

PERCEIVED BARRIERS AND FACILITATORS TO ROUTINE HIV SCREENING/  
TESTING IN PRIMARY CARE SETTINGS

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**Abstract**

**Background.** In 2006 the Centers for Disease Control and Prevention implemented new recommendations for routine HIV screening and testing to be conducted in medical settings outside of STD/HIV clinics on all patients aged 13-64 regardless of perceived risk. Despite ongoing efforts to improve HIV screening and testing, many settings are not following these guidelines. In addition, the southeastern United States is disproportionately affected by HIV.

**Purpose.** The purpose of this project was to describe health care providers' perceived barriers and facilitators to universal screening and testing for HIV at poorly utilized/novel testing sites in the southeastern US through a review of the literature, and to develop recommendations for future research, practice, and policy. **Methods.** I conducted a review of the literature of perceived barriers and facilitators to routine HIV testing among health care providers in February, 2016 according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. Identified barriers and facilitators were coded and organized into levels of the Ecological Model of Health Promotion. **Results.** Perceived barriers and facilitators were identified at the societal, organizational, and individual level including federal/state policy, protocol constraints, and provider beliefs/characteristics. The information from this paper may help guide future research and interventions to improve adherence to CDC recommendations.

*Keywords:* HIV testing, HIV screening, provider perception, primary care, barriers, facilitators, Southeastern United States.

## **Introduction**

Despite a wealth of published research on HIV transmission, pathophysiology, and treatment in the past 5 years, HIV continues to be a major public health concern worldwide and in the United States (US). A high proportion of people with HIV infection remain undiagnosed or are diagnosed late, indicating that current HIV testing practices are insufficient. Individuals with undiagnosed HIV will eventually progress to AIDS without treatment. Clinical symptoms of late infection, such as secondary tuberculosis infection and Kaposi's sarcoma, typically present only when one's CD4 count is less than 200 trigger individuals to seek care. Klein et al. (2003) reported that approximately 43% of diagnosed HIV patients presented in the late phase of HIV infection. Individuals in the late phase of HIV infection are more likely to have serious opportunistic infections that ultimately lead to death. In a study of 1,763 serodiscordant couples, Cohen et al. (2011) found that early initiation of antiretroviral therapy reduced rates of clinical events such as secondary infection complications. These findings are evidence that HIV should be diagnosed as soon as possible to link individuals to appropriate treatment.

Routine HIV screening and testing can increase early diagnosis of HIV and increase discovery of HIV in patients who are not perceived as high risk. The existing literature suggests that patients are largely accepting of HIV testing (Irwin, Valdiserri, & Holmberg, 1996). Previous literature reviews have examined physician perspectives on barriers to routine HIV testing (Burke et al. 2007), but failed to include the perspective of other health care providers who could perform HIV testing. In addition, the existing literature has not frequently examined facilitators to implementation of routine HIV testing. HIV continues to be an issue in the US and more specifically the Southeast despite ongoing efforts nationally and locally over the last thirty-five years.

### **HIV in the United States**

In response to the ongoing epidemic, in 2006 the Centers for Disease Control and Prevention (CDC) implemented new recommendations for universal routine HIV screening in health care settings based on evidence that a risk-based testing strategy was unsuccessful at identifying a large proportion of infected individuals (Branson et al., 2006; Appendix I). The CDC recommended that everyone ages 13-64 years be screened as a part of routine medical visits (Branson et al., 2006). Despite these recommendations, actual practice within primary care settings had not caught up by 2008. In response to the continuing HIV epidemic, the White House Office of National AIDS Policy (ONAP) developed the National HIV/AIDS Strategy (NHAS) for the US that outlined three primary goals: (a) reducing the number of people who become infected with HIV; (b) increasing access to care and optimizing health outcomes for people living with HIV; and (c) reducing HIV-related health disparities (2010). The NHAS also envisioned that, “The United States will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity, or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination” (2010, p. 9). According to the ONAP, goals and objectives of the NHAS should be met within 5 years. However, estimates of undiagnosed HIV and recent surveillance data from the CDC suggest that goals and objectives have not been met.

