

ASSESSING HIV SCREENING AMONG ADOLESCENTS AND ADULTS WITH
MENTAL ILLNESS IN A RURAL HEALTH SETTING

by

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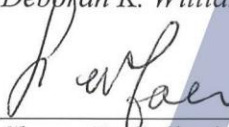
As members of the DNP Project Committee, we certify that we have read the DNP project prepared by *Samantha Sholeh Kordeie*, titled *Accessing HIV Screening Among Adolescents and Adults with Mental Illness in a Rural Health Setting* and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.



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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College. ®

I hereby certify that I have read this DNP project prepared under my direction and recommend that it be accepted as fulfilling the DNP project requirement.



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DEDICATION

I would like to dedicate this project to my fiancé, as well as friends and family members.
Thank you for all for your continuous love, support and patience throughout these last two years.

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ABSTRACT

Current Center for Disease Control and Prevention (CDC) recommendations are for one-time Human Immunodeficiency Virus (HIV) screening for all people age 13-64. Studies have demonstrated the psychiatric population is at increased risk for HIV with a prevalence of 3-8% compared to the general population at 0.6%. For these reasons, a retrospective chart review was performed, looking at the rate of HIV testing for psychiatric patients at Bay Clinic, a rural private clinic in Coos Bay, Oregon. Charts were reviewed on 450 consecutive patients seen by three different providers from December 1, 2017 to June 30, 2018. In total, 373 patients met inclusion criteria, specifically, patients had to be between age 13-64 and have a psychiatric diagnosis in their medical record. Of these patients only 27 (7.1%) had received formal HIV testing with similar testing rates amongst all three providers. A provider survey was sent out to three providers, including one Psychiatric Mental Health Nurse Practitioner and two-Family Nurse Practitioners, to assess barriers and facilitators to HIV testing, as well as what is needed to enhance screening. A lack of provider education regarding current CDC recommendations on HIV testing was found. An educational PowerPoint presentation was created and sent to providers, to help improve compliance with CDC guidelines for HIV testing, with a recommendation for implementation of a question regarding HIV testing as part of nursing/medical assistant intake for all patients. A future study could be carried out to examine the effectiveness of this intervention.

INTRODUCTION

Human immunodeficiency virus (HIV) attacks healthy immune cells in the body and can progress to acquired immunodeficiency syndrome (AIDS) and deadly outcomes if left untreated (World Health Organization, 2017). Although there is no cure for HIV, the disease can be controlled with proper medical treatment, which can prevent the progression to AIDS. Globally, HIV/AIDS has killed more than 35 million people, with one million dying from HIV-related causes in 2016 (World Health Organization, 2017). Healthy People 2020 recognizes HIV as a major public health concern and has developed four primary goals which include: reducing new HIV infections, increasing HIV testing and preventing HIV risk, and increasing access to care (Office of Disease Prevention and Health Promotion, 2017). The Henry J. Kaiser Family Foundation (2017) estimates that nearly 15% of individuals infected with HIV are unaware. The Joint United Nations Program on HIV and AIDS (UNAIDS) has created a 90-90-90 goal for 2020. The goal is that by 2020, 90% of individuals who are living with HIV will be aware of their status, 90% of individuals who are diagnosed with HIV will be receiving antiretroviral therapy, and of those individuals who are receiving antiretroviral therapy, and 90% will have viral suppression (2018). The lifetime cost for treating an individual with HIV is estimated to be \$379,000 (Centers for Disease Control and Prevention, [CDC], 2017). The lifetime cost that is saved from preventing one HIV infection in the United States is \$229,800. If all HIV-infected individuals were detected early and remained in the care, the lifetime cost saved per person would increase to \$338,400 per year (Schackman et al., 2015).

Background

The prevalence of HIV in individuals receiving treatment for mental health is estimated to be more than four times the general population (Blank et al., 2014). It is estimated between 5-23% of individuals who have a mental illness are infected with HIV (Yehia et al., 2014). There are various reasons why mentally ill individuals are more likely to acquire HIV including: increased risky sexual behaviors, residing in areas with a high HIV prevalence, and engaging in IV drug use (Andriot, 2012). Although individuals with a mental illness are at higher risk for HIV, only 48.5% of adults diagnosed with mental illness report ever having an HIV test (Yehia et al., 2014).

Several reasons have been postulated as to why this population do not have higher compliance with CDC recommendations. Individuals who are mentally ill may have a deficit in knowledge about HIV and how it is transmitted. If individuals do have adequate knowledge, they may be unable to accurately gauge their own risk (Popiel et al., 2016). Healthcare workers might do a poor job discussing this topic with their patients (Biradavolu, Jia, Withers, & Kapetanovic, 2016). Possible reasons include fear of worsening a patient's anxiety, misjudgment about who is at risk for HIV, or lack of training and lack of time (Biradavolu et al., 2016). Individuals who reside in a rural area may also decline testing due to stigma (Buzi, Madanay, & Smith, 2016). Routine HIV testing, in comparison to target, risk-based testing, has the potential to reduce the stigma that is associated with receiving an HIV test (Buzi et al., 2016).

The CDC has specific, revised guidelines for HIV testing for adults, adolescents and pregnant women in healthcare settings. Based on these recommendations voluntary HIV screening should be conducted at least once on individuals aged 13-64, regardless of risk while

those identified as a higher risk should be tested annually (CDC, 2006). Implementing routine HIV screening is beneficial because HIV can be detected before symptoms develop allowing for earlier treatment, which can add years to an individual's life and prevent the progression to AIDS (CDC, 2006). Adolescents as well as adults should be screened for HIV. Adolescents aged 13-19 represent a new generation of patients who are at risk (CDC, 2006). The youth risk behavior surveillance from 2015 found that 41% of adolescents in the United States had sex in high school (CDC, 2016). Adolescents and young adults represent 4% and 12% of the newly diagnosed HIV cases and over half are unaware of their diagnosis (Minnear, Gilmore, Arnold, Flynn, Knapp, & Gaur, 2009).

