

**Programs for Persons with Mental Illness and HIV**

by

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B.S. in Biological Sciences, University of Pittsburgh, 2022

Submitted to the Graduate Faculty of the  
Department of Infectious Diseases and Microbiology  
School of Public Health in partial fulfillment  
of the requirements for the degree of  
Master of Public Health

University of Pittsburgh

2023

UNIVERSITY OF PITTSBURGH  
SCHOOL OF PUBLIC HEALTH

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2023

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University of Pittsburgh, 2023

## **Abstract**

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system. Over time, it may lead to Acquired Immunodeficiency Syndrome (AIDS), weakening the patient's immune system and leaving them unable to fight infections. HIV leads to an increased risk of cardiovascular diseases, diabetes, chronic renal disease, hepatitis B and hepatitis C, and other chronic diseases. HIV can also lead to an increased risk of developing a serious mental illness. Those already diagnosed with a serious mental illness are also at an increased risk for HIV infection due to an increase in risk-taking behaviors, social determinants of health and other co-occurring disorders, such as substance use. This paper aims to examine different HIV programs to examine the characteristics that contribute to their effectiveness. This study will examine how programs address HIV prevention, diagnosis and treatment management, and advocacy for persons with mental illness and HIV.

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## 1.0 Introduction

### 1.1 Statement of Purpose and Aims

The purpose of this essay is to describe a program to support persons with mental illness that also have HIV infection. This essay intends to explore HIV programs in the greater Pittsburgh region in southwestern Pennsylvania that are tailored to persons with mental illness and identifying any gaps that the programs have.

### 1.2 Description of the Scope of the Problem

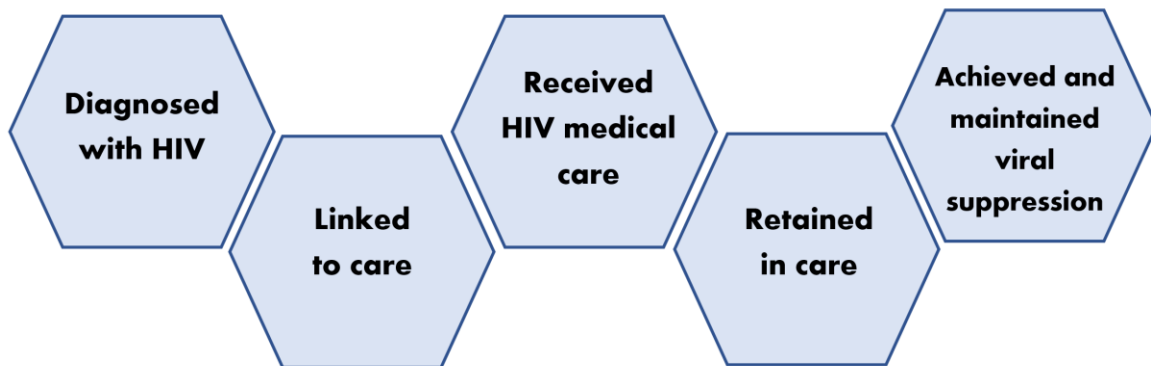


Figure 1 Outline of HIV Care Continuum (Gardner et al., 2011)

The HIV Care Continuum is a model that outlines the stages that persons with HIV go through from their diagnosis to viral suppression. It allows public health professionals to assess HIV outcomes on both an individual and a community level. The HIV Care Continuum also provides a framework for addressing HIV on a population level (Risher et al., 2017). The HIV

Care Continuum begins with the diagnosis of HIV infection, defined by an HIV diagnosis confirmed via HIV testing. The second step is linkage to HIV care, defined as HIV-positive providing patients with information and resources and linking them to treatment and care. The third step is treatment for HIV. The fourth step is retention in care to assure access to support service to keep them on HIV treatment regimen. The fifth step is defined as persons diagnosed with HIV who had two or more CD4 or viral load tests at least three months apart. This indicates adherence to care and effectiveness of the medication. Viral Suppression is defined as a viral load of less than 50 copies/mL and can only be achieved through adequate adherence to care (Gardner et al., 2011; Risher et al., 2017).

Although there have been significant medical advances in HIV prevention and treatment since the beginning of the HIV epidemic, HIV still has no cure. The management of HIV relies on patient adherence and access to antiretroviral therapy (ART) for the remainder of their lives (Remien, 2019).

Mental health is defined by the World Health Organization as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2019). Mental health is the foundation for general health and well-being. Like an HIV diagnosis, mental health diagnoses are frequently met with stigma, discouraging patients from acknowledging symptoms or consistently accessing care. HIV and mental health both impact each other. Mental health conditions frequently go undiagnosed in those with HIV (Cournos et al., 1991).

Those with mental health issues may have more challenges in adhering to ART or may increase risk-taking behavior that could lead to patients contracting HIV (Fredericksen et al.,

2021). Those with HIV are more likely to be diagnosed with major depressive disorder than those without HIV (Fredericksen et al., 2021). A patient's experience of receiving a HIV diagnosis can also worsen depressive symptoms, and depression may also be a side effect to receiving a HIV treatment (Sherr et al., 2011). In 1991, a study looking at patients that had been admitted to two psychiatric hospitals found that the prevalence of HIV among these patients is 5.5%. The prevalence was comparable in women and in men, and Black patients were disproportionately affected, holding 76% of positive results in the study (Cournos et al., 1991). This disparity in race, the similar proportion of men and women affected by HIV, and the disproportionate effect of HIV among persons with mental illness all still exist to this day. In 2020, the Kaiser Family Foundation published an article outlining the persisting disparities. As of 2020, Black patients account for 43% of HIV diagnoses despite being only 12% of the United States population. Although there have been improvements in these numbers since 1991, the disparity still persists. As of 2018, Black women account for the largest share of HIV diagnoses at 58% (CDC, 2023).

Persons with mental illness trying to manage HIV testing and treatment face extra barriers. A challenge is stigma and discrimination that occur with both HIV and mental illness. There is a distrust in the healthcare system, as persons with mental illness may not have had the best experiences in healthcare settings (Yehia et al., 2015; Nguyen et al., 2019). Cultural insensitivity surrounding how diverse cultures and communities view HIV diagnoses or mental health diagnoses could also play a role as a barrier to care for these patients (Yehia et al., 2015; Nguyen et al., 2019). Unreliable transportation or inconsistent housing could result in patients not being physically able to visit a clinic to adhere to treatment or get initial testing (Yehia et al., 2015; Nguyen et al., 2019). Persons with mental illness are at a higher risk of experiencing substance

abuse disorders, which is a risk-taking behavior that increases chances of contracting HIV but could also interfere with adherence to treatment (Yehia et al., 2015).

### **1.3 Public Health Significance**

This study works to identify characteristics of existing programs that make them effective. Analysis of programs to identify characteristics that make them effective could help existing programs create ways to adopt effective strategies to improve upon existing programs. Disseminating these results could also help existing programs advocate for more funding to be able to adopt strategies that have already been proven to make other programs effective. Adopting effective program characteristics could help reduce the incidence of HIV in the area.

