

# Accuracy of PrEP adherence measures among transwomen and young MSM in Latin America: ImPrEP Study

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## BACKGROUND

- HIV incidence is high among young men who have sex with men (YMSM) and transgender women (TGW).<sup>1</sup>
- PrEP is a key strategy to reduce new HIV infections, and monitoring PrEP adherence is essential to guide implementation programs.
- We aimed to assess the accuracy of indirect PrEP adherence measures with drug concentrations in dried blood spots (DBS) among YMSM and TGW enrolled in the ImPrEP study

## METHODS

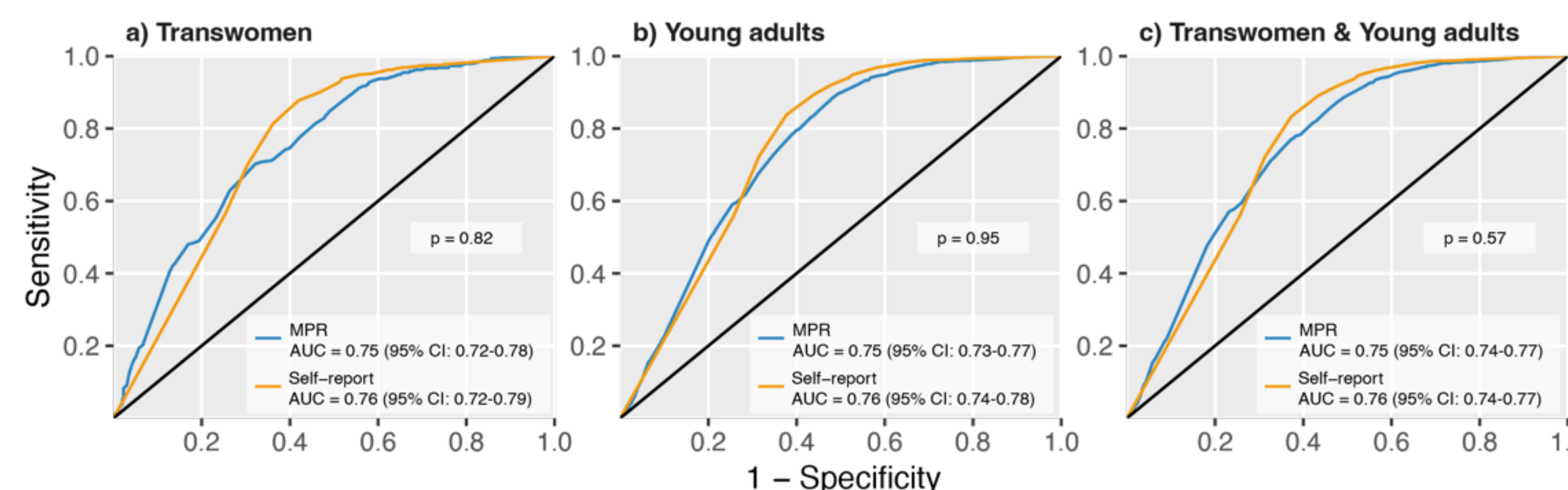
- ImPrEP was an implementation project offering same-day oral PrEP for 9509 MSM/TGW in Brazil, Mexico, and Peru (Feb/2018-Jun/2021).<sup>2,3</sup>
- Follow-up visits were scheduled 4 weeks post-enrolment and then quarterly.
- For this analysis, we included YMSM aged 18-24 years and TGW (all ages) who had at least one DBS obtained during study follow-up.
- We compared two indirect adherence measures with DBS: medication possession ratio (MPR) (ratio between tablets dispensed in prior visit and days between the two visits) and self-reported information (single-question at each visit; 30-days recall).
- We used generalized estimating equations and area under the curve (AUC) to assess the accuracy of each indirect measure with protective drug DBS levels (TFV-DP  $\geq$  550 fmol/punch [week 4] and  $\geq$  800 fmol/punch [other weeks]), and the DeLong test to compare the curves.
- We calculated optimal cut-off points for discriminating protective drug levels based on Youden index and their respective sensitivity, specificity, negative (NPV) and positive (PPV) predictive values.

Self-reported adherence and MPR adequately discriminated protective levels of PrEP among key populations in Latin America. These low-cost and easy to implement measures could be used for monitoring PrEP programs.

Table. Association between indirect adherence measures and protective drug levels.

Population/measure	Cut-off	Sensitivity	Specificity	PPV	NPV
<b>All participants</b>					
MPR	97.0	76.8	63.0	80.4	57.8
Self-report	93.3	83.4	62.7	81.5	65.6
<b>Transgender women (all ages)</b>					
MPR	97.0	70.2	67.8	74.5	63.1
Self-report	90.0	87.8	58.0	73.6	78.0
<b>Young (18-24 years) adults</b>					
MPR	89.0	88.2	52.2	80.3	66.6
Self-report	93.3	83.8	62.3	83.1	63.6

Figure. ROC curves for protective drug level vs. indirect adherence measures.



## RESULTS

- We included 4274 DBS samples from 2096 participants (week 4: 1905 [44.6%], week 28: 1170 [27.4%], week 52: 745[17.4%], week 76: 254[5.9%], week 100: 135[3.1%], week 124: 65[1.5%]).
- Overall, 1692 (80.7%) participants were MSM and 404 (19.3%) TGW; most were aged 18-24 years (1802; 86.0%), non-white (1582; 75.5%), and had  $\geq$ 12 years of education (1374; 65.5%).
- Of all DBS samples, 2871 (67.2%) had protective drug levels. AUC was 0.75 (95%CI:0.74-0.77) for MPR and 0.76 (95%CI:0.74–0.78) for self-report adherence, with no difference between adherence assessment methods' curves (Figure).
- Calculated cut-off points for MPR and self-reported adherence were 97.0% and 93.3%, respectively (Table).

## CONCLUSIONS

- Self-reported adherence and MPR adequately discriminated protective levels of PrEP among key populations in Latin America at different time points during the study follow-up.
- These measures are low-cost, easy to implement, and allow for immediate action to support PrEP adherence at health service level and ultimately contribute to monitoring PrEP programs.

## REFERENCES

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## ADDITIONAL KEY INFORMATION

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