Local Problem

More than 1,000 adult and adolescents in Oregon are believed to have an undiagnosed HIV infection, and each year there are about 250 newly diagnoses cases (Oregon Health Authority, 2013). Of those newly diagnosed cases, 39% have advanced disease and have likely been undiagnosed for 7-10 years (Oregon Health Authority, 2013). This highlights the limitations of having to rely on risk-based testing, which was the CDC's previous recommendation prior to routine, opt out HIV screening. According to research, HIV screening was found to be cost effective in settings where only 1 in 2,000 people have an undiagnosed HIV infection (Oregon Health Authority, 2013).

Oregon has been shown to have the highest prevalence of mental illness in adults based on a study by Mental Health America (2017). They examined each state and ranked the prevalence of mental illness (Mental Health America, 2017). Because Oregon has a high prevalence of mental illness, it places increased importance on HIV testing. In Oregon, only

43.7% of individuals reported ever being tested for HIV in 2016 (Henry J. Kaiser Family Foundation, 2017a).

In Coos County, Oregon, HIV was the second most commonly reported communicable disease in 2011 (Coos County Public Health, 2013). The patients who are seen at Bay Clinic in Coos Bay, Oregon are recognized as a medically underserved population by the Oregon Office of Rural Health. One of the common barriers to receiving HIV testing and treatment in a rural health setting is the social stigma associated with the disease (Rural Health Information Hub, 2009). Other issues that a rural health setting may pose are concern for anonymity and lack of awareness about HIV (Rural Health Information Hub, 2009). Because rural health communities are smaller than urban communities, there are concerns about remaining anonymous when seeking testing or treatment for HIV. Patients may also believe HIV is more prevalent in urban areas (Rural Health Information Hub, 2009).

Coos County, located on the Southern Oregon Coast, has a population of 63,190 people, and has a unique coastal culture (Coos County Community Health Assessment, 2018). The median age of individuals living in Coos County is 48 years old with 85.8% of the population being Caucasian, followed by 5.95% Hispanic, 3.5% multi-racial, 2.5% Native American, 1.2% Asian, 0.6% African American, 0.3% other and 0.1% Islander (Coos County Community Health Assessment, 2018). Both the average and median family incomes in Coos County are lower than the state average. There is a higher level of poverty overall in Coos County, ranging from 18-20% of the population which is also higher than the state average (Coos County Community Health Assessment, 2018). Compared to the rest of Oregon, Coos County has decreased high school graduation rates, and a lower number of individuals who attained an advanced degree.

Coos County has more low wage jobs compared to the state average (Coos County Community Health Assessment, 2018). The most common industries individuals in Coos County work in include health care, educational services, food services, and construction (CityData, 2018). The Oregon Office of Rural Health recognizes Coos County as an area with medical health professional as well as mental health professional shortage (Coos County Community Health Assessment, 2018). When comparing Medicaid mental health populations, there was a lower prevalence of mental health issues among adults (ages 26 and older) compared to the rest of Oregon, but a greater prevalence of youth with a mental health condition in Coos County compared to Oregon (Coos County Community Health Assessment, 2018).

Purpose

The primary purpose of this quality improvement project was to examine whether providers are following CDC's recommendations for routine HIV screening and to identify what is needed to enhance screening at Bay Clinic. Previous studies have demonstrated providing HIV services to those with a mental illness can be challenging because their judgment and decision-making ability may be impaired (Biradavolu et al., 2016). Other factors that contribute to lack of testing may also include money, time and resources (Biradavolu et al., 2016). With the high prevalence of mental illness in Oregon, it is important to discover what the barriers to testing are, and to create solutions to address these barriers. This DNP student has been working with a psychiatric/mental health nurse practitioner at a rural healthcare clinic located in a Coos Bay, Oregon. This healthcare clinic integrates behavioral and medical care for individuals from infancy to adulthood.

Currently, there is a growing body of literature regarding the importance of HIV testing as well as recommendations from the CDC on HIV screening for the general population. Providers may or may not be following the CDC's recommendations for screening, which can directly affect a patient's quality of care (McNaghten et al., 2013). Because less than half of mentally ill individuals have ever been tested for HIV, there remains, a need to increase HIV testing which provides the opportunity for a public health improvement effort (Yehia et al., 2014). The aim for this study was to promote the quality of care a patient is receiving by examining whether providers are following recommendations when screening patients for HIV. This project will contribute to the growing body of knowledge on HIV testing among adolescents and the mentally ill population.

A stakeholder is anyone who has an interest in a project and is invested in its success (Silver et al., 2016). HIV is a public health problem, but it also has economic, legal, political, and social implications (Mondal & Shital, 2013). A broad inclusion of stakeholders can be beneficial because it offers a variety of valuable perspectives (Leviton & Melichar, 2016). Stakeholders at Bay Clinic who have an interest on whether providers are following recommendations for HIV testing include; medical professionals such as the medical doctors and nurse practitioners, the healthcare administration, the Bay Clinic board of directors, patients/clients, those living with HIV/AIDS, community members, and Coos County Health Department.

Study Question

This is a two-part study question that examined: 1) Are providers following current CDC guidelines when screening adolescents and adults for HIV?; and, 2) What is needed at Bay Clinic to enhance HIV screening?

THEORETICAL FRAMEWORK AND SYNTHESIS OF EVIDENCE

Theoretical Framework

The theory that guided this project was Leininger's middle range theory of culture care, developed by Madeleine Leininger (1991). According to Leininger, culture is defined as "learned values, beliefs, rules of behavior, and lifestyle practices of a particular group of people" (Leininger, 1991, p. 142). One of the primary goals of this theory is to provide culture specific care that is compatible, beneficial and safe to people with diverse or similar cultures (Zoucha, 2016). All individuals come from various backgrounds, which influences their values and beliefs. By recognizing these individuals come from various backgrounds, the Nurse Practitioner is better able to provide appropriate care to the patient.

Leininger (1991) identified two systems of caring that were present in all cultures she studied. The two systems of caring include generic (emic) caring and professional (etic) care knowledge. Generic caring, which is the oldest form of caring, consists of inter-personal cultural practices (Leininger, 1991). Professional care knowledge differs in that it is cognitively learned and practiced through education (Leininger, 1991). In order to provide culturally congruent care, the advanced practice nurse must link generic and professional care knowledge in order to benefit the patient (Zoucha, 2016).