## **2.0 Background and Review of Relevant Literature**

### **2.1 Persons Living with HIV and Mental Illness**

The literature has shown that persons living with mental illness are affected by the HIV epidemic at a disproportionate rate (Hobkirk et al., 2015; Conroy et al., 2022; Feelemyer et al., 2023). Serious mental illness can also impact adherence to treatment or to minimizing risk-taking behaviors (Hobkirk et al., 2015; Conroy et al., 2022; Feelemyer et al., 2023). HIV programs that also involve treating or managing mental illness can help clients better adhere to therapy, reducing the incidence and prevalence of HIV.

A 2021 study links social support with HIV outcomes. Many HIV care organizations have programs that focus on social services and support groups, and this study highlights just how vital these programs are to HIV care. The study found that low social support was associated with an increased risk of developing depression and poor adherence to treatment. Low levels of social support were also associated with drug use and anxiety. On the other hand, high social support was associated with better adherence to treatment and an undetectable viral load, indicating that a patient's HIV was well-managed. Medium social support levels were also associated with lower treatment adherence levels and poor engagement in care. These results highlight just how important the incorporation of social support is to HIV treatment and support programs (Fredericksen et al., 2021).

### **2.1.1 Veterans Living with HIV and Mental Illness**

One of the largest providers of HIV Care is the Department of Veterans Affairs (VA). Veterans with HIV getting care in the VA system often face other disorders due to their military service such as psychiatric and substance use disorders (Dux & Lee-Wilk, 2018). The VA has noted increased cases of psychiatric disorders such as post-traumatic stress disorder (PTSD), depression, and substance use disorders in the veteran population than in the non-veteran population. These disorders can contribute to an increased risk of contracting HIV as well, leading the VA to be one of the largest providers of HIV care.

A 2021 study looked at the VA's HIV Clinical Care Registry (CCR) between the years 2000 and 2006 to determine the effect of mental health diagnoses on the progression of HIV and AIDS. 69% of veterans in the study cohort were found to have at least one mental health diagnosis, with the most common disorders being substance abuse disorders, depression, anxiety, bipolar, and schizophrenia. Over half (53%) of the study cohort had greater than two mental health diagnoses. It was found that females were more likely to have a mental health diagnosis. Those with a mental health diagnosis were also faced with more outpatient visits and lower adherence to combination antiretroviral therapy. Through the calculation of hazard ratios, the study found that substance use disorder had the most negative effect on the progression of HIV and AIDS (Nurutdinova et al., 2021). The study highlights what an impact serious mental illness can have on the progression of HIV, especially in the veteran population where serious mental health diagnoses are a greater issue compared to the general population.

### **2.1.2 Women Living with HIV and Mental Illness**

Women living with HIV experiences higher rates of mental illness than men living with HIV and women without HIV infection. Even though this discrepancy exists, women living with HIV are frequently undertreated for their mental illness (Waldron et al., 2021). A history of sexually transmitted infections, intimate partner violence, and inconsistent condom use are all risk factor for contracting HIV, and factors that women experience more often than men, potentially leading to mental health issues while contracting HIV. These experiences combined with the increased burden of issues related to mental health in women living with HIV highlight the need for HIV care in conjunction with care for mental illness that also uses a trauma-informed approach (Waldron et al., 2021).

A 2022 study found that women living with HIV experience intimate partner violence with a prevalence of 55%, which is twice the prevalence of intimate partner violence in the general population (Conroy et al., 2022). Gender-based violence, including intimate partner violence, is associated with increased rates of mental health disorders such as depression, anxiety, and PTSD. Mental health disorders can decrease adherence to ART, which could worsen progression of HIV on an individual level. The intersectionality of gender-based violence and socioeconomic status can work together to exacerbate the effects of mental health diagnoses on the progression of HIV in women. Women with mental health disorders are more likely to be food insecure or be living in poverty which decreases adherence to ART. This also highlights how important trauma-informed social support is for mental health disorders in women living with HIV (Conroy et al., 2022).

### **2.1.3 Persons Living with Substance Abuse and HIV**

A study by Feelemyer et al. showed that there was an association between substance use and increased sexual risk behaviors. Sexual risk behaviors were described as condomless sex, having multiple sexual partners, or transactional sex. Both substance use and sexual risk behaviors increase the risk of contracting HIV. The meta-analysis that the Feelemyer et al. study conducted resulted in all but two of their studies reporting a positive association between drug use and unprotected sex, all but one study found a positive association between drug use and transactional sex, and all studies found a positive association between stimulant use and having multiple sexual partners (2023).

A 2021 study suggests that up to 50% of persons living with HIV currently report substance use. The rate of substance use disorders in persons living with HIV is also greater than the general population. Substance use disorders are found to interfere with adherence to treatment and as a result contribute to a more rapid progression of HIV. Those that use injection drugs are less likely to start and stay on ART even in areas where ART is readily available (Buckingham, Schrage & Cournos, 2013; Iverson et al., 2021). Lower adherence to treatment can also lead to higher viral loads and increased engagement in risk-taking behaviors (Buckingham, Schrage & Cournos, 2013; Conway, Rountree & Jones, 2021). Risk-taking behaviors can lead to unsafe sex practices or needle sharing during injection drug use, which could lead to the further spread of HIV increasing the prevalence. Support for those that are living with HIV and a substance use disorder is a necessary part of treatment for patients to adhere to care more strongly and in turn reduce viral loads.



## **2.2 Programs for Persons with HIV and Mental Illness from Across the Country**

The Adolescent Quality Learning Network (AQLN) in the state of New York is a collective of 16 HIV Specialized Care Centers that focus on providing HIV care to adolescent and young adult patients. They work to integrate medical services and mental health services to address the unique needs of adolescents and young adults living with HIV. This holistic approach to care aims to increase retention to care and adherence to ART, improving health outcomes. The centers work to address barriers to care relating to housing transitions, new adult responsibilities, health care coverage, mental health, and college transitions. The centers saw a 7.7% increase in the number of patients on ART in the four-year period between 2014 and 2018, and a 4.7% increase in viral suppression in the four-year period between 2014 and 2018. The AQLN works to reach the community by partnering with hospital systems around the state and the state health department and collaborating with providers to consistently improve upon their strategies (West et al., 2020).

Models for HIV care that include behavioral health services have been shown to help improve outcomes related to HIV, substance abuse, and serious mental illness (Goldhammer et al., 2022). These disorders are frequently co-occurring, so adopting a holistic treatment regimen would help improve health on many levels. The population of persons living with HIV are disproportionately affected by mental health disorders such as depression, anxiety, substance use, and PTSD, and these conditions frequently go untreated or undertreated. The lack of attention to these disorders could negatively impact quality of life and adherence to HIV treatment and care. Integration of behavioral health can take many forms including collaborative care; screening, brief intervention and referral to treatment (SBIRT); patient reported outcomes (PROs); and onsite psychological and addiction specialist services (Goldhammer et al., 2022).

