Final Findings from the SPNS Black MSM Initiative Multisite Evaluation

The Implementation of Evidence-Informed Behavioral Health Models to Improve HIV Health Outcomes for Black Men who have Sex with Men (MSM) Initiative

David Rein, Ben Reist, Savy Shah,
Andrew Chiao, Jared Sawyer

2022

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

Disclosures

All presenters have no relevant financial interests to disclose.

Disclosure will be made when a product is discussed for an unapproved use.

This continuing education activity is managed and accredited by AffinityCE, in collaboration with the Health Resources and Services Administration (HRSA), LRG, and AffinityCE. AffinityCE, LRG and HRSA staff, as well as planners and reviewers, have no relevant financial interests to disclose. AffinityCE adheres to the ACCME's Standards for Integrity and Independence in Accredited Continuing Education. Any individuals in a position to control the content of a CME activity, including faculty, planners, reviewers, or others, are required to disclose all relevant financial relationships with ineligible entities (commercial interests). All relevant conflicts of interest have been mitigated prior to the commencement of the activity.

There was no commercial support for this activity.

Learning Objectives

At the conclusion of this activity, participants will be able to:

1. Discuss the evaluation methods and analytic approach of the multisite evaluation.
2. Describe the key findings and outcomes of the Black MSM Initiative, including challenges faced while implementing behavioral health interventions to improve HIV health outcomes during COVID-19.
3. Provide lessons learned during the evaluation that may help future implementations of similar models of care for improving HIV health outcomes.

Agenda

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

Today we'll discuss:

- Initiative overview
- Data collection and missing data
- Design and analysis
- Results
- Limitations
- Takeaways

Initiative Overview

Initiative Funding

- The Initiative was funded by the US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA) under grant number U90HA31812 as a part of HRSA's Special Projects of National Significance (SPNS)
- No percentage of this project was financed by non-governmental sources
- The content and conclusions in this presentation should not be construed as the official position or policy of HHS, HRSA, or the US government

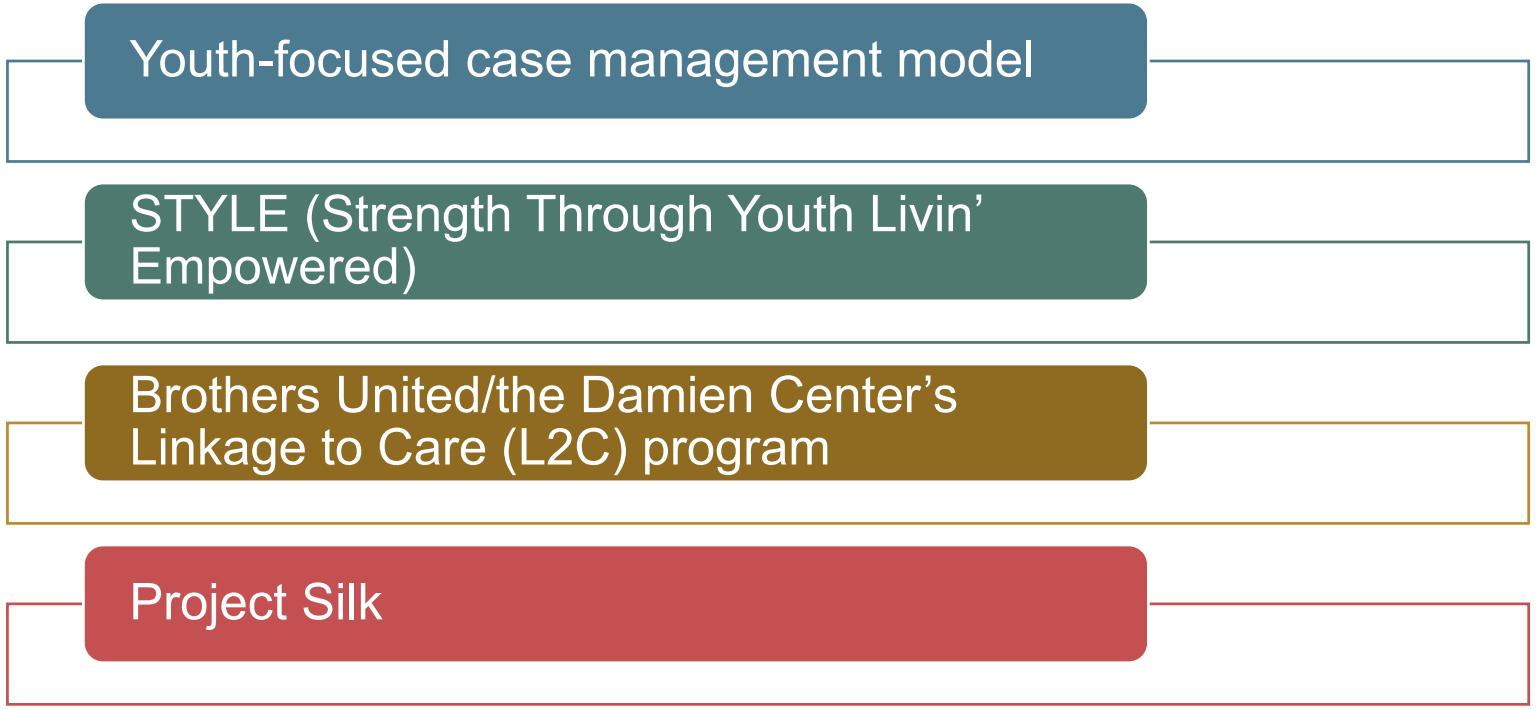
Initiative Rationale

- Black MSM with HIV experience greater housing instability, and needs for nutritional support, substance use treatment, and mental health services than other men with HIV.1
- Stigma, discrimination, and medical mistrust influence Black MSM's ability to comfortably and safely access HIV medical care and increase risks for depression and other behavioral health conditions.2-4
- Behavioral health needs can impact retention in HIV medical care5

1. DeGroote NP, Korhonen LC, Shouse RL, Valleroy LA, Bradley H. Unmet needs for ancillary services among men who have sex with men and who are receiving HIV medical care—United States
2.Malebranche DJ, Peterson JL, Fullilove RE, Stackhouse RW. Race and sexual identity: perceptions about medical culture and healthcare among Black men who have sex with men. 3. Jones KT, Wilton L, Millett G, Johnson WD. Formulating the stress and severity model of minority social stress for black men who have sex with men. I
4. Yang C, Krishnan N, Painter JE, Latkin C. The Association Between Disclosure of Same Sex Behavior to Healthcare Providers and PrEP Awareness Among BMSM in Baltimore.
5. Rooks-Peck CR, Adegbite AH, Wichser ME, et al. Mental health and retention in HIV care: A systematic review and meta-analysis.