There are three unique modes of care identified by this theoretical framework including culture preservation, culture care accommodation, and culture care re-patterning (Zoucha, 2016). The first, cultural preservation refers to the decision to help individuals from a particular culture maintain well-being or recover from an illness (Zoucha, 2016). Culture care accommodation are the professional actions and decisions that aid individuals or communities of a specific culture to

work with others in order to satisfy healthcare outcomes with a professional caregiver (Zoucha, 2016). Lastly, cultural care re-patterning are the assistive activities by healthcare professionals that promote decisions to create a new health pattern (Zoucha, 2016).

Application of Theory

The major concepts from this theory that are applied to this project include culture care diversity, culturally congruent nursing care, and culture care re-patterning. Culture care diversity refers to the differences in care between groups of people (Leininger, 1991). This theory allows for understanding of culturally based care for vulnerable populations. In the United States, the healthcare environment is constantly evolving. While some people may have access to services that promote health and well-being, there are people who cannot afford the same access to healthcare services due to their vulnerability (Zoucha, 2016). The clients at this facility represent the medically underserved population, particularly those living in a rural setting. A vulnerable population is defined as a group of people who experience disabilities, including mental and physical, and experience cultural differences with limited economic resources (Zoucha, 2016). Due to these barriers, they may be unable to be involved in mainstream health resources (Zoucha, 2016). The population who uses Bay Clinic includes those with a low socioeconomic status and those with mental disabilities or mental illness. Because this is a very specific population, this theory will allow this advanced practice nurse to develop specific guidelines aimed at promoting HIV screening for this particular culture.

Culturally congruent nursing care is a process where a nurse designs practices and services for a diverse population to improve their access to care, as well as promote positive health outcomes and reduce disparities (Marion et al., 2017). This project worked to identify

barriers and solutions to providing care to patients of a vulnerable population. By identifying barriers to care, solutions can be created that will directly improve health outcomes and promote access to care. Culture care re-patterning will involve the advanced practice nurse working with the patient to provide better health outcomes. A patient may not feel they need to be concerned about HIV or testing, but this provides an opportunity for the nurse to provide education as well as screen the patient. A patient who is engaged in high risk sexual behavior or IV drug use may be unaware of their risk and by receiving education he/she can change their decision to be tested, promoting better health outcomes.

An essential component of nursing is the ability to provide care to a patient. Leininger's (1991) theory of culture care is the ideal framework to guide this DNP project as it will allow the nurse to provide care that is culturally appropriate for a specific population. Every specific culture will have its own generic care knowledge and practices that may vary from professional care and practices. A nurse can enhance culturally sensitive care delivery by bridging generic and professional care knowledge. The ability to provide culturally competent care offers many benefits to patients and can create positive changes in healthcare practices.

Concepts

The concepts that are specific to this DNP project include mentally ill, HIV screening, and culture. Mentally ill are those individuals who are diagnosed with a mental illness. A mental illness is a disease that can cause a mild to severe disturbance in behaviors or thoughts, which impacts an individual's ability to cope as well as their daily life and routines (Mental Health America, n.d.). HIV screening is performing an HIV test for all individuals in a specific

population (CDC, 2006). Culture will be defined as a group of adolescents and adults who are seeking care at a rural health clinic located in Coos Bay, Oregon.

Synthesis of Evidence

HIV prevalence among adults with a mental illness ranges from 3-8% compared to 0.6% among the general population (Parry, Blank, & Pithey, 2007). Individuals with a mental illness present with a complex set of psychosocial and medical needs that require comprehensive and integrative care. Adolescents pose a unique need as many high school aged students engage in sexual activity but relatively few have been tested for HIV (CDC, 2012). In 2010, the CDC estimates that 26% of the 50,000 newly diagnosed cases of HIV were among youth aged 13 to 24 years (U.S. Department of Health & Human Services [HHS], 2016). Among those living with HIV in 2010, 60% were unaware they were infected (HHS, 2016). Adolescence is a difficult time in life; there is a need for autonomy, an increased desire for independent decision making, concrete thinking processes, and a need to fit in with peers (HHS, 2016). This can make it difficult to engage adolescents in healthcare in order to improve and maintain their health. In any setting, it is important for providers to create a supportive and caring environment for adolescents to promote health outcomes (HHS, 2016).

To understand the benefits of routine HIV testing as well as the various barriers and facilitators to testing, several literature searches were conducted using PubMed and PsycINFO. The following key terms were used: adult, adolescent, HIV, testing, policy, barriers, facilitators, mental health, and attitudes. Inclusion criteria included published within the last 10 years, English language, and an adult or adolescent population. These searches yielded 181 results, with 13 being examined for this literature review (Table 1). These 13 studies were selected because

they specifically examined the implementation of the current CDC guidelines for routine HIV screening/testing, and/or because they examined the barriers and facilitators to testing. The remaining studies were excluded as they did not examine strategies to increase HIV testing compliance, did not examine facilitators or barriers to HIV testing, or examined HIV testing among a homosexual population.

