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Evidence-based Strategies to Address Retention in HIV Care

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Capacity Building Assistance (CBA)
National Webcast
In collaboration with Clinical Directors Network, Inc. (CDN)
January 24, 2018 | 12 PM - 1 PM EST

CBA Program for High-Impact HIV Prevention

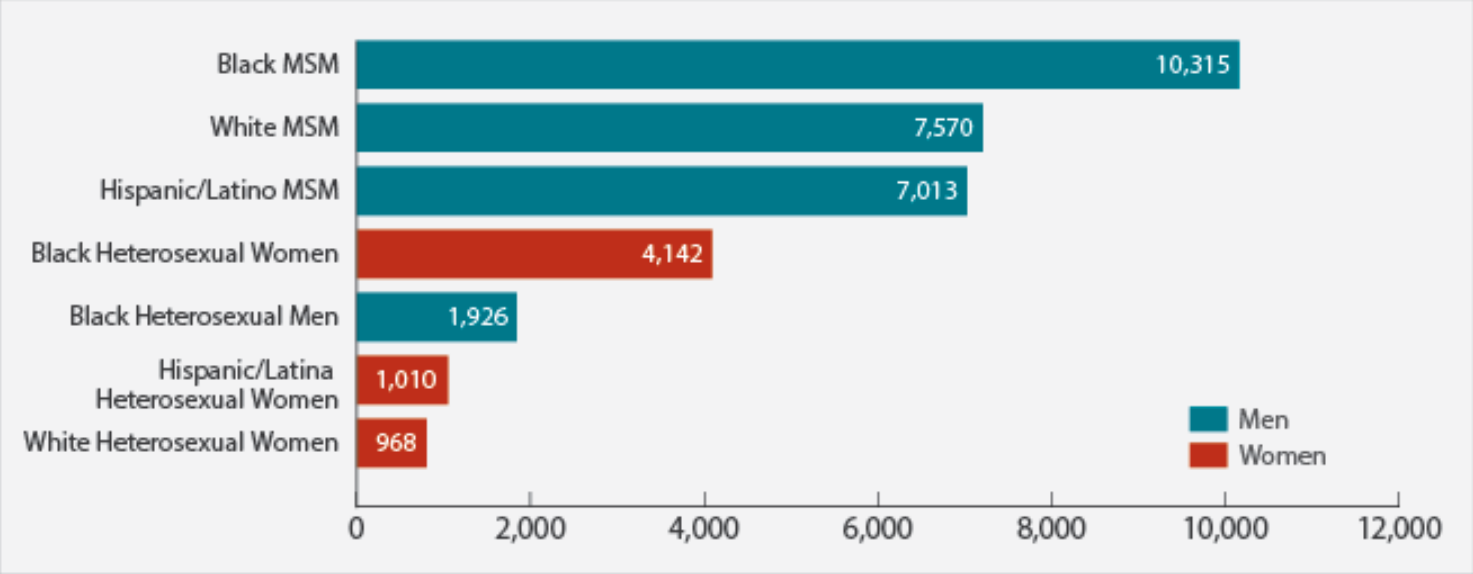
- CAI provides capacity building assistance (CBA) through the CDC's Capacity Building Assistance for High-Impact HIV Prevention. CAI provides CBA for healthcare organizations (HCOs).
- This CDC-funded project focuses on HIV testing, prevention with HIV-positive persons, and prevention with high-risk HIV negative persons
- CAI works with healthcare organizations nationwide to enhance the integration of High-Impact HIV Prevention strategies.

Disclosures

Funding from the National Institutes of Health (NIH) and the Rhode Island Department of Health.

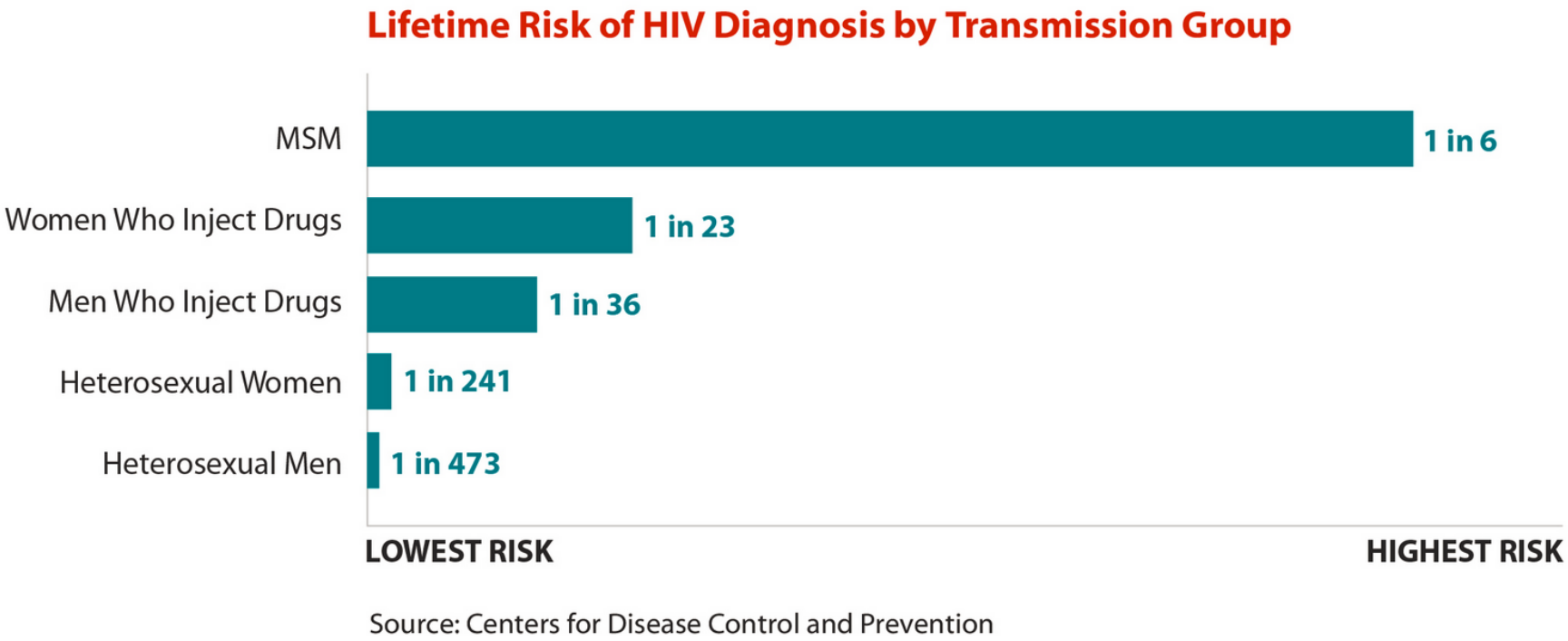
No commercial conflicts of interest.

