



8th International Conference on **HIV TREATMENT AND PREVENTION ADHERENCE**

jointly sponsored by



Postgraduate Institute
for Medicine

Gaps in the Care Cascade: Characterizing PLWH Not Linked, Retained, or Suppressed

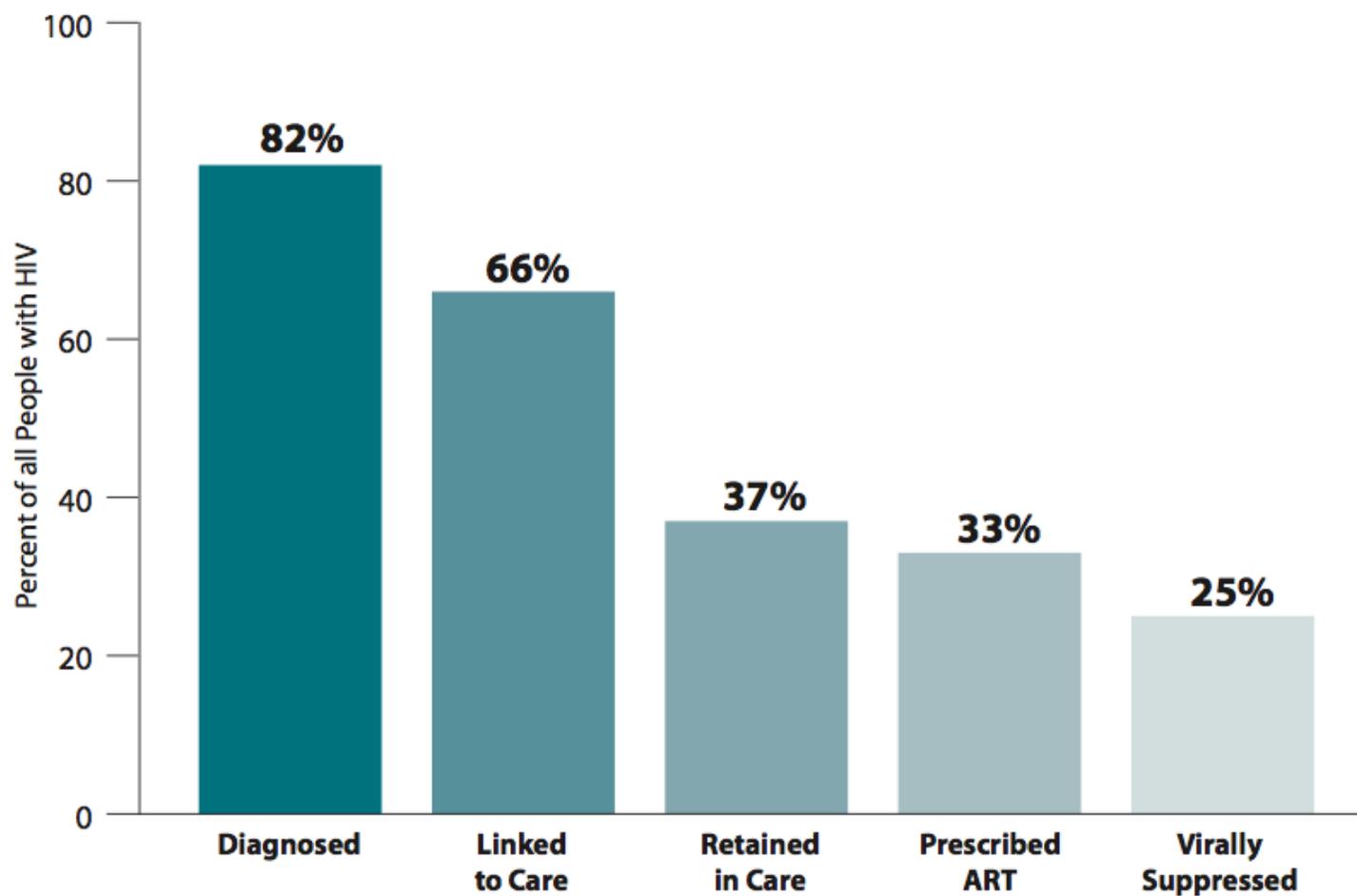
Sara Keller¹, Florence Momplaisir²,
Kathleen Brady³, Baligh Yehia¹