TABLE 1. *Literature review.*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
Baumann, Hemmige, Kallen, Street, Giordano, & Arya (2018)	To determine whether patients want their physician to offer them an HIV test and whether a physician's recommendation for testing could influence HIV testing acceptance.	Descriptive survey	<p><u>Sample:</u> 281 patients from a primary care clinic, median age 54 years old. 67.9% of participants were female. 75% had a yearly household income of less than \$20,000.</p> <p><u>Setting:</u> Publicly funded primary care clinic in Houston, Texas.</p>	<p><u>Data Collection:</u> Participants completed a survey that explored patient facilitators to HIV testing. Participants were given a \$10 gift card to local grocery store for completing survey.</p> <p><u>Data Analysis:</u> Two research assistants took the results from the paper survey and entered it into a Microsoft access database. Stata 13 was used to analyze the data. Standard descriptive characteristics were then calculated. Using the Fisher test, differences between demographic groups in this study's outcome of interest were compared.</p>	The most common answer to the question "What would convince you to get tested for HIV?" was "my doctor recommends I get tested". Although 57.8% reported they would get tested if their doctor recommended, 55.4% reported their doctor did not recommend the test. The top reason why a patient would get tested was physician recommendation, however providers were not routinely recommending HIV testing.
Biradavolu, Jia, Withers, & Kapetanovic (2016)	Examine what factors influence implementation of HIV services to individuals with mental illness.	Qualitative Focus Group	<p><u>Sample:</u> Nine RN's, six physicians, one pharmacist, six clinical supervisors, two nurse practitioners, two case managers, two social workers, one program specialist, one project director.</p>	<p><u>Data Collection:</u> Collected data using 90-minute focus groups. Interviews were audio recorded. Recordings were transcribed and identifying features were removed.</p> <p><u>Data Analysis:</u> Data was analyzed using NVivo Version 9 (QSR International Pty Ltd.). The.</p>	Common barriers to delivering HIV related services include patient related factors, stigma, and administrative factors. Patient related factors include impaired judgment, inadequate support, and poor insight. Stigma includes the stigma that is associated with HIV as well as mental illness. Administrative factors included spending more time

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
			<p><u>Setting:</u> One acute inpatient psychiatric unit at a government hospital in Washington DC, one public psychiatric facility in Washington DC for patients requiring long-term inpatient care, and one psychiatric emergency department in Washington DC.</p>	<p>first and senior author conducted coding. NVivo 9 ran coding comparison queries to verify inter-rater reliability.</p>	<p>addressing other priority concerns such as housing.</p>
Buzi, Madanay, & Smith (2016).	Examine the benefits of implementing routine HIV testing services at family planning clinics.	Retrospective Study	<p><u>Sample:</u> Ten family practice and primary care clinics</p> <p><u>Setting:</u> Houston, Texas</p>	<p><u>Data Collection:</u> Examined information regarding HIV testing of female and male adolescents and young adults who attended one of the ten Houston clinics from January 1st, 2011 to December 31st, 2014. The number of HIV tests administered between 2011-2014 was compared to the number of tests administered between 2006-2007 and 2008-2009.</p> <p><u>Data Analysis:</u> Data was analyzed using statistical analysis.</p>	<p>The amount of HIV tests that were administered increased in conjunction with system modifications and staff training. Routine, opt-out HIV testing in comparison to targeted, risk-based testing can reduce the stigma associated with HIV Testing.</p>

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
Gongidi, Sierakowski, Bowen, Jacobs, & Fernandez (2010)	To understand physicians' attitudes towards sexual history taking and HIV testing.	Cross sectional survey	<p><u>Sample:</u> 160 physicians (107 family medicine, 26 internal medicine, 14 emergency medicine, 6 pediatrics, 7 OBGYN).</p> <p><u>Setting:</u> Florida</p>	<p><u>Data Collection:</u> A survey consisting of 36 questions divided into three areas including sociodemographic factors, physician practices, and physician attitudes. This paper survey took about ten minutes to complete and was returned to research assistants upon completion.</p> <p><u>Data Analysis:</u> Data was entered into SPSS 16.0; SPSS Inc, Chicago, Illinois. First used descriptive analysis to understand physician practices. Next, a bivariate analysis was used to examine factors that were associated with recommended HIV testing at initial visit.</p>	Only 21% of physicians recommended HIV testing at all initial patient visits. 70.7% of physicians strongly agreed that a patient's sexual behaviors should be routinely screened. Having more time during the initial visit facilitated the discussion of HIV testing, and without sufficient time testing was a low priority. To facilitate testing, physicians felt that guidelines should be implemented.
Haines, Uwazuoke, Zussman, Parrino, Laguerre, & Foster (2011)	Examine adolescents' attitudes towards rapid HIV testing.	Descriptive Survey	<p><u>Sample:</u> 114 adolescents between the ages of 14 and 21 years old</p> <p><u>Setting:</u> St Christopher's Hospital for Children in Philadelphia, PA.</p>	<p><u>Data Collection:</u> Surveys administered in English and Spanish and required a written response. Surveys were a convenience sample.</p> <p><u>Data Analysis:</u> Data was analyzed using Stat 10.0 (College Station, Tex). To report the data, descriptive statistics were used.</p>	Results found that adolescents prefer rapid HIV testing where they get results at the same visit. Adolescents gained a better understanding of their risk by being offered an HIV test. Majority of adolescents stated they would prefer structured pre-test and post-test counseling, with 40% strongly preferring a counselor of the same sex.

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
Johnson, Mimiaga, Reisner, VanDerwarker, & Mayer (2011)	To examine the perceived barriers and strategies to routine HIV testing.	Qualitative Interview	<p><u>Sample:</u> Thirty individuals. Nine administrators, fifteen medical directors, and six senior medical providers.</p> <p><u>Setting:</u> Community health centers located in the greater Boston metropolitan area, southeast Boston, Cape Cod, and central and western regions in Massachusetts.</p>	<p><u>Data Collection:</u> The study team created a qualitative interview guide. Interviews were recorded and analyzed.</p> <p><u>Data Analysis:</u> Interviews were analyzed using content analysis. Data was organized into thematic categories. NVivo software, version 7, was used to assist with the coding and organization. Two different staff analyzed the data and the research team regularly reviewed coded transcripts.</p>	The thematic barriers to HIV testing that were identified include lack of funding, staff, and space, lack of time, patient and provider discomfort, inconsistent implementation of CDC recommendations, and concerns about incompatibility with the state testing policy. Facilitators to improve HIV testing include stronger state level guidance, organizational buy in, clinical reminders in the electronic health record and provider training.
Joore, Roosmalen, Bergen, & Dijk (2016)	Examine general practitioners' barriers and facilitators to routine HIV testing.	Qualitative focus group and interviews	<p><u>Sample:</u> 90 general practitioners (GP). N = nine in depth structured interviews, N = 81 focus group</p> <p><u>Setting:</u> Urban or Rural Dutch practices located in or around Amsterdam</p>	<p><u>Data Collection:</u> Semi structured interviews lasted from 60 to 90 minutes. Open-ended questions were asked to assess provider's opinion about HIV testing strategies. Focus groups were conducted for 60 to 75 minutes and were run by an independent moderator and observer. Interviews and focus groups were audio taped and transcribed. Nine participants took part in in-depth structured interviews, and 81</p>	Three types of barriers were identified including content related barriers, organizational barriers, and patient- related barriers. Organizational barriers included lack of time for testing, and not having an established relationship with the patient. Patient related barriers include fear patient would refuse the test due to cost, fear of raising stigma, and fear of creating unnecessary worry for the patient. Facilitators include taking a sexual