New HIV Diagnoses in the United States for the Most-Affected Subpopulations, 2015



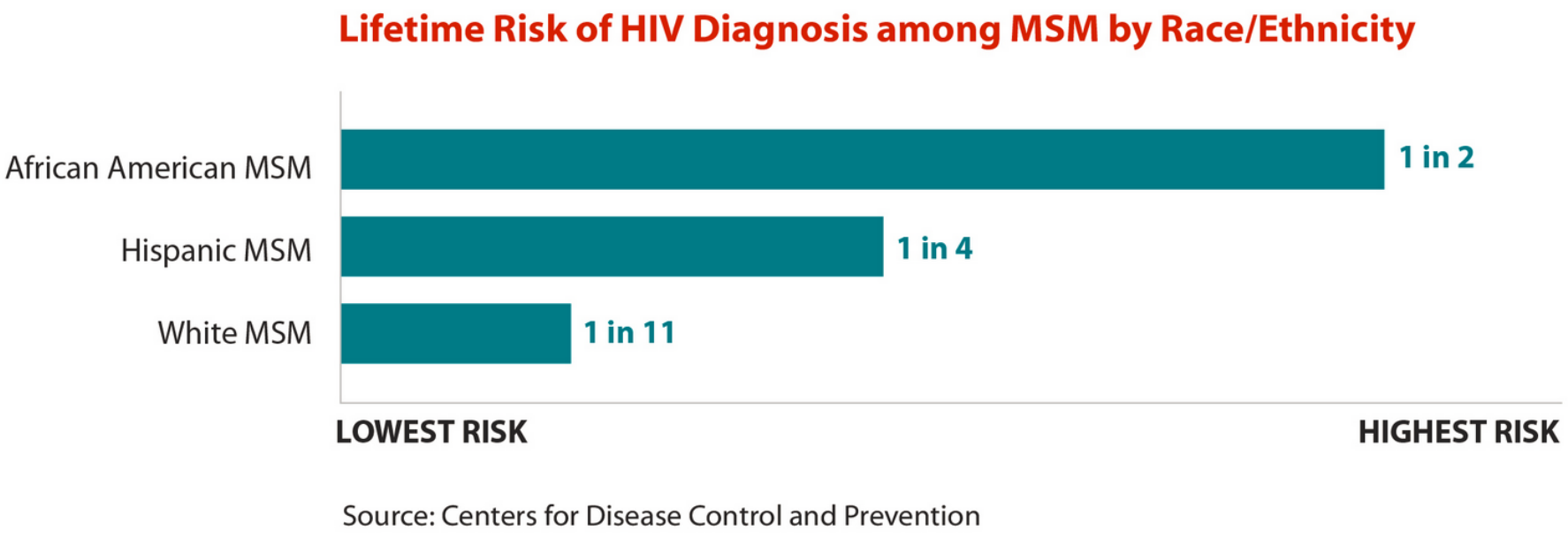
Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2015. *HIV Surveillance Report* 2016;27. Subpopulations representing 2% or less of HIV diagnoses are not reflected in this chart. Abbreviation: MSM, men who have sex with men.

Disparities in HIV Infection



Source: Centers for Disease Control and Prevention

Disparities in HIV Infection



Source: Centers for Disease Control and Prevention

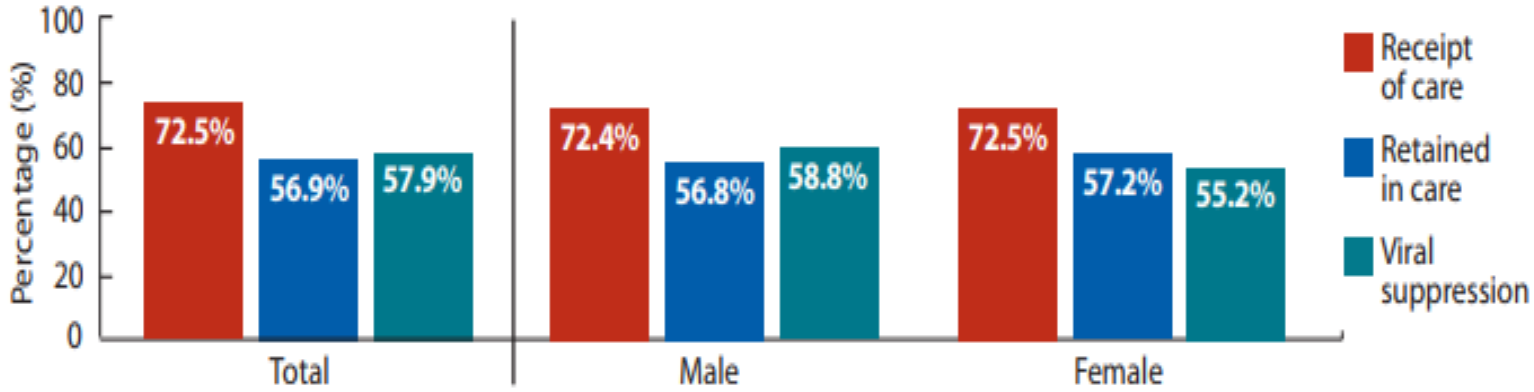

HIV CARE CONTINUUM:
THE SERIES OF STEPS A PERSON WITH HIV TAKES FROM INITIAL DIAGNOSIS THROUGH THEIR SUCCESSFUL TREATMENT WITH HIV MEDICATION
DIAGNOSED WITH HIV
LINKED TO CARE
ENGAGED OR RETAINED IN CARE
PRESCRIBED ANTIRETROVIRAL THERAPY
ACHIEVED VIRAL SUPPRESSION