According to the CDC (2012), approximately 1.2 million people over the age of 13 are living with HIV in the US, and about 156,300 (more than 18%) of these individuals are unaware of their infections. The spread of HIV can be associated with several factors including individual sexual behaviors and individual viral load. Individuals unaware of their infections are more

likely to transmit HIV to their partners because they are more likely to continue high-risk sexual behaviors. In a meta-analysis of literature, Marks et al. (2005) found that persons positive for HIV who were aware of their status were less likely to have high-risk sexual behaviors specifically unprotected anal or vaginal intercourse and reduced their HIV risk behaviors after learning their HIV-positive status (Marks et al., 2005). In addition, individuals unaware of their status are more likely to have a higher viral load because they are not being treated for their infections (George et al., 1998). Individuals with higher viral loads are more infectious than individuals with lower viral loads or in the latency phase. The transmission rate is 3.5 times higher among those with undiagnosed HIV compared to those who know their status (Marks et al., 2006). Higher transmission by individuals with undiagnosed HIV suggests that testing needs to be more universally focused rather than risk based. The ongoing HIV epidemic in the US indicates that current efforts must be evaluated and future work should be focused on finding those undiagnosed and linking them to care.

### **HIV National and Regional Health Disparities**

In the US, HIV disproportionately affects several racial and ethnic groups, specifically Black and Hispanic. In a study by Operario et al. (2015) of survey data of 19,510 adults from the National Health and Nutrition Examination Study (NHANES), Black males were found to have nearly five times greater odds than White males to test positive for HIV. Black females were found to have nearly 46 times greater odds than White females to test positive for HIV (Operario et al., 2015). Prevalence of HIV is greatest in Blacks, then Hispanics, and then Whites (Operario et al., 2015). These ongoing trends from 1999-2012 suggest that these groups should be focused on when developing testing strategies. In a study comparing the Center for Disease Control National HIV Prevention Program Monitoring and Evaluation (NHM&E) test data to the

National HIV Surveillance System (NHS) found that of CDC-funded tests, 55.3% of persons newly diagnosed with HIV were Black and 19.7% were Hispanic (Krueger et al., 2016). Based on 2014 United States Census data 13.4% of the population is Black of Hispanic and non-Hispanic origin and 17.5% of the U.S. population is of Hispanic origin inclusive of all races (U.S. Census Bureau, 2015). Blacks represent a relatively small fraction of the total U.S. population, but account for over half of new HIV diagnoses. Individual risk-based screening and testing is ineffective at finding new HIV diagnoses in these populations for reasons including but not limited to individual low perceived risk for HIV and provider belief that a person is at low risk for HIV.

### **HIV in the Southeastern United States**

The CDC identified the following states as southern: Alabama (Ala.), Arkansas (Ark.), Delaware (Del.), District of Columbia, Florida (Fla.), Georgia (Ga.), Kentucky (Ky.), Louisiana (La.), Maryland (Md.), Mississippi (Miss.), North Carolina (N.C.), Oklahoma (Okla.), South Carolina (S.C.), Tennessee (Tenn.), Texas, Virginia (Va.), and West Virginia (W.Va.). However, based on existing literature, geographical sources, and characteristics of typically identified southeastern states, for the purposes of this review the following states were included: Ala., Ark., Fla., Ga., La., Ky., Miss., N.C., S.C., Va., and W.Va.. Del. and Md. were excluded because these states are typically defined as mid-Atlantic; Okla. is typically defined as mid-western, and Texas is typically categorized as southern. The selected southeastern states of interest include nine states that are often categorized as the “Deep South”. HIV continues to specifically disproportionately affect the southeastern US: Ala., Ark., Fla., Ga., La., Ky., Miss., N.C., S.C., Va., and W.Va. These states have numerous characteristics —high HIV-related stigma, policies,

and population demographics—that drive the ongoing challenges of routine HIV testing and screening.