Initiative Goal

- Promote engagement and retention of Black MSM in HIV medical care and support services, including addressing behavioral health needs.
- HRSA funded eight (8) demonstration sites (1 site was unable to contribute data to the MSE) to adapt and implement one of four evidence-informed models of care (MOCs):



Population of Focus

- **Black men who have sex with men who were:**

1. **HIV positive, and**
2. **Were either out of care or at risk of falling out of care.**

General Activities

- **All sites implemented**
  - Enhanced case management and/or peer navigation
  - Availability of BH and SS services
- **Some sites implemented**
  - Additional text message or app-based support
  - Other enhanced care coordination
- Five sites used a youth-focused model approach adapted for all ages which front-loaded intensive care management services into the first 2-6 months of engagement.
- Remaining sites used a variety of services delivered throughout the year with a focus on social marketing and engagement, community building, and/or recreation-based peer support.

Evaluation Overview

- As part of the Initiative, NORC worked with 8 demonstration sites and:
  -  Provided guidance on Initiative design
  -  Developed data collection materials
  -  Evaluated impact of the Initiative
- NORC reviewed, cleaned, and analyzed data collected from the demonstration sites

Evaluation Rationale

- When selecting the appropriate outcomes for the Initiative, we selected outcomes that followed the logic of existing measures and looked to meet one of two criteria:
  - Preexisting Ryan White HIV/AIDS Program (RWHAP) outcomes which matched the purposes and goals of the individual demonstration sites
  - New behavioral health or support services HAP measure

Selected Outcomes

NATIONAL RYAN WHITE CONFERENCE ON HIV CARE & TREATMENT

HIV Medical Care

1. Awareness of HIV medical care services
2. Linkage to HIV medical care
3. Retention in HIV medical care
4. Suppressed viral load
5. Receipt of antiretroviral therapy (ART) prescription

Behavioral Health

6. Screening for behavioral healthcare needs
7. Screening positive for needing behavioral healthcare
8. Referred to behavioral healthcare
9. Receipt of behavioral healthcare

Support Services

10. Screened for support services needs
11. Screened positive for needing support services
12. Referred to support services
13. Received support services

Data Collection and Missing Data

Data Collection

Data Collection – Medical Records

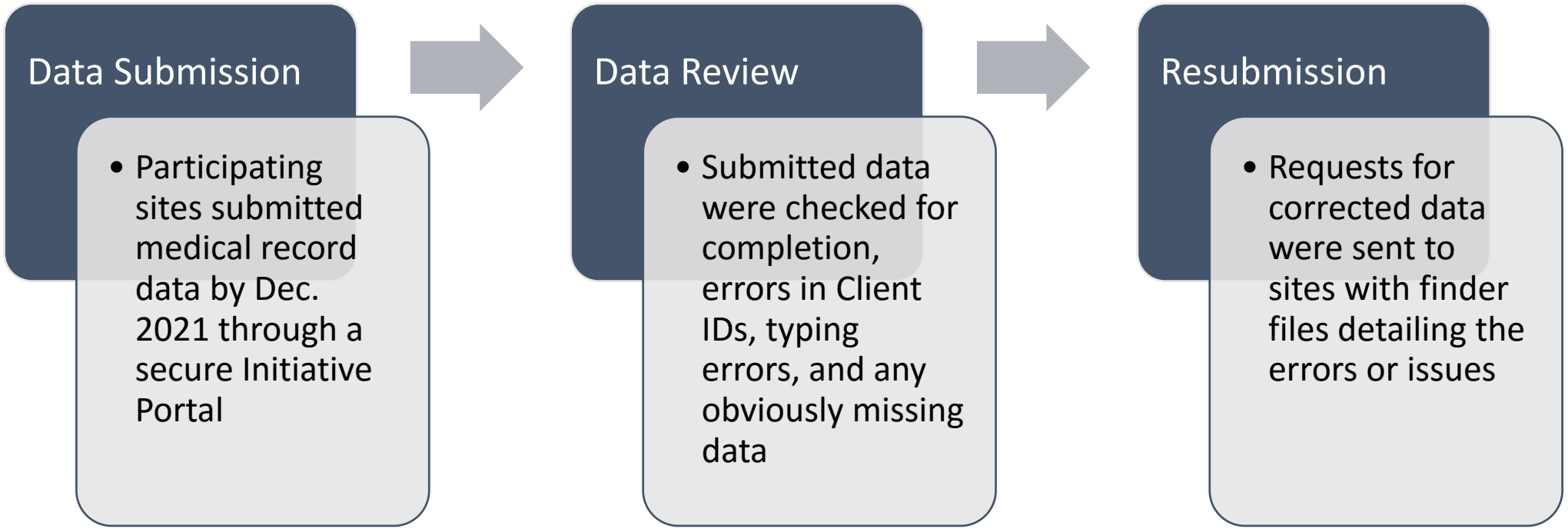
Demonstration sites collected data by either:

- Pulling the appropriate medical records from their electronic health record system and entering them manually (if the client utilized the site's health system)

OR

- Requesting the appropriate medical records from client's healthcare providers and entering them manually (when the client accessed services outside the site's health system)