www.hiv.gov

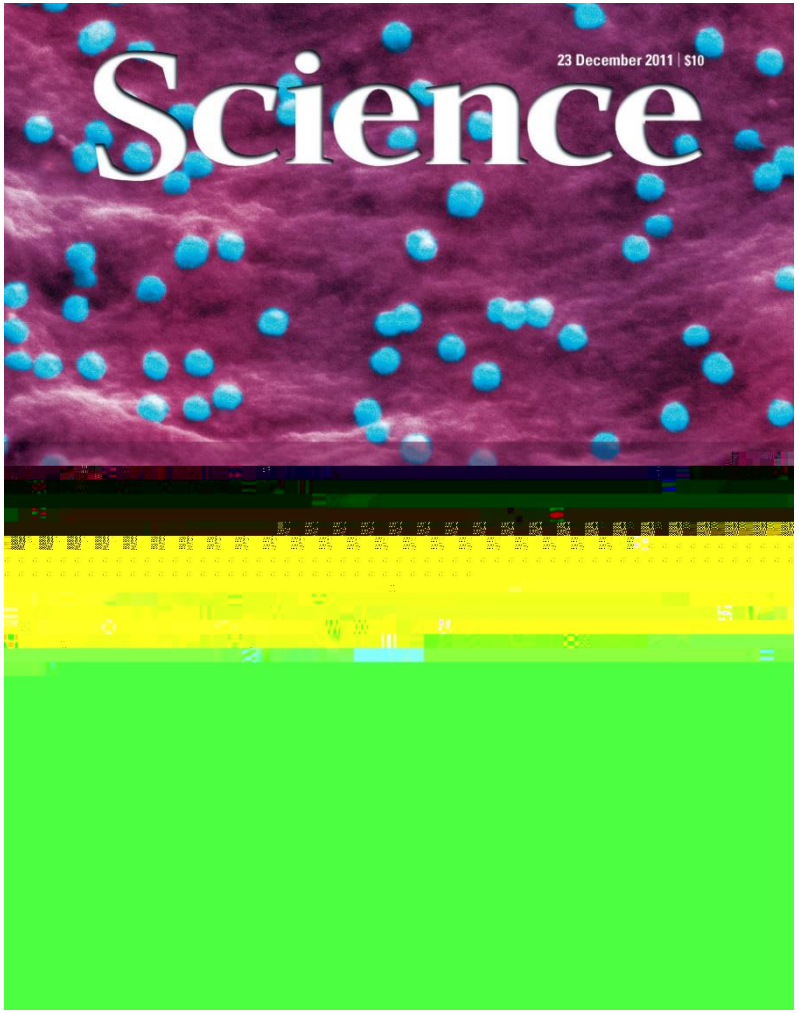
WHAT DOES THE HIV CARE CONTINUUM SHOW?

HIV Care Continuum Shows Where Improvements are Needed

Receipt of HIV Medical Care, Retention in Care, and Viral Suppression among Persons Aged ≥13 Years Living with Diagnosed HIV Infection, by Sex, 2014 – 37 States and the District of Columbia



According to the latest CDC data, of the 1.2 million people living with HIV in the U.S. in 2011, an estimated 86% were diagnosed. This means that 14% (approximately 1 in 7 people living with HIV) were unaware of their infection and therefore not accessing the care and treatment they need to stay healthy and reduce the likelihood of transmitting the virus to their partners.



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 11, 2011 VOL. 365 NO. 6

Prevention of HIV-1 Infection with Early Antiretroviral Therapy

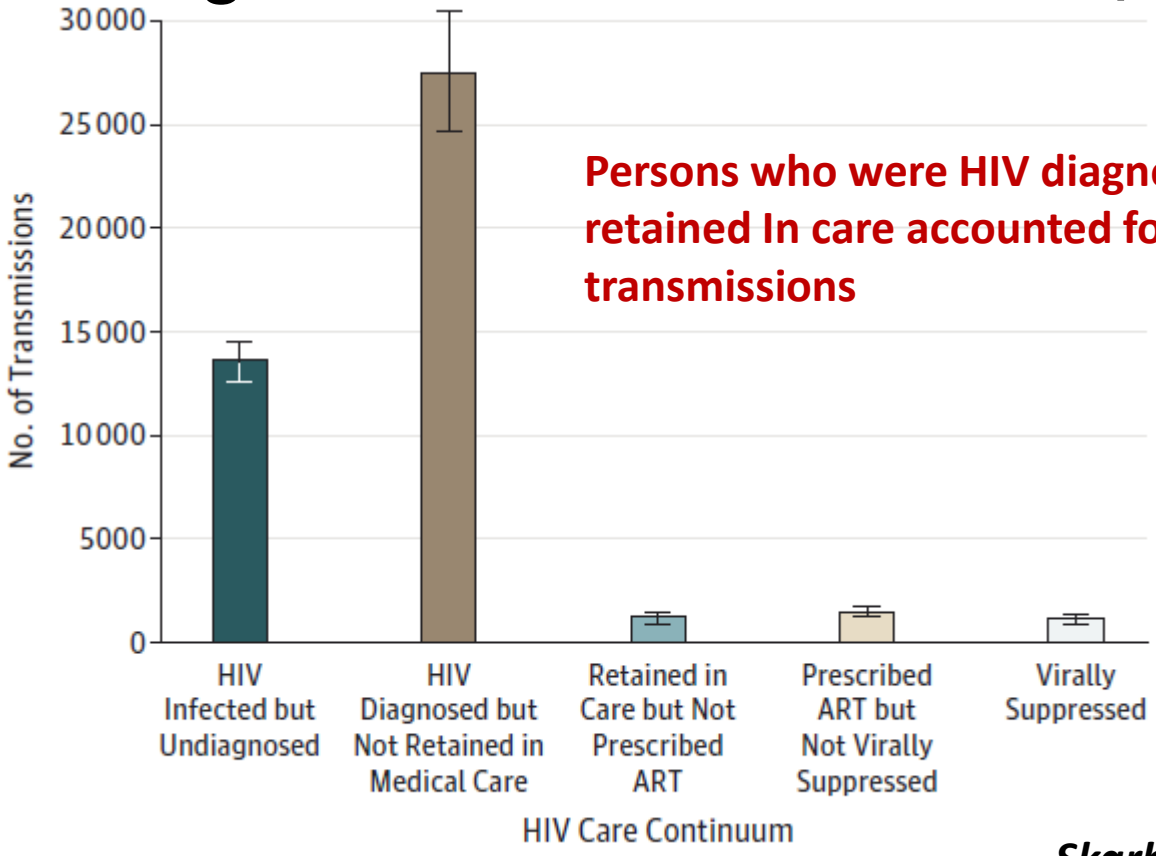
Myron S. Cohen, M.D., Ying Q. Chen, Ph.D., Marybeth McCauley, M.P.H., Theresa Gamble, Ph.D.,

1. HIV Prevention Trials Network (HPTN) 052 (Confirmed 'Treatment as Prevention')
2. 1763 Discordant couples
3. Early versus delayed treatment
4. May, 2011: Data and Safety Monitoring Board (DSMB) found a 96% reduction in HIV transmission in HIV-positive individuals who were on treatment

Importance of Retention-in-care

1. Increases probability of receiving antiretroviral therapy
2. Prevents HIV-associated complications
3. Improves clinical outcomes and survival
4. Decreases population-level transmission of HIV
5. Minimizes acute healthcare utilization (i.e. emergency rooms)

The Number of HIV Transmissions Attributable to Each Stage of the Care Continuum, 2009



Persons who were HIV diagnosed but not retained In care accounted for 61% of HIV transmissions

