

P2383 A model of reference laboratory (RL) for diagnosis of opportunistic infections (OIs) in HIV for low and middle-income countries (LMICs)

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Background: Fungal diseases and tuberculosis are the most common opportunistic infections in HIV patients in Guatemala. Based on this, our objective is to determine the feasibility of operating a reference laboratory (RL), which integrates diagnostic services, surveillance system, treatment provision and medical training, with the goal of minimizing HIV deaths related to OIs.

Materials/methods: The cornerstone of this model is the RL, serving 13 HIV care units in Guatemala. The laboratory services include diagnosis of histoplasmosis, cryptococcosis and tuberculosis, applying classical microbiology, immunological and molecular techniques. At each HIV unit, an electronic application with demographic, epidemiological and clinical data was filled. Then the clinical samples are sent to the RL by a courier service that delivers them in less than 24h. The results are sent electronically in 24-72 hours. This electronic application is part of the RL website, which also includes e-learning modules that combined with regional workshops provide continuous training for the network.

Results: During the first 10 months of 2017, a total of 5343 samples, from 2045 HIV patients, were processed. 336 (16%) of the patients had an opportunistic infection, 55.4% of which were fungal. 114 patients (33.9%) had histoplasmosis, 69 (20.5%) cryptococcosis, and 3 (0.89%) other fungal infection. 128 (38.1%) had tuberculosis and 7 (2.1%) other mycobacterial infections. Coinfection with *Mycobacterium tuberculosis* and *Histoplasma capsulatum* was detected in 10 (3.0%) as well as 5 (1.5%) coinfections were caused by other pathogens. When the results are compared with the same period of 2016, before the system was launched, 90.9% increase in the number of histoplasmosis, cryptococcosis and tuberculosis was detected (336 vs 176).

Conclusions: These preliminary results show that this RL model makes a significant impact on the accurate and timely diagnosis of fungal diseases and tuberculosis, which could be translated into a higher number of lives saved. Financial support is required to sustain the diagnostic services and clinical training provided by this model, with a focus on AIDS, endemic mycoses and tuberculosis.