¹University of Pennsylvania, ²Temple University,

³Philadelphia Department of Public Health



Gaps in the Care Cascade



**Barriers to successfully
meeting each step may differ**

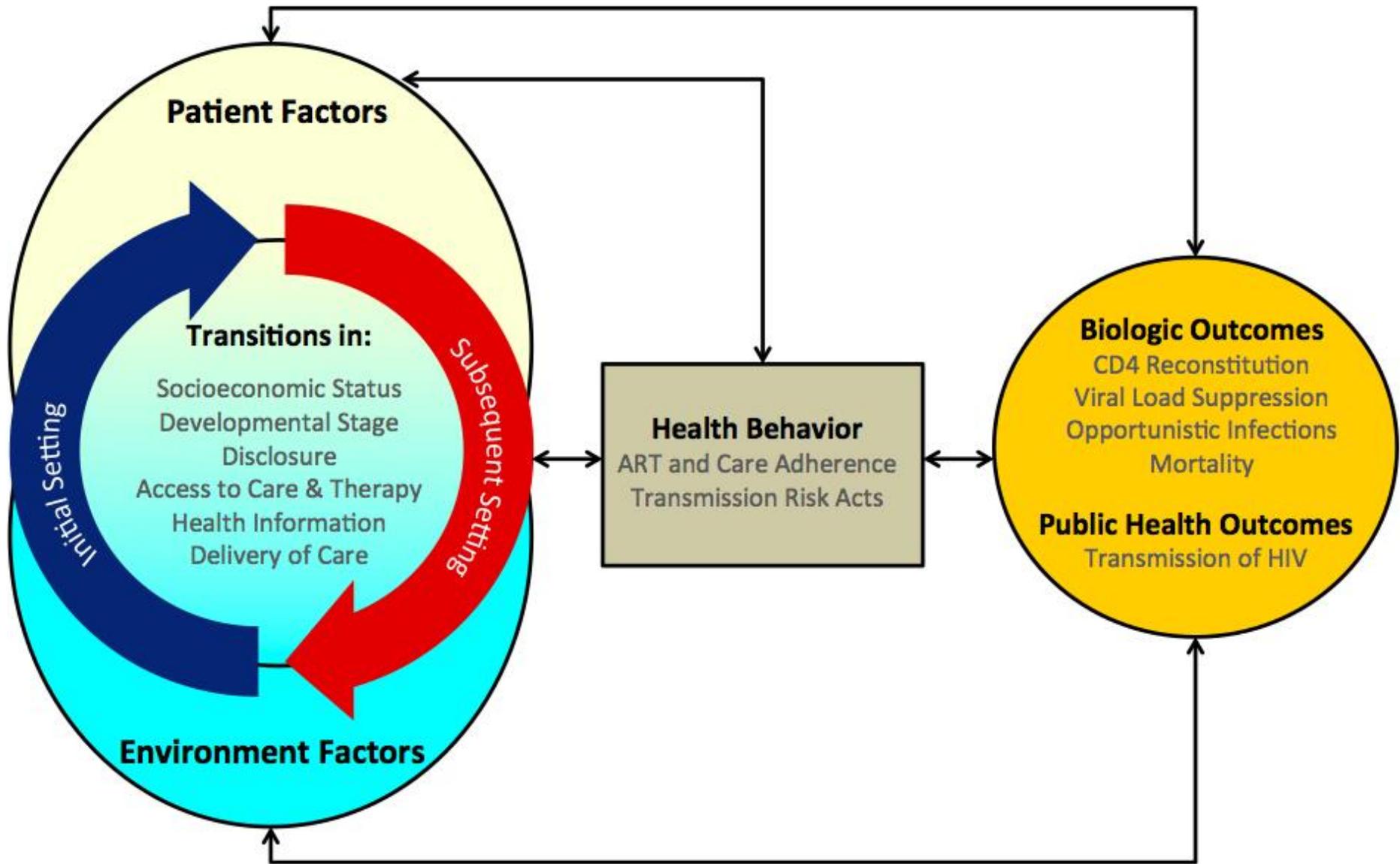
Case Examples

1: Negative Experiences in the Clinic

Patient with poor retention in care, but no issues adhering to ART at home.

2: Transportation & Lack of Understanding

Patient has poor retention in care related to transportation issues and poor adherence to ART due to lack of understanding of treatment benefits.



Objectives

Identify patient factors associated with:

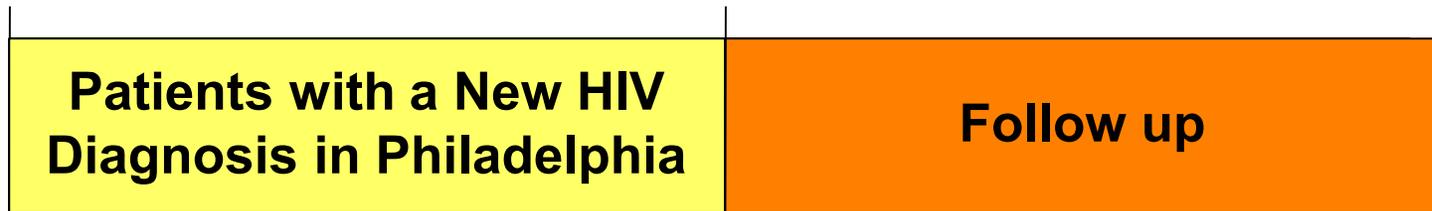
- 1) Linkage to care** (among those diagnosed with HIV)
- 2) Retention in care** (among those linked to care)
- 3) HIV Viral Suppression** (among those linked to care)

Retrospective Cohort Study

Jan 1, 2007

Dec 31, 2008

Dec 31, 2010



Retrospective Cohort Study

Jan 1, 2007

Dec 31, 2008

Dec 31, 2010

**Patients with a New HIV
Diagnosis in Philadelphia**

Follow up

**Enhanced HIV/AIDS
Reporting System
(eHARS)**

**Ryan White
CAREWare**

Retrospective Cohort Study

Jan 1, 2007

Dec 31, 2008

Dec 31, 2010

**Patients with a New HIV
Diagnosis in Philadelphia**

Follow up

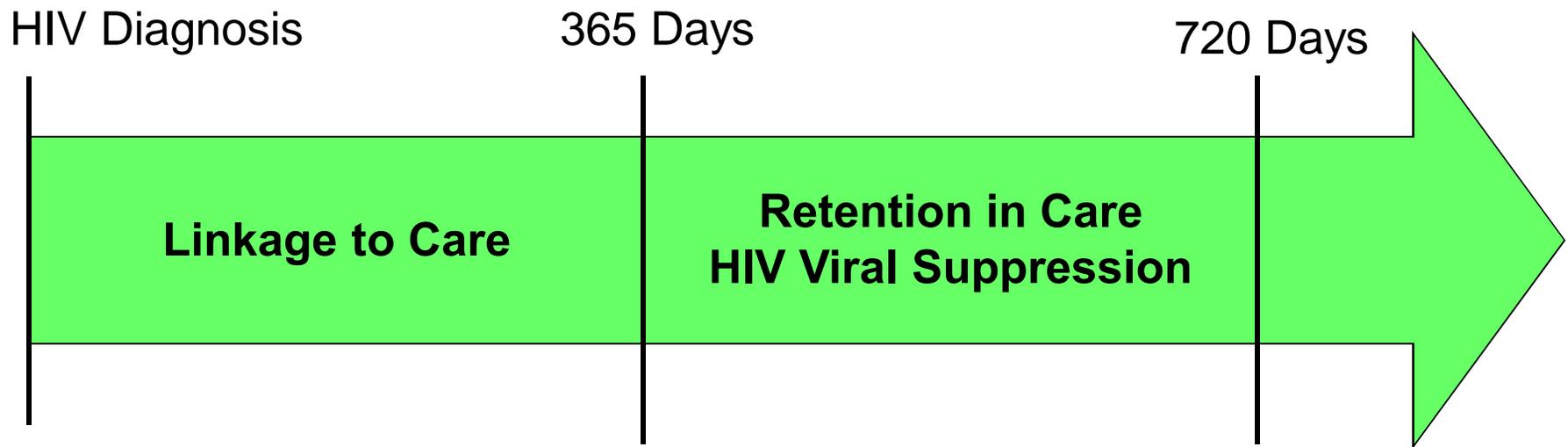
**Enhanced HIV/AIDS
Reporting System
(eHARS)**