Data Collection Process

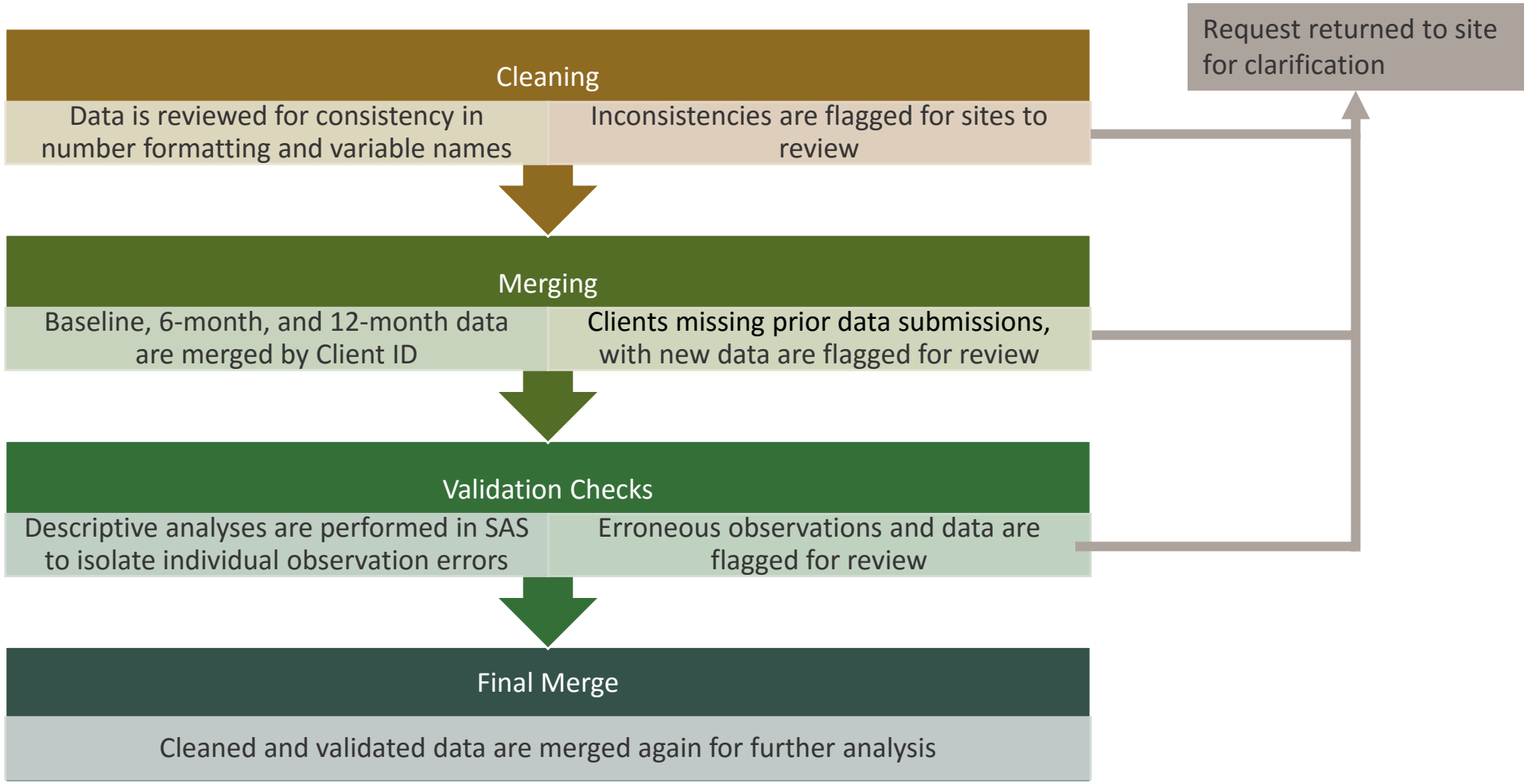


Data Collection – Patient Survey

In addition to medical records, demonstration sites also administered surveys to all clients at first entry into the Initiative, at 6 months, and at 12 months. Survey data were collected through Qualtrics. The survey allowed for data collection on items such as:

- Client demographic data
- Client awareness of care
- Client responses to the Patient Health Questionnaire (PHQ-8) in order to evaluate potential behavioral health care need

Preparing Analytical Dataset



Missing Data

Missing Data Were Problematic

- Considerable missing data
  - An average of 20.7% missing across all variables
  - Range: 2.4% (baseline HIV medical care awareness) – 57.3% (receipt of behavioral health services in the past 6 months at 12 months)
- Understandable given
  - Initiative design and participants
  - COVID-19
- However, not accounting for missing data could bias our estimates and/or severely limit our analyses

Some Ways of Dealing with Missing Data

Complete Case Analysis

- Standard way of handling missing data in statistical software
- Can significantly reduce the number of cases available for analysis
- Assumes that missingness is independent from the underlying values (Missing Completely at Random)

Imputation

- Replaces missing items with plausible values
- Allows for analysis using all the data in the dataset
- Assumes that missingness is dependent on the observed values of the underlying variable (Missing at Random)

Missing Data Patterns

- Different imputation approaches can be used for different patterns
- The data have a **general missingness pattern**
- General pattern can cause a large amount of data to be dropped in a complete case analysis
- Imputation will create plausible values for missing data

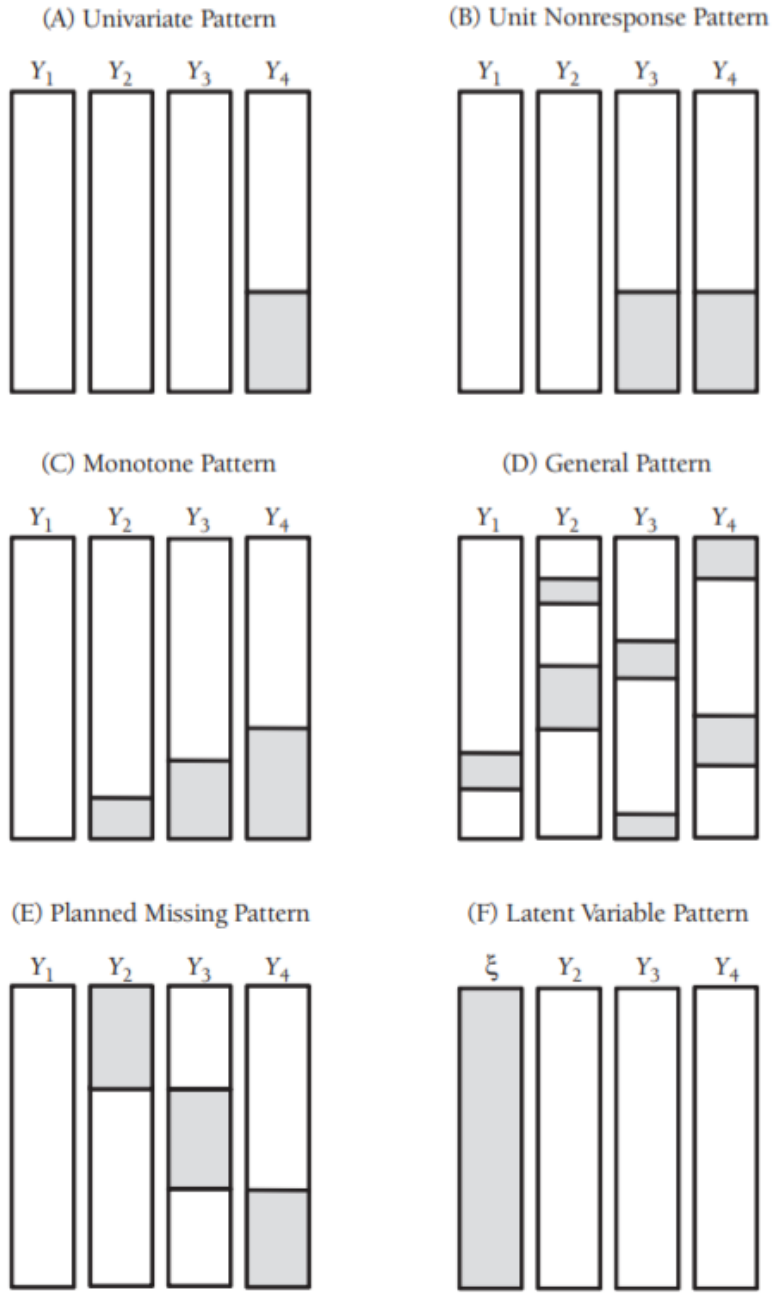


Figure from:
Mahanta, M. (2018) The Conundrum behind Missing Data-I
https://medium.com/@manasmahanta10/the-conundrum-behind-missing-data-i-14569ea83a66. Accessed 11/17/2021

Solutions Used for Final Analytical File

- Multiple Imputation by Chained Equations (MICE)
- MICE was used to impute all 28 measures
  - At three time points: Baseline, 6 months, 12 months
  - Some additional variables imputed
    - Examples: Age, PHQ-8 score
- Models used (different model for each variable)
  - Continuous: Predictive Mean Matching
  - Binary: Logistic
  - Nominal: Multinomial Logistic
  - Ordinal: Cumulative Logistic
- 100 imputations were performed
  - Larger number of imputations need to be used since there is a significant amount of missingness

Design and Analysis

Objectives

Compared to baseline, the goal of the evaluation was to determine if clients experiences changes in post-Initiative attainment of:

- Awareness of HIV medical care, behavioral health care, and support services
- Screening, referral, linkage, receipt, and engagement in HIV medical care, behavioral health care, and support services
- Retention in HIV medical care, ART prescription, and suppressed viral load

