Course 8K -*Strategies & Challenges in HIV Programming for People Living with Co-Occurring SUD and/or Serious Mental Disorders*

A Continuing Education Course Sponsored Online by CEU By Net, LLC

This is STUDY GUIDE 1

Chapters 1-4 of SAMHSA's Prevention and Treatment of HIV Among People Living with Substance Use and/or Mental Disorders

EVIDENCE-BASED RESOURCE GUIDE SERIES

SAMHSA Publication No. EP20-06-03-001, Released 2020

SAMHSA
Substance Abuse and Mental Health Services Administration

NOTES ABOUT HOW TO TAKE THIS COURSE AND ITS THREE QUIZZES

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When you have passed all 3 quizzes, you will see a message saying, 'Congratulations, you are almost done!' - with instructions to complete the Feedback Form for this course. Click the Feedback Form link and complete and submit it. After submission of the Feedback Form, you will see a message and a link to DOWNLOAD your CERTIFICATE. You can save it to your computer and print it, and/or you may also email it as an attachment, to yourself or someone else. You can reprint it at any time.

Prevention and Treatment of HIV Among People Living with Substance Use and/or Mental Disorders

Acknowledgments

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MESSAGE FROM THE ASSISTANT SECRETARY FOR MENTAL HEALTH AND SUBSTANCE USE, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

As the first U.S. Department of Health and Human Services Assistant Secretary for Mental Health and Substance Use at the Substance Abuse and Mental Health Services Administration (SAMHSA), I am pleased to present this new resource: *Prevention and Treatment of HIV Among People Living with Substance Use and/or Mental Disorders.*

In response to the charge of the 21st Century Cures Act to disseminate information on evidence-based practices and service delivery models, the National Mental Health and Substance Use Policy Laboratory has developed the Evidence-Based Resource Guide Series focused on the prevention and treatment of substance use disorders (SUD and mental illnesses. With this specific guide, SAMHSA's goal is to inform health care practitioners and administrators, policy makers, and community members about strategies to prevent and treat HIV among individuals who have mental illness and/or SUD.

Established in 2019, the federal initiative "Ending the HIV Epidemic: A Plan for America" aims to reduce new HIV infections in the United States by 90 percent by the year 2030. It encourages implementation of HIV prevention, diagnosis, treatment, and outbreak response through effective programs, practices, and resources. Supporting the needs of people at risk for and with HIV who have co-occurring mental illness and/or SUD is key to meeting the initiative's goals. *People with mental illness and/or SUD are particularly vulnerable to HIV.* SUD*, in particular, can hasten the progress of HIV.*[1] *More specifically, injection drug use increases the risk of getting or transmitting the disease,*[2] *and the risk of getting HIV is 4 to 10 times greater for people with mental illness.*[3]

This guide reviews effective programs and practices to prevent HIV and increase adherence to and retention in care. I encourage you to use this guide to become informed about the populations experiencing mental illness and/ or SUD with or at risk for HIV; to review the current evidence on the effectiveness of programs and practices to prevent HIV among this population; and to develop and implement appropriate and effective programming in your communities. Ultimately, your efforts will help meet the goals of ending the HIV epidemic over the next decade.

Elinore F. McCance-Katz, MD, PhD
Assistant Secretary for Mental Health and Substance Use
U.S. Department of Health and Human Services

1 National Institute on Drug Abuse. (2020, April 10). Common comorbidities with substance use disorders research report. https:// www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-3-connection-between- substance-use-disorders-hiv
2 National Institute on Drug Abuse. (2020, April 10). ibid
3 Remien, R. H., Stirratt, M. K., Nguyen, N., Robbins, R. N., Pala, A. N., & Mellins, C. A. (2019). Mental health and HIV/AIDS: The need for an integrated response. AIDS, 33(9), 1411-1420. doi: 10.1097/QAD.0000000000002227

Forward

Evidence-Based Resource Guide Series Overview

The Substance Abuse and Mental Health Services Administration (SAMHSA), and specifically, the National Mental Health and Substance Use Policy Laboratory (Policy Lab), is pleased to fulfill the charge of the 21st Century Cures Act to disseminate information on evidence-based practices and service delivery models to prevent substance misuse and help people with substance use disorders (SUD), serious mental illnesses (SMI), and serious emotional disturbances (SED) get the treatment and support they need.

Treatment and recovery for SUD, SMI, and SED can vary based on a number of geographic, socio-economic, cultural, gender, race, ethnicity, and age-related factors, which can complicate evaluating the effectiveness of services, treatments, and supports. Despite these variations, however, there is substantial evidence to inform the types of resources that can help reduce substance use, lessen symptoms of mental illness, and improve quality of life.

This Evidence-Based Resource Guide Series contains a comprehensive set of modules with information to improve health outcomes for people at risk for developing, living with, or recovering from mental illness and/or SUD. It is designed for practitioners, administrators, community leaders, and others considering an intervention for their organization or community.

A priority topic for SAMHSA is preventing human immunodeficiency virus (HIV) among people with mental illness and/or SUD and linking people with HIV and co-occurring mental illness and/or SUD to HIV care. This guide reviews research findings and literature related to this issue, examines emerging and best practices, and identifies challenges and strategies for implementation.

SAMHSA's Policy Lab developed this document between 2019 and 2020 prior to and during the COVID19 pandemic ....,,, The practices and programs highlighted in Chapter 4 are examples of implementation prior to and at early phases of the pandemic. It is quite possible that these organizations and programs have modified their service delivery to include telehealth and other ways of providing services due to the COVID-19 public health emergency.

Expert panels of federal, state, and non-governmental participants provided input for each guide in this series. The panels included accomplished scientists, researchers, service providers, community administrators, federal and state policy makers, and people with lived experience. Members provided input based on their knowledge of healthcare systems, implementation strategies, evidence-based practices, provision of services, and policies that foster change.

Research shows that implementing evidence-based practices requires a comprehensive, multi-pronged approach. This guide is one piece of an overall approach to implement and sustain change. Readers are encouraged to visit the SAMHSA website for additional tools and technical assistance opportunities.

