

# Rates of recent prior antiretroviral therapy exposure among treatment initiators in South Africa

Mariet Benade<sup>1,2</sup>, Mhairi Maskew<sup>1</sup>, Vinolia Ntjikelane<sup>1</sup>, Nkonsinathi Ngcobo<sup>1</sup>, Linda Sande<sup>1</sup>, Sydney Rosen<sup>1,2</sup>

<sup>1</sup>Health Economics and Epidemiology Research Office, University of the Witwatersrand, Johannesburg, South Africa; <sup>2</sup>Boston University School of Public Health, Boston, MA, USA

## Background

- ART programs in sub-Saharan Africa are experiencing high rates of interruption and subsequently, high rates of re-engagement, with modeled rates of non-naïve initiators exceeding 50% in many places.
- Most re-engagers are reluctant to admit prior antiretroviral exposure, and other data sources are scarce.
- For a small cohort of ART initiators in South Africa, we collected data from four discrete sources to estimate the proportions who had prior treatment experience when presenting for initiation.

At least 45% of patients presenting for ART initiation at 3 public sector clinics in South Africa were re-initiators, with prior ART experience.

## Methods

- We enrolled clients who reported newly initiating ART or re-initiating ART after an interruption >90 days at 3 primary healthcare facilities in Mpumalanga, KwaZulu-Natal, and Gauteng provinces in South Africa.
- We collected data on previous ART experience from four sources:
  - Self-report** by PREFER survey participants on day of initiation (Self).
  - Laboratory testing of blood samples for **metabolites** of tenofovir diphosphate (TDF). TDF metabolites typically last for 90 days, allowing detection of prior ART use during previous 3 months (Metabolite).
  - Lab records** in the national laboratory system (NHLS) indicating previous lab tests associated with ART (Lab).
  - Electronic medical records** from clinics (TIER.net) indicating prior ART-related services (EMR).
- Using these data, we estimated proportions of participants with prior ART experience and the extent to which multiple indicators for the same individuals provided concordant results.

## Results

- We enrolled 89 participants (median age 33, 62% female).
- Among our sample of 89 participants, 16 (18%) self-reported previously taking ART but with a current interruption >3 months (those self-reporting ART ≤3 months were excluded from study).
- As shown in Figure 1, 45% of participants had at least one indicator of prior ART use.
- 40% of participants had non-concordant indicators (Figure 2); prior lab tests in laboratory records were the most common indicator (Figure 3).
- Among the 73 self-reporting never having taken ART, 24 (33%) had other indicators of prior use.
- Gender, age, and location were not associated with a detectable TDF metabolite result.