### **2.2.1 Collaborative Care Programs**

A 2020 study implemented a collaborative care model in an urban HIV clinic, open to all clients regardless of insurance status. The model was implemented by pairing patients with depressive symptoms with a behavioral health professional. The behavioral health professional would then work with patients to develop self-management strategies and meet with psychiatrists to manage medication and counseling. Depressive symptoms were reassessed every month to ensure the therapy was effective (Gunzler et al., 2020).

Patients that were improving under the collaborative care model were shown to have an undetectable viral load at the end of the 12-month period. The collaborative care model was shown to improve depressive symptoms and have a positive effect on HIV care and adherence. Overall, collaborative care was shown to increase HIV clinic visits, increasing adherence to HIV treatment (Gunzler et al., 2020)

Collaborative Care Management (CoCM) is a Ryan White funded collaborative care program with various locations around the country. The CoCM programs have worked to create increases in the initiation and adherence to ART, leading to increases in viral suppression. They utilize population-based and measurement-based care to ensure that they are providing effective treatment to all their patients. Patients are routinely assessed for improvements in mental health, and providers work to change treatments plans if no improvement is seen. CoCM works to address mental health care along with medical HIV care to increase adherence to ART and increase viral suppression (Marc et al., 2021).

### **2.2.2 Screening, Brief Intervention, and Referral to Treatment (SBIRT)**

SBIRT is an acronym for Screening, Brief Intervention and Referral to Treatment. This method works to identify patients that are at risk for substance use disorders and connects them with preventative care so that they do not develop further health and social consequences from the substance use disorder (Bray et al., 2017). The SBIRT initiative is supported by the Substance Abuse and Mental Health Services Administration, a national organization that helps patients navigate substance use disorders. Programs that use SBIRT aim to improve the treatment for substance abuse disorders and reduce the harmful effects of these disorders (Bray et al., 2017).

Given that substance use is a common factor relating to HIV transmission, it would be important to note the potential role and impact SBIRT can have on persons living with HIV. SBIRT can help to identify patients that either experience substance abuse or that are at risk for it. This facilitates healthcare providers to provide early interventions to reduce the effects that substance use may have on patients. Persons with substance abuse disorders also show higher rates of HIV transmission behaviors and demonstrate lower adherence to ART. Brief interventions have been shown to reduce the use of alcohol, heroin, cocaine, and amphetamines (Dawson Rose et al., 2015; Acquavita et al., 2019; Puskar et al., 2013). A 2015 study looks at how effective SBIRT interventions are, and whether the efficacy changes when it is web-based or in-person. It was found that when the interventions were completed, they were effective in reducing substance use, but patients were more likely to complete the intervention in person than online (Dawson Rose et al., 2015). The study demonstrated that SBIRT interventions could be conducted while patients wait to be seen, saving time during the visit, and making a positive impact on their HIV care.

Ryan White funded initiatives that are a part of the Using Evidence-Informed Interventions to Improve Health Outcomes among People Living with HIV are current programs that use SBIRT

in practice. The programs have shown that using SBIRT increases the percentage of those who reach viral suppression and adherence to treatment. The programs use universal screening to determine drug and alcohol use and determine when the brief intervention should be administered. Those that used substances were also referred to treatment. SBIRT also increased the number of patients that initiated ART (Ellenberg et al., 2021).

### **2.2.3 Patient Reported Outcomes (PROs)**

Although Patient Reported Outcomes (PROs) are not a type of program model, they are an approach that some HIV programs incorporate into their strategies. Programs that use PROs assess mental health and substance abuse symptoms of persons living with HIV. Nearly half of people living with HIV have a substance use disorder, and 20-50% of persons living with HIV have a mental health disorder (Jabour et al., 2021). Because substance abuse and mental health disorders are so prevalent among persons living with HIV, assessing and treating symptoms of these disorders are important to the treatment of HIV. PROs are any report of a patient's health condition that comes directly from a patient and is not interpreted by anyone else. PROs can increase the rate of providers addressing potential substance use or mental health disorders and help providers work with patients to come up with early intervention plans to manage illness (Jabour et al., 2021). A 2021 study demonstrated that by incorporating PROs into HIV patient care, the issue of substance abuse or mental health was more likely to be addressed. Those that used PROs were also more likely to have action taken on substance abuse or mental health disorders. Results also highlighted high patient satisfaction with using the PROs, as patients listed that they would not have mentioned these issues if not for the PROs (Jabour et al., 2021).

#### **2.2.4 Onsite Psychological and Addiction Specialist Services**

Because persons living with HIV are disproportionately affected by mental health and substance abuse disorders, it is important to employ a holistic care approach to HIV treatment. The integration of the medical services with the mental health services is associated with better mental health outcomes, reduced stigma, more follow up visits, decreased substance abuse, and better health outcomes (Walley et al., 2015). Having addiction specialists and psychological specialists available to persons living with HIV in the same location as their HIV clinic could increase the probability that patients utilize the addiction and psychological services while they are at the clinic, improving health outcomes. This would also encourage communication and collaboration between the patient's providers, allowing them to create a holistic plan for their HIV care. A 2022 study highlighted that the presence of an addiction specialist at an HIV care clinic decreased the addiction severity of both alcohol and drug use across gender, age, and income level (Goldhammer et al., 2022). A study from 2015 also indicated that the presence of an addiction specialist and a psychological specialist resulted in lower addiction severity (Walley et al., 2015). Another study that takes place in Camden, New Jersey investigates the integration of HIV care with addiction services and its effect on viral suppression and retention to care. The study found that when addiction specialists worked collaboratively with HIV primary care providers, retention to care and rates of viral suppression were increased (Gorman, 2020). Another study about mental health in adolescent patients with HIV specifically found a need for not only the integration of mental health services with HIV care, but a need for adolescent friendly mental health services (Bosche et al., 2022). The onsite integration of psychological and addiction services with HIV care is essential to developing holistic HIV care programs.

### **2.2.5 Ryan White HIV/AIDS Program**

The Ryan White HIV/AIDS Program (RWHAP) is funded through the Health Resources and Services Administration (HRSA) and the HIV/AIDS Bureau and works to provide comprehensive HIV care and prescription drugs by funding health departments and HIV clinics. The Ryan White HIV/AIDS Program works to serve patients that are uninsured or underinsured and provides many support services for people living with HIV (HRSA, 2021). The Ryan White Program funds many of the HIV programs in the Pittsburgh area.

There are multiple parts to the Ryan White HIV/AIDS Program outlined in the Ryan White Comprehensive AIDS Resources Emergency Act of 1990. All Ryan White funding is used only after patients have exhausted other options such as insurance coverage.

Ryan White Part A provides grant funding to metropolitan and transitional areas. These areas are defined as populations of at least 50,000 with 2,000 AIDS cases in the last five years to be considered metropolitan and between 1,000-1,999 AIDS cases to be considered a transitional area (S.2240, 1990; HRSA, 2021).