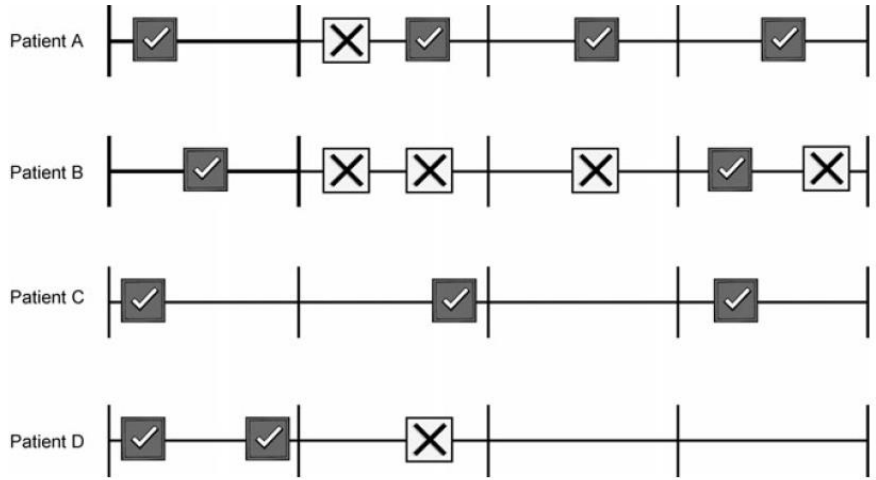
Skarbinski et al., 2015

Assessing Retention-in-care

1. No gold standard
2. Five common metrics:
   A. Number of missed visits
   B. Appointment compliance (ratio of number of completed visits to the number of total scheduled visits)
   C. Visit constancy (proportion of time intervals with at least 1 visit)
   D. Gaps in care (time interval between visits)
   E. HRSA (2+ visits in a 12-month period separated by 3+ months)
   F. CDC's Selected National HIV Prevention and Care Outcomes (2+ documented CD4+ or viral load tests, performed at least 3 months apart in the observed year by the end of year preceding measurement year)

RETENTION MEASURES FOR FOUR EXAMPLE PATIENTS CALCULATED ACCORDING TO CLINIC VISIT ATTENDANCE DURING THE 12-MONTH OBSERVATION PERIOD

	Missed visits (dichotomous and count measure of "no show" visits)	*Appointment adherence (number of completed visits divided by scheduled visits)*	*Visit constancy (number of 3-month periods with ≥1 completed visit)*	*Gap in care (6-month time period between completed visits)*	*HRSA HAB Performance Measure (≥2 completed visits during a 12-month period separated by ≥3 months)*
Patient A	Yes; 1	80%	100%	No	Yes
Patient B	Yes; 4	33%	50%	Yes	Yes
Patient C	No; 0	100%	75%	No	Yes
Patient D	Yes; 1	67%	25%	Yes	No

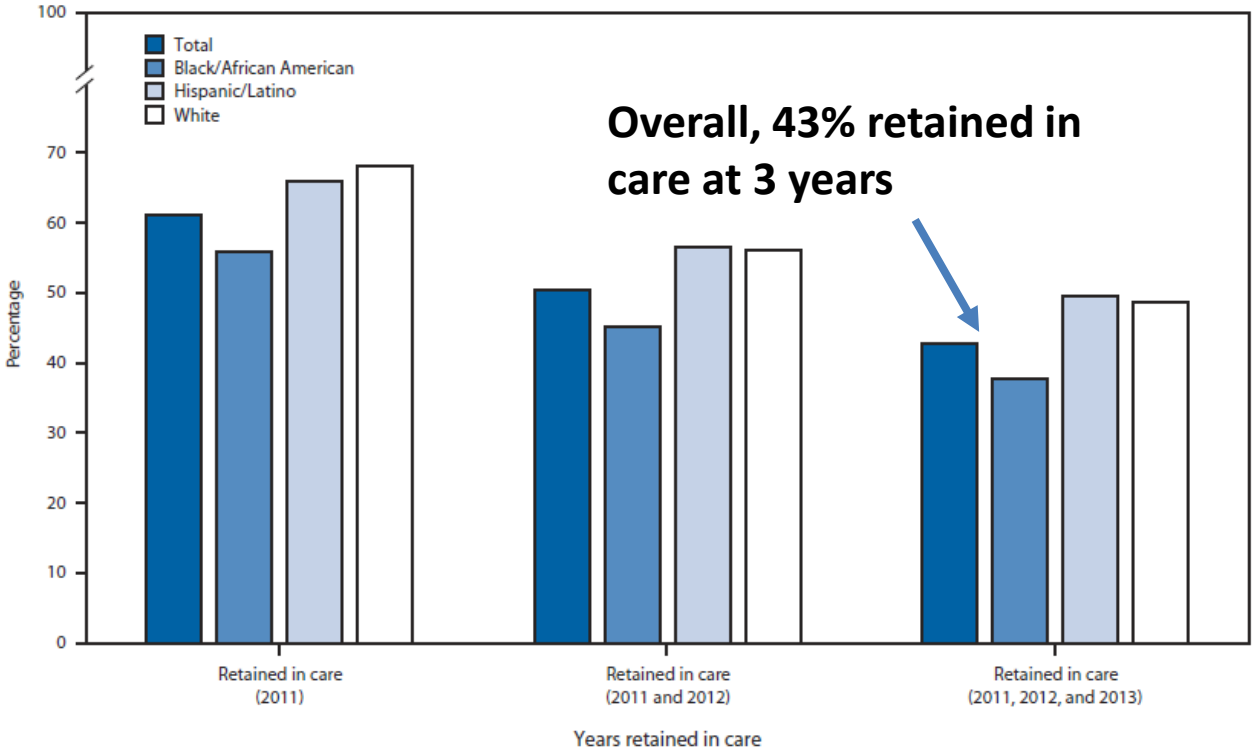


***Different retention measures result in different outcomes**

Mugavero et al., 2010

People Living with HIV/AIDS in the United States Who Were Retained in Care, 2011-2013 (N=9,824)

(Diagnosed in 2010, ≥13 years old, 12 jurisdictions)