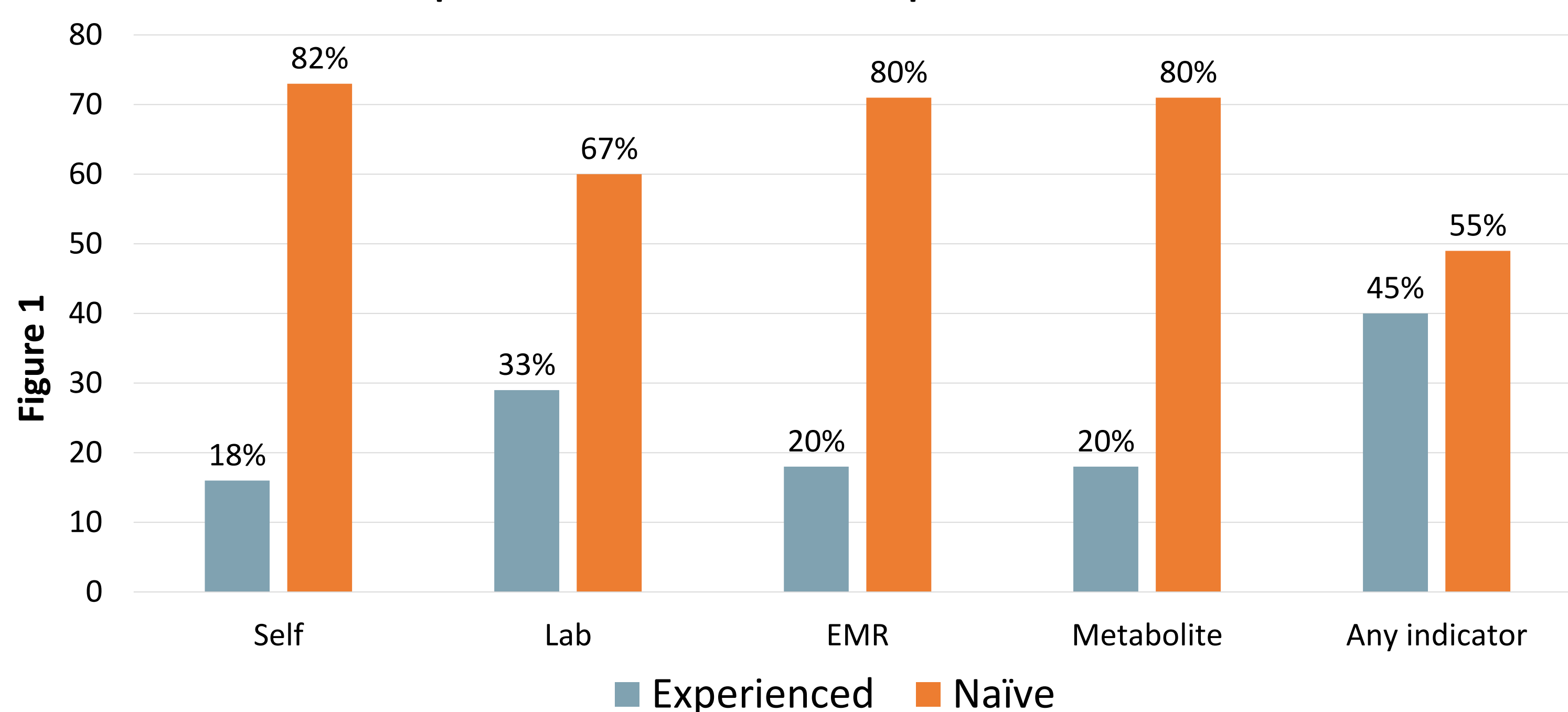
## Limitations

- Sample size was limited, due to cost of metabolite testing and delays in obtaining DBS supplies.
- In other studies, suppressed baseline (initiation) viral load tests, suggesting recent ART use, have been common. VL tests performed on DBS samples by our study produced inconsistent results and were not utilized. **Our results therefore likely underestimate true prior exposure.**
- In our study, of 11 participants who were given baseline VL tests by the clinics for reasons unknown, none were suppressed.