Ryan White Part B provides grant funding to leaders of states and territories to increase access to HIV care within their state. Part B also has funds for the AIDS Drug Assistance Program that provides funding for medications for persons with HIV for the treatment of HIV diseases and co-morbid conditions, such as Hepatitis C, sexually transmitted infections, cardiovascular diseases, and diabetes. They distribute funds to community-based organizations to provide support services for patients. They also distribute at least 15% of their funds to support women, children, and families living with HIV (S. 2240, 1990; HRSA, 2021).

Ryan White Part C provides funding for early intervention services. This part provides direct funding to clinics to implement early intervention treatment services to persons with HIV.

Clinics and community-based organizations that provide direct clinical care apply for these cooperative agreements to deliver Part C services (S.2240, 1990; HRSA, 2021).

Ryan White Part D provides clinical services for women, children, adolescents as well as case management and support services (S. 2240, 1990; HRSA, 2021).

Ryan White Part F provides funding for dental services for patients with HIV and funding to the AIDS Education and Training Centers (S. 2240, 1990; HRSA, 2021).

The RWHAP features a tool that patients can use to find partner organizations that provide HIV care and support services. This tool is available online or by phone. To qualify for services, patients must be from a low-income background diagnosed with HIV or AIDS. They must also be uninsured or have insurance that does not pay for the care they need to manage their HIV (HRSA, 2021).

The RWHAP provides medical care services, drug assistance programs, and support services to assure comprehensive care. They also offer community-based health services and home health care, bringing care to communities in need of HIV care. In addition, they provide clinical treatment with adherence services and integrated behavioral health services. The program offers services for persons with HIV that may have developed a mental illness related to their diagnosis. They also offer substance use outpatient care, to help patients manage substance use disorders that could worsen mental illness or HIV treatment adherence (HRSA, 2021).

While the RWHAP helps provide medical care services, they also help provide social support services. The RWHAP provides financial assistance, food bank programs, and housing assistance. Patients from low-income backgrounds cannot adhere to treatment if they do not have basic needs. These services help patients meet basic needs so that they can focus on HIV treatment and prevention.

Case managers work with each patient to help them understand what services they need and what services are provided by RWHAP. A case manager can help patients understand the barriers they face and what services they can take advantage of to overcome barriers to care and treatment (HRSA, 2021).

An example of a Ryan White funded HIV program is the Broward County Ryan White Part A Program in Fort Lauderdale, FL. The Broward County program works to provide both primary care and behavioral health services. This allows their patients with HIV to be more easily connected to mental health and substance abuse services. They work to provide trauma-informed care and destigmatizing mental health services. While they partner with the Ryan White Program for funding, they also partner with the county health department to address community needs relating to HIV and mental health. In the two-year period between 2017 and 2019, the Broward County program saw a 21.1% increase in the number of clients who utilized mental health services (Broward County Health Care Services, 2021).

Another example of a Ryan White funded HIV program is the Rutgers School of Dental Medicine dental clinics. The clinic expanded to provide oral health care for persons with HIV. Their dental services specifically receive funding from Ryan White Part F. The Rutgers dental clinics offer low-cost oral health care to persons with HIV as they may not be able to afford dental services due to inability to pay for care, barriers involving transportation, and discrimination by providers. All providers at the Rutgers dental clinics go through trauma-informed care training, to ensure that they provide a safe space for persons with HIV to get dental care (Rutgers School of Dental Medicine, 2019).



## 2.3 Local and Regional Programs

### 2.3.1 AIDS Free Pittsburgh

AIDS Free Pittsburgh is a not-for-profit public health organization based in Pittsburgh, Pennsylvania that is dedicated to ending the HIV epidemic in Allegheny County. AIDS Free Pittsburgh works with community-based organizations, healthcare systems (UPMC and Allegheny Health Network), and government organizations to work to reduce the prevalence of HIV and provide support for persons living with HIV. They also receive funding from the University of Pittsburgh Medical Center and the Allegheny Health Network. AIDS Free Pittsburgh works to raise awareness for the HIV epidemic and encourage collaboration among community organizations to work to end the HIV epidemic. They work toward their goals of normalizing HIV testing, increasing access to pre-exposure prophylaxis (PrEP), and standardizing early linkage to care (*AIDS Free Pittsburgh*).

While AIDS Free Pittsburgh does not directly provide services, they do provide resources for service providers to connect with clients. Resources include information about HIV care options, PrEP, and HIV in general. These resources can be used to educate both patients and service providers, to increase the number of patients getting care to manage their HIV and encourage behaviors that prevent HIV. The website includes links to finding HIV testing sites, and links for how to obtain free HIV at-home tests. At home testing makes HIV testing more accessible to patients who may not always be able to get to a clinic. Information about the benefits of taking PrEP for those that are at-risk for HIV is also available. Information about post-exposure prophylaxis (PEP) is also available for those that have been recently exposed to HIV. Information includes who should take PEP and where to get PEP. AIDS Free Pittsburgh also includes

information about financial assistance for those that may need help paying for treatment (*AIDS Free Pittsburgh*).

## 2.4 Existing Models for Programs for People with Mental Illness and HIV

**Table 1 A Summary of National and Local HIV Program Models**

	<b>Organization summary</b>	<b>Programs to Manage Mental Health</b>
<b>Ryan White HIV/AIDS Program</b>	<ul style="list-style-type: none"> <li>• A federal program that serves low-income people with HIV</li> <li>• Provides grants to cities, counties, community organizations, and clinics</li> <li>• Helps patients receive medical care, medications, and support services</li> <li>• Funded through HRSA and the HIV/AIDS Bureau</li> </ul>	<ul style="list-style-type: none"> <li>• Case management</li> <li>• Social support programs</li> <li>• HIV treatment</li> <li>• HIV primary care</li> </ul>
<b>Department of Veterans Affairs</b>	<ul style="list-style-type: none"> <li>• One of the largest providers of HIV care</li> <li>• Offers screening, testing, education, and HIV research</li> </ul>	<ul style="list-style-type: none"> <li>• Separate care for depression, anxiety, and PTSD</li> </ul>
<b>AIDS Free Pittsburgh</b>	<ul style="list-style-type: none"> <li>• Public health organization that works with community-based organizations to reduce the prevalence of HIV.</li> <li>• Does not provide services.</li> <li>• Provides resources for service providers to connect with clients.</li> <li>• Provides information about HIV care, PrEP, testing sites</li> <li>• Funded by UPMC and the Allegheny Health Network</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy for LGBTQ+ communities and communities of color</li> <li>• Information about social support services</li> </ul>
<b>Pittsburgh Area Center for Treatment of HIV (PACT)</b>	<ul style="list-style-type: none"> <li>• Part of UPMC Center for Care of Infectious diseases</li> <li>• Focuses on clinical approaches to HIV Care</li> </ul>	<ul style="list-style-type: none"> <li>• Mental health care</li> <li>• Support groups</li> <li>• Substance abuse treatment</li> <li>• Case managers</li> </ul>