***Definition: Two or more CD4+ or viral load tests ≥3 months apart during a given calendar year**

Dasgupta et al., MMWR 2016

Predictors of Retention-in-care

Predictor(s) of retention in care	Number of articles in which predictor(s) is/are cited	Referenced in first author (article #)
Substance use	7	Althoff [14], Dombrowski [23], Giordano [15], Lourenço [16], Noysk [12], Rebeiro [17], Tobias [10]
Demographic	7	Althoff [14], Blank [19], Giordano [15], Horberg [20], Noysk [12], Rebeiro [17], Richey [21]
Physical health	6	Adams [22], Blank [19], Giordano [15], Noysk [12], Richey [21], Tedaldi [7]
Mental health	4	Blank [19], Dombrowski [23], McMahon [18], Tobias [10]
Support	4	Althoff [14], Kelly [26], Tobias [10], Waldrop-Valverde [25]
Health beliefs	3	Blank [19], McMahon [18], Tobias [10]
Social/welfare	3	Blank [19], Rebeiro [17], Tedaldi [7]
Cognitive impairment	1	Waldrop-Valverde [25]
Domestic violence	1	Schafer [24]
Linkage to care	2	Adams [22], Richey [21]
Time	1	McMahon [18]

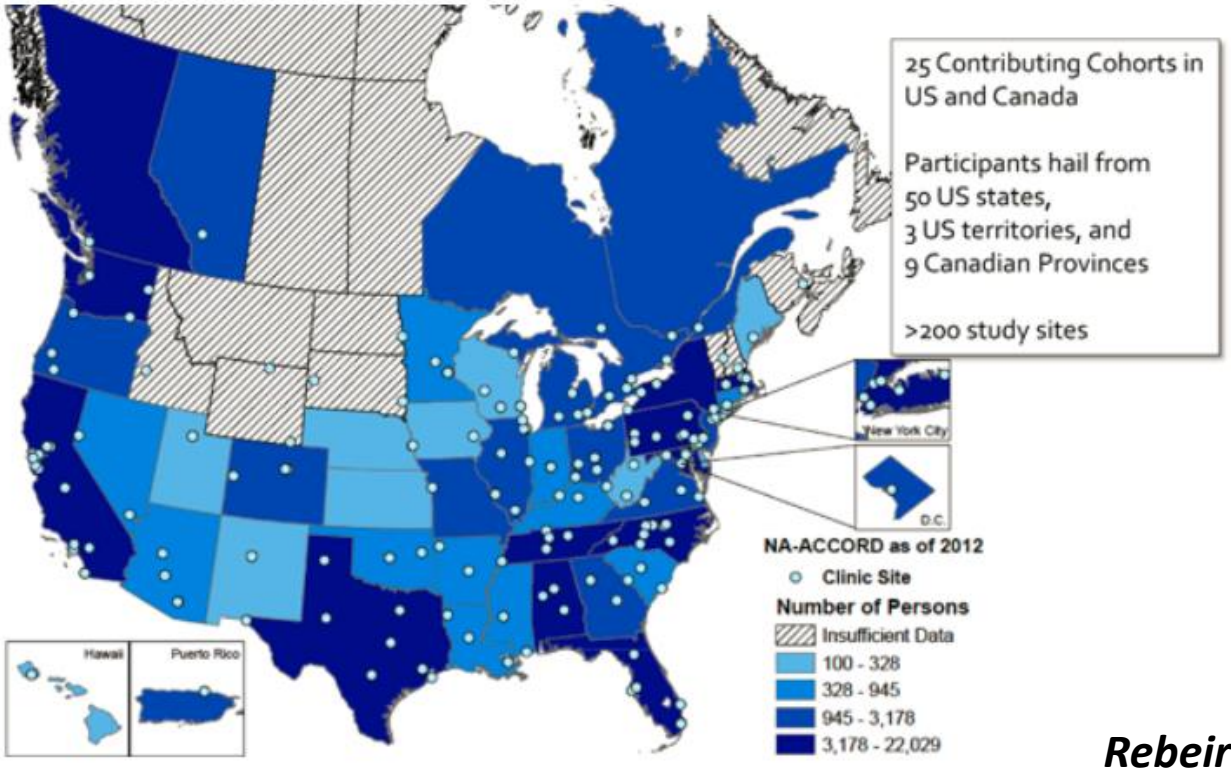
Bulsara et al., 2016

Overall Characteristics of Those with Incomplete Retention-in-care

1. Younger age
2. Male sex
3. Black/African American
4. Injection drug use

Rebeiro et al., 2013

North American AIDS Cohort Collaboration on Research and Design



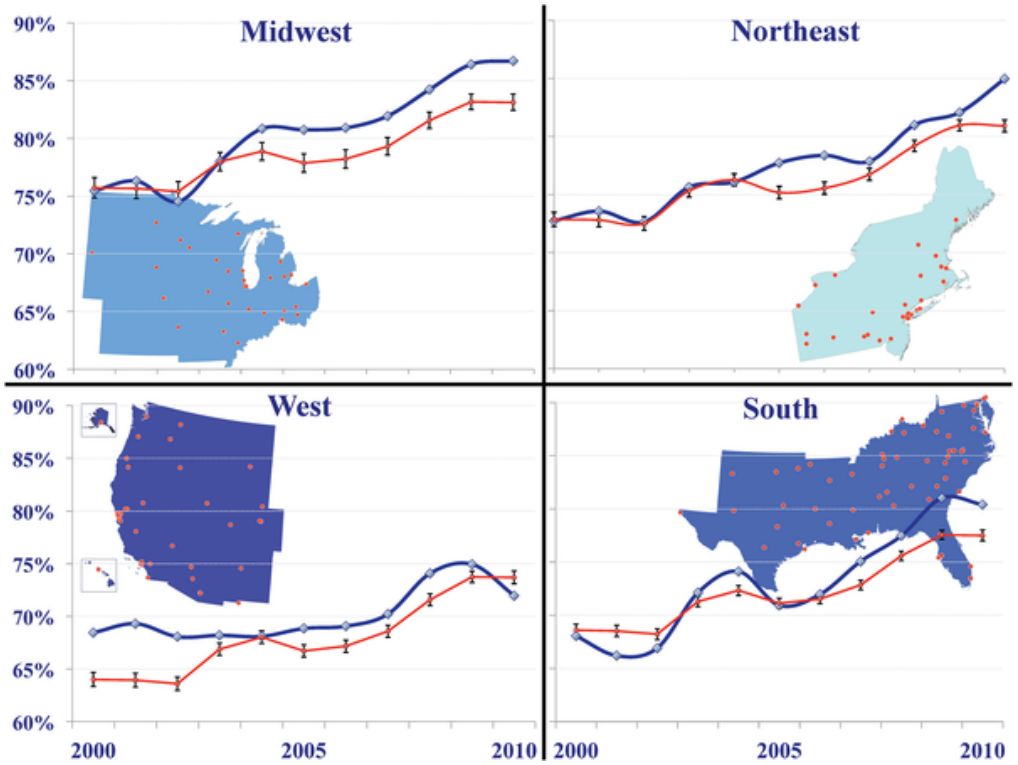
Rebeiro et al., 2013

North American AIDS Cohort Collaboration on Research and Design

1. N=61,438
2. Years 2000-2008
3. Complete retention-in-care was defined as CD4+ or viral load measurement ≥90 days and <12 months after previous evaluation
4. 25% (N=15,360) not retained
5. More likely to be not retained in care: Black (OR 1.31), IDU (OR 1.68), and those in care longer (OR 1.09)

Rebeiro et al., 2013

Temporal trends in percentage of individuals successfully clinically retained in the NA-ACCORD by CDC-defined region of the United States, from 2000–2010, by CDC-defined region of the United States.