Design and Models

Design

Outcomes were assessed pre-post, to estimate the change in between:

- Baseline,
- 6 months, and
- 12 months

Models

Analysis was driven by generalized logistic mixed-effects models which compared each client-level study outcome:

- At each collection time,
- As a function of time,
- Controlling for client-level random effects, site, baseline age, and baseline health status

Additional Analyses

Impact of Behavioral Health or Support Services

- We compared linkage, retention, and viral load outcomes post-Initiative to assess differences
  - By receipt of behavioral health or support services during the 12-month period of Initiative,
  - Controlled for baseline attainment of those measures

Impact of HIV medical care visit by HRSA definition

- We also compared linkage, retention, and viral load outcomes post-Initiative to assess differences
  - Between those who had **at least** one routine HIV medical care visit (HRSA definition) and
  - Those with **any or no** visits (liberal definition)

Results

Sample by the numbers

7 Sites (1 site unable to contribute data)

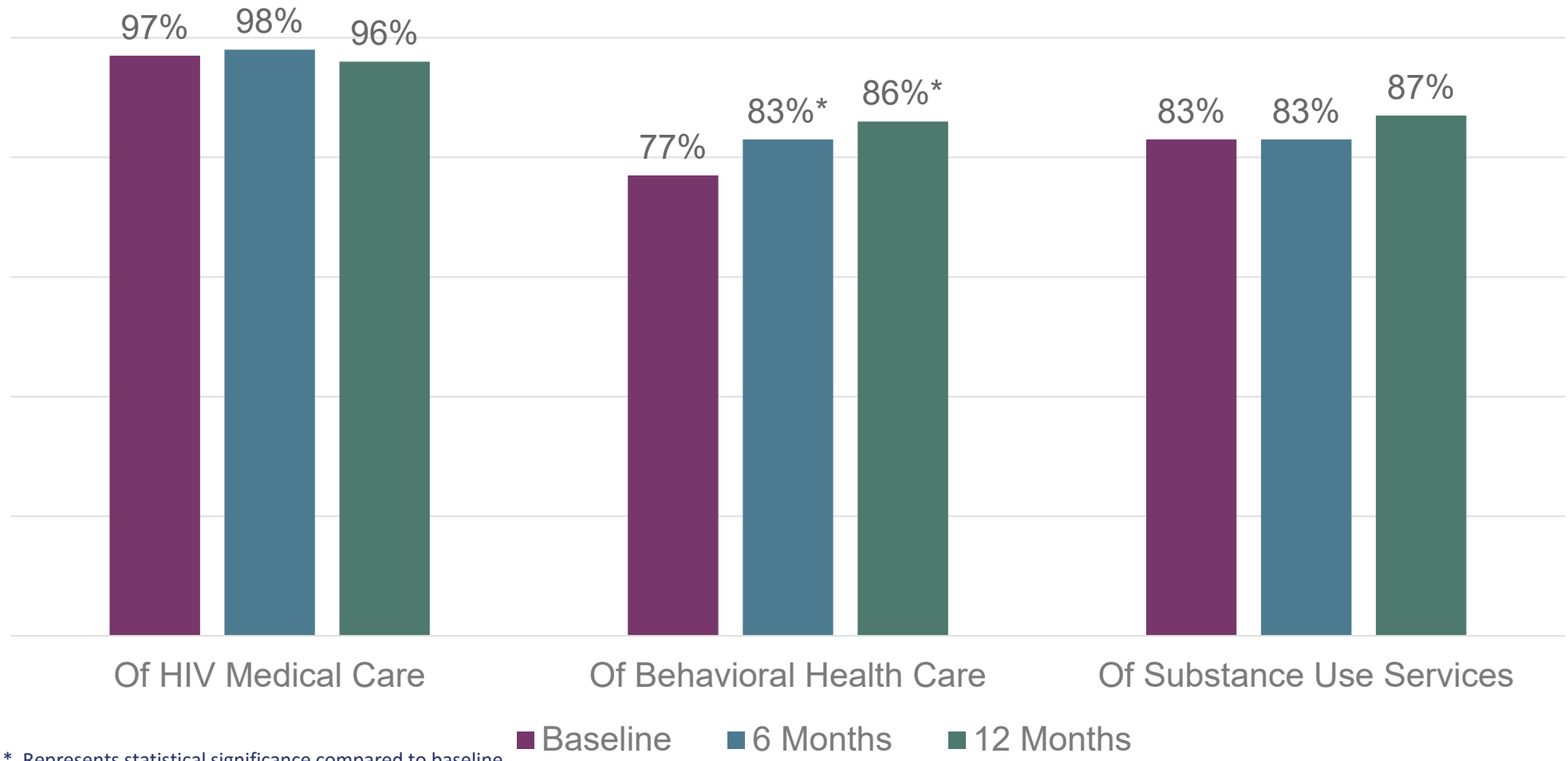
758 Clients

66-180 Range per site

210 Clients receiving at least one BH service in 12 months

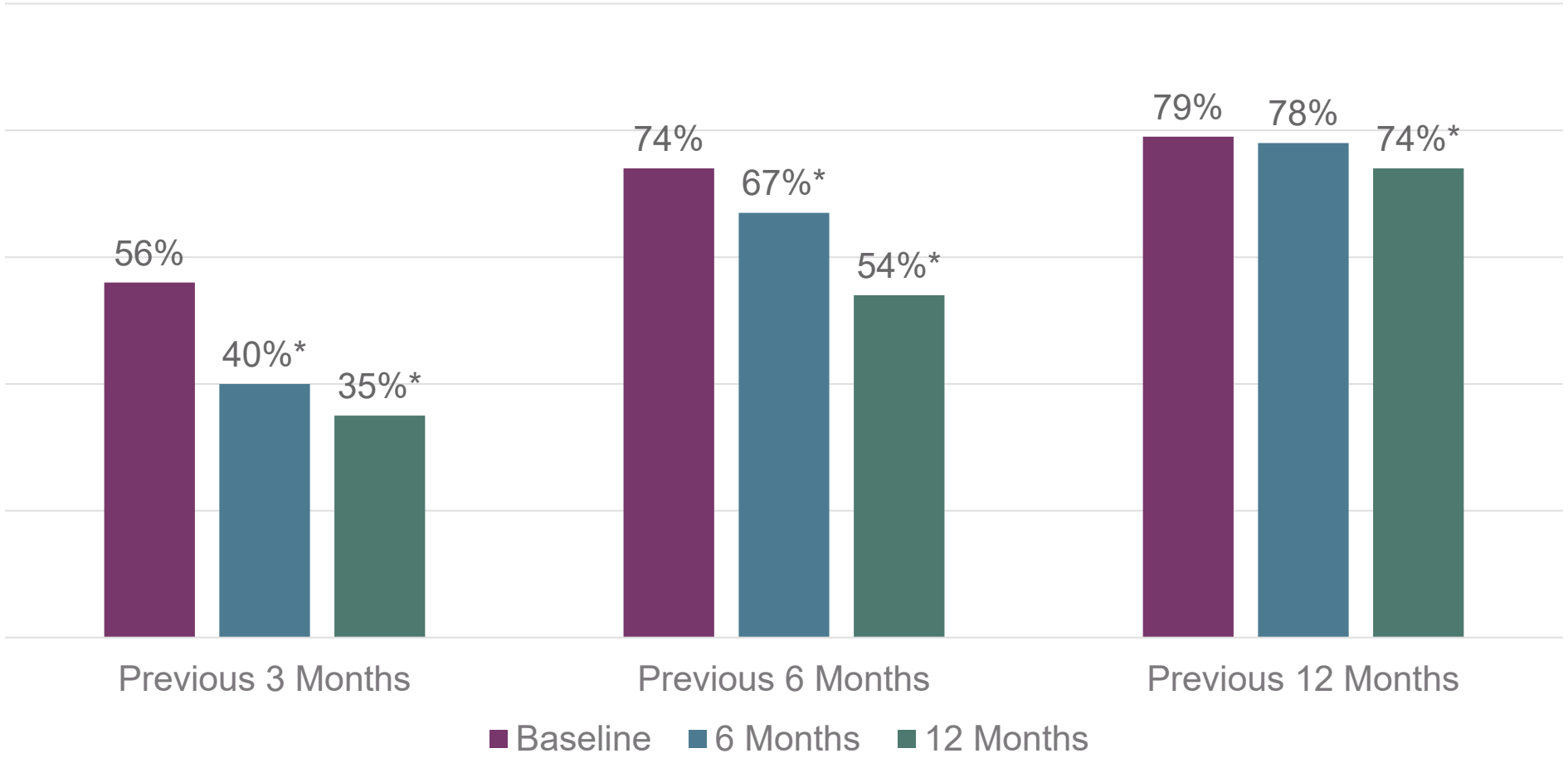
303 Clients receiving at least one SS service in 12 months