	<ul style="list-style-type: none"> <li>• Offers PrEP and PEP, free HIV testing, and telehealth appointments.</li> <li>• Co-infection care</li> <li>• Funded by Ryan White Parts B, C and D</li> </ul>	
<b>Allies for Health and Wellbeing</b>	<ul style="list-style-type: none"> <li>• Offers medical and social services to those with or at risk for HIV.</li> <li>• Offers food assistance, financial assistance, legal services, housing and transportation information, and mental health care.</li> <li>• Low-cost access to PrEP</li> <li>• Open until 6:30PM every day</li> <li>• Hepatitis C co-infection care</li> <li>• Funded by Ryan White Part B</li> </ul>	<ul style="list-style-type: none"> <li>• Mental health treatment for depression and anxiety</li> <li>• Trauma-informed care</li> <li>• Substance abuse treatment</li> <li>• Gender-affirming care</li> </ul>
<b>Persad Center</b>	<ul style="list-style-type: none"> <li>• Behavioral health agency for LGBTQ+ community members affected by HIV/AIDS</li> <li>• Offers LGBTQ+ Cultural competency training to other community organizations.</li> <li>• Offers counseling and other programs to help support LGBTQ+ members with an HIV diagnosis</li> <li>• Funded by Ryan White Part B</li> </ul>	<ul style="list-style-type: none"> <li>• Transgender care</li> <li>• Domestic violence programs</li> <li>• Substance abuse treatment</li> <li>• Support groups</li> <li>• Individual and group counseling</li> </ul>
<b>Shepherd Wellness Community</b>	<ul style="list-style-type: none"> <li>• Help clients with HIV live with dignity.</li> <li>• Offers wellness programs, support groups, outings, social events, spiritual life programs, counseling, fitness programs, and transportation assistance.</li> <li>• Offers programs at no cost</li> <li>• Funded by Ryan White Part B</li> </ul>	<ul style="list-style-type: none"> <li>• Support groups for HIV positive members</li> <li>• Spiritual life programs, conducted in an interfaith format.</li> <li>• Peer counseling</li> </ul>
<b>Allegheny General Positive Health Clinic</b>	<ul style="list-style-type: none"> <li>• Part of the Center for Inclusion Health at the Allegheny Health network</li> <li>• Primary care clinic for persons with HIV that offers testing, treatment, and primary care for those with HIV and those at risk for contracting HIV.</li> </ul>	<ul style="list-style-type: none"> <li>• Support groups</li> <li>• Case management</li> <li>• Harm reduction education</li> <li>• Gender-affirming care</li> <li>• HIV wellness classes</li> <li>• Patient advocacy and peer support</li> </ul>

	<ul style="list-style-type: none"> <li>• Medical care, support groups, financial assistance, transportation assistance, housing assistance, and case management</li> <li>• Funded by Ryan White Parts B, C, and D</li> </ul>	
<b>Central Outreach and Wellness</b>	<ul style="list-style-type: none"> <li>• Clinic that offers HIV and Hepatitis C care to the LGBTQ+ community</li> <li>• Offers healthcare regarding transgender care, HIV and Hepatitis C primary care, and harm reduction services.</li> <li>• PrEP and PEP</li> <li>• Mobile clinic, addiction rehabilitation, testing and treatment, and pharmaceutical discounts</li> <li>• Funded by Ryan White Part B and donations</li> </ul>	<ul style="list-style-type: none"> <li>• Support groups</li> <li>• Transgender care</li> <li>• Substance abuse treatment</li> </ul>

**2.4.1 Pittsburgh Area Center for Treatment of HIV (PACT)**

Pittsburgh Area Center for Treatment of HIV (PACT) is a part of the UPMC Center for Care of Infectious Diseases. PACT is also a Ryan White Center for Excellence, and obtains funding from Ryan White Parts B, C, And D. It employs various healthcare professionals with expertise in HIV care that provide adequate care for patients living with HIV.

PACT offers HIV treatment, for persons with HIV with Part C funding, Medicaid, and private insurance. They offer PrEP and PEP to prevent the acquisition of HIV with other funding as Ryan White funding cannot pay for PrEP. They also offer gynecologic care for women as they also receive Ryan White Part D funding. In addition, they offer hepatitis C co-infection care.

Patients may not always feel comfortable seeking care for other health issues with a HIV diagnosis, for fear of facing stigma or discrimination because of their HIV diagnosis. Having support for other types of basic care in PACT helps patients have access to all types of healthcare. PACT also offers free confidential partner testing, to ensure that partners of those with HIV get

the care they need. Telehealth visits are also offered for patients that may not be able to make it to a clinic due to inadequate transportation or time. PACT also offers mental health care, as patients that receive a mental health diagnosis may need more support managing new or worsening mental illness.

Case managers help patients determine what services they need to address the barriers to care that they face. Psychologists on-site at the clinic offer mental health services. PACT also works with peer advocates that can support HIV and mental health care by reducing stigmas associated with these diagnoses. Peer advocates help empower patients and ensure that someone with lived experience is advocating for their needs, allowing for more personalized care (Pittsburgh Area Center for Treatment of HIV (PACT)).

#### **2.4.2 Allies for Health and Wellbeing**

Allies for Health and Wellbeing is a not-for-profit organization based in Pittsburgh that provides HIV treatment, support, and education for people living with HIV and people at risk for contracting HIV. Allies for Health and Wellbeing receives its funding from Ryan White Part B. They work to create integrated medical care and patient support so that patients can receive holistic healthcare that is free of stigma and discrimination. The University of Pittsburgh Medical Center provides physicians for the clinical treatment program.

Allies for Health and Wellbeing offers HIV treatment services staffed by doctors and nurse practitioners. They also offer mental health care, legal services, housing, transportation, financial assistance, and food assistance. Because HIV disproportionately affects low-income communities, having assistance related to basic needs such as food and housing can help patients adhere to and receive proper HIV care. Many patients that may want care may not be able to travel to a clinic.

Transportation services help make sure that patients have an adequate and affordable way to get to their appointments. Having mental health therapy and support groups available could minimize or manage the effects of a mental illness on HIV. Information about PrEP and PEP is also available to help prevent HIV and reduce risk factors related to HIV infection. They provide PrEP at a low cost to ensure that patients can have access to HIV prevention while removing cost as a barrier to care. Their clinic is open until 6:30pm every day, allowing patients to come in after work hours, so that they would not have to miss a day of work to get care (*Allies for Health and Wellbeing*, 2023)

### **2.4.3 Persad Center**

The Persad Center is a behavioral health agency in Pittsburgh, Pennsylvania for members of the LGBTQ+ community. They provide mental health services for patients and families as well as community outreach, prevention, and training for the community (Persad center, 2022). The Persad Center gets its funding from Ryan White Part B and the Pennsylvania Department of Human Services as a community mental health center.

The Persad Center offers mental health therapy and related support services for their clients. Mental health services offered are related to psychiatric disorders, substance use disorders, and HIV care. Social services concern transgender services, senior programs, and domestic violence programs. LGBTQ+ cultural competency training is offered to local organizations including schools, governmental agencies, police departments, healthcare centers, faith centers and more. Services are offered to support individual patient and client needs, while also providing training services and resources to community organizations to help reduce stigmas and increase access to care (*Persad center*, 2022).

