections characterized mainly by highly productive cough, chest pain, and night sweats. Cumulatively combining these symptoms for identifying TB increased PPVs to 67.6% for adolescents living with HIV. Combining productive cough and night sweats for HIV+ adolescents or a productive cough and chest pain for HIV+ adolescents had high PPVs (83.7%).

CONCLUSIONS
✓ Our analysis suggests high rates of PTB, and RTIs among adolescents living with HIV in a community-traced study from South Africa.
✓ PTB, and more surprisingly RTIs can be detected with reasonable accuracy using a simple symptom-based approach.
✓ Additional research to understand provider use of symptom-based screening to prioritise TB and RTI diagnosis is needed, so that adolescents at highest risk of mortality can access timely and correct treatment.

Methodological contribution
✓ Latent Class Analysis (LCA) used to compute full sample reliable TB outcome using self-reported symptoms and offers prospects for more effective TB/RTIs differentiation, especially in resource-poor settings

FIGURE 1: PROFILES OF ADOLESCENTS TB SYMPTOM EXPERIENCES

DATA (MZANTSİ WAKHO STUDY)
At baseline, 1527 adolescents were enrolled and 1454 were successfully re-interviewed at follow-up (94% retention rate) and were included in this analysis. The sample was predominantly female (57.6%) and HIV positive (N=1060, 72.4%) with median age 15. According to self-reports, 71.8% of the adolescent’s sample, had been tested for TB in the past year and were aware of the results. 28 % of those tested reported having TB in the past year (either treated or not).

OBJECTIVE
✓ To estimate and assess rates of PTB infection among adolescents in a resource-constrained setting in South Africa.

BOTTOM: Table Showing Self-reported TB and TB diagnosis in patient medical records

Self-reported TB n=761 213 (TB+) 28%
TB diagnosis in patient medical records n=711 47 (TB+) 6.6%

BACKGROUND
Tuberculosis is the most common cause of death globally, especially in the era of HIV/AIDS. South Africa has a long history of high tuberculosis burden, and about 25,000 TB-related deaths were recorded in 2015 (WHO 2017). The country houses one of the highest global TB burdens, with 28% of the world’s cases of HIV-TB co-infection. However, few studies have measured TB prevalence in non-clinical settings in low- and middle-income countries, particularly among adolescents living with HIV (ALHIV). Despite progress made, burden of undetected TB is high, most effective TB diagnostic tools (sputum, Gen-Expert) are expensive and not accessible to resource-constrained populations. Moreover, accurate estimates for rates of TB infection remain unknown, particularly for high risk populations such as ALHIV.

ANALYSES
Classifications over a sequence of 2, 3, and 4 latent class models