**Current status of southeastern states.** Krueger et al. (2016) found that 56.9% of new diagnoses of CDC-funded HIV testing were diagnosed in the South. In an analysis of trends from 2008-2013 of HIV/AIDS, in the US nine states —Ala., Fla., Ga., La., Miss., N.C., S.C., Tenn., and Texas— lead the US in new HIV/AIDS diagnoses, HIV prevalence, death rates from HIV disease, and racial disparities (Reif et al., 2015). Table 1 summarizes the latest data released from the 2014 CDC HIV Surveillance Report. Compared to the national average Ala., Fla., Ga., La., Miss., N.C., and S.C. have higher rates of HIV diagnoses among adults and adolescents. In addition to rates of new diagnosis, Fla., Ga., La., N.C. S.C., Tenn., and Va. have close to or greater than the national average rates of Black Americans living with diagnoses of HIV. Fla., Ga., La., Ky., and Miss. have close to or greater than the national average rates of Hispanic/Latino Americans living with diagnoses of HIV infection.

**The perfect storm.** The spread of HIV in the Southeast is perpetuated by racism (Thomas 2006), poverty (Schroeder, 2016; Thomas and Thomas, 1999), poor health care access, poor education (Adimora, Schoenbach, and Doherty, 2006; Peterman, Lindsey, and Selik, 2005), stigma (Kerr et al., 2014; Stringer et al., 2016; Young and Bendavid, 2010), and public policy (Adiomora et al., 2014). Racism, poor health care access and poor education contribute to perception of low HIV-risk, poor knowledge about HIV, and lack of resources to be tested and linked to care (Cook et al., 2015)

The Southeastern US is a socially conservative region with a diverse population spread within urban centers and rural areas (Adimora et al., 2006). HIV-related stigma is perceived by citizens in the South, experienced by people living with HIV/AIDS (PLWHA), and affects health

care provider practice. In a study conducted by the National Alliance of State and Territorial AIDS directors (NASTAD), the South and Midwest reported significantly higher levels of HIV-, gender-, and sexuality-based stigma than the West and Northeast (2012). Past and current research suggests that PLWHA in the Southeast report experiencing higher levels of stigma from health care providers than PLWHA from other regions (Baunach & Burgess, 2013; Boehme et al., 2012; Heckman et al., 1998). In addition to PLWHA experience with stigma, HIV-related stigma and discrimination remain prevalent within the Deep South among health care providers (Stringer et al., 2016). Stigma has many effects on routine HIV testing at the patient and provider level. One effect on patients is that fear of stigma contributes to delays in screening for HIV (Fortenberry et al., 2002). At the provider level, societal stigma may decrease a provider's willingness to screen and test for HIV (Wong et al., 2013).

**State policy implications.** In 2006, the CDC recommended that states address policies regarding criminalization of potential HIV exposure, informed consent, and counseling requirements. The CDC further recommended that general informed consent for medical care notifying the patient that an HIV test will be performed unless the patient declines is sufficient and prevention counseling should not be required with HIV screening programs in health-care settings (Branson et al., 2006). In a recent review of state laws, Lehman et al. (2014) noted that legislative approaches to prevent HIV transmission had been used to prevent HIV transmission but the implications of these laws have not been evaluated. Implemented laws are both protective and punitive towards PLWHA including laws that promote HIV screening (Neff & Goldschmidt, 2011), laws protecting sensitive health information (Health Insurance Portability and Accountability Act of 1996), laws criminalizing behaviors of PLWHA, and laws that allow the prosecution of those accused of exposing others (Lazzarini, 2002; O'Toole, 1996; Wolfe and

Vezina, 2004). The implications of the state laws criminalizing HIV are unclear; however, a few proposed implications include criminalizing laws would deter people from seeking HIV testing, and criminalizing laws perpetuate HIV discrimination and HIV-related stigma.