Quick View of Primary Interventions for HIV Prevention and Treatment

Biomedical

Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP) are medications that can be taken to prevent HIV transmission. PrEP has been shown to reduce the risk of contracting HIV from sex by 99 percent, and the risk of contracting HIV from injection drug use by 74 percent. When taken within three days of possible exposure to the virus, Post-Exposure Prophylaxis (PEP) has been shown to lower chances of HIV transmission by more than 80 percent.

ART is a combination of medications used to treat HIV. ART blocks HIV replication, decreasing the amount of HIV in blood and bodily fluids. By reducing the HIV viral load (amount of virus) in the body, ART improves the health outcomes of people with HIV; decreases mortality; and, when treatment results in an undetectable viral load, reduces the chance of transmitting the disease to others to zero. The availability of and adherence to ART has changed HIV from a terminal diagnosis to a manageable chronic disease.

Behavioral

CM is a behavioral therapy that uses motivational incentives and tangible reinforcers to increase desirable behavior. People in CM programs are given reinforcers—often vouchers that can be exchanged for money or goods, or chances to win prizes—when they consistently demonstrate positive behavior (e.g., negative urine drug screens, reduction in viral load through ART, showing up for an appointment).

Content of the Guide

This guide contains a foreword and five chapters. The chapters stand alone and can be read in any order. Each chapter is designed to be brief and accessible to healthcare practitioners, healthcare system administrators, community members, policy makers, and others working to meet the needs of people at risk for developing, experiencing, or recovering from mental illness and/or SUD.

The goal of this guide is to review the literature on preventing and treating HIV for people with mental illness and/or SUD, distill the research into recommendations for practice, and provide examples of how practitioners use these practices in their programs.

FW **Evidence-Based Resource Guide Series Overview**

Introduction to the series.

1 **Issue Brief**

Overview of current approaches and challenges to preventing and treating HIV for people with mental illness and/or SUD.

2 **What Research Tells Us**

Current evidence on effectiveness of programs and strategies to prevent HIV among people with co-occurring mental illness and/or SUD and link them to HIV care: Practices to increase uptake of and improve adherence to Pre-Exposure Prophylaxis (PrEP), Syringe Services Programs, Contingency Management, Cognitive Behavioral Therapy, and Patient Navigation.

3 **Guidance for Selecting and Implementing Evidence-based Practices**

Practical information to consider when selecting and implementing programs and practices to improve health outcomes for people with mental illness and/or SUD with or at risk for HIV.

4 **Examples of Effective Programs and Strategies**

Descriptions of programs and practices to prevent HIV and link people with HIV and co-occurring mental illness and/or SUD to HIV care.

5 **Resources for Evaluation and Quality Improvement**

Guidance and resources for implementing best practices, monitoring outcomes, and improving quality.

A NOTE ON MEDICATIONS FOR OPIOID USE DISORDER

SAMHSA has an extensive online resource center with tools for use alongside this guide. For example, practitioners can use the current (May 2021) Treatment Improvement Protocol (TIP) 63: Medications for Opioid Use Disorder together with practices recommended in this guide to support improved health outcomes for people with or at risk for HIV who are experiencing opioid use disorder. ***To avoid duplication, this guide does not discuss medications for opioid use disorder.***

FOCUS OF THE GUIDE

People with mental illness and/or SUD are disproportionally affected by HIV. They may participate in behaviors that increase risk for contracting and transmitting HIV, such as sharing injection drug equipment or engaging in sexual behaviors that increase HIV risk. This guide addresses the co-occurrence of HIV and mental illness and/or SUD. It reviews effective programs and practices to prevent HIV and, for those with HIV, to increase linkage and retention in care in order to improve health outcomes.

CEU By Net, LLC Note

This CEU By Net 'Course 8K' is the material contained in Chapters 1 through 4 of SAMHSA's 2020 update of 'Prevention and Treatment of HIV Among People Living with Substance Use and/or Mental Disorders.'

The 4 chapters are divided into 3 Study Guides (sections), and each section has a quiz (3 quizzes total). **THIS IS STUDY GUIDE 1.**