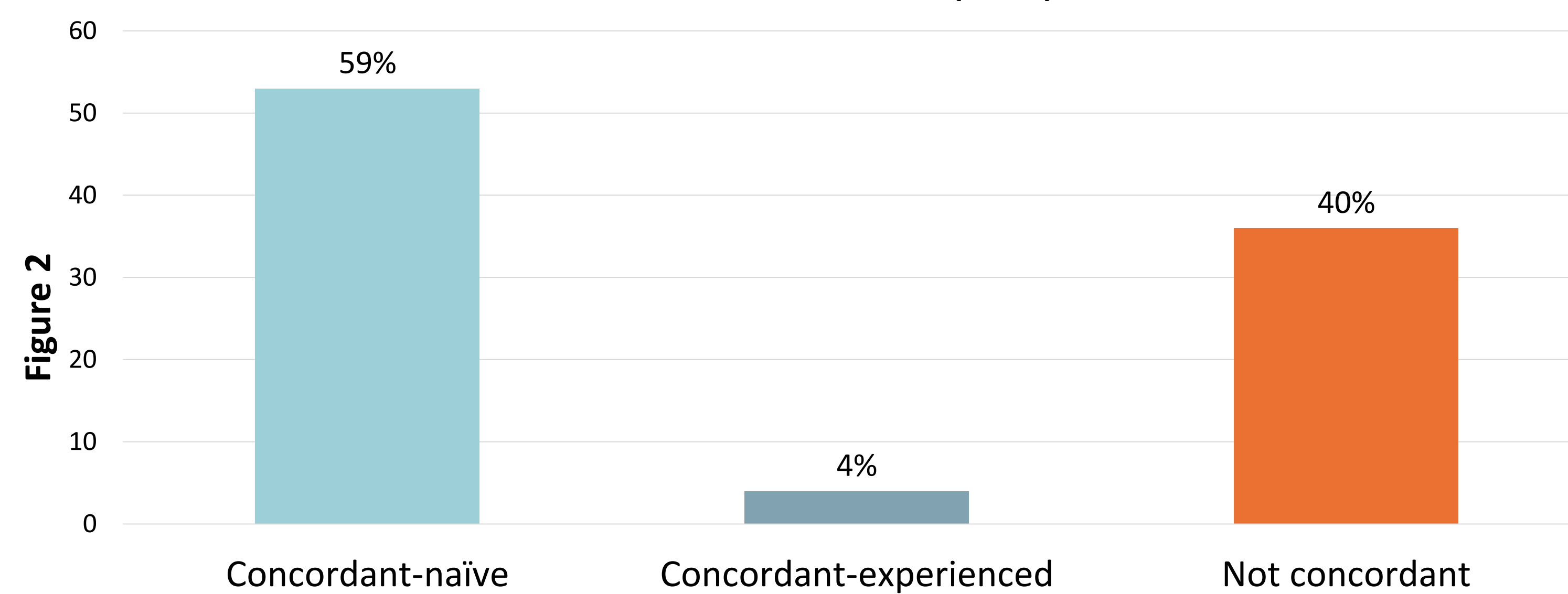
## Conclusions

- At least 45% of patients presenting for ART initiation at 3 public sector clinics in South Africa were re-initiators, with prior ART experience.
- This is a lower proportion than anticipated based on modeled estimates, possibly due to self-selection out of the study and lack of baseline viral load tests.
- Future work should explore reasons for reluctance to disclose prior ART use, how to identify re-engagers at initiation, and interventions needed to support re-engagers.
- Models of care must identify and address the barriers that re-initiators previously faced, to avoid repeat cycling in and out of care.

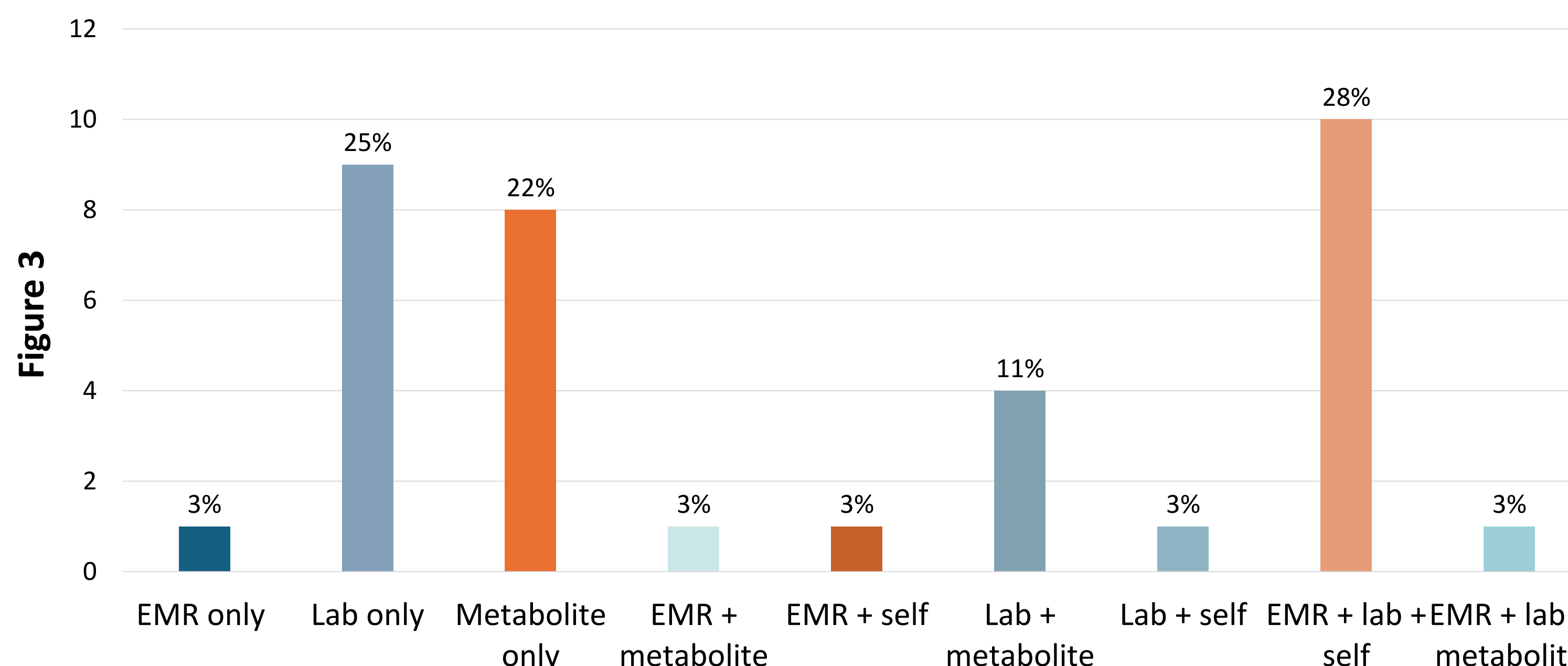
Proportions ART-naïve v ART-experienced at initiation



Overall concordance (n=89)



Type of discordance (n= 36)



Further information about the study sites and populations can be found at [sites.bu.edu/ambit](https://sites.bu.edu/ambit)



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Contact details:  
Dr. Mariet Benade,  
[mbenade@bu.edu](mailto:mbenade@bu.edu).