#### BACKGROUND

In Argentina, a middle-income country, HIV diagnosis is confirmed through RNA-HIV (viral load, VL), which is usually performed in specialized referral laboratories.

Individuals with preliminary diagnosis require a second appointment to receive HIV confirmation (HIV-C) needed to initiate anti-retroviral therapy (ART). Time to HIV-C depends on laboratory and administrative factors.

Shortening the diagnostic process is the first step towards implementing test and treat strategies. We hypothesized that point-of-care (POC) technologies would reduce:

- Time to results
- Proportion of delivered results (communicated to the participant)
- Time to ART initiation as compared with standard of care (SOC)

#### METHODS

A pilot study in 2 HIV testing centers within Buenos Aires:

- Non-government organization (NGO)
- Public hospital

Participants with a new preliminary HIV diagnosis (HIV-PD) after a reactive HIV rapid test were enrolled into the study.

Phase	1: SOC	<b>2: POC</b>		
Method/strategy	conventional: mimics standard of care	point of care		
Viral load	blood samples sent to the laboratory for RT-PCR	blood samples locally processe with m-PIMA <sup>™</sup>		
HIV confirmation	delivered in a second appointment	same day		

- Time from HIV-PD to HIV-C and ART initiation were evaluated as a continuous variable with Wilcoxon sum rank test.
- Categorical variables were tested with Chi-squared test or Fisher's exact test.
- Linear regression models were fitted with an interaction term between center and strategy to evaluate whether the effect on time to HIV-C or ART initiation differs for each strategy between centers.

## Impact of point of care HIV-1 RNA testing on time to HIV confirmation and ART start in Buenos Aires

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# **POC viral load implementation** was feasible and reduced the time from HIV preliminary diagnosis to HIV confirmation and ART initiation

## RESULTS

#### Between May 2023 and July 2024, 91 people with HIV preliminary diagnosis (HIV-PD) were enrolled:

- Median age 30 years (IQR: 26-36)
- 84% cisgender men, 9% transgender women, and

Phase	<b>1: SOC</b> n: 44	<b>2: POC</b> n: 47	p-value
HIV confirmation received, n (%)	43 (98%)	47 (100%)	0.5
Time to HIV confirmation, median [IQR]	16 days [14-23]	4 hours [3-34]	<0.001
Same day HIV confirmation, n (%)	0 (0.0%)	33 (70.2%)	<0.001
ART initiation, % (CI)	80% (64-90)	87% (74-95)	0.3
ART initiation < 30 days, % (CI)	66% (48-80)	85% (70-94)	0.045

- The interaction between strategy and center was not significant (p=0.0681), suggesting that time differences between SOC and POC do not differ between centers.

m-PIMA

70/		
1 %	cisgender	women





Box Plots - Time between rapid test and HIV diagnosis confirmation (time to HIV-C), and time between rapid test and Initiation of antiretroviral therapy (time to ART), across strategies

#### CONCLUSIONS

### **ADDITIONAL KEY INFORMATION**

> In this pilot study, POC implementation was feasible and adequate to reduce time to HIV-C and ART initiation.

• Time to results was significantly shorter with POC strategy.

• Proportion of participants who started ART in less than 30 days was significantly higher with POC strategy.

> Site-specific practices should be considered when implementing POC technologies in clinical settings.

> Healthcare systems need to adapt to facilitate the rapid ART initiation strategy.

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