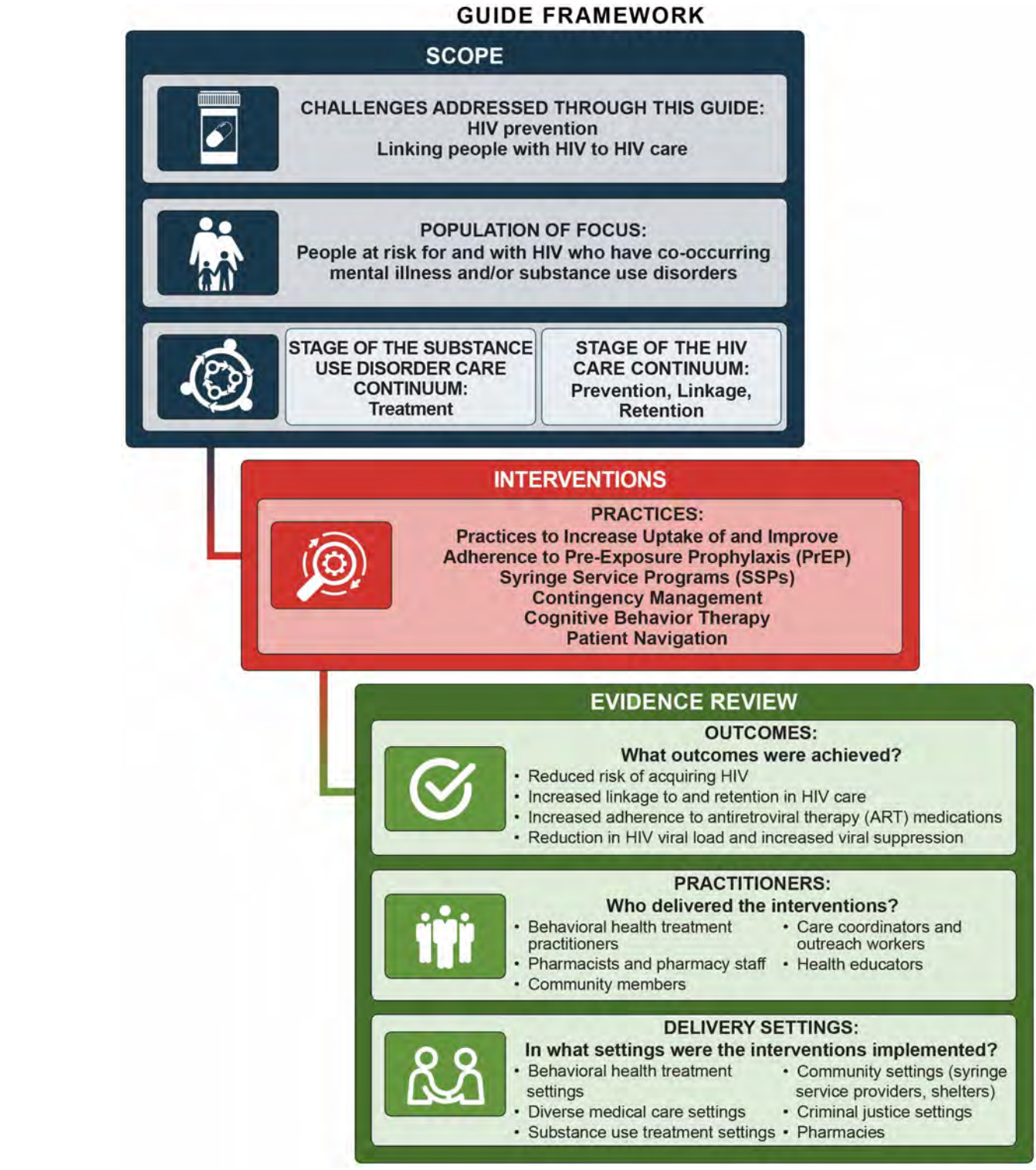
As indicated in SAMHSA's note at the lower left, they did not include their newly REVISED 'TIP 63 pertaining to Medications for Opioid Disorder' in this document. *However*, we want those who take this course to be aware of the basic concepts expressed in the revision of TIP 63.

Therefore, following chapter 4 in Study Guide 3, *CEU By Net, LLC* has inserted text extracted from SAMHSA's *May 2021 revision of TIP 63, regarding medications in treatment of PTSD and Opioid Use Disorder*, plus a *Depression Rating Scale* - both of which are referenced in this current SAMHSA document pertaining to treatment of HIV in persons with co-occurring behavioral health disorders.

- CEU By Net

CEU By Net NOTE: SAMHSA has inserted some 'pop-up' notations that may appear next to some of the graphics and tables in this course when viewed online. You will NOT be tested on those 'popups' and they will NOT be visible when the course is printed. They provide additional explanation only. You may read if desired.

The graphic below provides an overview of SAMHSA's research process for this document. The guide addresses the challenges in conducting the research pertaining to the target population (people with HIV and co-occurring mental illness and/or SUD), and then focuses on prevention and treatment programs that have been evaluated. The review of these programs in Chapter 2 of the guide includes specific outcomes, practitioner types, and delivery settings.



CHAPTER

1

Issue Brief

First detected in 1981,[1] human immunodeficiency virus (HIV) is a retrovirus that infects a type of white blood cells called CD4+ T-cells and puts people at increased risk for other infections. If left untreated, HIV can lead to acquired immunodeficiency syndrome (AIDS), which was once a fatal infection.

While there is no cure for HIV, it can be effectively managed as a chronic illness with antiretroviral therapy (ART), and prevented through harm reduction strategies (e.g., condoms and syringe services programs) and medical interventions (e.g., pre-exposure prophylaxis [PrEP] and post-exposure prophylaxis [PEP]).

Substantial progress has been made in preventing HIV and supporting people with HIV, however, there is still room for improvement in addressing linkage to treatment, ART initiation and adherence, and viral suppression, as well as engagement and retention along the HIV care continuum.

Challenges with client engagement across the HIV care continuum hinder the effectiveness of prevention and treatment efforts. These challenges increase the likelihood of HIV transmission and negative health outcomes for people with HIV.

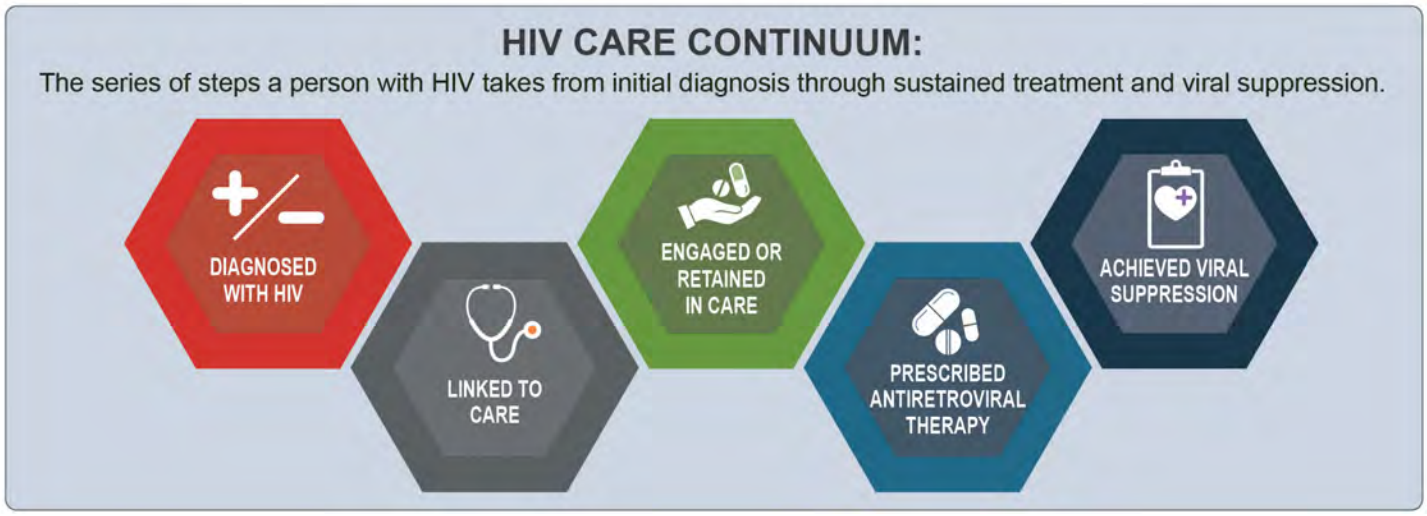
Established in 2019, the federal initiative "Ending the HIV Epidemic: A Plan for America" (EHE)[4] capitalizes on scientific discoveries and increased public awareness to prevent and treat HIV. As of 2020, there are 1 million people with HIV in the United States, and an estimated 38,000 new infections occur each year.[5] The goal of the EHE initiative is to reduce new infections by 75 percent by 2025 and by 90 percent by 2030.[6]