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
				<p>participated in focus groups.</p> <p><u>Data Analysis:</u> Two researchers analyzed the transcribed text and findings were discussed with principal investigator. A repetitive process of open coding was used for data immersion. Transcripts were analyzed using MAXQDA software.</p>	<p>history of the patient to understand their risk, implementing routine HIV testing in a high prevalence area, and combining an HIV tests with routine lab work.</p>
<p>Minniear, Gilmore, Arnold, Flynn, Knapp, & Gaur (2009).</p>	<p>To implement a process for routine HIV screening as recommended by the CDC, and report acceptance of screening among adolescents at a large, urban, pediatric emergency room.</p>	<p>Descriptive Survey</p>	<p><u>Sample:</u> N=118. 49 physicians, 17 social workers, 52 nursing staff members. 53% worked in the ED</p> <p><u>Setting:</u> Children’s medical center in Memphis, Tennessee</p>	<p><u>Data Collection:</u> Four-page survey that consisted of seven multiple choice questions about the pathophysiologic features of HIV, and a 15 Likert scale questions about belief and opinions regarding HIV testing and diagnosis. This survey was sent out via email.</p> <p><u>Data Analysis:</u> A statistical analysis was performed using SAS 9.13.</p>	<p>22% of the respondents were aware of the CDC guidelines on HIV testing. Perceived barriers to implementing these guidelines included the refusal to be screened, a lack of follow up care after screening, and lack of knowledge about HIV. Reasons staff do not offer testing include forgetting to ask or feeling uncomfortable. Adolescents and their guardians were likely to accept HIV screening of race, or gender. Screening rates increased from 28.9% to 54.3% with computerized prompting.</p>
<p>Myers, Koester, & Dufour (2011)</p>	<p>Examine HIV testing practices as well as barriers and facilitators at a publicly funded primary care setting. Develop recommendations</p>	<p>Qualitative Interview</p>	<p><u>Sample:</u> Six San Francisco Department of Public Health (SFDPH)</p>	<p><u>Data Collection:</u> Majority of interviews were done in person and on site, with a few conducted via telephone due to scheduling issues. Interviews were audio</p>	<p>A barrier as well as facilitator to testing included provider attitudes. In clinical settings without a history of HIV testing, providers were reluctant to discuss testing</p>

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
	and strategies to expand routine HIV testing.		administrators, and 12 medical directors and medical doctors. <u>Setting:</u> San Francisco general hospital and 12 community oriented primary care community health centers in San Francisco	taped. <u>Data Analysis:</u> To analyze facilitators and barriers, the audiotapes were transcribed and grouped in categories. To develop strategies to expand testing, a consensus meeting with 12 experts and stakeholders was held.	because of inexperience in this area. Some medical directors felt it was necessary to increase screening and testing based on the CDC's recommendations. Strategies to increase HIV testing were to educate providers about the need for HIV testing, and acknowledging that HIV screening is not about finding new diagnoses but providing what should be a standard of care test.
Simmons, Brown, Sly, Ma, Sutton, & McLellan-Lemal (2011)	Examine the perspectives of primary care providers and administrators regarding routine HIV testing. Identify barriers and facilitators to routine HIV testing.	Qualitative interviews	<u>Sample:</u> 24 health care workers including primary care providers, medical assistants, social workers and other health care administrators. <u>Setting:</u> 7 primary care clinics, located in Mississippi or Rhode Island.	<u>Data Collection:</u> Semi structured, individual, face-to-face interview with open-ended questions. Conducted by five interviewers who audiotaped the interviews. <u>Data Analysis:</u> Audiotapes were transcribed verbatim. Analysis was completed using Analysis Software for World-based Records. Two analysts independently coded all of the transcripts.	The perceived barriers to HIV testing included lack of patient friendly literature, primary care provider discomfort in discussing HIV testing, lack of training, and incorrect assumptions about an individual's HIV risk. Facilitators to testing included patient willingness and interest, availability of HIV related literature and availability of HIV-specific training.
Sison, Yolken, Poceta, Mena, Chan, Barnes, Smith, & Nunn (2013)	Examine providers attitudes about and practices towards routine HIV testing	Qualitative Interview	<u>Sample:</u> 25 health care providers (nurse practitioners and physicians)	<u>Data Collection:</u> 1-2 hour interviews, loosely structured with open-ended questions to assess provider attitudes. Interviews were recorded and	Barriers to routine HIV testing included inability to bill for test, confusion about informed consent, and belief that patients were at low risk to acquire HIV. None of the