All southern states have laws that are consistent with the CDC recommendations with regards to informed consent and pre-test counseling. Despite consistency between state laws and CDC recommendations, many health care settings and practitioners have not adopted CDC recommendations and/or have low HIV testing rates (Montaño et al., 2008; Wong et al., 2013).

### **Novel/Poorly Utilized Testing Sites**

Included in the CDC's 2006 recommendations were suggested locations for routine HIV screening and testing: (a) hospital EDs, urgent-care clinics; (b) inpatient services, (c) Sexually Transmitted Disease (STD) clinics or other venues offering clinical STD services, (d) tuberculosis (TB) clinics, (e) substance abuse treatment clinics, (f) other public health clinics, (g) community clinics, (h) correctional health-care facilities, and (i) primary care settings (Branson et al., 2006). Routine HIV screening and testing has been successfully implemented in STD clinics, TB clinics, correctional health-care facilities/jails/prisons, health departments, and some obstetrics and gynecology practices. The remaining locations have had variable uptake of HIV screening and testing recommendations despite evidence that these locations may significantly decrease the number of individuals unaware of their HIV status. These poorly utilized testing sites include at least one or multiple primary care focused visits. McNaghten et al. (2009) found that 31% of providers in primary care were still mainly offering testing to those perceived to be at high risk and 9% reported not offering screening at all.

In targeting areas of high HIV prevalence for universal HIV testing/screening, a health care provider's recommendation may be enough to get individuals to test. In a study conducted



among Hispanic men, 86% reported that they would accept a physician-endorsed HIV test (Fernandez et al., 2003). 73% of respondents reported they would be “very likely” to accept HIV testing, if a doctor recommended it (Haukoos et al., 2008). In addition, patients desired to be tested routinely by their primary care provider even when they did not perceive themselves to be high risk (Simmons et al., 2005). Providers in primary care settings should routinely offer HIV testing/screening to their patients because it may be enough to get individuals to test.

### **Conceptual Framework**

The sites of interest are governed by public policy, exist within a complex societal environment, and have differing organizational structures that potentially impact the implementation of universal HIV screening and testing. The Ecological Model for Health Promotion (EMHP) (McLeroy et al., 1988) which is an adapted model of the Ecological Perspective (EP) (Bronfenbrenner, 1979) was the primary framework guiding the organization and analysis of this literature review. The EMHP allowed for the examination and interpretation of multiple factors associated with routine HIV screening/testing as interrelated and complex factors. The EMHP highlights the relationship between five factors that determine a behavior: (a) intrapersonal factors; (b) interpersonal processes and primary groups, (c) institutional factors, (d) community factors, and (e) public policy (McLeroy et al., 1988).

Intrapersonal factors are characteristics of an individual such as knowledge, attitudes, and skills (McLeroy et al., 1988). Intrapersonal factors regarding the patient and provider were examined using this framework. Interpersonal processes and primary groups are the informal and formal social and support systems that an individual interacts with including family and friends (McLeroy et al., 1988). Institutional factors are organization characteristics formal and formal such as clinic operation procedures and clinic work environment (McLeroy et al., 1988).

Community factors are the relationships among organizations and institutions (McLeroy et al., 1988), these include referral systems, relationship between providers, and presence of racism or ageism. And lastly, public policy is the local, state, and national laws and policies that affect behavior. These five factors were grouped into three categories: (a) societal factors: community factors/public policy; (b) organization factors: institutional factors; and (c) individual factors: interpersonal processes/intrapersonal factors.

### **Aims**

The two aims of this project were to: (a) describe health care providers' perceived barriers and facilitators to universal screening and testing for HIV at poorly utilized/novel testing sites in the southeastern US through a review of the literature; and (b) develop recommendations for future research, practice, and policy.