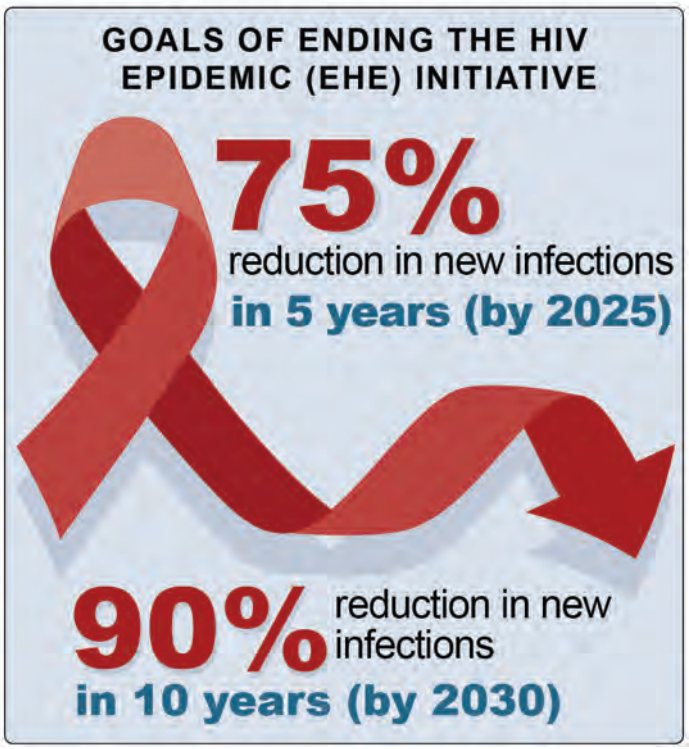
The success of the EHE initiative relies on identifying pathways to increase access to HIV prevention and treatment for those with complex needs.[7-8]

Biomedical Interventions for HIV Prevention and Treatment

Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP) are medications that can be taken to prevent HIV transmission. PrEP has been shown to reduce the risk of contracting HIV from sex by 99 percent, and reduces the risk of contracting HIV from injection drug use by 74 percent.[2] PEP, when taken within three days of possible exposure to the virus, has been shown to lower chances of HIV transmission by more than 80 percent.[3]

ART is a combination of medications used to treat HIV. ART blocks HIV replication, decreasing the amount of HIV in blood and bodily fluids. By reducing the HIV viral load (amount of virus) in the body, ART improves the health outcomes of people with HIV; decreases mortality; and, when treatment results in an undetectable viral load, reduces the chance of transmitting the disease to others to zero. The availability of and adherence to ART has changed HIV from a terminal diagnosis to a manageable chronic disease.





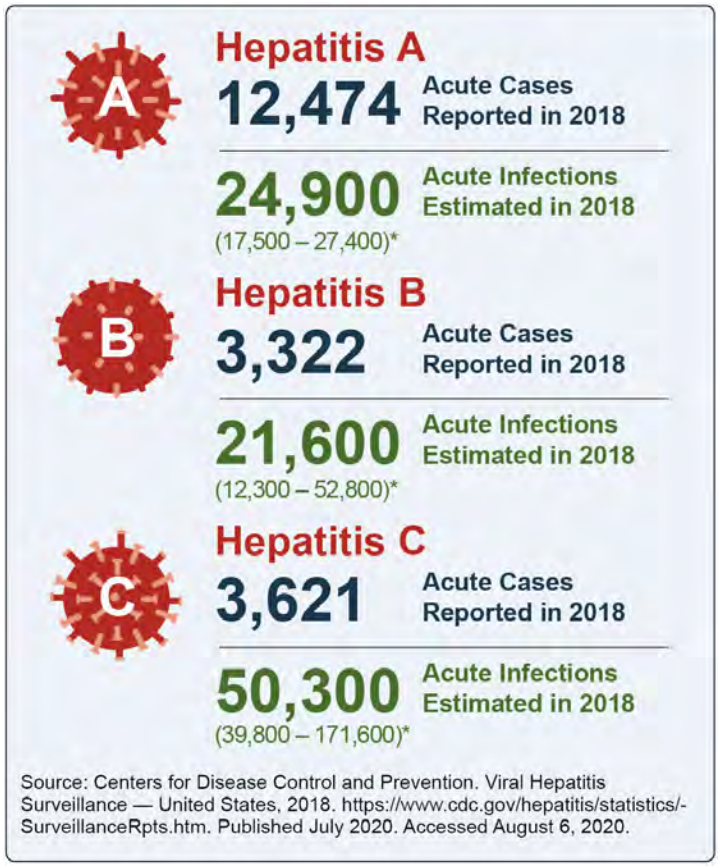
HIV Testing

In the United States, about 1 in 7 (14 percent) of the estimated 1 million people with HIV do not know they have the disease.[9] Testing identifies a person's HIV status and helps to link those who are newly diagnosed with HIV to care. Testing also helps to prevent HIV transmission and new infections.[10] Individuals who are undiagnosed or unaware of their HIV infection account for an estimated 30 to 40 percent of ongoing HIV transmissions.[11-12] The U.S. Preventive Services Task Force recommends that clinicians conduct screening for HIV infection among individuals aged 15 to 65, younger adolescents and older adults at increased risk, and all pregnant women, giving the recommendation an "A" rating, requiring HIV testing be provided free by health insurance companies.[13-15]