For HIV care, the Persad Center offers non-medical case management services and counseling services. To be eligible for these services, clients must have an HIV diagnosis and live in southwestern Pennsylvania. They work with every client to offer individualized care. The case management services help clients coordinate healthcare services such as medical, social, and dental services, and help clients apply for and obtain healthcare coverage for these services. They also help clients take advantage of the Persad Center's services and resources. They also offer emergency financial assistance for client needs regarding utilities, housing, food, transportation, and medication costs. Counseling services are offered to help clients navigate their HIV diagnosis and manage their care and adherence to treatment (*Persad center, 2022*).

#### **2.4.4 Shepherd Wellness Community**

The Shepherd Wellness Community is a not-for-profit organization that was founded in 1987 to care for people with HIV. In the early days of the epidemic, an HIV diagnosis was not treatable. The organization helped clients “die with dignity.” Now that HIV care and treatment is more readily available, the organization helps clients “live with dignity.” They stress that although treatment has advanced since the 1980s, the Shepherd Wellness Community prioritizes the ongoing importance of assistance and wellness programs for persons living with HIV (*Shepherd Wellness Community for People Living with HIV/AIDS, 2021*).

The Shepherd Wellness Community organizes wellness programs, support groups, outings and social events, spiritual life programs, and counseling. Wellness programs in general provide emotional support and community to persons living with HIV. Wellness dinners help to ensure that the community receives adequate nutrition. Support groups help to build community and emotional support for persons living with HIV. Spiritual life programs offer encouragement and

community to clients as well. Peer counseling helps members connect with services and aid those with HIV. Overall, the Shepherd Wellness Community works to support persons with HIV and mental health issues by offering support groups, spiritual life programs, and peer counseling.

The Shepherd Wellness Community also offers their programs at no cost to their members. This keeps the programs accessible to the members so that cost is not a concern when they are looking for support and services related to their HIV diagnosis.

The Shepherd Wellness Community works with the Pittsburgh Foundation to raise money in the form of donations for their organization. They also hold fundraisers to raise money for their organization and accept donations (*Shepherd Wellness Community for People Living with HIV/AIDS*, 2021). The Shepherd Wellness Community is also a Ryan White Part B funded organization.

#### **2.4.5 Allegheny General Hospital Positive Health Clinic**

The center for Inclusion Health at the Allegheny Health Network is an HIV treatment and primary care clinic for persons with HIV. They offer testing, treatment, and primary care for persons living with HIV and those that are at risk for HIV infection (*Center for Inclusion Health: Positive Health Clinic*, 2022).

They provide patients with experienced physicians that know how to efficiently treat persons with HIV and comorbidities such as cardiovascular disease and diabetes. They provide HIV testing and ART to treat HIV. Their approach to HIV care is patient-centered to ensure that individuals receive treatment and support services to manage not just HIV disease but other challenges they face. They offer education about harm reduction, reducing the risk of injection drug users contracting HIV, as many of their patients are individuals with substance use disorders.



They also offer a mobile health unit to bring care to patients that may not always be able to get to a clinic on their own. They also keep their clinics open in the evening so that patients can receive treatment without taking time off from work, as that may not be feasible for everyone. In addition to medical care, they offer support groups, financial assistance, transportation and housing assistance. They also offer case management so that patients can figure out what services they need and so that patients can utilize and balance all services to the best of their abilities (*Center for Inclusion Health: Positive Health Clinic, 2022*).

The support groups and case management help persons with mental illness find a community resources throughout their HIV disease and psychiatric disorder. Support groups can also help patients manage their mental health. Case management helps everyone balance their needs and the services they use, which can be even more important in patients with mental illness as they could have an increased need for some services such as support groups, while also being at a higher risk for needing housing assistance or financial assistance.

The Allegheny General Positive Health Clinic is funded by the Ryan White Parts B and C programs and the Allegheny Health Network (*Center for Inclusion Health: Positive Health Clinic, 2022*).

#### **2.4.6 Central Outreach and Wellness**

Central Outreach and Wellness is a clinic located in the Northside region of Pittsburgh. They offer HIV and Hepatitis C care to the LGBTQ+ population of Pittsburgh. They embrace transgender care, harm reduction, and recovery. They offer locations across western Pennsylvania and Ohio. Central Outreach and Wellness is funded by donations, Medicaid, private insurance, and Ryan White Part B.

Central Outreach and Wellness offers culturally competent healthcare concerns LGBTQ+ health, transgender care, HIV primary care, Hepatitis C primary care, PrEP and PEP, and harm reduction services. Rates of substance misuse are higher in the LGBTQ+ community, so harm reduction services are essential to ensuring community safety and risk of contracting both HIV and Hepatitis C.

They also offer a mobile clinic, addiction rehabilitation services, testing and treatment, and pharmaceutical discounts. Pharmacy services and discounts help keep PrEP, PEP and ART affordable and more accessible to the population that Central Outreach serves. Prescription costs can be a major barrier to receiving care. In terms of mental health care, Central Outreach offers support groups specifically for LGBTQ+ populations. An HIV diagnosis can exacerbate existing mental health conditions, so having a support group with people from the same community going through the same diagnosis could help individuals manage their feelings. They also offer helplines and text lines for those that may not want to attend a support group or that may need individual support.

## **3.0 Methods**

### **3.1 Key Terms**

Programs for persons with mental illness and HIV have a few characteristics that make them effective. They address HIV as a clinical issue but also address the social determinants of health when approaching HIV care. Education for the patient and their support system helps them understand their illness and how to manage it. Educating patient families about HIV could help reduce stigmas that patients face and could help to normalize HIV testing and treatment. Advocacy helps to raise awareness for HIV as an issue and could help create solutions to fill gaps in HIV care. Advocacy could help patients get the best care they can. Financial assistance programs could help address economic stability for patients, allowing them to focus on their health. Transportation, food, and housing programs could help the social and community context and build environment so that patients can focus on their health and these programs also help to reduce some of the risk factors that could lead to HIV. Incorporating all these characteristics while also being conscious of the specific communities being served will also help to create the best patient care. Culturally tailoring programs to specific populations of race, income, urban or rural, and sexual orientation help to create programs that also serve as safe spaces where patients feel comfortable coming in to get care.

### **3.2 Assumptions**

One of the assumptions of this paper is that there are a range of effective programs for people with mental illness and HIV. This means that there are a variety of programs that address the unique needs of patients with both a mental health diagnosis and HIV, and that provide holistic care for these patients.