### **Methods**

I analyzed data from a systematic review of literature on health care provider perceived barriers and facilitators to screening and testing for HIV in poorly utilized/novel testing sites in the southeastern United States. The results were categorized according to three organizational levels based on the EMHP: (a) Society level: state/system/policy factors (b) Organization: practice/program/clinic factors and (c) individual: provider/patient factors.

### **Systematic Review**

A review of the literature was conducted February 2016 using CINAHL, MEDLINE, and EMBASE, no date filters were applied. Excluded literature included masters or doctoral theses, conference posters/abstracts, reviews and other unpublished literature. Table 3 describes the search strategy applied to all three databases. In order to capture all relevant literature that may potentially have health care provider perspective on routine HIV testing in poorly utilized

primary care settings—primary care clinics, substance abuse clinics, hospital EDs, and community clinics—search strings were applied across entire documents instead of title, key terms, or abstracts. A Geographical MeSH term “southeastern United States” was included in the MEDLINE search to ensure inclusion of studies that identified their location as southeastern.

Inclusion criteria were: (a) published in a peer-reviewed journal; (b) focused on routine/universal HIV screening and testing in primary care locations including substance abuse clinics, primary care practices, obstetrics/gynecology practices, community health clinics, emergency rooms, and community based organization clinics; and (c) included health care provider perspectives on interventions or routine/universal HIV screening and testing in their practice. Studies were excluded if they were not conducted in the southeastern states of interest or did not include a southeastern state of interest; were conducted at HIV/STD clinics, health departments, or jails/prisons; were solely on HIV specialist health care provider perspectives; or were about screening or testing of other STDs in relation to HIV. Due to the exploratory nature of this review, inclusion criteria based on type of study was not applied.

Titles and abstracts of 412 papers resulting from the search were read and coded on Excel based on eight inclusion/exclusion criteria. Seventeen papers remained after coding. A comprehensive description of the search strategy and article selection process is shown in Figure 1.

I read and extracted data regarding location, purpose, study-design, perceived barriers/facilitators to routine HIV testing, and overall quality and rigor of the 17 selected papers. Extracted data is presented in Appendix II, which includes six columns: (1) First author’s name, study year, study, title [location], (2) purpose, study type/methods [sample number], (3) EMHP

level, (4) perceived barriers, (5) perceived facilitators, and (6) appraisal of research rigor and quality.

## Results

Results are presented in order of EMHP level—Societal, Organizational, Individual—and are further subcategorized into barrier or facilitator categories. Appendix II contains a detailed summary of results from the review of literature and includes all mentioned perceived barriers/facilitators to routine HIV testing/screening and non-perceived or additional barriers/facilitators to routine HIV testing/screening. The below results present only the extracted health care provider perceived factors regarding HIV screening/testing. Several barriers and facilitators were categorized in multiple EMHP levels due to categorization and wording in their original studies.

The seventeen identified articles consisted of six survey studies (Anderson et al., 2005; Barnes et al., 2003; Gongidi et al., 2010; Nichols et al., 2002; Simmons et al., 2006; Troccoli et al., 2002), six qualitative studies (Bogart et al., 2008; Davis et al., 2015; Simmons et al., 2011; Sison et al., 2013; Sullivan et al., 2015; White et al., 2015), and five program/implementation studies (Haynes et al., 2011; Lanier et al., 2014; Minniear et al., 2009; Weiss et al., 2009; Wright et al., 2013).

### **Societal Level: State/System/Policy**

**Perceived barriers.** Eleven of the seventeen articles mention perceived societal level barriers for routine HIV testing/screening: financial, HIV-related stigma, population characteristics, policy, health care networks, and availability of resources for organizations/patients/providers. The most frequently cited barrier was financial concerns and constraints. Financial barriers include lack of reimbursement from third party insurance

providers (Barnes et al., 2003; Lanier et al., 2014; Nichols et al., 2002; Sison et al., 2013; White et al., 2015); lack of financial support for implementation of testing programs (Simmons et al., 2011); and lack of financial support to expand existing HIV testing programs (Wright et al., 2013).