The EHE initiative recommends the following steps to increase the number of undiagnosed people with HIV who receive an HIV test, are diagnosed, and receive treatment: 1) make HIV testing simple, accessible, and routine in healthcare and non-healthcare settings using innovative technology, systems, and programs; and 2) conduct focused work to increase annual testing among people who are at substantial risk for HIV. HIV testing can be conducted in a range of clinical settings or at home (through rapid or mail-in self-tests).[16-17]

Behavioral health providers play an essential role in providing integrated HIV, viral hepatitis, mental health, and substance use screenings within the clinic setting. In a 2019 "Dear Colleague Letter," SAMHSA called on mental health and substance use providers to increase on-site, same-day oral fluid HIV testing efforts and include HIV testing as part of the standard of care.[19] Oral fluid testing can be self-administered and provides results within 20 minutes.[20] Settings that provide screening for many common co-occurring illnesses often include testing for viral hepatitis to address both hepatitis prevention and potentially serious co-occurring HIV and viral hepatitis infections.[21]

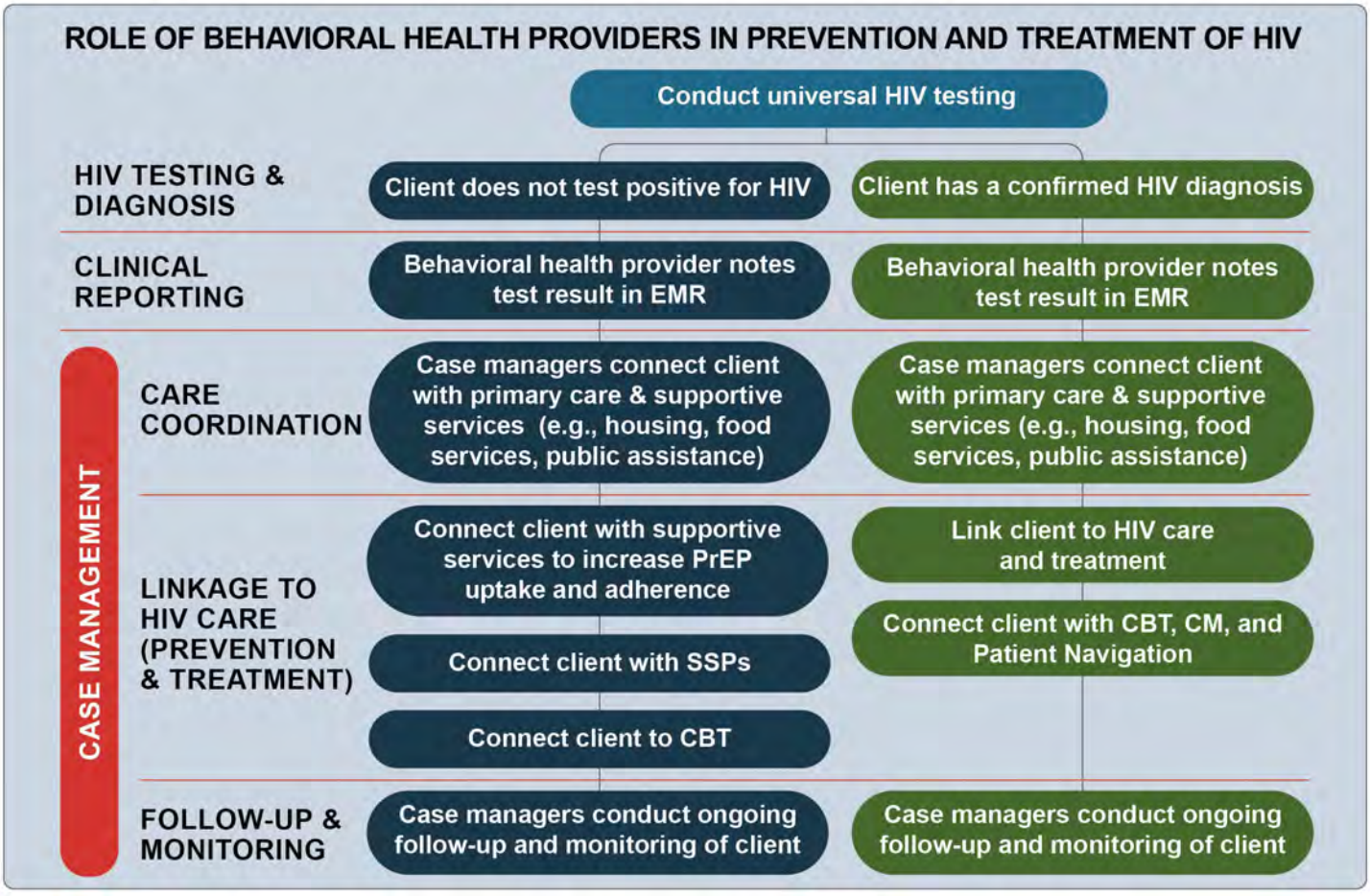
People with any mental illness diagnoses or symptoms were more likely to report being tested for HIV than those without mental illness diagnoses or symptoms.[22] However, only 48.5 percent of people with a mental illness have had an HIV test.[23]



Once diagnosed with HIV, persons with three or more psychosocial concerns were less likely to be adherent to HIV medications and persons with four or more problems were less likely to be virally suppressed.[24] ***People with mental illnesses were less likely to be prescribed ART and achieve viral suppression.***[25] **[ART blocks HIV replication, decreasing the amount of HIV in blood and bodily fluids.]**

Aligning with the EHE key strategy of diagnosing all individuals with HIV, **universal testing in behavioral health settings can support rapid linkage to preventive services and HIV care including supportive services to increase PrEP uptake and adherence, syringe services programs (SSPs), cognitive behavioral therapy (CBT), contingency management (CM),** and **patient navigation (further discussed in Chapter 2)**.[26] The flow diagram (below) shows the role of mental health and substance use providers in caring for clients who are at risk for or have been diagnosed with HIV.