*Improved retention overtime for all regions. Lower retention rates in the West and South compared to the Midwest and Northeast.

Rebeiro et al., 2016

Barriers to Retention-in-care

1. Substance use
2. Mental health
3. Transportation
4. Insurance
5. Housing
6. Stigma
7. Competing life activities (i.e. family, work)
8. Forgetting/Feeling sick
9. Concerns about privacy
10. Avoidance and disbelief of HIV status
11. Challenges with appointment scheduling
12. Negative experiences with staff

Facilitators to Retention-in-care

1. Positive relationship with medical providers
2. Strong social support system
3. Access to transportation
4. Patient-friendly services
5. Reminder strategies

Interventions to Improve Retention-in-care

- Strengths-based case management
- Patient navigation approaches
- Appointment accompaniment to medical appointments
- Transportation to medical appointments
- Co-location of services (i.e., ancillary services and medical care)
- Outreach services
- Bilingual/bicultural health care teams
- Consistent reminder calls
- Brief messages from health providers during medical visits
- Posters and brochures in waiting rooms
- Peers as part of the health care team

Higa et al., 2012

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention

Linkage to, Retention in, and Re-engagement in HIV Care (LRC) Chapter

This chapter of the *Compendium* categorizes the best practices in promoting Linkage to, Retention in, and Re-engagement in HIV Care among people living with HIV, one of the priorities outlined in the U.S. National HIV/AIDS Strategy. Additional details about the LRC Chapter or the Prevention Research Synthesis (PRS) Project can be obtained by contacting PRS.

https://www.cdc.gov/hiv/research/interventionresearch/compendium/lrc/index.html

Antiretroviral Treatment Access Study (ARTAS)

1. **Strengths-based case management**
2. **Linkage and retention-in-care intervention**
3. **Up to five (5) case management sessions over 90 days (or until the patient is linked to medical care, whichever comes first)**

Gardner et al., 2005, Craw et al., 2008

Antiretroviral Treatment Access Study (ARTAS)

Role of the case manager:

1. Build an effective, working relationship with the patient;
2. Encourage patient to identify their strengths, abilities and skills to link to care;
3. Meet with the patient in their environment where they feel comfortable;
4. Coordinate and link patient to other resources (e.g. housing, food, support groups, etc.);
5. Advocate for the patient.

Gardner et al., 2005, Craw et al., 2008

Antiretroviral Treatment Access Study (ARTAS)

1. N=273 HIV+ patients over 12 months
2. Atlanta, Baltimore, Los Angeles, Miami
3. Standard-of-care versus intervention
4. Standard-of-care included referrals for appropriate resources and educational material
5. Outcomes:
    - A. Linkage-to-care (medical visit at least once)
    - B. Retention-in-care (medical visit at least once during each of two consecutive six month periods.

Gardner et al., 2005, Craw et al., 2008

Antiretroviral Treatment Access Study (ARTAS)

The intervention was found to significantly improve outcomes versus the standard-of-care:

Linkage-to-care: 78% versus 60%, RR 1.36

Retention-in-care: 64% versus 49%, RR 1.41

***Cost: $600-1,200 per client**

Gardner et al., 2005, Craw et al., 2008

Retention through Enhanced Personal Contacts (REPC)

A trained interventionist establishes a personal relationship with an HIV+ patient and provides:

1. **Affirming statements;**
2. **Responses to questions or concerns about appointments;**
3. **Reminder calls 7- and 2-days before appointments;**
4. **Follow-up after missed appointments;**
5. **Patient-centered behavioral skills (e.g. communication, problem-solving);**
6. **Plan to address unmet needs;**

Gardner et al., 2014

Retention through Enhanced Personal Contacts (REPC)

Intervention components:

1. **Brief face-to-face meetings at each medical visit (initial meeting 25-45 minutes; subsequently 10-20 minutes);**
2. **Phone calls over the course of 12 months (approximately 12 minutes each)**

Gardner et al., 2014; Centers for Disease Control and Prevention. Compendium of Evidence-based Interventions and Best Practices for HIV Prevention: Retention Through Enhanced Personal Contacts . 2017.

Retention through Enhanced Personal Contacts (REPC)

1. N=1,838 HIV+ patients
2. Boston, Brooklyn, Baltimore, Birmingham, Miami, Houston
3. Missed one or more visits in the past month, had a gap in care of at least six (6) months in the previous year, or were a new patient
4. Randomized to Enhanced Contact (EC), Enhanced Contact plus Skills, or standard-of-care (appointment reminder calls only).

Gardner et al., 2014

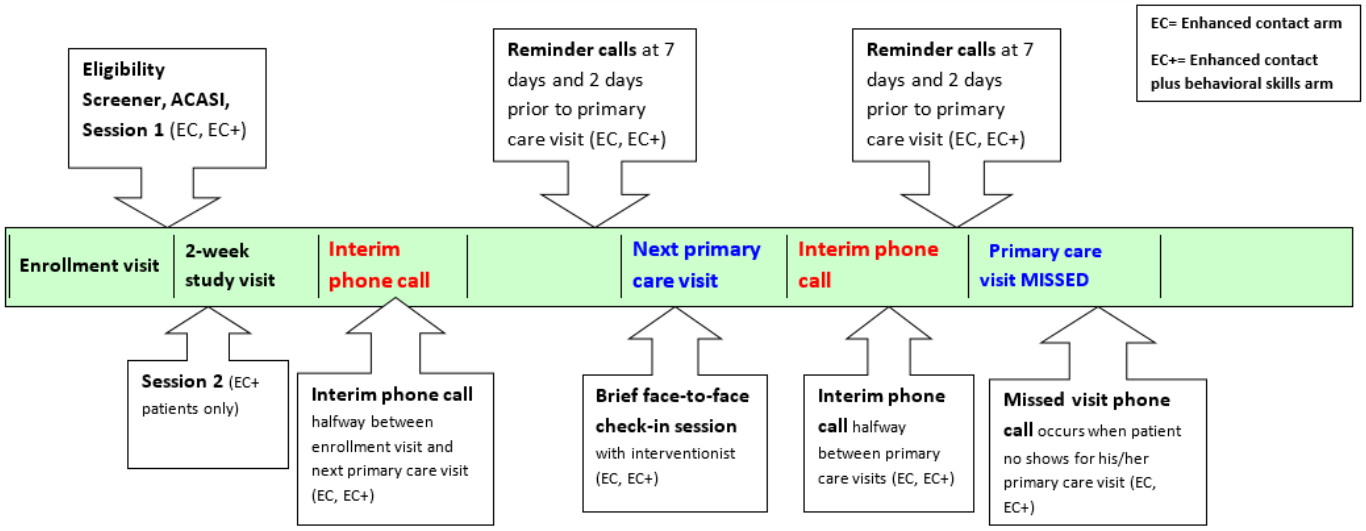
Retention through Enhanced Personal Contacts (REPC)