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
			<p><u>Setting:</u> Primary care and infectious disease clinics in Mississippi Delta counties.</p>	<p>professionally transcribed.</p> <p><u>Data Analysis:</u> The information was coded by patterns and themes. More than one data specialist coded all interviews. Any discrepancies were discussed amongst the research team.</p>	<p>providers reported routinely screening patients for HIV. Most providers stated they would be likely to offer the test if they were able to bill for the service.</p>
White, Walsh, Rayasam, Pathman, Adimora, & Golin (2014)	Examine physicians' perceptions of the barriers and facilitators to routine HIV testing.	Qualitative Focus Group	<p><u>Sample:</u> 18 primary care physicians who completed family medicine or internal medicine residencies.</p> <p><u>Setting:</u> Rural North Carolina</p>	<p><u>Data Collection:</u> The authors developed a semi-structured interview guide. Participants also completed a one-page survey on their awareness of the CDC's recommendations for routine HIV testing. Interviews were audio recorded.</p> <p><u>Data Analysis:</u> Two of the others read and coded the transcripts. Codes and quotations were documented in Excel. Descriptive statistics were used to characterize the sample. Statistics calculated using SAS statistical software, version 9.</p>	<p>The physicians identified 21 barriers and 32 facilitators to routine HIV testing. Barriers and facilitators were found to occur at find different levels including patient, provider, community, practice, and policy. Lack of third party reimbursement was the most widely recognized barrier to implementing routine HIV testing. Providers reported there were unclear guidelines to follow for HIV screening. Facilitators to implementation include eliminating written consent and requiring providers to conduct routine testing.</p>
Wright, Curran, Stewart, & Booth (2013)	To examine the barriers to implementing HIV testing with substance use treatment from the perspective of providers in Arkansas.	Qualitative Interviews	<p><u>Sample:</u> 28 providers. 13 providers were female and 11 were African American</p>	<p><u>Data Collection:</u> Interviews conducted by same two members of investigation team. Interviews conducted by telephone and no monetary incentives were given</p>	<p>Seven categories of barriers were identified to providing HIV testing. The barriers included; environmental, policy, funding, organizational structure as well as limited intra- and inter-agency</p>

TABLE 1 – *Continued*

Reference	Research Question/Hypothesis	Study Design	Sample and Setting	Methods for Data Collection and Data Analysis	Findings
			<u>Setting:</u> Rural and urban substance use treatment programs in Arkansas	<u>Data Analysis:</u> Using constant comparison and content analysis techniques, primary patterns in the data were identified, coded, categorized, classified, and labeled.	communication, burden of responsibility, and concern for client fragility. A solution and facilitator to testing was finding a site that provided on site HIV education, testing and counseling services. External funding was necessary to make HIV testing possible at certain sites.

Common barriers to HIV testing were identified including societal factors, organizational factors, individual-provider factors, and individual patient factors. The most noted societal factors included lack of reimbursement and cost, lack of educational materials for HIV testing, completing other health need priorities, and limited access to services (Biradavolu et al., 2016; Joore, Roosmalen, Bergen, & Dijk, 2016; White et al., 2014; Johnson, Mimiaga, Reisner, VanDerwarker, & Mayer, 2011). Organizational factors included lack of time, lack of resources for testing, lack of inconsistent guidelines, lack of on-site testing equipment, and acceptance of testing among staff members (Simmons et al., 2011; White et al., 2014; Johnson et al., 2011). Individual provider barriers include misjudging patients risk for HIV, believing other healthcare issues take priority, discomfort talking about HIV testing, and lack of knowledge/unaware of testing guidelines (Biradavolu et al., 2016; Myers et al., 2011; White et al., 2014; Wright, Curran, Stewart, & Booth, 2013). Individual patient barriers included misperception about risk for HIV, fear of positive results, lack of education of HIV and low health literacy levels (White et al., 2014; Biradavolu et al., 2016).

Facilitators to HIV testing include: 1) increased education for HIV billing, 2) third-party reimbursement, 3) more time during initial visit, 4) provider education about testing guidelines, 5) availability of a sexual history taking tool, 6) reminders to screen in the electronic health record, 7) on site testing and a strong referral network, 8) staff support for testing, 9) having a good relationship with the patient, and 10) providing patient education about HIV risk (Minnear et al., 2009; Biradavolu et al., 2016; Myers et al., 2011; Wright et al., 2013). A study by Haines et al. (2011) found that adolescents reported a higher likelihood of getting tested if rapid HIV tests were available along with pre-test and post-test counseling.

Buzi, Madanay, and Smith (2016) specifically examined the benefits of implementing the CDC practice guidelines for HIV screening. The authors found that implementing the recommended, routine, opt-out HIV screening for adolescents and young adults, in comparison to targeted, risk-based testing, can reduce the stigma associated with HIV testing and decrease the amount of missed opportunities in diagnosing an HIV infection. Another study by Minniear et al. (2009) also implemented routine HIV screening as recommended by the CDC and found that 89.5% of adolescents and their guardians were willing to accept routine HIV screening regardless of their gender or age. Based on the findings from this literature review, implementing routine, opt-out HIV screening for adolescents and adults would be beneficial for Bay clinic as it will increase the overall quality of care that is being provided. The literature found various barriers and facilitators to testing so it will be necessary to find out the specific barriers and facilitators at Bay clinic.

There are various strengths, weaknesses and gaps in this literature review. A strength of this literature review was that there were that several common barriers and facilitators between the studies, despite different samples and settings. A variety of healthcare professionals were surveyed including physicians, nurse practitioners, social workers, nurses, pharmacists and other healthcare providers. These studies were also conducted in a range of settings, including both urban and rural areas. There were articles selected that focused specifically on testing in rural areas and others that focused on testing in urban areas. Both the urban and rural settings had similar barriers and facilitators to HIV testing, although limited access to services was reported as a more common barrier in rural settings.

A weakness of this literature review was that only two articles focused specifically on screening amongst those with a mental illness and three studies focused specifically on the adolescent population, indicating there is a gap in the literature about HIV testing for adolescents who are diagnosed with a psychiatric disorder. Several studies were conducted in a general practice setting or emergency room, and it was not specified if the individuals being treated were diagnosed with a mental illness. Although these studies may not have focused specifically on adolescents and adults who have a mental health disorder, the findings may be applicable to a variety of healthcare settings.

METHODS

Design

This DNP project examined provider's compliance with CDC guidelines for routine HIV screening during a specific time as well as needs at this site to enhance screenings. A retrospective chart review was conducted to assess if providers were following CDC guidelines for routine HIV testing, and an electronic survey was conducted to assess what was needed to enhance screening, as well as the barriers and facilitators to testing.