Mandated reporting of all
new HIV diagnoses

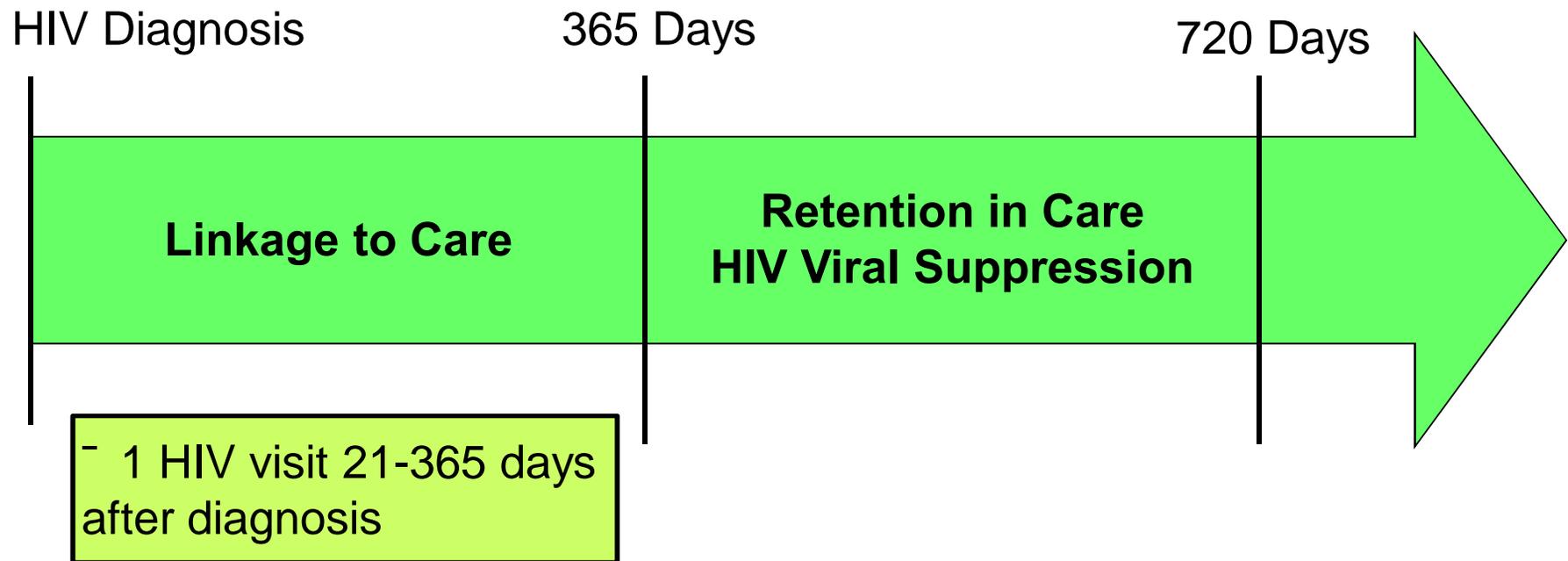
**Ryan White
CAREWare**

Patient-level data
~71% of all PLWH in care

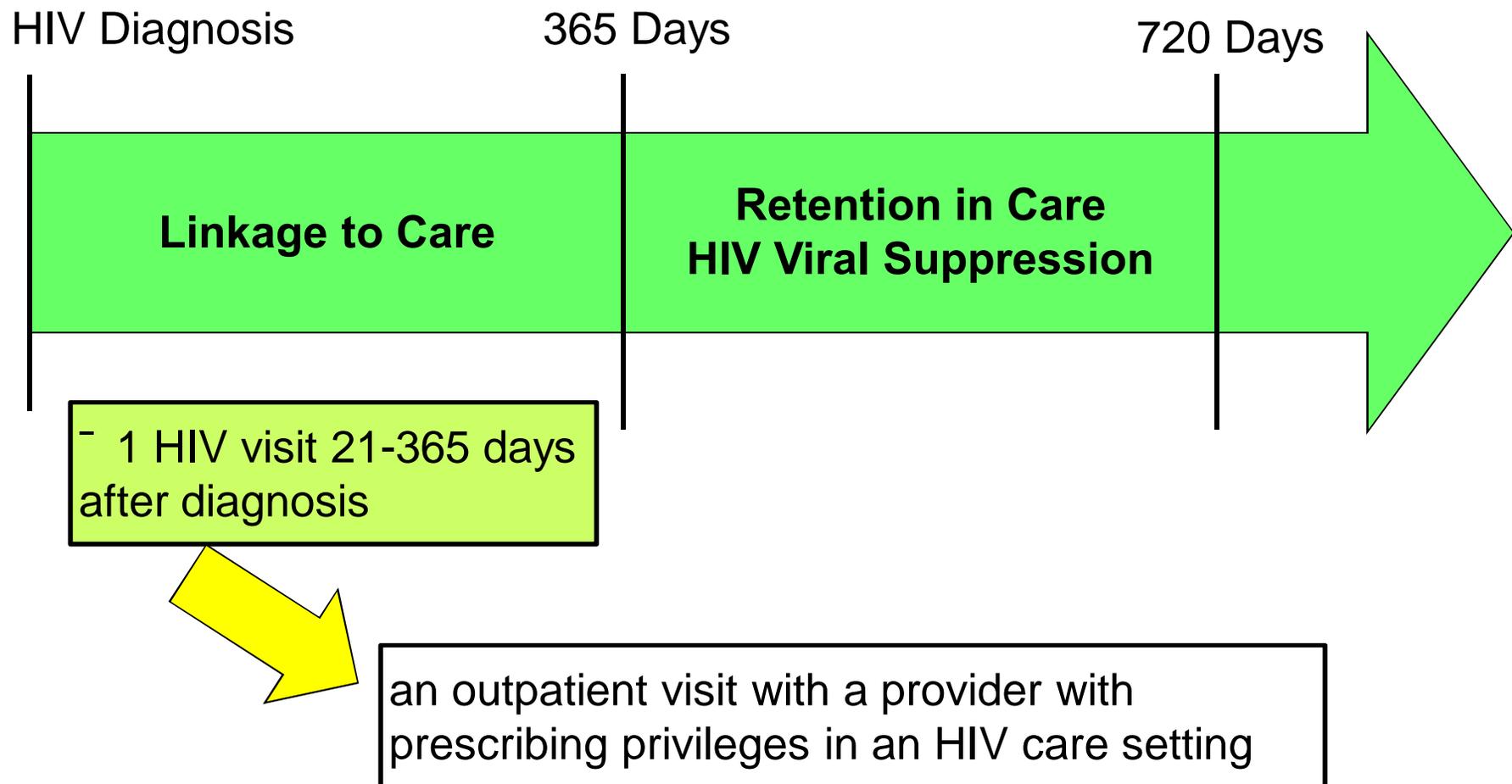
Primary Outcomes