Awareness of Care Services



* Represents statistical significance compared to baseline

Linkage to HIV Medical Care

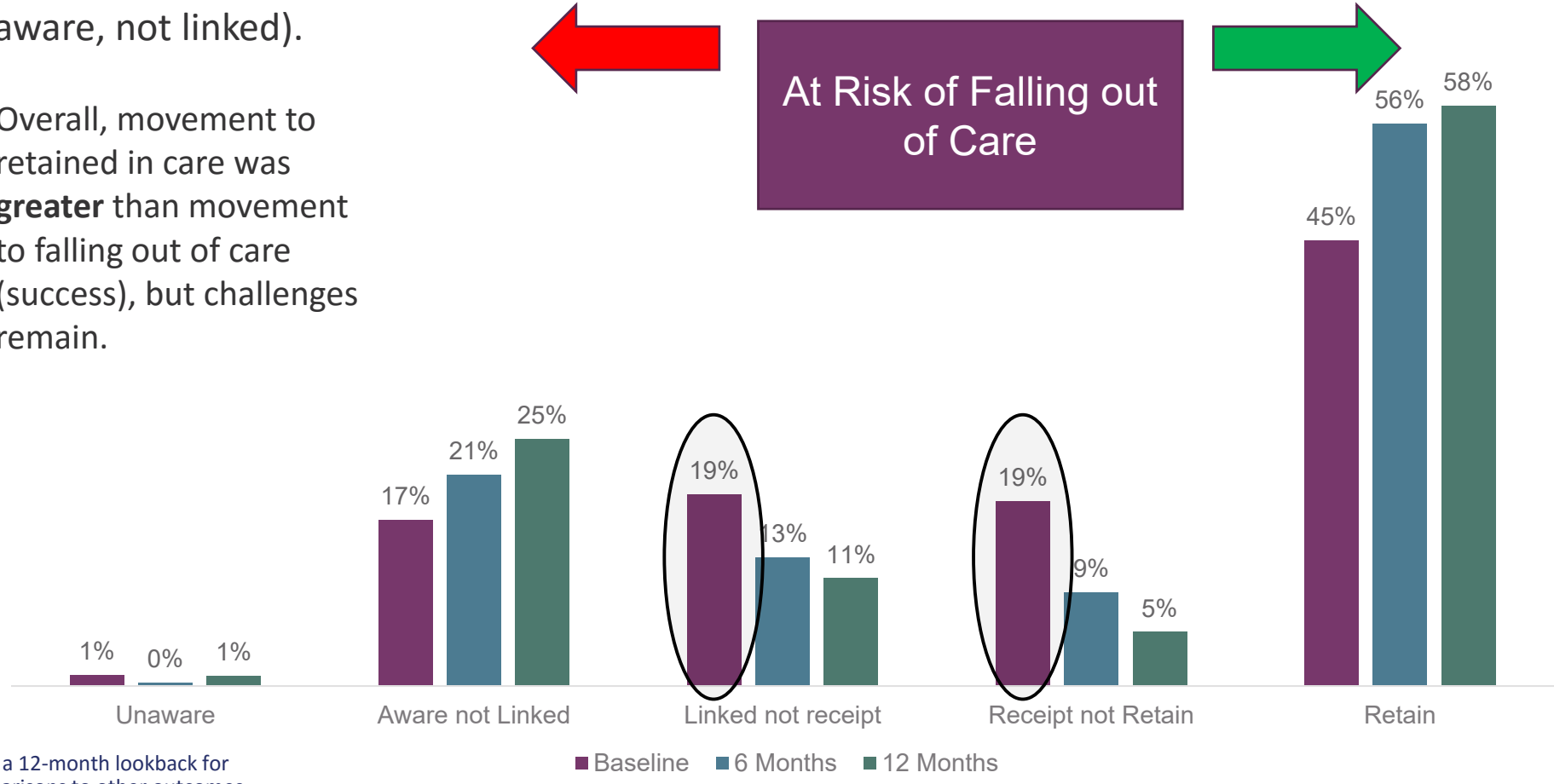


* Represents statistical significance compared to baseline

Retention in HIV Medical Care

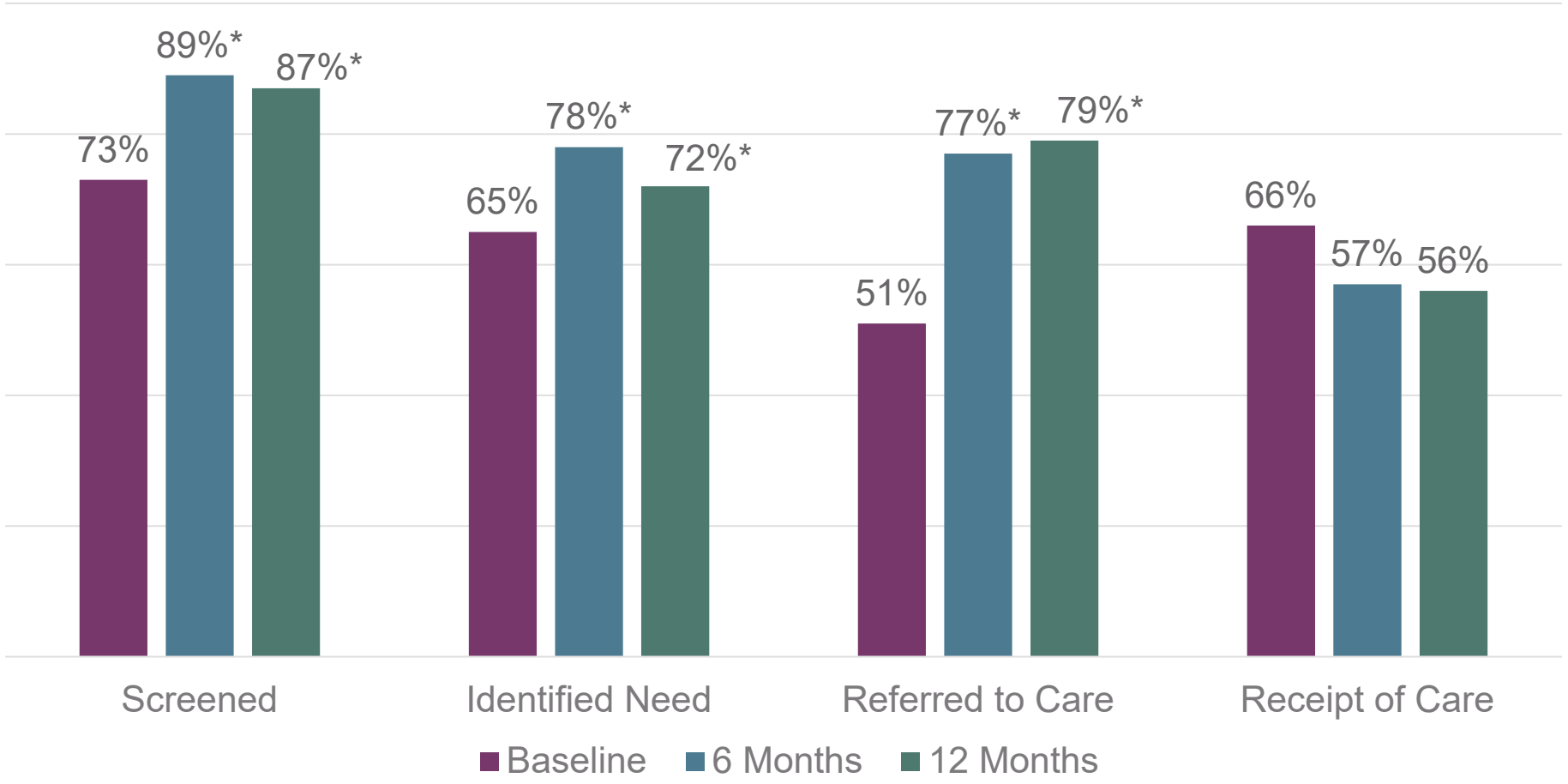
Clients who started the Initiative at risk of falling out of care at baseline moved to **retained in care** (success) or **out of care** (aware, not linked).

Overall, movement to retained in care was **greater** than movement to falling out of care (success), but challenges remain.