A retrospective chart review involves reviewing pre-recorded, patient centered data to answer a research question (Matt & Matthew, 2013). Utilizing existing health records is common in quality assessment and improvement projects (Gearing, Mian, Barber, & Ickowicz, 2006). There may be disadvantages to conducting a retrospective review which must be considered including missing charts, information that is inaccurately recorded or not recorded at all, or difficulty interpreting information found in the chart (Gearing et al., 2006). However, there are major benefits to conducting a chart review. A chart review is relatively inexpensive and allows

access to existing data (Gearing et al., 2006). Conducting a retrospective chart review allows for health providers to conduct effective research that has the potential to improve or add to a practice (Gearing et al., 2006).

To find out what is specifically needed at this site to enhance screening, healthcare providers were interviewed in an online survey. The interviews were semi structured utilizing open-ended questions allowing for provider feedback (Polit & Beck, 2012). Initial questions were developed to prepare for the semi-structured interview. Prior to beginning this project, approval was obtained from the University of Arizona's Institutional Review Board (IRB) (Appendix C). The IRB ensures that proposed plans meet the federal requirements for ethical research (Polit & Beck, 2012).

Setting

The setting for this project was at Bay Clinic, located in Coos Bay, Oregon. This clinic is a rural healthcare clinic with integrated medical care. Coos Bay, Oregon is a low-income area that has a lack of mental health providers. Bay clinic has one psychiatric/mental health nurse practitioner and one psychiatrist who provide mental healthcare to all of Coos county. The clinic also has one certified nurse midwife, two family nurse practitioners, six internists, three pediatricians, one OBGYN, one family medicine doctor, one general surgeon and one allergist.

Participants

A commonly used sampling method in retrospective chart reviews is convenience sampling (Gearing et al., 2006). Convenience sampling was utilized and involved selecting cases over a specific time frame. Cases had to meet specific inclusion and exclusion criteria. Inclusion criteria included; patients who are between the ages of 13 and 64 years old, have a psychiatric

disorder listed in the electronic medical record (EMR), and were seen between December 1, 2017 and June 30, 2018. Exclusion criteria included the following: the patient was younger than 13 years old or older 64 years old, or if the patient did not have a listed psychiatric diagnosis in the EMR. Those participating in the interview portion of the project included two family nurse practitioners and one psychiatric/mental health nurse practitioner as they are the providers who conduct HIV Screening at Bay Clinic.

Data Collection

A data extraction form was utilized when reviewing charts (Appendix A). Baseline data was collected from the EMR during the chart review including age, sex, race, and their primary psychiatric diagnosis. A “yes” or “no” answer was recorded for whether the patient had received an HIV test, which was found in the laboratory results section of the EMR. During the interview portion, participants were asked closed and open-ended questions. The first closed ended question that was asked was, “Are you aware that the CDC currently recommends routine HIV screening for individuals between the ages of 13-64, regardless of risk?” That question was followed by open-ended questions including: 1) What do you think is needed to enhance HIV screening at this clinic?; 2) What do you perceive as the major facilitators to testing at this clinic?; and, 3) What do you perceive as the major barriers to testing at this clinic? (Appendix B).

Data Analysis

Data analysis allows for data to become organized, structured, and elicit meaning (Polit & Beck, 2012). For the retrospective chart review, demographics were described using descriptive statistics. A single one-way ANOVA was utilized to compare age between the three

groups and a Pearson's chi-square test was utilized to compare all other data between the three groups. The outcome of interest was whether the provider conducted HIV screening, which was entered as a "yes" or "no" in the spreadsheet and then compared between the three providers with Pearson's chi-square test. The overall numbers from the "yes" or "no" were also totaled.

For the interview, qualitative data was analyzed. There are various challenges to analyzing qualitative data, as there are no universal rules. Data was analyzed using a content analysis to find commonalities. Once commonalities are identified through this interview, appropriate changes to enhance screening could be made.

Ethical Considerations

The three key ethical principles that guided the planning and implementation of this DNP project were: respect for persons, beneficence, and justice. A retrospective review of charts allowed for respect for persons by not allowing for charts to leave the clinic and by using patient identifiers rather than names. Patients identities as well as healthcare providers who are interviewed remained anonymous throughout the project. Beneficence was established by minimizing risk to participants while maximizing benefits. The third and final ethical principle, justice, was demonstrated as the retrospective chart review and interviews will be non-exploitive to participants.

RESULTS

A total of 373 patients met inclusion criteria for chart review. Of the 373 patients, 157 (42%) were seen by Provider 1, the PMHNP, 177 (48%) were seen by Provider 2, a FNP, and 39 (10%) of the patients were seen by Provider 3, also a FNP. The majority of patients were female (n=263, 71%) with the remaining 110 (29%) male. The average age of the patients was 41.9

years old with 61.9% (n=231) of patients being Caucasian. A large proportion (n= 128) 34% did not have ethnicity listed in EMR (Table 2).

TABLE 2. *Demographics and outcome of interest.*

Demographics	Total (n=373)	Provider 1 (n=157)	Provider 2 (n=177)	Provider 3 (n=39)	p-value
Average Age	41.9	37.1	46.5	40.9	<0.01
Sex					
Male	110	52 (33%)	52 (29%)	6 (15%)	0.09
Female	263	105 (67%)	125 (71%)	33 (85%)	
Ethnicity					
Caucasian	231	68	140	23	<0.01
Native American	3	1	2	0	
Hispanic	7	4	2	1	
African American	3	1	2	0	
Declined	128	83	30	15	
Other	1	0	1	0	
Outcome of Interest					
Received HIV testing	27	9	13	5	0.31
Did not receive HIV testing	346	148	164	34	
Percent	7.80%	6.10%	7.90%	14.70%	

Of the 373 patients selected for chart review, 27 (7.8%) received HIV testing. Provider one screened 9 of 157 (5.7%) patients. Provider two screened 13 of 177 (7.3%) patients. Provider three screened 5 of 39 (13%) patients. The patients who received HIV testing were primarily tested because they were symptomatic or had concerns about sexually transmitted illnesses. Patients who received HIV testing were analyzed based on diagnosis. The most common diagnosis was generalized anxiety disorder (n=9, 33%), major depressive disorder, recurrent, moderate (n=3, 11.1%), and bipolar II disorder, bipolar disorder with a current hypomanic episode, chronic post-traumatic stress disorder or attention deficit disorder (n=7, 7.4%). Of the patients who received HIV testing, 66.7% (n=18) identified as Caucasian, and 33.3% (n=9) declined to report ethnicity.