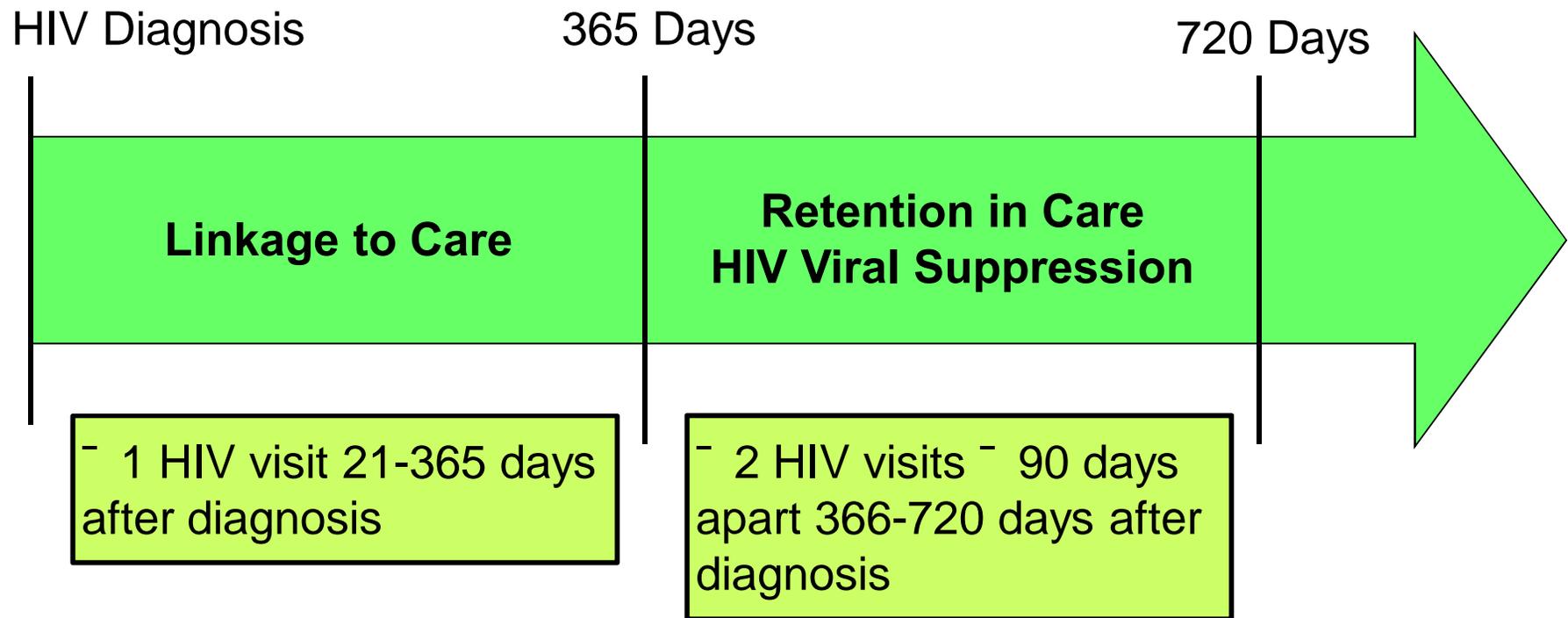
Primary Outcomes



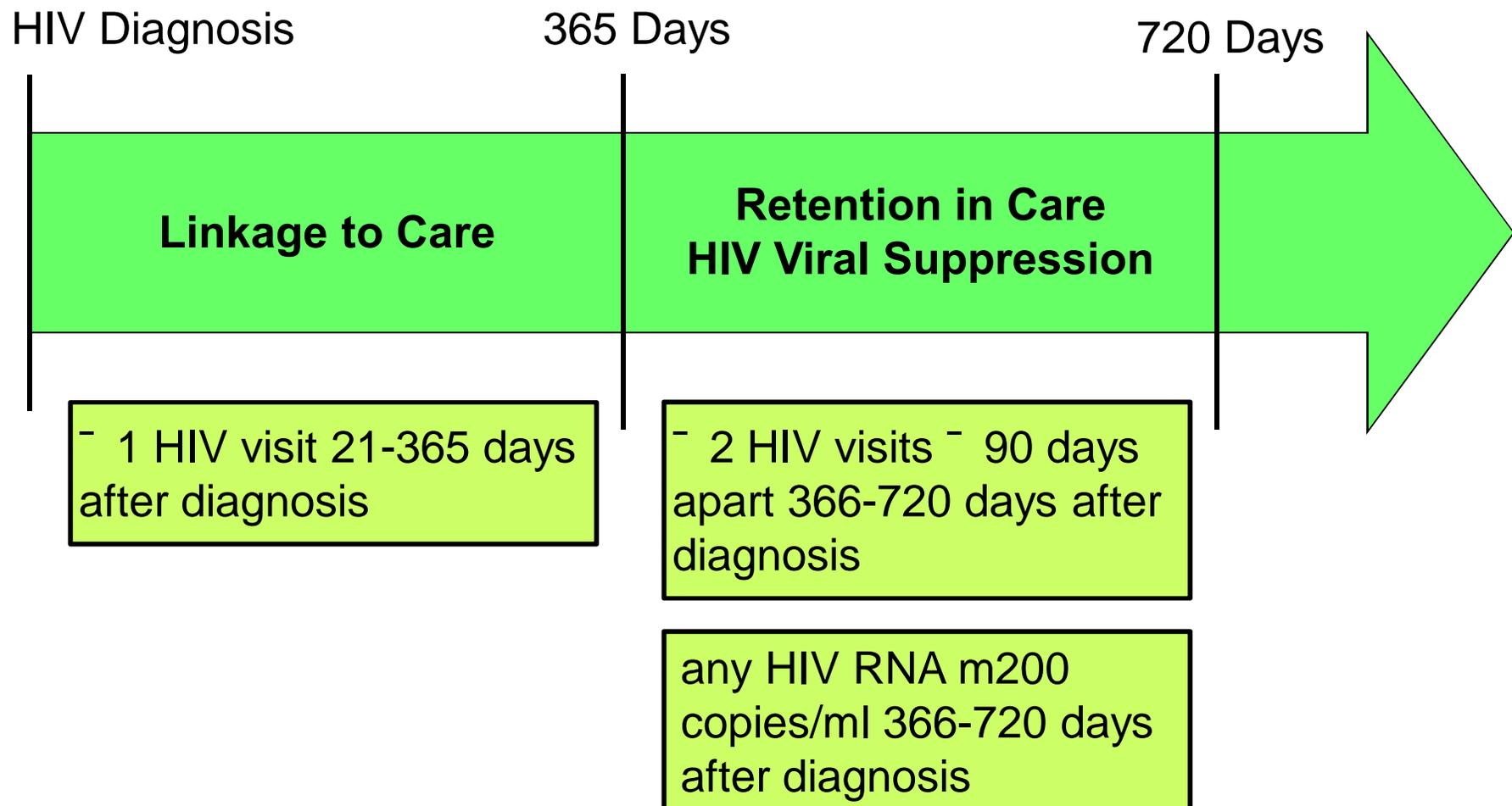
Primary Outcomes



Primary Outcomes

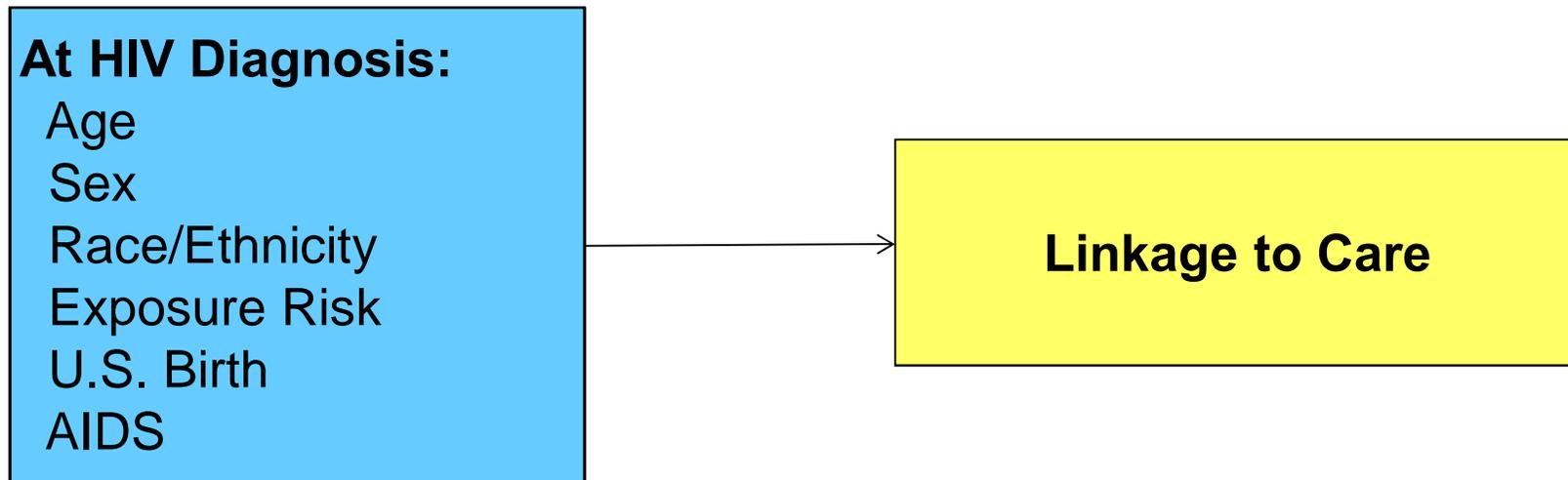


Primary Outcomes



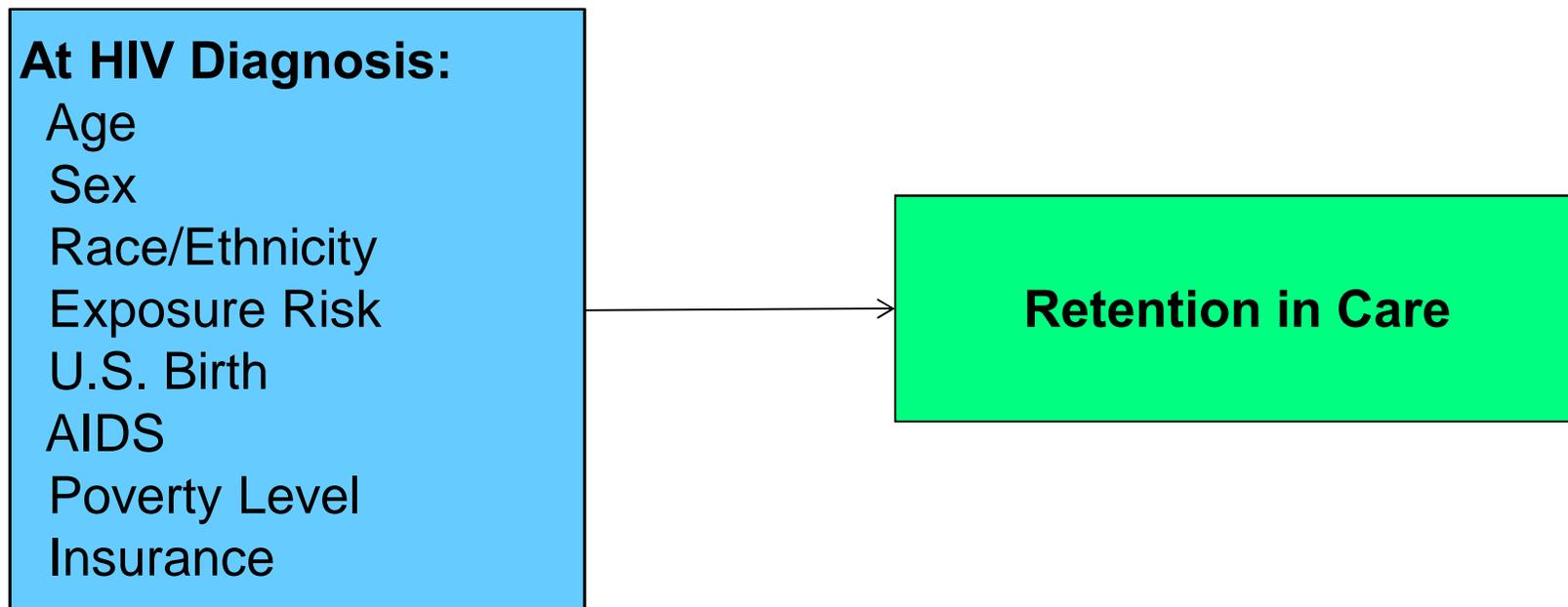
