Washington University in St. Louis
School of Medicine

#ADHERENCE2023

# Exploring Longitudinal Engagement in PrEP Care in a Cohort of Individuals Newly Initiating PrEP in St. Louis, MO from 2014-2021: A Multi-state Analysis

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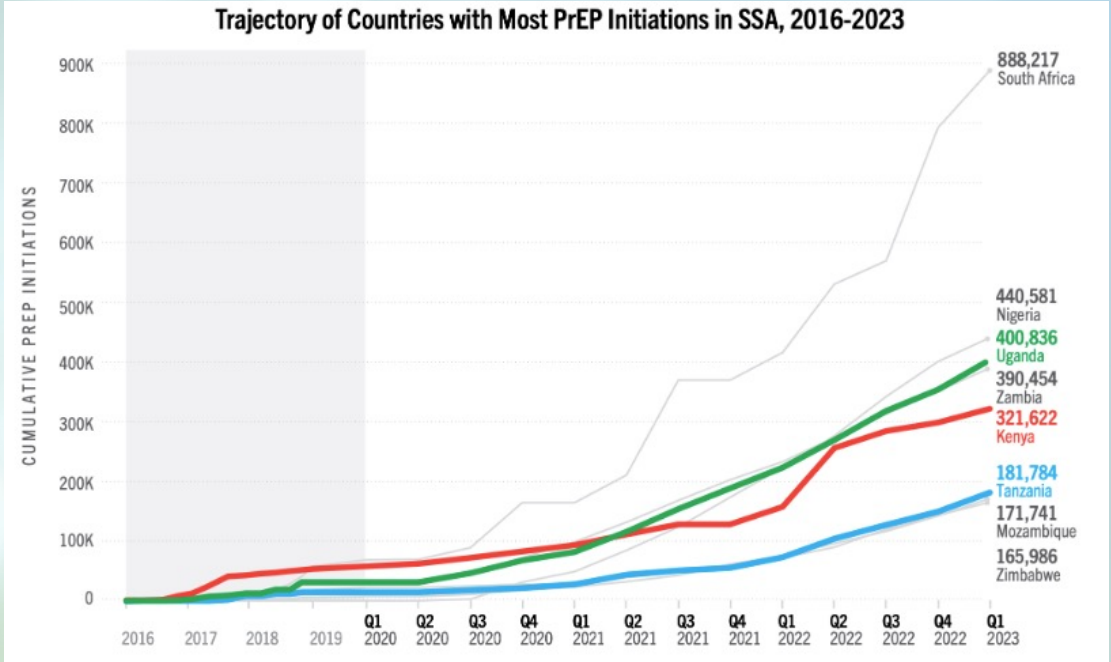
# PrEP, though rapidly gaining global traction, is still a vastly underutilized HIV prevention tool

- ~300,000 Americans, out of 1.2 million (25%) w/a treatment indication were prescribed PrEP in 2020




CDC. Report 4. 2021

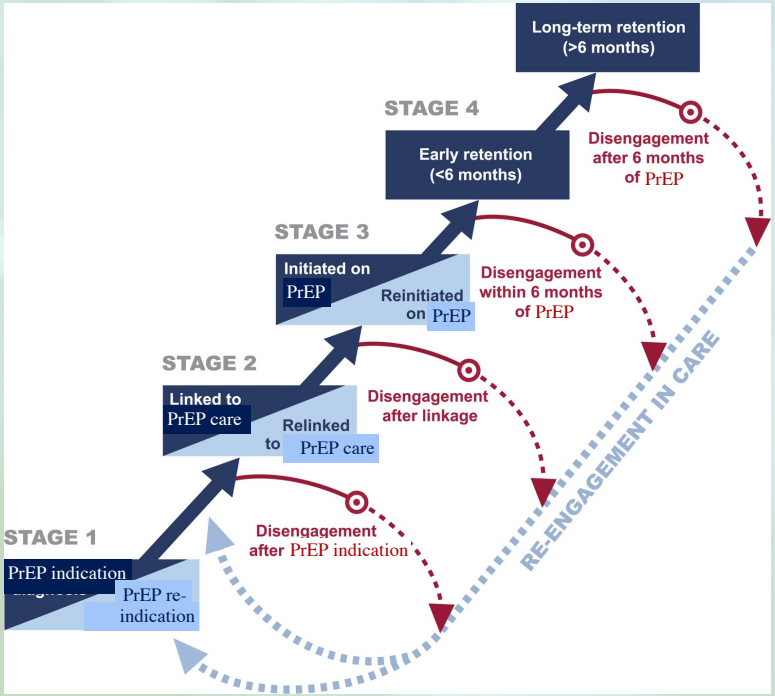
PxWire Vol. 13 No. 2 May 2023. AVAC.