The Steps and Decision Tree in Prevention and Treatment of HIV



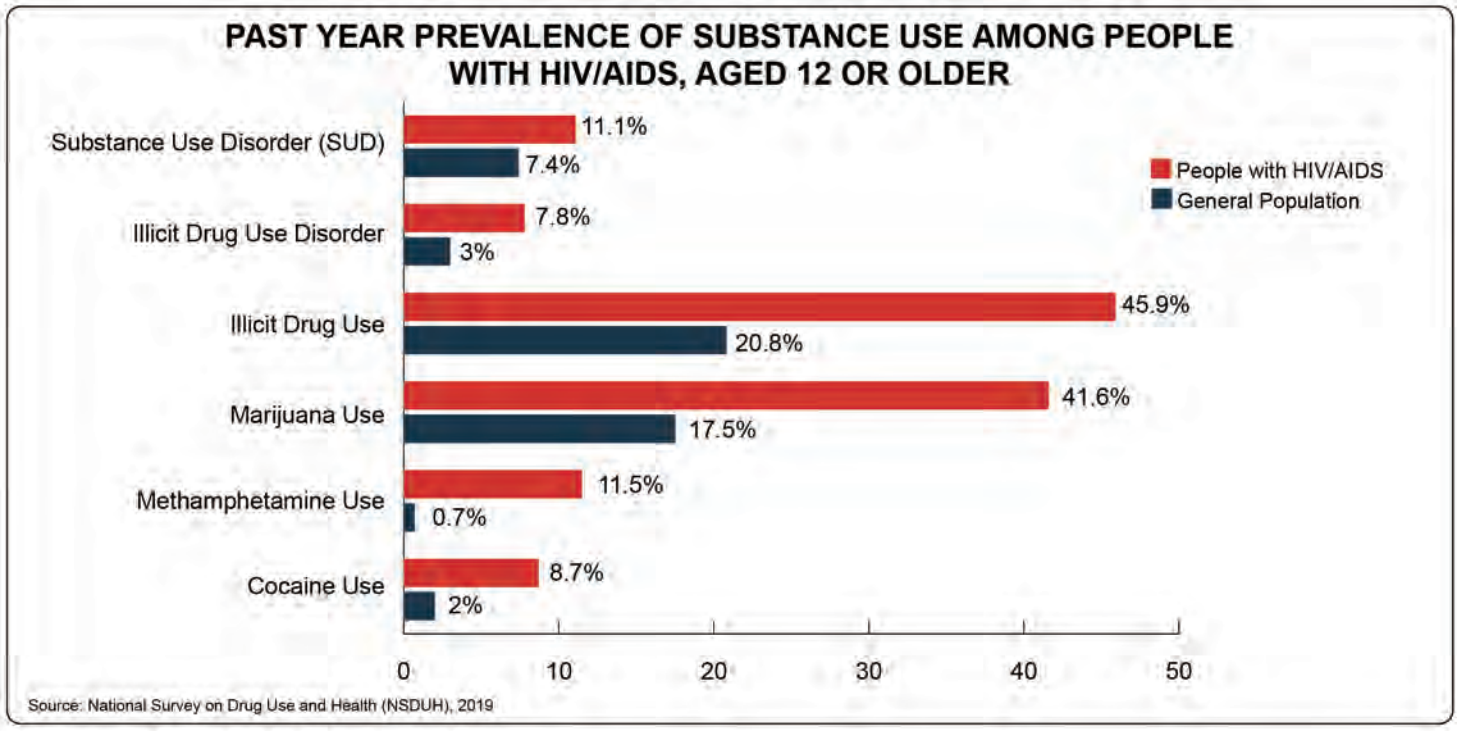
Substance Use and HIV

SUD can increase the risk of getting HIV and negatively impact HIV care, treatment, and related health outcomes. The prevalence of substance use among people with HIV is also higher than among the general population (as shown in the chart below). People who inject drugs (PWID) are at increased risk for blood borne pathogens, such as HIV and hepatitis B and C.[27] In 2017, 9 percent (or 3,641) of the 38,739 new HIV diagnoses in the United States and its territories were among PWID.[6, 28] Of that population, 2,625 were male and 1,016 were female.[28] Six percent (or 2,389) of new HIV diagnoses in the United States were directly attributed to PWID.[29] New HIV diagnoses are most prevalent among Whites, Blacks/African Americans, and individuals between the ages of 25 and 44.[28]

In addition, research suggests that substance use, including alcohol,[30-32] methamphetamine,[33-34] cocaine,[35] opioids, and inhalants, increases sexual behaviors that are associated with increased likelihood of getting HIV (e.g., condomless sex).[28, 36-38]

Mental Health and HIV

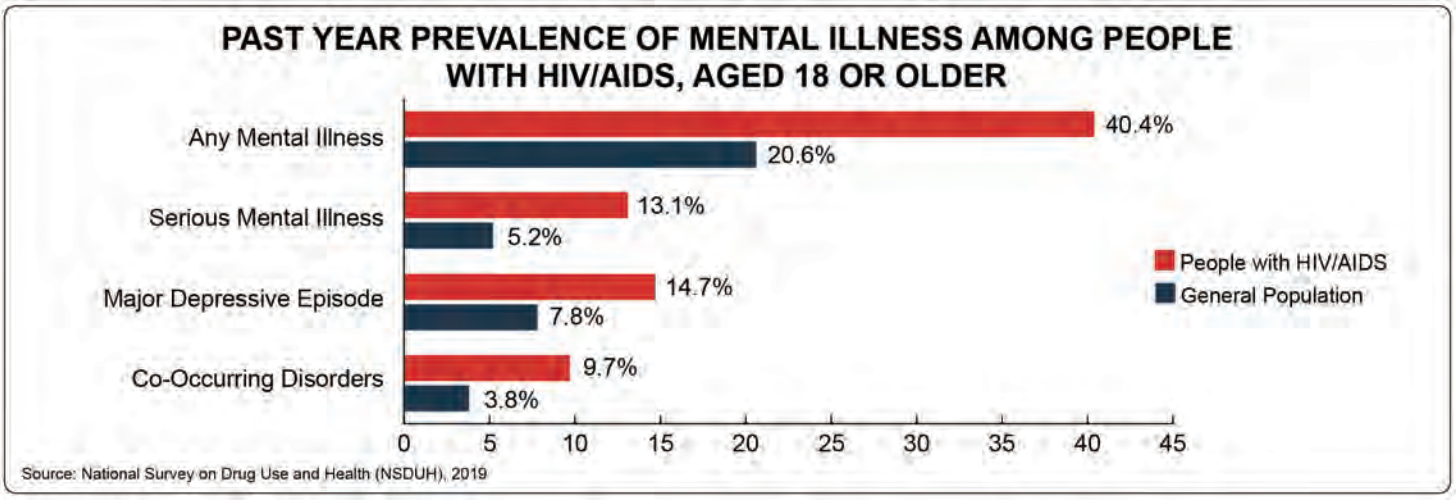
Mental illness can interfere with HIV prevention and adherence to treatment[48-49] and is linked to behaviors that increase likelihood of getting HIV.