Data Analysis

Logistic Regression



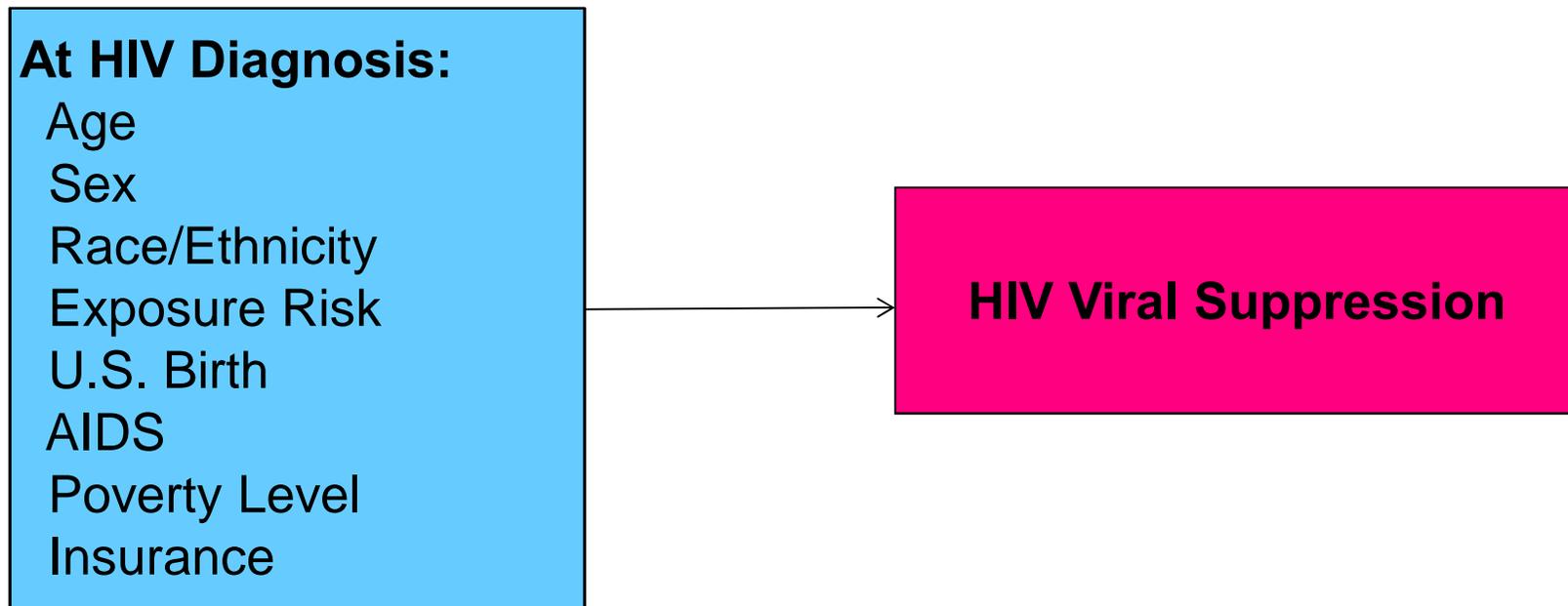
Data Analysis

Logistic Regression



Data Analysis

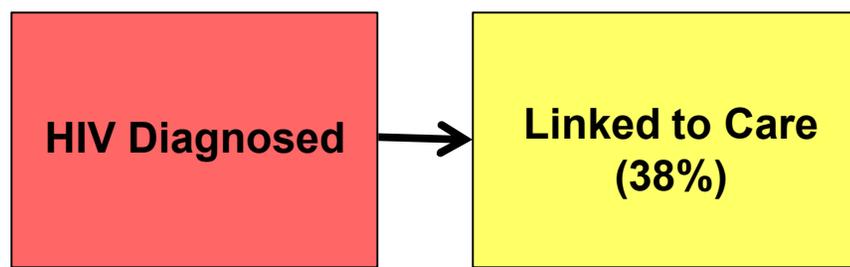
Logistic Regression