* For this slide, we used a 12-month lookback for linkage to support comparisons to other outcomes.

Screening and Receipt of Behavioral Health Care



* Represents statistical significance compared to baseline

Behavioral Health Results

Behavioral Health

Programs were **successful** in increasing:

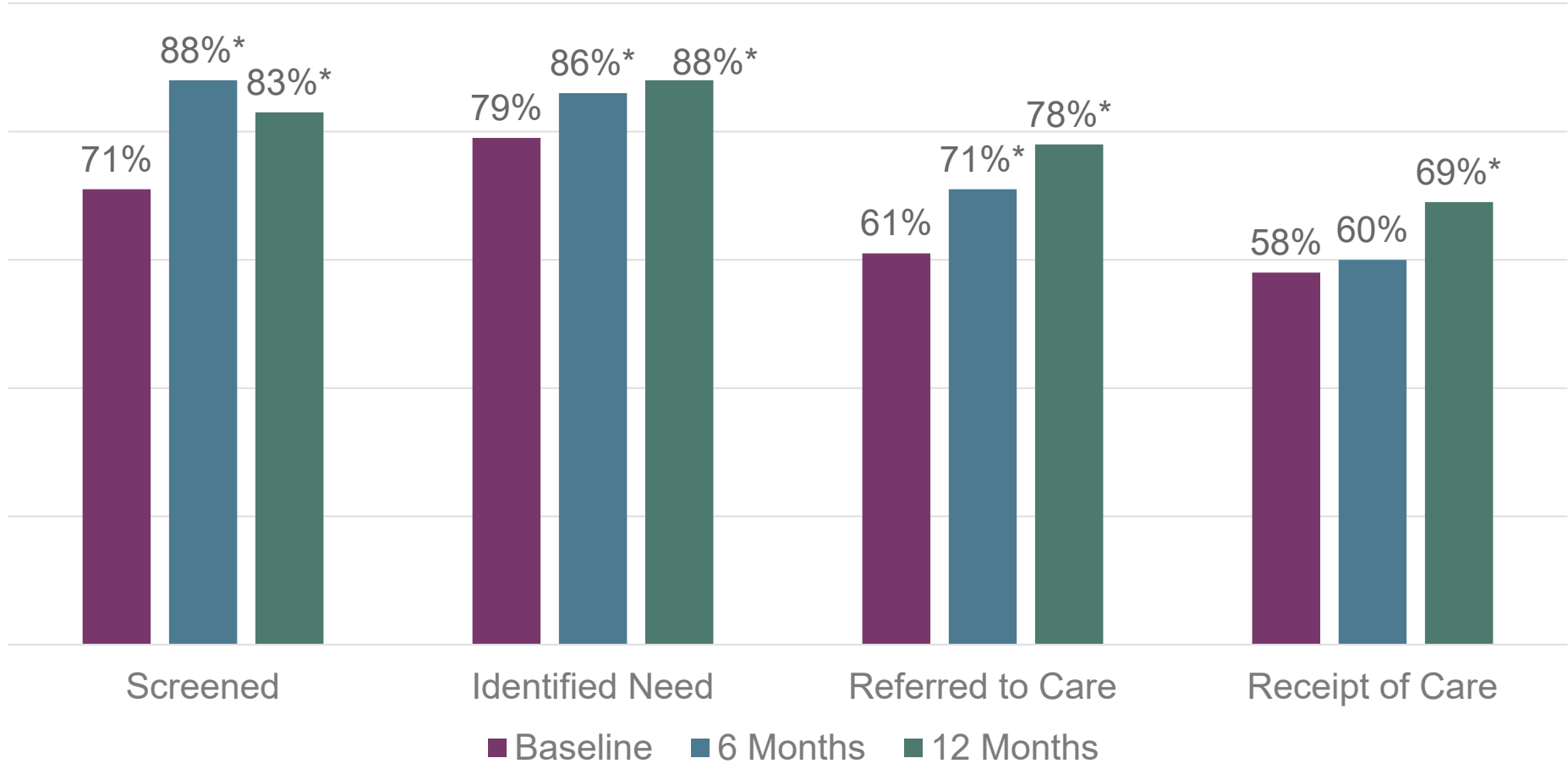
- Screening
- Screen-positive identification
- Referral

Programs were **not successful** in increasing receipt of behavioral health services.