A survey was emailed to three providers, with all three of the providers completing the survey. Based on their answers, all three providers indicated they are currently aware of CDC's testing guidelines for routine HIV screening. They identified the availability of on-site testing resources as a facilitator to testing at Bay Clinic. Barriers included lack of knowledge amongst patients, a culture of the patient population against testing and concern over patients giving consent for testing.

DISCUSSION

This retrospective chart review and provider survey offered an excellent overview of HIV testing practices at Bay Clinic. Few psychiatric patients (7.8%) received HIV testing. All three providers had low rates of testing, with the highest rate of testing between the three providers at only 13% of patients. This represents an area for improvement at Bay Clinic.

Provider surveys indicated that more patient education was needed on this subject in order to improve screening. The individuals who utilize Bay Clinic represent a unique culture with a specific set of needs. The average age of patient's in the chart review was 41.9 years old, representing a population who grew up in a specific time period where HIV created a lot of fear and stigma amongst individuals (American Psychological Association, 2014). One provider indicated that many patients in this population view HIV as the "gay persons disease" and do not understand why testing would be needed.

The identified barriers and facilitators at this clinic are consistent with current research on HIV testing. As previously discussed, the literature search indicated common barriers included lack of provider and patient education (White et al., 2014; Johnson et al., 2011; Minniear et al., 2009). However, a facilitator found in the literature was the availability of sexual history taking

tool which was actually found to be a barrier at Bay Clinic (Johnson et al, 2011). The providers indicated that education, specifically for patients, as well as an improved sexual health history taking tool in the electronic health record is needed to enhance screening at Bay Clinic. Upon review of the charts, majority of providers had not completed the HIV screening tool available in the EMR. The HIV screening tool asked whether providers offered HIV testing but did not have a set of sexual health history screening questions to ask patients. Two of the providers utilized their own personal sexual health history form as no standardized tool was available.

The paucity of testing seen at Bay Clinic represents an ideal area for quality improvement. To enhance screening at Bay Clinic, an educational pamphlet was created and emailed to providers to hand out to patients. The information in the pamphlet provided education on the CDC's current screening guidelines, as well as information on the importance of testing. A future study could look at the percentage of patients who received testing after the educational pamphlets were given to patients. A future study could also work to create a standardized HIV screening tool as part of the intake for all patients at Bay Clinic, with standardized documentation of refusal of testing in patients. As previously mentioned, this project was guided by Leininger's theory of culture care, which was an appropriate selection. Through the use of this theory, this project worked to identify and understand culture-based care for a vulnerable population in rural Oregon.

Limitations

One major limitation for this study is that there was no standardized documentation on whether patients were offered and refused an HIV test. Looking at the rate of testing provides an objective end-point; however, it would also be important to know the percentage of patients who

were offered and refused testing. If testing refusal rates were high, a quality improvement project focusing on patient education would be more beneficial than changing how HIV tests are offered.

Conclusion

HIV testing is currently recommended at least once for all patients aged 13-64, regardless of risk. Despite this recommendation, only 7.8% of the patients at Bay Clinic had received testing. This represented a significant area for quality improvement. A provider survey demonstrated patient concerns as a primary reason for a lack of testing. For this reason, an educational pamphlet was created for patients. The pamphlet offered current CDC recommendations, and explanations for why getting tested was important (Appendix D).

APPENDIX A:
DATA COLLECTION CHART

Data Collection Chart

Primary Psychiatric Diagnosis	Age	Race	Sex	HIV test	Provider

APPENDIX B:
SEMI-STRUCTURED INTERVIEW GUIDE

Semi Structured Interview Guide

- 1) What do you perceive as the major facilitators to testing at this clinic?
- 2) What do you perceive as the major barriers to testing at this clinic?
- 3) What do you think is needed to enhance HIV screening at this clinic?
- 4) What is your position at Bay Clinic?

APPENDIX C:
THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL
LETTER



Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://hgw.arizona.edu/compliance/home>

Date: June 20, 2018

Principal Investigator: Samantha Kordeie

Protocol Number: 1806691224

Protocol Title: ROUTINE HIV SCREENING OF PATIENTS WITH A MENTAL HEALTH DIAGNOSIS IN A RURAL HEALTH SETTING

Determination: Human Subjects Review not Required

Documents Reviewed Concurrently:

HSPF Forms/Correspondence: *Advisor confirmation email.pdf*

HSPF Forms/Correspondence: *Determination update.pdf*

Other Approvals and Authorizations: *Site Authorization Template-final.pdf*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(d): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX D:
HIV TESTING EDUCATIONAL PAMPHLET

Where and how can I get Tested?

- Talk to your provider about routine HIV testing at Bay Clinic
- Testing is done through taking blood and may take up to 7-10 days to receive results



What are the Risk Factors?

- Unprotected anal or vaginal sex
- IV drug use
- Multiple sex partners
- Having unprotected sex with an individual who has HIV

Those identified to be at high risk should be tested **annually**

HIV in Oregon

More than 1,000 adults and adolescents in Oregon are believed to have an undiagnosed HIV infection. Each year there are around 250 newly diagnosed cases (Oregon Health Authority, 2013).

Of those newly diagnosed cases, 39% have advanced disease and have likely been undiagnosed for 7-10 years (Oregon Health Authority, 2013).

WHAT IS HIV?

Human immunodeficiency virus (HIV) attacks healthy immune cells in the body and can lead to deadly outcomes if left untreated (World Health Organization, 2017).

The Henry J. Kaiser Family Foundation (2017) estimates that nearly 15% of individuals infected with HIV are unaware.

HIV can be spread through sexual transmission, transmission by blood or blood products, occupational transmission, or maternal-fetal transmission (CDC, 2018)

RESOURCES

<https://www.cdc.gov/hiv>

<https://www.hiv.gov/hiv-basics>

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HIV Testing

If you are between 13-64 years old, the CDC recommends you get tested for HIV at least once

**Get Tested
Know your Status**

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