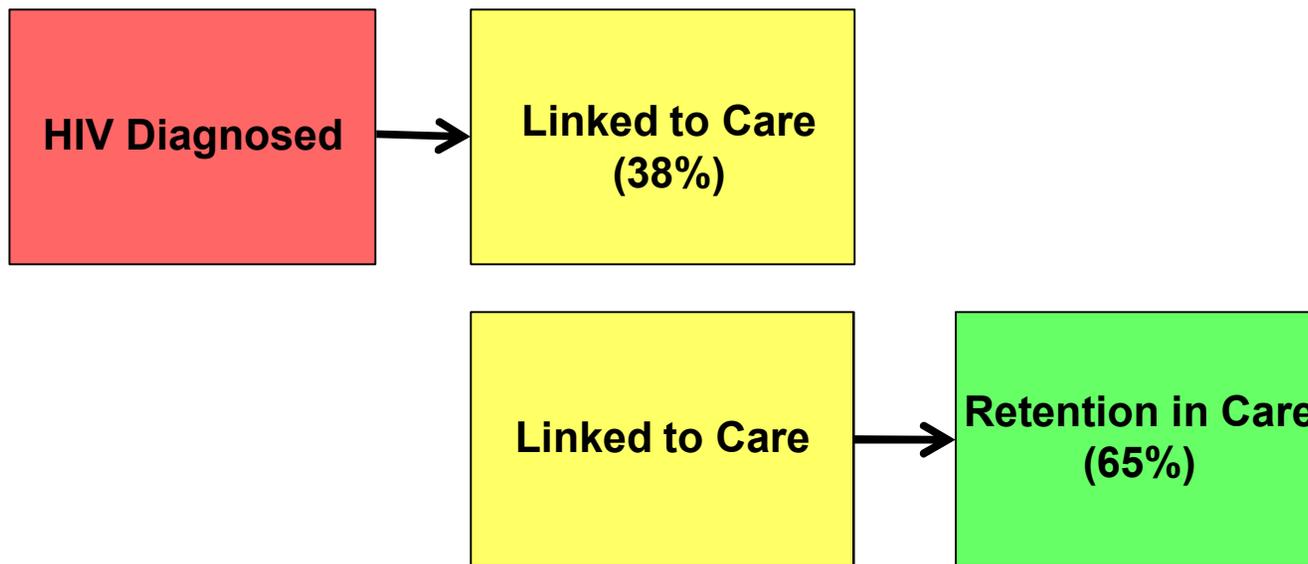
Characteristics of Dataset

	N=1,781
Mean Age	37
Female	30%
Race/Ethnicity	
White	17%
Black	63%
Exposure Risk	
Heterosexual	50%
Men who have Sex with Men (MSM)	31%
Injection Drug Use (IDU)	17%