COVID-19 restrictions and barriers may have prevented those referred for behavioral health services from receiving those services.

These services often require in-person appointments.

Screening and Receipt of Supportive Services



* Represents statistical significance compared to baseline

Supportive Services Results

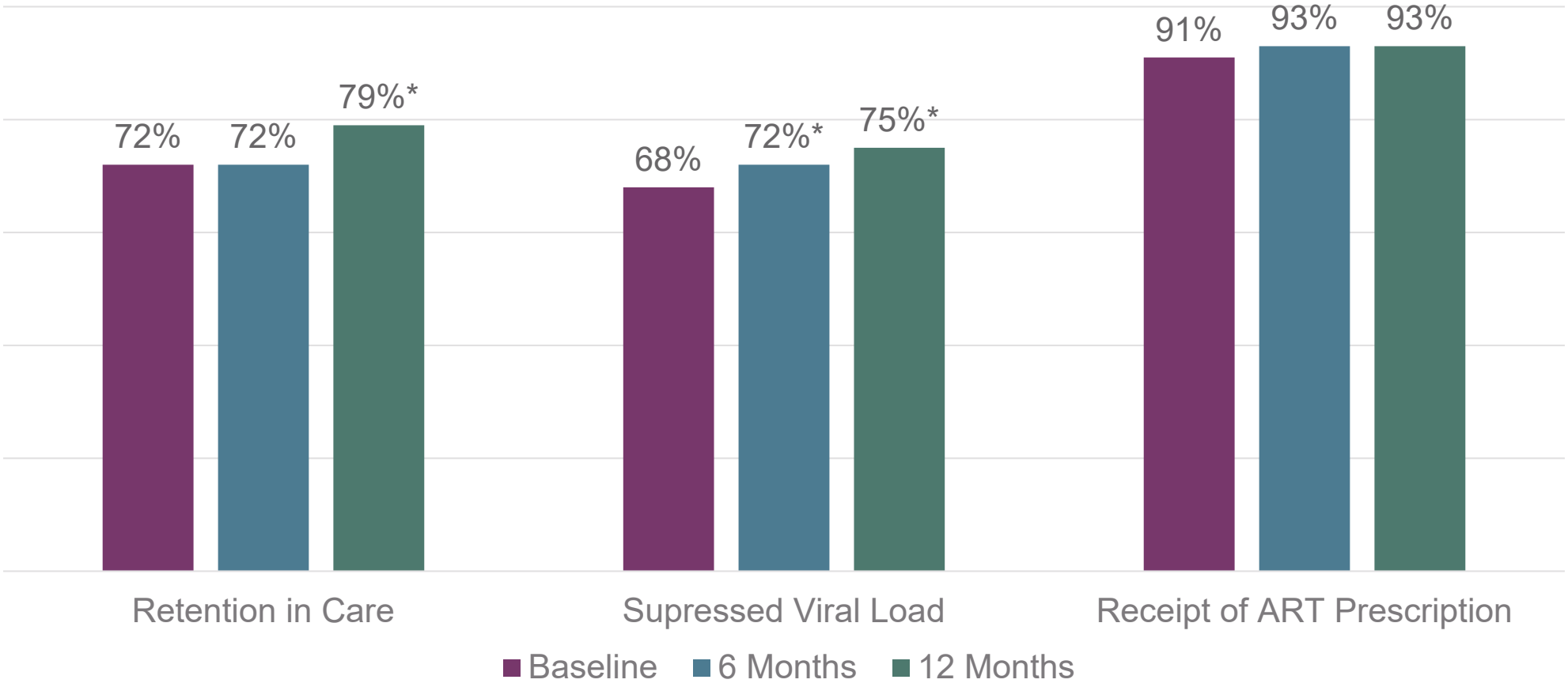
Supportive services

Programs were **successful** in increasing:

- Screening
- Screen-positive identification
- Referral
- Receipt of services

Success in achieving receipt of supportive services may be attributable to the fact that supportive services often do **not** require in-person appointments.

HIV Medical Services Outcomes



* Represents statistical significance compared to baseline

HIV Outcomes Results

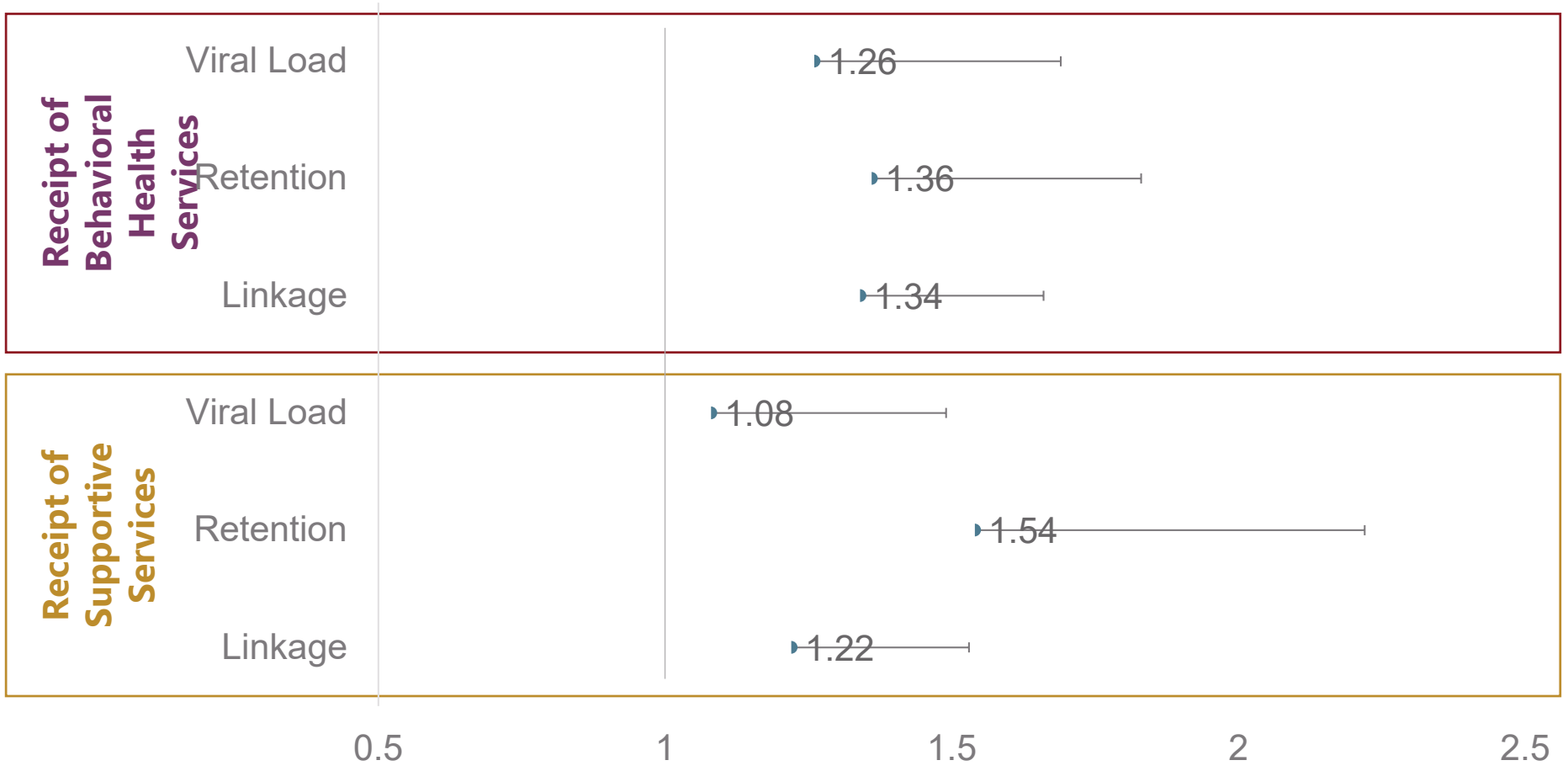
The Initiative showed success in impacting important HIV medical services outcomes.