In addition to financial constraints, HIV-related stigma remains a predominantly perceived barrier in the southeastern states of interest. Five articles found that providers perceived that stigma and stereotype surrounding HIV/AIDS was greater in rural areas (Davis et al., 2015; Minniear et al., 2009; Sison et al., 2013; Sullivan et al., 2014; White et al., 2015). Providers in N.C. and Ark. believed that their communities were socially and politically conservative (White et al., 2015; Wright et al., 2013). Davis et al. (2015) found that providers believed that HIV-related stigma was still present among physicians and that ageism is a factor that potentially causes providers to forget that older adults are at risk for HIV.

Providers perceived that certain population characteristics of southeastern states made implementation of routine HIV testing difficult. Providers believed that there was a lack of public acceptance (White et al., 2015) that may contribute to individuals being unwilling to test. Perception of low prevalence of HIV in Ky. (Davis et al., 2015) was cited as a barrier to testing. Wright et al. (2013) found that in implementing a HIV testing program in Ark. Providers believed that there were competing health needs and priorities dividing their attention.

Several policy barriers were identified in four articles. Barnes et al. (2003) found that providers perceived that legal issues related to obtaining informed consent for HIV testing was a barrier for testing; however, the findings of this study were published before the CDC recommendations and changes to state level policy. Providers believed that parental consent requirements for children/adolescents were a barrier for testing (White et al., 2015). In addition

to consent requirements, participants in one study noted that some states have requirements that all testing sites have policies, procedures and quality assurance to manage a testing program (Haynes et al., 2011). Wright et al. (2013) found that providers believed that there was a lack of strong political advocates to heighten awareness on routine HIV testing.

Health care network characteristics determine the support networks for providers and access to care for populations. Three studies noted health care network barriers to HIV testing including lack of safety net for providers providing follow-up care for patients (Barnes et al., 2003), lack of feedback from hospitals about patients who tested for HIV (Sullivan et al., 2014), and limited access to health care services in rural areas (Sison et al., 2013).

Resource barriers are defined as available literature, and materials regarding routine HIV testing/screening. There is a lack of dissemination and implementation strategies regarding successful implementation of HIV testing programs in primary care, substance abuse clinics, and emergency rooms (Simmons et al., 2011; Sullivan et al., 2014). In the same study by Simmons et al. (2011), providers noted that there is a lack of patient-friendly literature and education materials for implementation of HIV testing for providers.

**Perceived facilitators.** Federal guideline congruency, policy, financial factors, and health department engagement were the primary perceived facilitators mentioned by the selected articles. Providers stated that congruency between CDC and USPTF guidelines was a facilitator for testing, more specifically that the USPTF assigned a grade A for routine testing of patients between the ages of 15-65 (Davis et al., 2015; White et al., 2015). Wright et al. (2013) found that participants believed that the lack of regulatory barriers in Ark. was a facilitator to their program implementation. White et al. (2015) noted several potential factors identified in interviews: (a)

elimination of written HIV consent; (b) requiring HIV testing for college enrollment; and (c) requiring physicians to test routinely.

Financial factors included federal funding availability for full time staff for HIV (Haynes et al., 2011), accessibility to less costly rapid HIV tests (Simmons et al., 2006), and third party reimbursement (White et al., 2015). Providers believed that increasing education regarding billing for HIV tests and screening would facilitate increased testing (Sison et al., 2013).

Providers also believed that more HIV literature and HIV-specific training for clinic staff should be made available (Simmons et al., 2011). Additional potential facilitators noted by providers were to decrease stigma, and public campaigns to encourage patient acceptance (White et al., 2015). Providers within the HIV care system believed that state/county health department engagement with community based organizations and clinics in which the health department provided rapid tests was a facilitator to testing (Sullivan et al., 2014).