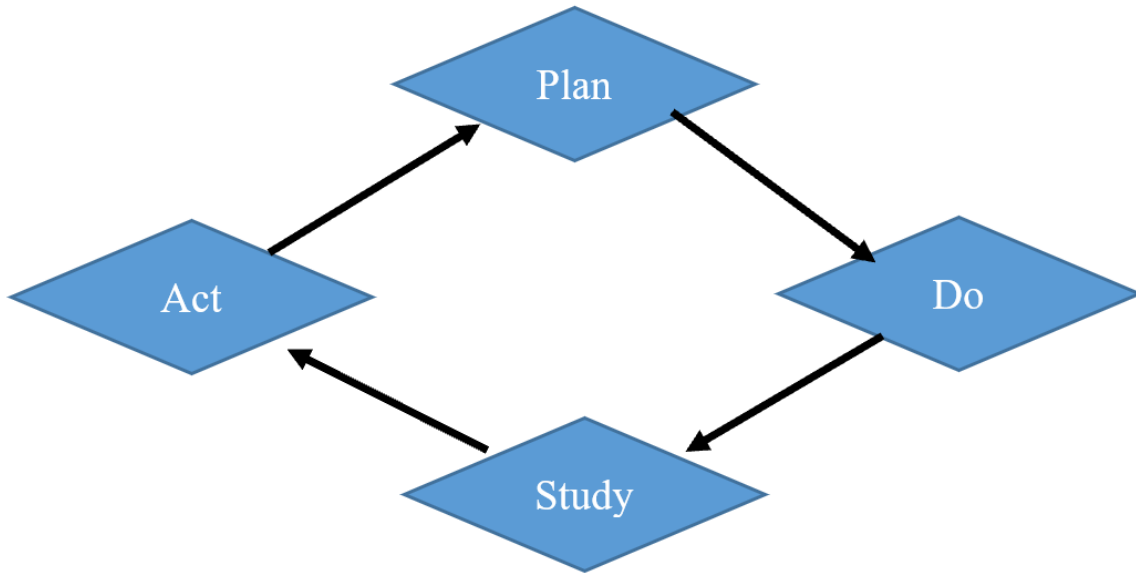
Another assumption of this paper is that each program is culturally tailored to their environment with the funding they have available. For example, a program in a rural setting is specific to the rural population it serves and able to meet the needs of their population.

### **3.3 Quality Management**

The quality management process works to provide efficient care by increasing provider accountability, increasing the efficiency of resources, and minimizing the effects of error (Dodwad, 2013). Quality management in public health refers to ways organizations can provide positive results most efficiently, while reducing the amount of harm done to their population (Seelbach & Brannan, 2023). Quality management works to ensure that patients get consistent, positive results. These processes involve planning, implementation, and evaluation of strategies to continuously inform organization improvement and positive public health outcomes (CDC, 2017). Quality management helps to reduce disparities in care and promote equity in care.

A model for quality management is the Plan-Do-Study-Act (PDSA) model. This model outlines the process of improvement by planning to test or observe, carrying out the test or

observation, analyzing the data, and determining modifications and preparing a plan for subsequent testing (Shewart, 1924; & Neuhauser, 2006).



**Figure 2 Plan-Do-Study-Act (PDSA) Model (Best & Neuhauser, 2006)**

The PDSA Model, also known as the Shewhart Cycle, was developed to assure that changes lead to improvement (Shewart, 1924; & Neuhauser, 2006). The “plan” stage refers to the identification of issues and what can be done to solve the issues. The “do” stage refers to the implementation of the identified changes. The “study” stage refers to the analysis of the outcome of the implemented changes. The “act” stage refers to the re-implementation of the identified changes based on efficiency indicated by the analysis done in the “study” stage. The PDSA cycle is essential to developing models that inform continuous quality management (Best & Neuhauser, 2006). In the context of HIV programs, using the PDSA model to inform continuous quality improvement can help to ensure that patients are getting positive outcomes as efficiently as possible.

### **3.3.1 Quality Management Requirements in the Ryan White Program**

According to a policy clarification note on the Ryan White Comprehensive AIDS Resources Emergency Act, the program requires all their grant recipients to establish a Clinical Quality Management (CQM) program. As a part of the CQM, programs need to assure that their HIV health services are updated to Public Health Service guidelines for HIV care and have a plan to ensure that services are improving access to quality HIV services. The Ryan White Program requires all CQM programs to include a plan for infrastructure (e.g. dedicated staffing and resources), performance measures, and clinical quality improvement plans and evaluations. The Ryan White Program defines effective CQM programs as having specific aims about health outcomes, specifically named leadership, accountability for proposed activities, resources dedicated specifically to quality management, and the use of outcome data to inform progress and improvements to achieve program and quality management aims (S. 2240 PCN 15-02, 2020).

### **3.3.2 Quality Management in Specific Programs**

Programs receiving Ryan White funding are required to follow quality management guidelines. Specific examples of programs reporting on quality management include the Pittsburgh Area Center for Treatment of HIV, Allies for Health and Wellbeing, the Persad Center, Allegheny General Hospital Positive Health Clinic, and Central Outreach and Wellness. The AIDS Free Pittsburgh website offers links to ongoing clinical research studies through their partner organizations but does not specify quality management efforts, as they are not a Ryan White funded organization (*AIDS Free Pittsburgh*).

The Pittsburgh Area Center for Treatment of HIV and the Allegheny General Positive Health Clinic consistently assess the quality of their programs, reviewing patient data and program use to inform continuous quality improvement (Pittsburgh Area Center for Treatment of HIV (PACT); Allegheny Health Network, 2022).

Allies for Health and Wellbeing addresses quality management by using patient ratings to improve their care. Responding to patient feedback allows the Allies for Health and Wellbeing organization to consistently improve upon their services and organization (*Allies for Health and Wellbeing*, 2023).

The Persad Center website shares a community impact report on their programs. This report indicates a 58% increase in appointments since the start of the COVID-19 pandemic. Regarding counseling services, 99% of clients reported a 7/10 or higher rating of care, and that 93% of clients would recommend the Persad Center to someone else that needed help. 100% of clients indicated that their therapist was helpful (Persad Center, 2020). They also indicate giving 1,902 people cultural competency training throughout the state of Pennsylvania; 96% of training participants reported that the training was highly or very highly clear and understandable (Persad Center, 2020).

The Central Outreach and Wellness clinic published an annual report in 2021 regarding the use of their programs. They reported a 76.9% increase in new patients at the North Shore clinic between 2020 and 2021, 974 new patients with HIV, 4,402 sexually transmitted disease (STD) tests given, and 209 harm reduction kits distributed (Central Outreach, 2021). Although the annual report included statistics about the use of their services, they did not indicate statistics about patient satisfaction.

### **3.4 Limitations**

Although information about existing HIV programs was easy to find, it was difficult to find information regarding patient experiences or statistics regarding the effectiveness of these programs. While some of the programs included information about effectiveness and quality management, information about patient experience was harder to find. Many of them summarized what they do for their patients but did not address how their patients really feel in the organization setting.