# Individuals seeking PrEP must navigate a number of steps to to reap the full benefit of this prevention tool.


- CDC guidelines recommend:
  - HIV + GC/CT + Syphilis testing @ initiation and 1 time every 3 months
  - Kidney function, Hep B, cholesterol level testing depending on treatment
- Provider adherence to guidelines is variable and represents an additional barrier to achievement of optimal PrEP care outcomes

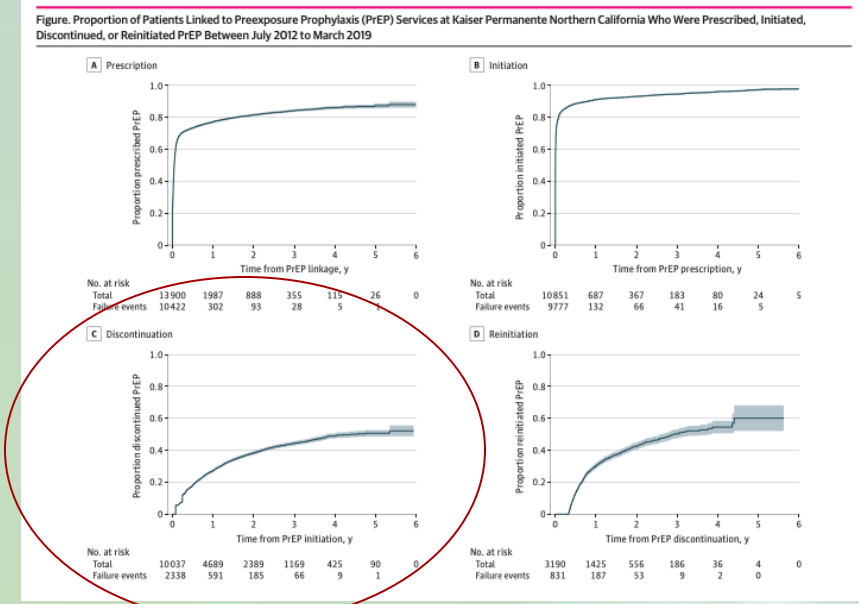
US Public Health Service. PrEP Clinical Practice Guidelines. 2021

# In reality, individuals often cycle in and out of PrEP care over time




Adapted from: Ehrenkranz et. al. 2021

# Longitudinal PrEP care engagement data is limited, but existing evidence suggests persistence in care is poor.




Hojilla et. al. JAMA Network Open. 2021.

- Of 14,000 individuals linked to PrEP care:
  - 52.2% (95% CI, 48.9%-55.7%) discontinued PrEP at least once during the study period

