

Impact of Training Residents to Improve HIV Screening in a Teaching Hospital in Mexico City

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BACKGROUND

Among 270,000 people living with HIV (PLWH) in Mexico, 26% are unaware of their diagnosis, and half of newly diagnosed individuals are diagnosed with advanced disease.¹ Mexico has a concentrated epidemic mainly in MSM population, sex workers and transgender women.²

Missed opportunities may reflect a low self perceived risk of HIV and a lack of clinicians' consideration of HIV screening as part of routine medical care. We assessed whether an educational intervention on residents was effective to:

- 1) Improve their knowledge on HIV
- 2) Increase the rate of HIV tests requested in the hospitalization floor (HF) and the emergency department (ED)
- 3) Increase HIV diagnosis in the HF and the ED

METHODS

Internal Medicine and Surgery residents at a third-level teaching hospital were invited to participate. The IRB approved this study. Written informed consent was obtained from all participants.

The intervention occurred in August 2018 and consisted in 2 educative sessions on HIV screening with an HIV expert. A questionnaire was applied before (BQ) and after (AQ) the intervention, which included HIV screening indications and clinical cases. BQ and AQ mean scores of all participants were compared with a paired t-test.

To evaluate the effect on HIV test rate in the HF and ED, an interrupted time series analysis was performed. Daily rates of tests were obtained from September 2016 to August 2019 and plotted along time. Restricted cubic splines (RCS) were used to model temporal trends.

New HIV diagnosis in HF and ED pre- and post-intervention were compared with a Fisher's exact test. A p<.05 was considered significant.

This educational intervention improved residents' knowledge on HIV. A constant rate of HIV testing was maintained in the hospitalization floor, where the number and rate of new HIV diagnosis increased significantly. These results were not observed in the emergency department. Barriers to HIV testing in the ED warrants further evaluation.

HIV testing across time



Figure 1. (A) Emergency Department, (B) Hospitalization Floor

Each point represents an HIV test and red line indicates the median HIV test rate. Gray area represents post-intervention period.

	Emergency Department		Hospitalization Floor	
	Pre-intervention*	Post-intervention^	Pre-intervention*	Post-intervention^
Number of episodes	83,400	42,591	14,812	8,077
Number of HIV tests	2,146	991	1,079	894
HIV test rate per 100 episodes	2.6	2.3	7.3	11.1
Number of new HIV diagnosis	18	8	0	5
New HIV diagnosis rate per 1000 tests	8.4	8.1	0	5.6†
Table 1. Description of episodes, HIV tests and rates pre- and post-intervention. * Pre-intervention period took place from 09/01/2016 to 08/31/2018. * Post-intervention period took place from 09/01/2018 to 08/31/2019. * Post-intervention period took place from 09/01/2018 to 08/31/2019.				

RESULTS

- Among 104 eligible residents, 57 voluntarily participated and completed both questionaries.
- BQ mean score was 79/100 (SD \pm 12) and AQ was 85/100 (SD \pm 8), $p{<}.004.$
- Time series of HIV testing had apparent temporal trends (Figure 1).
- HIV test rate in the HF increased (7.3 vs 11.1 per 100 episodes) and decreased in the ED (2.6 vs 2.3 per 100 episodes) (Table 1).
- New HIV diagnosis increased in the HF, from 0/1079 (0%) preintervention to 5/894 (0.6%) post-intervention, p<.018.

CONCLUSIONS

- This educational intervention improved residents' knowledge on HIV.
- A constant rate of HIV testing was maintained in the HF, where the number and rate of new HIV diagnosis increased significantly.
- · However, these results were not observed in the ED.

PERSPECTIVES

- Our results support the routinely implementation of this educational strategy.
- Barriers to HIV testing in the ED warrants further evaluation.
- Impact in other clinical settings should be studied.
- Differences in demographic characteristics among groups who received an HIV test before and after the intervention should be explored, as they could reflect changes in physician-perceived risk.

ACKNOWLEDGEMENTS

- · Patients and staff members of the HIV Clinic.
- · Laboratory staff for their support to retrieve all HIV test results.

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