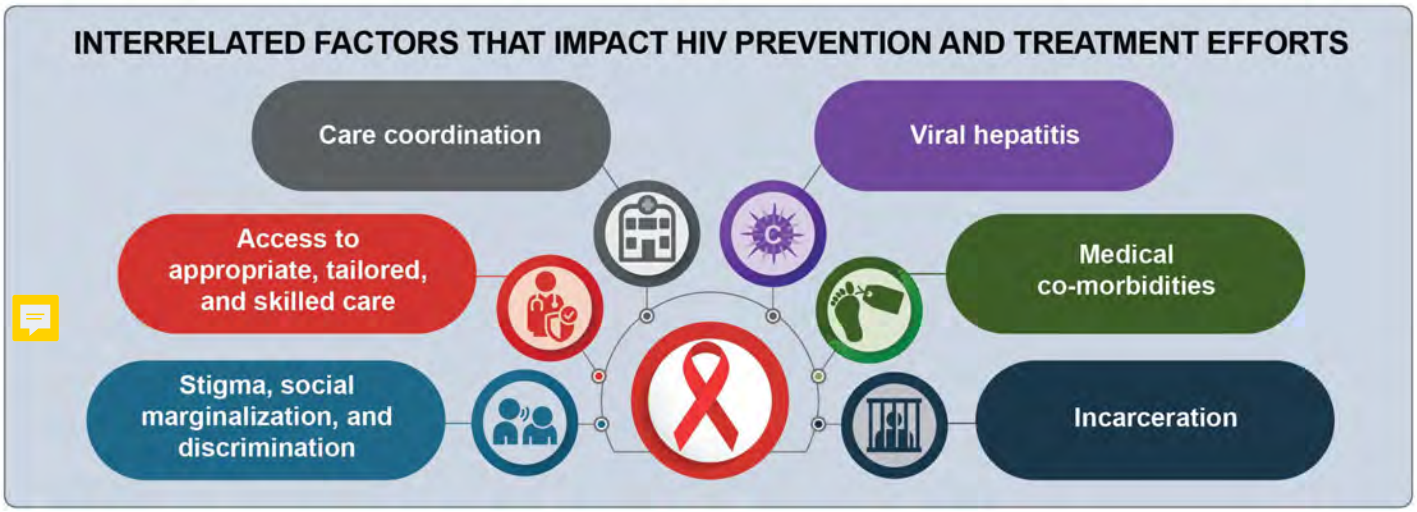


Substances and HIV-Related Outcomes	
Alcohol	Heavy alcohol consumption is linked to sexual behaviors that increase likelihood of getting HIV and associated with delays in HIV diagnosis and lower rates of ART receipt and adherence.[39-40]
Opioids	Opioid use is associated with injection drug use equipment sharing and sexual behaviors that increase likelihood of getting HIV.[41-42] Injection drug use presents increased likelihood for HIV transmission, because the virus can survive in a used syringe for up to 42 days. A person without HIV has a 1 in 160 chance of getting HIV when using a syringe previously used by someone who has HIV.[38] Emerging evidence suggests that individuals who misuse prescription opioids are engaging in sexual behaviors that increase likelihood of getting HIV (e.g., condomless sex, sex with multiple partners).[42-43]
Methamphetamine	Methamphetamine use is associated with injection drug use equipment sharing and sexual behaviors that increase likelihood of getting HIV. People who actively use methamphetamines have lower rates of adherence to ART and medical follow-up (impacting both prevention and treatment).[44-45]
"Club drugs" [e.g., 3,4-methylenedioxymethamphetamine (MDMA, Ecstasy, Molly), Ketamine (Special K), Gamma Hydroxybutyric Acid (GHB, Liquid Ecstasy), alkyl nitrites (Poppers, TNT)][46]	"Club drugs" have been linked to sexual behaviors that increase likelihood of getting HIV. However, studies on these drugs are complicated, as it can be difficult to determine the timing of drug use and sexual behavior. Poly-drug use is also common among users of club drugs, complicating analyses.[47]

The prevalence of mental illness among people with HIV is also higher than among the general population (as shown in the chart below). People with HIV may experience high rates of depression, mood disorders, and generalized anxiety disorder.[50-55] An estimated 10 to 28 percent of people with HIV have co-occurring mental illness and/or SUD.[56] People with HIV who also experience depression report higher rates of other co-occurring mental health concerns such as anxiety disorders (78 percent) and SUD (61 percent), as well as increased viral loads.[54, 57-58] Depression in people with HIV can also negatively affect HIV treatment, as it is associated with discontinuation of and non-adherence to ART.[59-60]

In addition to depression and anxiety, trauma and post-traumatic stress disorder (PTSD) are strongly associated with HIV. Experiences of trauma among people with HIV can lead to behavior that increases likelihood of transmitting HIV, lower adherence to HIV care and ART, and higher likelihood of AIDS-related mortality.[61] Among women in the United States with HIV, 30 percent have PTSD (five times the national rate for women).[62]