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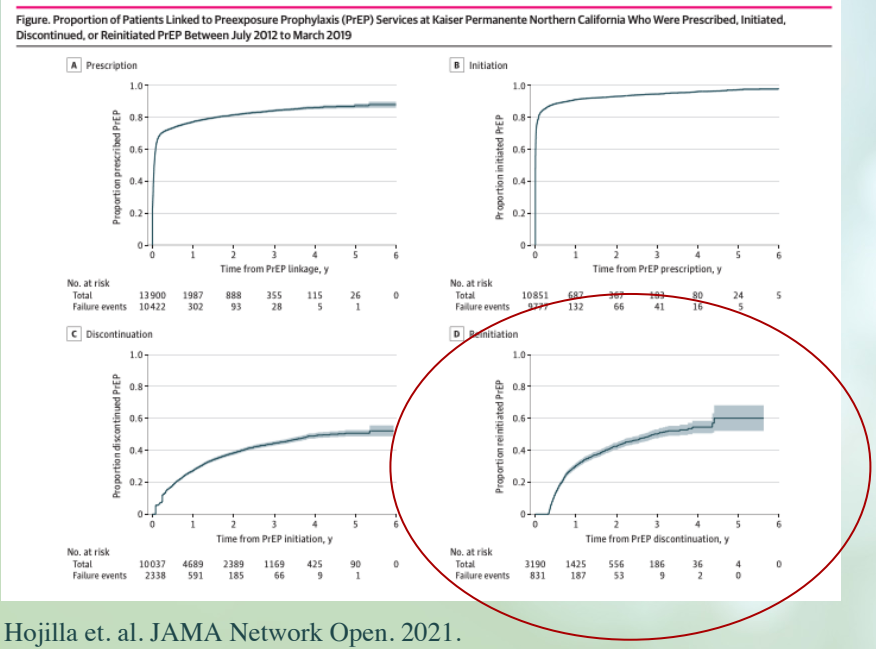



Hojilla et. al. JAMA Network Open. 2021.

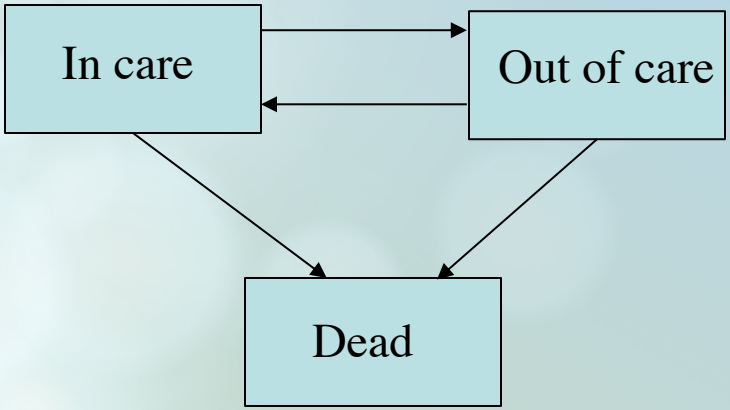
- Of 14,000 individuals linked to PrEP care:
  - 52.2% (95% CI, 48.9%-55.7%) discontinued PrEP at least once during the study period
  - 60.2% (95% CI, 52.2%-68.3%)of whom subsequently reinitiated

# Understanding engagement in PrEP care over time can allow us to identify distinct interventions that are needed and when they are needed.

- Different implementation gaps require different interventions/implementation strategies:
  - Poor lab monitoring = innovative ways to increase access to lab monitoring and improve provider fidelity to guidelines
  - Extended periods of disengagement = proactive efforts to re-engage individuals in care
- Particularly critical in Ending the HIV Epidemic priority states such as Missouri

# Novel multi-state analytic methods can illuminate the most vulnerable periods for disengagement from PrEP care

- Models for understanding a process
- Individuals move through or occupy one of several states at a time
- States are mutually exclusive and exhaustive (e.g., in care, out of care, dead)