### **Organization Level: Clinic/Program/Organization**

**Perceived barriers.** Ten studies noted organization barriers including clinic characteristics, visit characteristics, and administration characteristics.

Clinic characteristics and visit characteristics included lack of time, personnel, and practice size. Lack of time and providers' belief that it is difficult to fit rapid test counseling into one session was the most frequently cited organization barrier (Barnes et al., 2003; Bogart et al., 2008; Davis et al., 2015; Lanier et al., 2014; Simmons et al., 2011). In addition there were concerns regarding counseling being difficult to integrate into other patient services (Bogart et al., 2008). Lack of personnel to perform routine STD testing (Barnes et al., 2003; Bogart et al., 2008) and lack of personnel to handle medical needs of HIV-positive women (Nichols et al., 2002). Lack of space and privacy was also cited as a barrier to implementation (Bogart et al.,

2008; Minniear et al., 2009). Clinic size may also be a barrier. White et al. (2015) found that some providers believed that small practices were less likely to be up-to-date on new recommendations.

Clinic protocol barriers and barriers associated with designing clinic protocols were identified. Two studies found that providers felt that there was a lack of guidelines for providing educational information to patients (Davis et al., 2015; Sullivan et al., 2014). Additionally, providers felt that some clinic guidelines were inconsistent with CDC recommendation and that only perceived high risk patients were screened and tested for HIV (Davis et al., 2015; White et al., 2015). Providers felt that quality assurance procedures for rapid tests were too complex, and that it was difficult to design a rapid testing protocol for their organization (Bogart et al., 2008).

Administration barriers were noted in two studies including the belief that there were too many administrative hassles associated with rapid HIV test use, and a lack of administrative support (Bogart et al., 2008; Lanier et al., 2014).

Additional organization level barriers included that HIV testing is conducted at different locations from primary care services (Davis et al., 2015; White et al., 2015); silos exist within programs and hospitals that prevent coordination of services (Minniear et al., 2009; Wright et al., 2013); and that there is staff resistance and limited compliance with guidelines (Lanier et al., 2014; Simmons et al., 2011; White et al., 2015)

**Perceived facilitators.** Facilitators for HIV testing included accessibility, protocols, and availability of resources. Providers believed that having on-site or easily accessible testing and treatment (Simmons et al., 2011), strong internal and external support networks, and dedicated programs for HIV testing (Wright et al., 2013) would facilitate routine HIV screening practices.



Protocols regarding sexual history taking (Lanier et al., 2014) and integration of testing into clinic flow (Haynes et al., 2011; Weis et al., 2009; White et al., 2015) help standardize and normalize testing procedures. Availability of resources including gender-neutral sexual history tools (Lanier et al., 2014) that could be implemented at every clinic visit and low literacy/translated patient education materials (Troccoli et al., 2002) allow clinic staff to begin conversations regarding sexual health.

Additional facilitators include clinic assurance of confidentiality (Simmons et al., 2011) and being in a university practice setting because they are more likely to be up to date (White et al., 2015). White et al. (2015) found numerous potential facilitators including use of nurse/staff initiated HIV screening, educating medical directors/nurses/ and office staff about HIV testing recommendations, decreasing stigma within clinics, and including HIV testing as part of an STD panel. In regards to successful implementation of HIV testing programs, Haynes et al. (2011) note that a leadership/change champion is necessary to drive the implementation.