AIDS at time of HIV diagnosis	35%
Under 133% of the federal poverty line*	83%

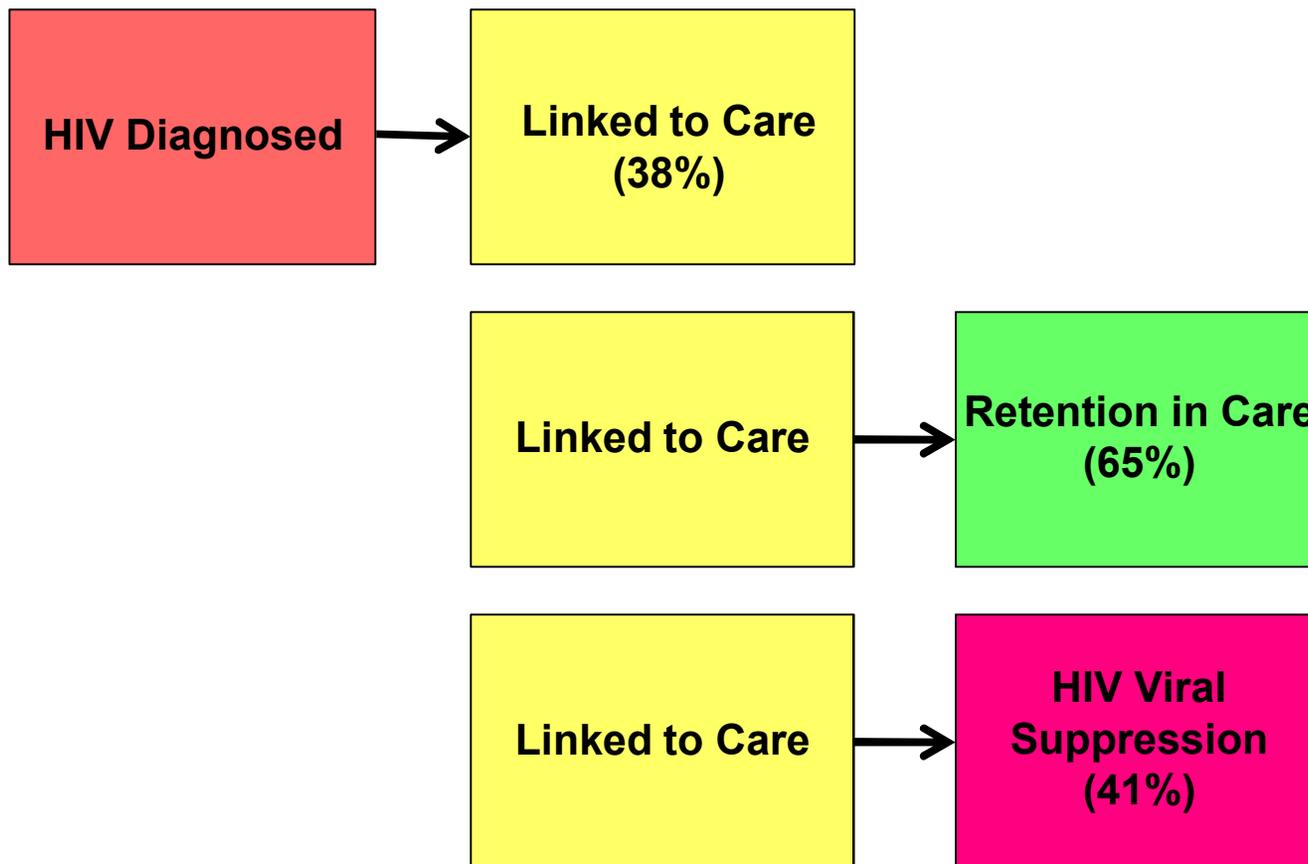
Care Cascade Outcomes



Care Cascade Outcomes



Care Cascade Outcomes



Predictors of Linkage (N=1,781)