# We aimed to address existing gaps in the literature by:

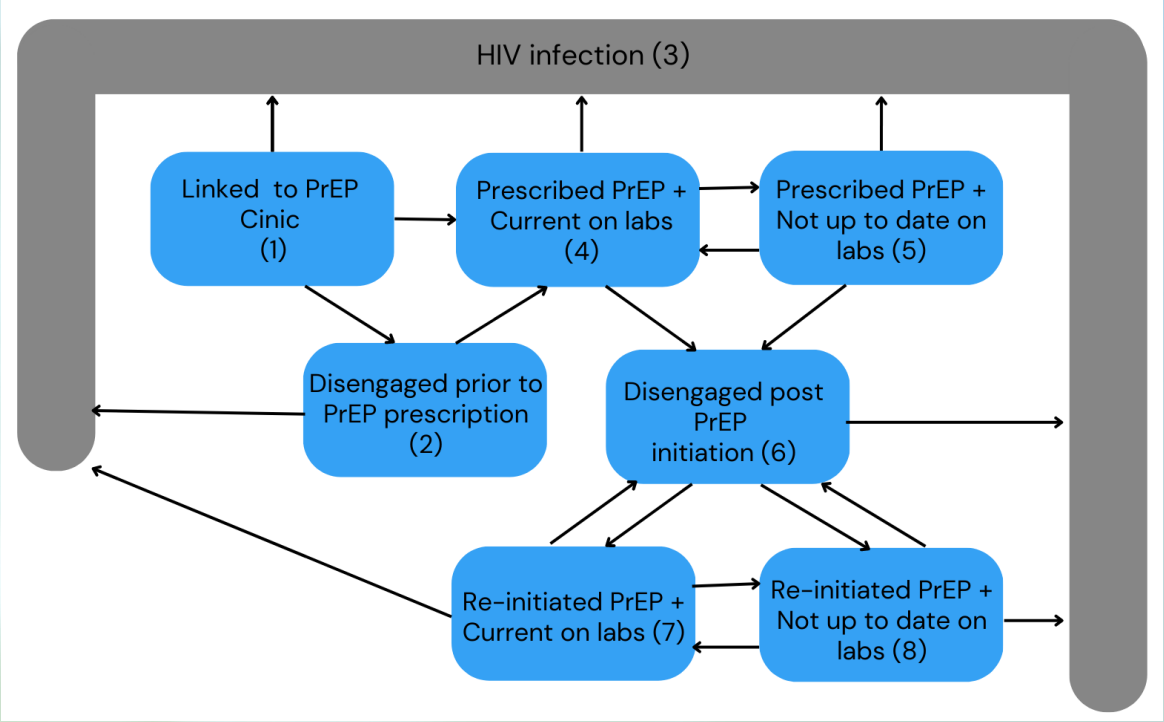
- Characterizing transitions between PrEP care states over time
- Quantifying the proportion of individuals in each care state at distinct timepoints following enrollment into the cohort

# We leveraged data from a cohort of PrEP initiators at an ID clinic in St. Louis, Missouri

- June 2014-November 2021
- Electronic Health Record data + REDCap Survey data
  - Clinic appointment dates
  - First PrEP prescription date
  - HIV/GC/CT/Syphilis lab dates
  - Age, gender, race/ethnicity, relationship status, education, employment, insurance

# Conceptual (Multi-state) Model

- ***Linked***- date of intake visit from RedCap
- ***Prescribed***- 1st PrEP prescription date in RedCap
- ***Lab status***- entered cohort "up to date"; After, considered "late" when a 6-month gap in GC/CT, syphilis, or HIV testing occurred. After, "up to date" 1st date all labs were current.
- ***Clinic engagement-*** "disengaged" from care on the 1st date individual had 6-month gap in clinic visits. "Re-engaged" at next PrEP clinic visit