Furthermore, women from low-income, high-HIV prevalence communities experience stressors that lead to the development of PTSD, such as high rates of child maltreatment and physical, emotional, and sexual abuse.[63]

Interrelated Factors that Impact HIV Prevention and Treatment Efforts

Understanding the complex relationship between social determinants of health, unmet needs, and HIV-related risk factors is key to addressing HIV and mental illness and/ or SUD.[64] For example, it is difficult to engage people in HIV prevention or treatment programs when their basic ancillary needs (e.g., housing, child care, transportation, food, employment, health insurance) are not met.[65-68] In urban, high-poverty areas, higher HIV prevalence tends to be associated with socioeconomic status, including educational attainment, household income, employment status, structural racism, and housing status.[69-70] There are six key interrelated factors (identified below) that impact HIV prevention and treatment efforts addressed through the practices highlighted in this guide.

Stigma, social marginalization, discrimination

Stigma is a "perennial problem,"[71] contributing to poor ART adherence, higher rates of depression,[72] and challenges related to HIV prevention (e.g., fear of disclosure impacting negotiation of condom use).[73] Stigmatizing beliefs (e.g., that HIV can be transmitted through coughing or sneezing) contribute to a culture of social discomfort, prejudice, violence, and discriminatory actions (e.g., avoiding interactions with a person they know has HIV).[73] Stigma and mistrust of medical systems may deter individuals from seeking care and from sharing with their healthcare providers details about behaviors that increase risk of getting HIV (e.g., injection drug use, condomless sex) and existing medical conditions (e.g., mental illness, SUD, HIV status, testing, and medication adherence).

Access to appropriate, tailored, skilled care

Mental illness and SUD are conditions that present barriers to accessing and linking to HIV care, as well as initiating and adhering to medication (ART, PrEP, and PEP).[60, 74-80] Access to treatment is key to reaching viral suppression.[79] Individuals may experience challenges in finding providers that have expertise in HIV, mental health, and SUD. Mental illness and SUD treatment providers are well positioned to address some of the social determinants of health and unmet needs, but they may need additional training to address co-occurring HIV.[81]

Care coordination

Untreated or undertreated mental illness and/or SUD can create obstacles to initiating and continuing PrEP and ART, increasing the potential for HIV transmission. Integrated testing (as previously described) and service delivery (e.g., multi-disciplinary teams and one-stop-shop models that provide co-located or coordinated substance use, mental health, medical, and social services, further discussed in Chapter 3) are successful strategies for engaging and retaining in care people with or at risk for HIV who may have multiple co-occurring health and ancillary service needs.[82-85] Coordinated care, linkage to HIV care, and patient follow-up and monitoring within behavioral health settings (further discussed in Chapter 2) are also key to facilitating HIV prevention and treatment.

Medical co-morbidities

People with HIV have been shown to be at higher risk for cardiovascular disease, hepatic and renal disease, osteoporosis and fractures, metabolic disorders, skin and soft-tissue disorders, pulmonary disorders, central nervous system disorders, and various forms of cancer.[86-87] Cognitive difficulties can be caused by the impact of HIV on the brain (i.e., HIV-associated neurocognitive disorder).[88-89] Possible side effects and interactions from pharmacological therapy, including ART and medication for opioid use disorder, may further complicate health outcomes.[86-87, 90]

Viral hepatitis

People with HIV are disproportionately affected by viral hepatitis (hepatitis A virus [HAV], hepatitis B virus [HBV], and hepatitis C virus [HCV]). Of those with co-occurring HIV and viral hepatitis, about one third have both HBV and HCV. HBV and HCV are bloodborne pathogens, which can be spread through needle sharing associated with injection-drug use.[21] Nearly 75 percent of people with HIV who inject drugs also are infected with HCV.[91] Both HBV and HCV are also associated with sexual behaviors that increase risk of HIV (e.g., condomless sex). About half of people who have HCV do not display symptoms, so it is important that regular testing is done.[92] Co-occurring HIV and viral hepatitis present challenges in managing and treating HIV infection.[91, 94-95] Hepatitis A, B, and C are all associated with liver inflammation and liver damage. When the liver is inflamed, it is less able to process medications including anti-retroviral medications, which can cause worsened side effects of HIV medicine.[96] People with HIV who contract viral hepatitis are more likely to experience a faster progression of liver-related injury than people who do not have HIV.[21] Medications to treat hepatitis are similar to HIV in that they are anti-retroviral. However, some medications that treat HIV and HCV are not safe to use together, so it is important that people with HIV and HCV regularly consult with a doctor.[94]

Incarceration

While the extent of HIV transmission within jails and prisons is not fully understood,[97-99] the risk of HIV is heightened for incarcerated populations compared to non-incarcerated populations, namely due to high rates of HIV in prisons, inconsistent screening for HIV upon entry and release, condomless sex, injection drug use equipment sharing, and the labeling of condoms as contraband within prisons.[100-102] Release from incarceration is widely considered an especially vulnerable period for both opioid overdose[101-103] and discontinuation of HIV care and ART treatment provided during incarceration. The interruption in care can lead to reductions in treatment adherence[101, 104] and increases in viral loads.[101-102]

1 HIV.gov. (n.d.). *A timeline of HIV and AIDS*. htpps://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline

2 Centers for Disease Control and Prevention. (2019, October 17). *PrEP*. https://www.cdc.gov/hiv/basics/prep.html

CEU BY NET NOTATION: This is the end of Study Guide 1. You may take Quiz 1 (i.e., the quiz for Study Guide 1) now or after you finish reading the other two Study Guides in this course. (There are three Study Guides total, and each has a quiz.)

To take the quiz for Study Guide 1, return to your My Home Page and click the name of the course. You will be taken to the Study Guides and Quizzes page for this course. You will see the link to 'view or take' Quiz 1 on the right. Complete it and then click SUBMIT.

You can find Study Guide 2 for this course on the left side of the Courses and Quizzes page for this course. You can always find the Courses and Quizzes page by clicking the name of the course on your My Home Page.