Predictor	Adjusted OR (95% CI)
Age 30-39 (vs. 18-29)	0.74 (0.57-0.96)
Age 40-49 (vs. 18-29)	0.55 (0.42-0.71)
Age 50+ (vs. 18-29)	0.46 (0.32-0.61)
Female (vs. Male)	1.34 (1.11-1.68)
Black (vs. White)	1.28 (0.98-1.67)
Hispanic (vs. White)	1.00 (0.71-1.41)
MSM (vs. Heterosexual)	1.10 (0.82-1.34)
IDU (vs. Heterosexual)	0.54 (0.40-0.72)
AIDS at time of diagnosis (vs. non-AIDS)	1.47 (1.20-1.79)

Predictors of Retention (N=680)

Predictor	Adjusted OR (95% CI)
Age 30-39 (vs. 18-29)	0.88 (0.58-1.33)
Age 40-49 (vs. 18-29)	0.87 (0.56-1.35)
Age 50+ (vs. 18-29)	1.23 (0.69-2.17)
Female (vs. Male)	1.41 (0.93-2.13)
Black (vs. White)	0.88 (0.55-1.41)
Hispanic (vs. White)	1.30 (0.67-2.50)
MSM (vs. Heterosexual)	1.11 (0.71-1.75)
IDU (vs. Heterosexual)	0.75 (0.71-1.28)
AIDS at time of diagnosis (vs. non-AIDS)	1.23 (0.88-1.72)
≤133% of the Poverty Line (vs. >133%)	1.61 (0.97-2.63)

Predictors of Suppression (N=680)

Predictor	Adjusted OR (95% CI)
Age 30-39 (vs. 18-29)	1.45 (0.98-2.16)
Age 40-49 (vs. 18-29)	1.40 (0.96-2.04)
Age 50+ (vs. 18-29)	2.77 (1.68-4.56)
Female (vs. Male)	0.94 (0.68-1.29)
Black (vs. White)	0.80 (0.58-1.10)
Hispanic (vs. White)	1.17 (0.75-1.80)
MSM (vs. Heterosexual)	0.82 (0.60-1.13)
IDU (vs. Heterosexual)	0.72 (0.45-1.17)
AIDS at time of diagnosis (vs. non-AIDS)	2.22 (1.63-3.05)
≤133% of the Poverty Line (vs. >133%)	0.49 (0.31-0.77)

Summary

Less Likely to Link	Less Likely to Retain	Less Likely to Suppress
Age 30-39 (vs. 18-29)	Age 30-39 (vs. 18-29)	Age 30-39 (vs. 18-29)
Age 40-49 (vs. 18-29)	Age 40-49 (vs. 18-29)	Age 40-49 (vs. 18-29)
Age 50+ (vs. 18-29)	Age 50+ (vs. 18-29)	Age 50+ (vs. 18-29)
Female (vs. Male)	Female (vs. Male)	Female (vs. Male)
Black (vs. White)	Black (vs. White)	Black (vs. White)
Hispanic (vs. White)	Hispanic (vs. White)	Hispanic (vs. White)
MSM (vs. Heterosexual)	MSM (vs. Heterosexual)	MSM (vs. Heterosexual)
IDU (vs. Heterosexual)	IDU (vs. Heterosexual)	IDU (vs. Heterosexual)
AIDS at time of diagnosis (vs. non-AIDS)	AIDS at time of diagnosis (vs. non-AIDS)	AIDS at time of diagnosis (vs. non-AIDS)
	≤133% of the Poverty Line (vs. >133%)	≤133% of the Poverty Line (vs. >133%)

Summary

More Likely to Link	More Likely to Retain	More Likely to Suppress
Age 30-39 (vs. 18-29)	Age 30-39 (vs. 18-29)	Age 30-39 (vs. 18-29)
Age 40-49 (vs. 18-29)	Age 40-49 (vs. 18-29)	Age 40-49 (vs. 18-29)
Age 50+ (vs. 18-29)	Age 50+ (vs. 18-29)	Age 50+ (vs. 18-29)
Female (vs. Male)	Female (vs. Male)	Female (vs. Male)
Black (vs. White)	Black (vs. White)	Black (vs. White)
Hispanic (vs. White)	Hispanic (vs. White)	Hispanic (vs. White)
MSM (vs. Heterosexual)	MSM (vs. Heterosexual)	MSM (vs. Heterosexual)
IDU (vs. Heterosexual)	IDU (vs. Heterosexual)	IDU (vs. Heterosexual)
AIDS at time of diagnosis (vs. non-AIDS)	AIDS at time of diagnosis (vs. non-AIDS)	AIDS at time of diagnosis (vs. non-AIDS)
	≤133% of the Poverty Line (vs. >133%)	≤133% of the Poverty Line (vs. >133%)

Limitations

- “ Focus on one major U.S. urban area.
 - “ Underestimate of linkage to care, as PLWH may link to care outside Ryan White Program-funded clinics.
 - “ Use of a strict definition of linkage to care.
 - . Previously shown to have the highest AUC for predicting retention in care in Philadelphia
 - . Linkage rates vary using other criteria: 17-81%
 - “ Did not account for use of ART in the viral suppression analysis.
 - “ Did not evaluate other important barriers to care
-

Conclusions

- “ Linkage rates differed from national estimates
 - . Communities should identify the largest step-offs in their local HIV care cascade.

- “ Factors associated with each step differed.
 - . Screening tools and interventions targeting each step should be designed with these differences in mind.

- “ Future studies should examine risk factors beyond the basic patient factors studied here.

Thank You!

City of Philadelphia Department of Public Health

Funders:

Sara Keller . AHRQ

Kathleen Brady . HRSA,CDC

Baligh Yehia . NIH/NIMH K23-MH097647