# Statistical Methods

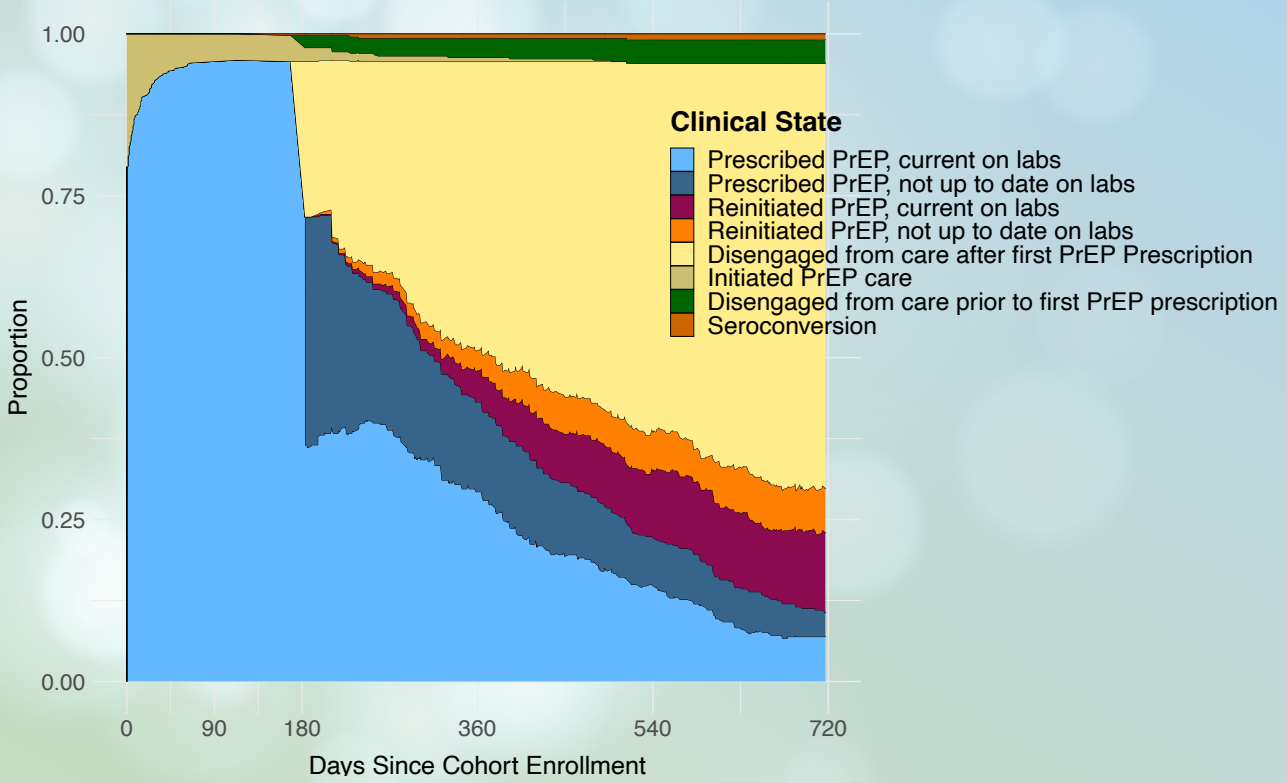
- Descriptive statistics (counts/proportions; medians/IQRs)
- Longitudinal methods of inquiry:
  - Nonparametric multistate analytic techniques (Aalen-Johansen estimator) to estimate proportion of individuals in each state at different time points following enrollment
  - Cumulative incidence of disengagement from care following PrEP initiation and re-engagement in care following a clinical lapse

# Study Population

| | N (%) |
|---|---|
| Male | 420 (90.3) |
| Age (Median/IQR) | 29 (25-36) |
| Race/Ethnicity | |
| White, non-Hispanic | 243 (52.9) |
| Black, non-Hispanic | 136 (29.6) |
| Single | 346 (74.4) |
| **College+** | **298 (68.5)** |
| Employed | 295 (67.7) |
| Insurance | |
| **Private insurance** | **319 (73.0)** |
| Uninsured | 57 (13.0) |