Retention-in-care outcomes (over 12 month period):

1. **Visit constancy (kept at least one appointment in three consecutive 4-month intervals);**
2. **Visit adherence percentage (#appointments made divided by #scheduled)**
3. **Mean number of made appointments**
4. **Mean number of missed appointments**

Gardner et al., 2014

Timeline of Intervention Activities



Intervention Content

Enhanced personal contacting (EC)

- interim phone call
- reminder phone calls
- missed visit phone calls
- brief face-face visits

Enhanced contacting plus behavioral skills (EC+skills)

- strengths-based discussion at 2-week study visit
- unmet needs assessment and delivery of skills modules:
  - organizational skills—time management, use of a calendar and filing system
  - communicating with the provider—teaching the skills of asking questions and pre-visit preparation
  - problem solving—teaching the options for solving appointment problems, understanding the consequences, and ordering of options.

Standard of care (SOC)

- usual practices for established and new patients
- referrals to social worker or case manager, as usually done
- usual visit reminders (whether automated or individual, telephone or written)

Gardner et al., 2014

Retention through Enhanced Personal Contacts (REPC)

The EC intervention was found to significantly improve outcomes versus the standard-of-care:

Visit Constancy: 56% versus 46%, RR 1.22
(kept at least one appointment in three consecutive 4-month intervals)
Visit Adherence: 73% versus 67%, RR 1.08
(#appointments made divided by #scheduled)
Visits Made: 4.12 versus 3.59
(Mean number of made appointments)
Visits Missed: 1.56 versus 1.75
(Mean number of missed appointments)

***No significant difference between EC and EC+Skills arms**

Gardner et al., 2014

Virology FastTrack

A clinical decision support system

1. Generates alerts in the electronic medical record (EMR) system
2. Notifies medical providers about suboptimal follow-up, virologic failure, laboratory toxicities
3. Alerts through EMR home page, patient-specific EMR, biweekly emails
4. Providers can request follow-up appointments and lab tests
5. Scheduling requests electronically sent to administrative staff

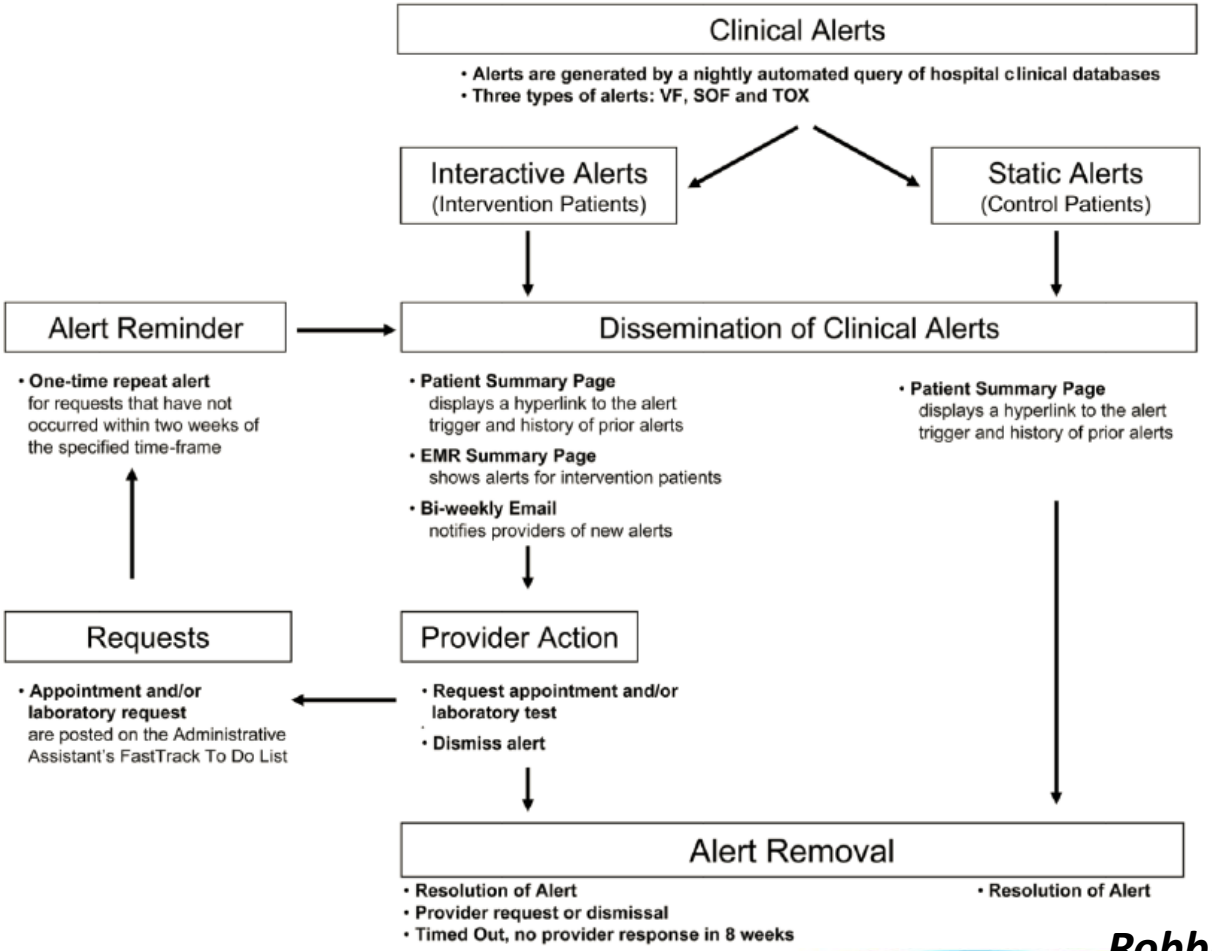
Robbins et al., 2012

Virology FastTrack

1. Boston, Massachusetts
2. N=1,011 HIV-infected patients
3. Randomized to the intervention versus comparison group ("static" alerts which were visible only on patient-specific EMR pages and provided no additional information or ability to reschedule from that alert)
4. <u>Retention-in-care outcome</u>: Suboptimal follow-up measured as having no made appointments for >6 months during the 12-month study period