#### 4.0 Summary of Findings

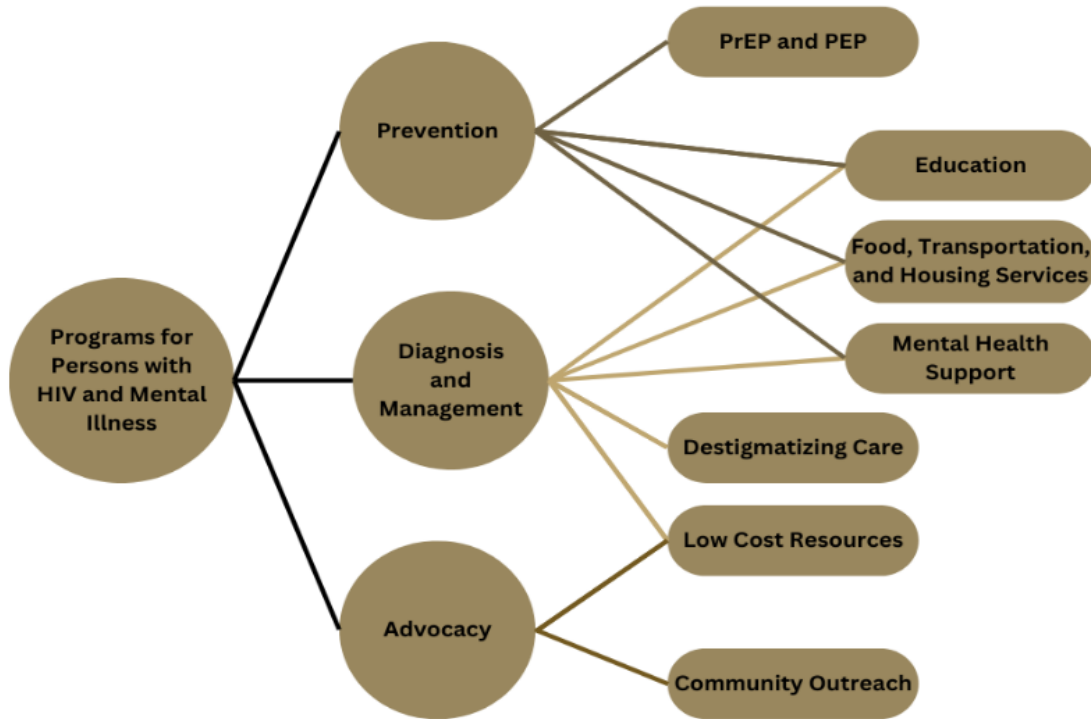


Figure 3 Summary of Findings

The programs described in this paper had similarities. Characteristics they shared are outlined by Figure 1. Each program described in this paper included all or some of the elements relating to HIV prevention, HIV management, and advocacy. For HIV prevention, the programs talked about the importance of PrEP before exposure to HIV and PEP for after HIV exposure. Education regarding HIV and mental illness helps with HIV prevention and management to further understand the disease and reduce stigmas. Food, transportation, and housing services helped patients meet basic needs so that they could focus on getting the HIV and mental health care they

needed. PACT took this one step further by offering telehealth services so that patients would not have to worry about transportation to get to their appointments. Mental health support throughout the HIV Care Continuum helps to manage symptoms of mental illness while managing HIV risk and disease. All programs also included information about access to low-cost resources. The programs in this paper were also all involved in advocacy and community outreach, helping to ensure that patients had access to resources they needed and reduced stigma for HIV and mental illness in their communities.

## **5.0 Discussion**

### **5.1 Notable Findings**

While all the programs included the characteristics of prevention, diagnosis and management, and advocacy, some of them focused on certain parts of the HIV Care Continuum, while others address the entire continuum. Programs that choose one component of the care continuum to focus their resources might be more effective overall as they could devote whatever resources they have to preventing HIV at that point. However, this approach could lead to unintended consequences. Programs that don't focus on the whole continuum would have to link patients to other programs that focus on other parts of the continuum. This could disrupt the continuity of care and lead to patients not receiving the proper care throughout. Programs such as the Ryan White HIV/AIDS Program might be better equipped to tackle the entirety of the continuum as they are larger programs with a larger reach and greater funding. The stigma and trauma associated with an HIV diagnosis can have profound impacts on mental health, and programs that focus on mental health throughout the whole HIV Care Continuum may find higher adherence to care and better outcomes.

The primary way many of these programs share information is through their program websites. People from low-income backgrounds may not have regular access to the internet. Although these HIV programs may have information readily available on their websites, it may not be accessible to these low-income populations that do not have regular access to the internet. For example, a 2018 study conducted in Philadelphia discovered that only 56% of youth (aged 18-

21) experiencing homelessness accessed the internet at least once a day, while 86% of youth experiencing homelessness accessed the internet at least once a week (VonHoltz et al., 2018).

Programs that use Ryan White funding are required to have CQM plans in place (S. 2240 PCN 15-02, 2020). As a result, they keep track of and share data regarding patient care. Having CQM in place ensures that healthcare providers are held accountable for the program and informs strategies for positive patient outcomes.

## **5.2 Areas for Further Investigation and Public Health Implications**

Information regarding quality management was difficult to find while researching organizations that were not Ryan White funded. Although that does not indicate that the programs do not have quality management measures in place, studies using staff surveys, patient interviews, and on-site observation could help improve the programs by highlighting what the community finds the most useful, what is working as it should, and what is not working as it should.

The integration of behavioral health into HIV primary care is also an area of further investigation. Many programs have already incorporated behavioral health services into HIV primary care, but this is something that should be done across the entirety of the HIV care continuum, not just after an HIV diagnosis. Behavioral health counseling for those that are at risk for HIV specifically is a concept that could be explored and implemented further.

## 6.0 Conclusions and Public Health Implications

HIV programs that focus on holistic care could help to increase adherence to antiretroviral therapy and increase the rate of HIV testing. Holistic HIV treatment should include social support for those that are also experiencing mental health issues. Increasing adherence to care, the rate of testing, and the initiation of care could help move toward the Healthy People 2030 goals of reducing the number of new HIV infections, increase knowledge of HIV status, and increase viral suppression (Healthy People 2023). Mental health systems would become less overwhelmed if symptoms of mental illness are diagnosed and treated early. Because persons with HIV are at an increased risk for developing a mental illness, it is important that HIV programs have systems in place for mental health support. The integration of behavioral health care with HIV primary care has been shown to improve outcomes for persons with HIV (Marc et al., 2021; Dawson Rose et al., 2015; Acquavita et al., 2019; Puskar et al., 2013; Jabour et al., 2021; Walley et al., 2015; Goldhammer et al., 2022), and the integration of behavioral health care should be present throughout the HIV care continuum. Organizations should also include patient input in developing new programs and ensure that current programs provide effective and efficient care and positive patient outcomes. The healthcare team should also be trained to specifically provide care for persons with HIV and to educate those at risk for contracting HIV. Programs becoming involved in advocacy would help to increase awareness for HIV and mental illness and decrease stigma surrounding HIV and mental illness. Community advocacy would also help programs advocate for more funding. Advocacy and community outreach would increase quality of care and ensure that every patient with HIV is treated with holistic healthcare.

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