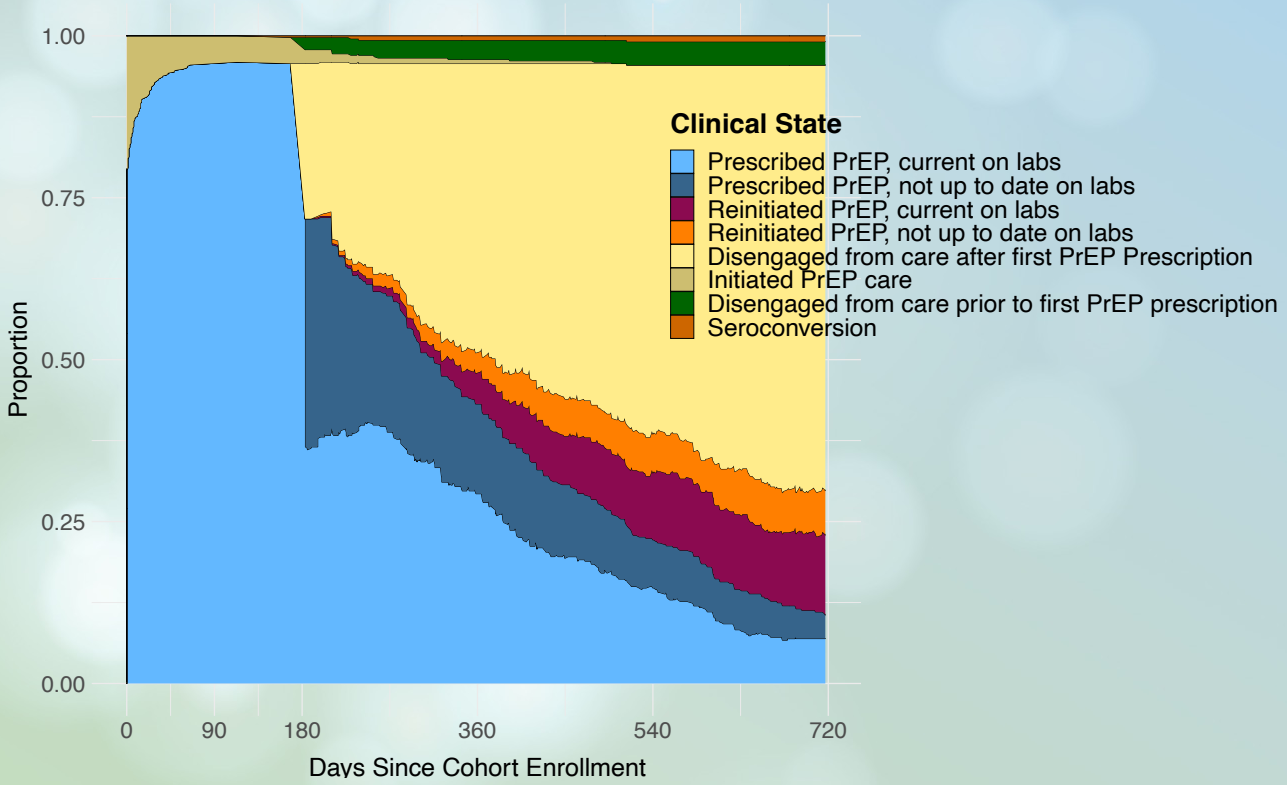
# Proportion of individuals in each care state following cohort enrollment

- ***Prescribed:***
  - 81.1% (95% CI: 78.2, 83.8) same day
  - 95.7% (95% CI: 94.4, 97.1) within 90 days
- ***Disengaged:***
  - 48.3% (95% CI: 45.1, 451.8) 1-year following enrollment
  - 70.0% (95% CI: 66.7, 73.5) 2-years following enrollment



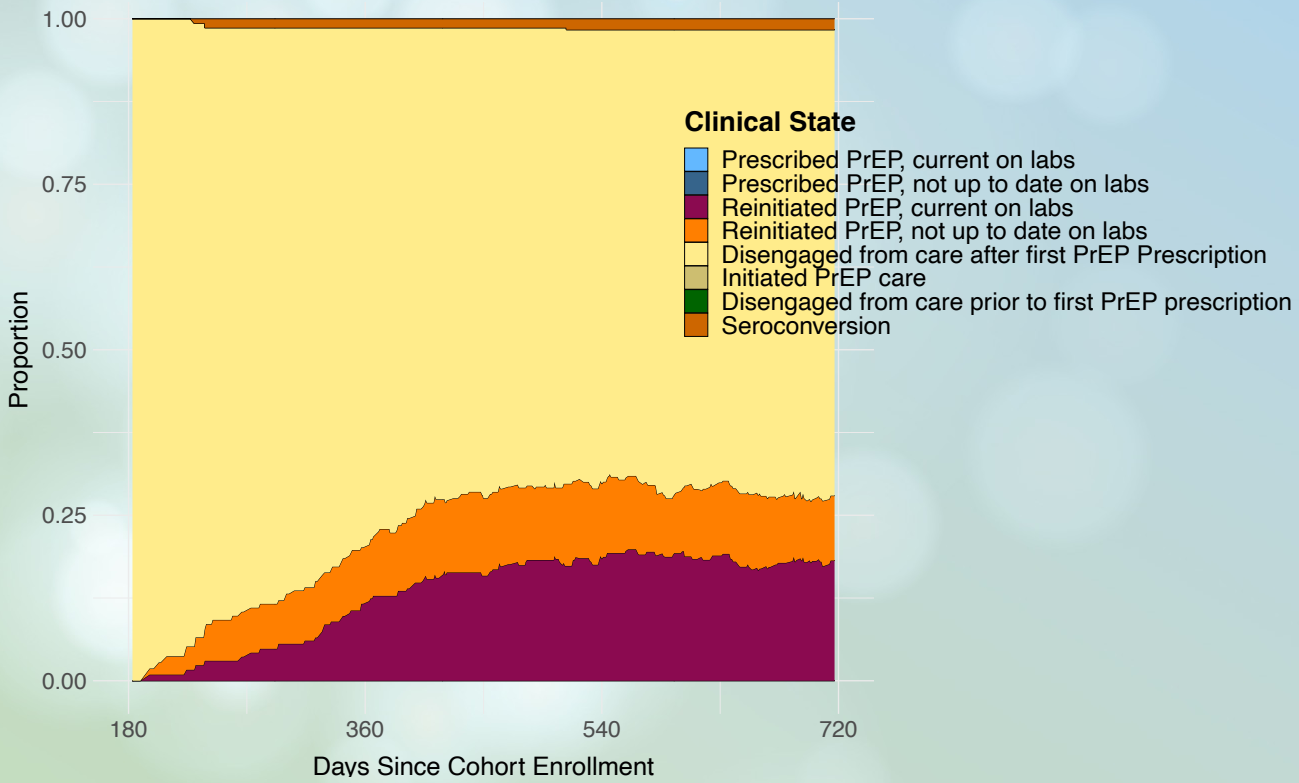
# Proportion of individuals in each care state following cohort enrollment