Retention in care, ART prescription, and **viral load suppression** were each measured among the population with at least on routine HIV visit in the last 12 months.

Among this population, **retention** and **viral load suppression** each significantly improved, and

ART prescriptions remained at a consistently high level across all three time periods.

Logistic Regression Results



Models are adjusted for site, baseline age, baseline PHQ-8 score, and baseline attainment of the modeled indicator. By controlling for baseline attainment, the odds ratio is interpreted as the relative log odds of a member of the stratification group of attaining the outcome at 12 months compared to the reference group, controlling for their attainment at baseline

Overall Regression Results

Among persons who screened positive for a **behavioral health service** need:

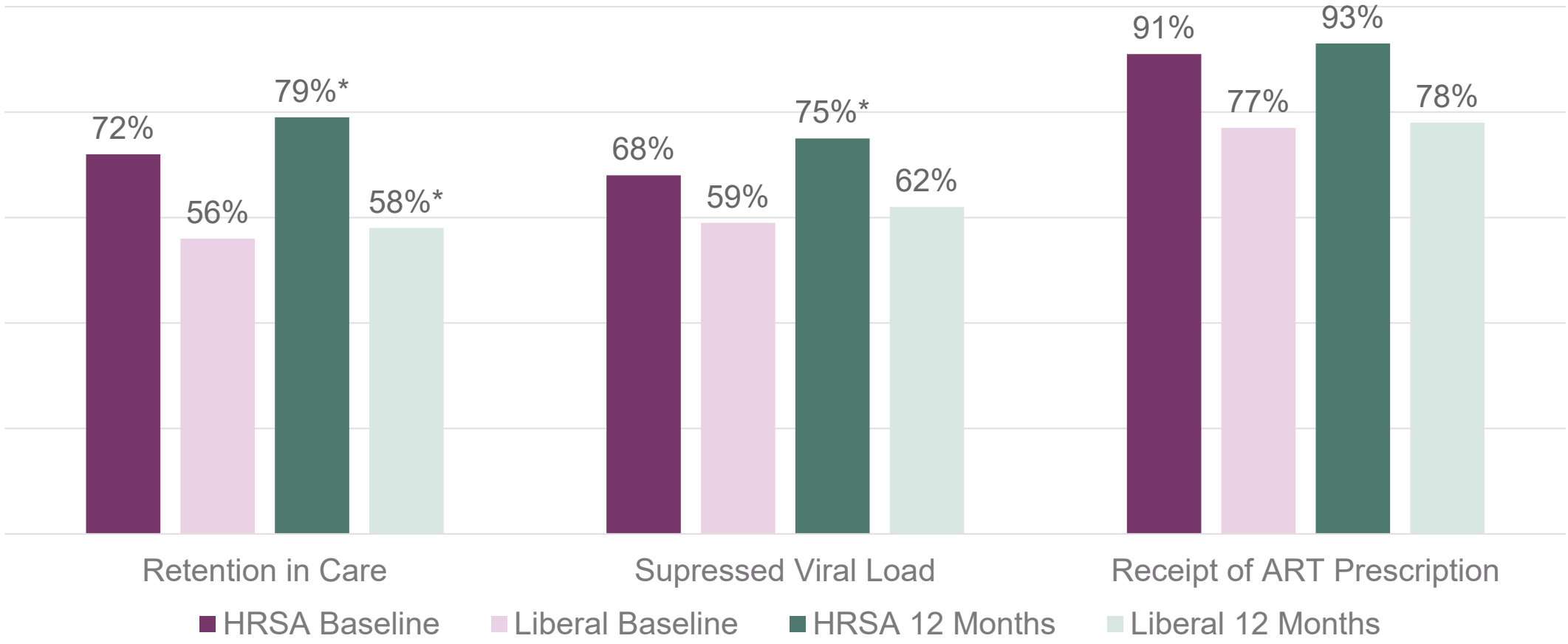
- Those who received behavioral health services were statistically more likely to be linked to and **retained in care**.
- They were also more likely to be **virally suppressed**.
  - This result was not statistically significant.

Similarly, of those who screened positive for **needing support services**:

- Those who received support services were statistically more likely to be **retained in care**.
- They were also more likely to be **linked to care** and **virally suppressed**.
  - These results were not statistically significant.

These results suggest that providing behavioral health and support services to those who need them can influence the greater attainment of HIV care goals. However, more research is needed.

Comparing HRSA vs More Liberal Definitions



* Represents statistical significance compared to baseline
Liberal definition means that denominator is not limited to clients with at least 1 routine HIV medical care visit

Liberal Definition Results

Among all clients including those without at least one routine HIV visit in the last 12 months, outcomes improved slightly, but this increase was not significant.

- For example, among all clients (using complete case analysis),
  - Retention increased from 56% at baseline to 58% at 12 months,
  - ART prescription increased from 77% at baseline to 78% at 12 months, and
  - Suppressed viral load improved from 59% at baseline to 62% at 12-months.

We conclude that the Initiative was effective for clients that started the Initiative at risk of falling out of care but had minimal impact on clients who were not in care as measured by having at least one routine HIV visit in the last year.

Limitations

Key Limitations

This study has several limitations to note.

Limitation	Notes
Implementation during COVID-19	Created challenges for client recruitment, and delivery of in-person health care and behavioral health services
Data collection methods	Potentially higher data quality could be achieved by extracting electronic health records directly
Missing data	More complete data may have altered our results or resulted in some differences being significant where currently they are not.
HRSA outcome definitions	Limited our study population to clients who received at least one routine HIV medical care visit in the last 12 months. Among all clients enrolled, these measures also improved, but the increase was not statistically significant.

Takeaways

Key Takeaways

This study highlights the critical needs of Black MSM with HIV for care and services.

Demonstrates models of care that emphasizes identifying behavioral health and support services needs and providing services to meet those needs can be effective in improving some behavioral health, support services, and HIV care outcomes.

Because this Initiative occurred during the COVID-19 pandemic, it is difficult to generalize these findings to a non-pandemic environment.

However, we would argue that the success achieved by these Initiatives during the pandemic is highly suggestive that these programs can be effective in a post-emergency environment.

How To Claim CE Credit

If you would like to receive continuing education credit for this activity, please visit:

ryanwhite.cds.pesgce.com