Robbins et al., 2012

Flow Diagram of Interactive and Static Computer Alerts



Robbins et al., 2012

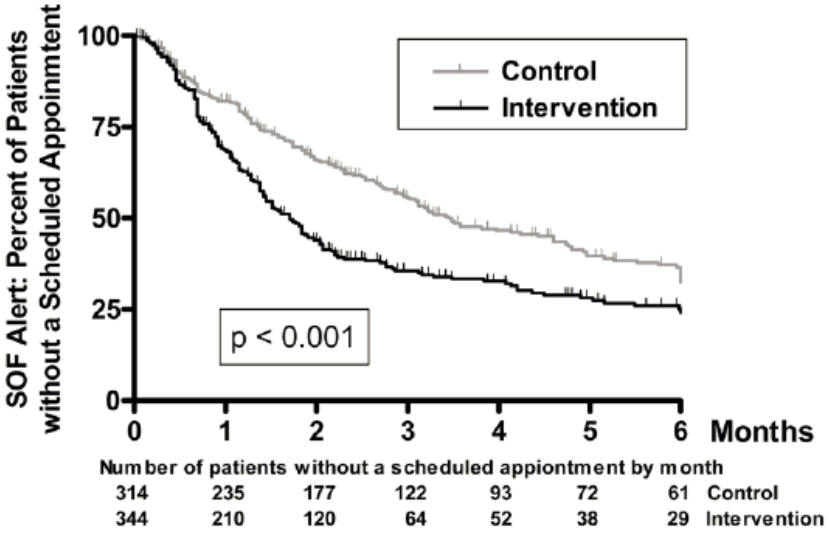
Virology FastTrack

The rate of 6-month suboptimal retention was significantly lower in the intervention arm vs. the comparison group.

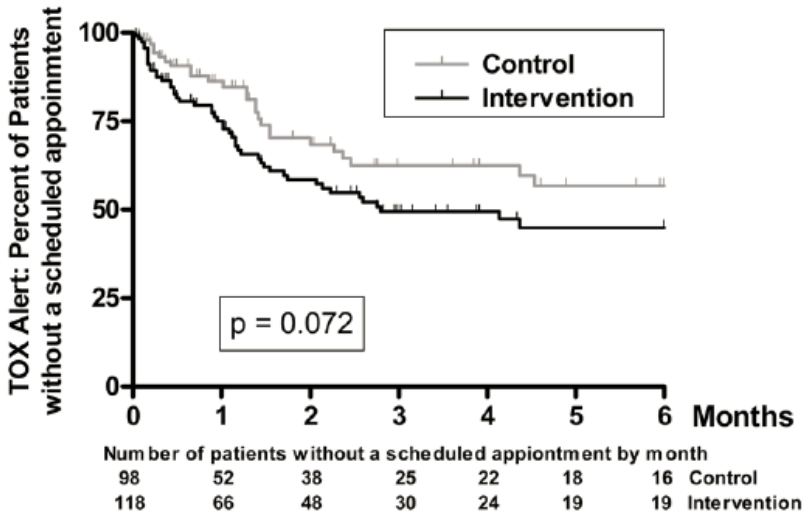
<u>Suboptimal retention-in-care</u>:
20.6 versus 30.1 events per 100 patient years

Robbins et al., 2012

Suboptimal Follow-up



Toxicity



Kaplan-Meier analysis of time-to-next scheduled appointment following the first suboptimal follow-up (SOF) and first toxicity (TOX) alerts.

Robbins et al., 2012

Clinic-based Buprenorphine Treatment

1. Integration of buprenorphine-naloxone treatment in HIV care
2. Includes a 2-day induction followed by three 10-40 minute sessions per week for 2-4 weeks, then ongoing weekly to monthly 10-40 minute sessions
3. N=96, randomized to clinic-based buprenorphine versus referred-treatment
4. Outcome: Over 12-months, intervention patients had significantly more visits with their primary HIV provider than control patients (median, 3.5 visits versus 3.0 visits, p=0.047)
5. Patients also more likely to participate in drug treatment and had lower rates of opioid/cocaine use

Lucas et al., 2010

Other Evidence-Informed Interventions for Retention-in-Care

1. **Clinic-Based Surveillance-Informed Patient Retracing** (Clinical/Public Health data to identify and link to care through a linkage specialist)
2. **Bilingual/Bicultural Care Team** (Hispanic/Latino staff team)
3. **Centralized HIV Services** (Behavioral-based for youth to improve variety of skills)
4. **HIV Care Coordination Program** (Home- and field-based patient navigation services)
5. **Routine Universal Screening for HIV (RUSH) Program** (non-medical case management services, ED setting)
6. **Stay Connected** (Clinic-wide educational intervention)
7. **Strength Through Livin' Empowered (STYLE)** (Case management, other services)

Conclusions

1. Different measures of retention-in-care
2. Significant disparities exist in retention-in-care
3. Known barriers and facilitators to retention-in-care
4. Evidence-based interventions (EBIs) to address retention-in-care

Contact Information

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CDC Capacity Building Assistance Provider Network

- Purpose: To build the capacity of the nation's HIV prevention workforce in 3 Settings:
  - Health Departments
  - Community-Based Organizations
  - Health Care Organizations
- Focused on Specific Prevention Strategies:
  - HIV testing
  - Prevention with HIV-positive persons
  - Prevention with HIV-negative persons
  - Condom distribution
  - Organizational development & management
  - Policy

CBA for HCOs: Component Areas

Areas of Expertise for Category C Partners:
Billing/Reimbursement, Chronic Care Management, Cultural Competency/Sensitivity, Gay, Bisexual Men and Other Men Who Have Sex With Men (MSM), Group Facilitation, Health Reform/ACA Implementation/Medicaid Expansion, HIV/AIDS Navigation Services, HIV/AIDS Care Continuum, HIP in Clinical Settings, Medication Adherence, PrEP, nPEP, Process Improvement, Sexual Health Assessment, Sexually Transmitted Diseases (STDs), Workflow Analysis.

Effective Behavioral Interventions:
Anti-Retroviral Treatment and Access to Services, Choosing Life: Empowerment! Action! Results!, Couples HIV Testing and Counseling, HIV Linkage to Care, Patient Navigation, Personalized Cognitive Counseling, Patient Navigation, Partnership for Health-Safer Sex, Partnership for Health-Medication Adherence, Promise for HCOs, Sister to Sister.

How HCOs can access services:

- CBA.caiglobal.org
- Contact CAI directly:
  - JBradford-Rogers@caiglobal.org
- Through the CDC CRIS website:
  - https://wwwn.cdc.gov/Cris2009/