- ***Lab coverage:***
  - 16.8% (95% CI: 13.8, 19.3) in care but not up to date at 12-months; ~1/3 of those engaged or re-engaged in PrEP care
  - 11.0% (95% CI: 8.7, 13.2) in care but not up to date at 24-months; ~38% of those engaged or re-engaged in PrEP care
- ***Seroconversion:*** 5 (1.1%) across entire follow-up

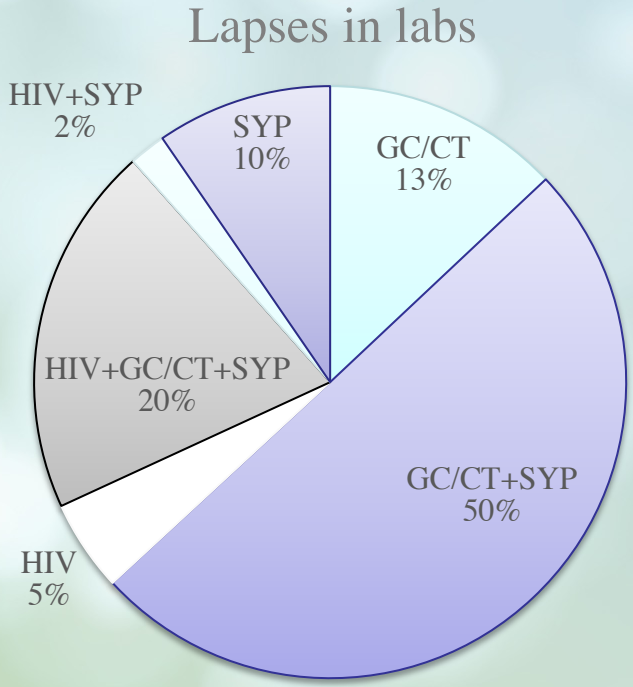


# Proportion of individuals in each care state following disengagement

- ***Re-engagement among those who disengaged:***
  - 30.8% (95% CI: 25.8, 35.2) by month 18
  - 26.7% (95% CI: 22.6, 30.5) by month 24



# Of the unique lab lapses that were independent of lapses in care, a majority were lapses in GC/CT and Syphilis testing



# Targeted public health planning is needed to improve PrEP engagement.

- Clinic lapses are common, even when allowing for 6 months between visits
- Lab lapses are common, and represent a missed opportunity for screening and treating STIs
- Among those who disengage from PrEP care, few re-engage
- Flexible care options (e.g., telehealth, at-home lab testing and medication delivery) and unique interventions that address each of these barriers are needed to optimize the benefits of PrEP
- Multi-state methods can capture these patterns and help target public health planning related to PrEP care

Questions? Get in touch:
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