### **Individual Level: provider/patient**

**Perceived provider barriers.** Provider attitudes, comfort with HIV testing conversations, and lack of education were identified from thirteen studies. Negative provider attitudes regarding HIV prevalence, clinical priorities, and financial beliefs were noted as barriers to testing. Providers believed that some providers lacked motivation to do testing routinely (Barnes et al., 2003) and that they had many competing clinical priorities (White et al., 2015). Providers in three studies noted that provider perception that a patient is low risk for STDS was a barrier to testing (Barnes et al., 2003; Simmons et al., 2011; White et al., 2015), Davis et al. (2015) also found that providers prioritization of HIV screening in older adults was low. Some providers also believed that only high risk patients should be tested (Simmons et al.,

2006; Sison et al., 2013) and that it was the health department's responsibility or not their responsibility to test (Sison et al., 2013; Sullivan et al., 2014)

Financial beliefs that were found to be barriers included the belief that screening is cost ineffective (Barnes et al., 2003; White et al., 2015), providers being unaware of cost of testing (Barnes et al., 2003), and provider lack of knowledge regarding reimbursement rates and how to be reimbursed (Sison et al., 2013). In comparison to HIV test providers, Non-HIV test providers in community clinics and community based organizations believed that rapid testing does not allow more people to know their status (Bogart et al., 2008).

Provider lack of knowledge was found to be a significant barrier to testing. Several studies found that providers were unaware of CDC guidelines (Minniear et al., 2009; Nichols et al., 2002), had different definitions of routine testing (Simmons et al., 2011), and may be confused about laws governing informed consent (Sison et al., 2013; Troccoli et al., 2002). Additionally providers perceived low personal knowledge about HIV (Minniear et al., 2009; Simmons et al., 2011; Sullivan et al., 2014).

Discomfort with HIV/sexual health conversations with older adults and adolescents was also cited as a barrier to testing in eight articles. Discomfort having sexual history discussion was the most frequently cited provider barrier to testing (Davis et al., 2015; Lanier et al., 2014; Nichols et al., 2002; Simmons et al., 2011; Sullivan et al., 2014). This discomfort contributes to provider unwillingness to test. Provider discomfort answering questions and communicating about HIV testing (Davis et al., 2015; Nichols et al., 2002; Wright et al., 2013). Providers also noted that there may also be discomfort communicating about HIV testing specifically (White et al., 2015). Minniear et al. (2009) found that some nurses were uncomfortable offering HIV tests

Concerns regarding HIV positive follow up care included feeling unprepared to treat an HIV-positive woman, and discomfort informing patients they are positive (Troccoli et al., 2002; Wright et al., 2013). Some providers were also concerned about the extent of responsibility after a patient tested positive for HIV (Wright et al., 2013).

Additional perceived barriers included belief that ordering an HIV test is too complicated (Davis et al., 2015); nurses forgetting to implement testing (Minniear et al., 2009); and poor cultural competency (Simmons et al., 2011).

**Perceived patient barriers:** Providers perceived several patient barriers to testing including patient perception of risk, lack of education, patient refusal, and fear.

The most frequently mentioned barrier to testing was patient perception that they are at low risk for HIV (Barnes et al., 2003; Davis et al., 2015; Simmons et al., 2011; Sison et al., 2013; White et al., 2015). Patient refusal was the second most cited barrier to testing and that older patients were more likely to refuse (Barnes et al., 2003; Nichols et al., 2003; White et al., 2015). Providers also believed that lack of education about HIV/AIDS and low literacy/health literacy contributed to low testing rates (White et al., 2015; Davis et al., 2015).

Providers also believed that patient concerns about confidentiality and stigma was a significant barrier to testing (Lanier et al., 2014; Minniear et al., 2009). Additional patient barriers to testing included: patient fear of results (Davis et al., 2015; Simmons et al., 2011) fear of needles (White et al., 2015), and client fragility in substance abuse recovery programs (Wright et al., 2013)

**Perceived provider facilitators.** Several provider facilitators were identified including HIV/AIDS specific training/education, personal experience, and positive physician attitudes towards HIV testing. Training during residency (Davis et al., 2015), education regarding

recommendations, and increased awareness of HIV prevalence in communities (White et al., 2015; Sison et al., 2013). Providers believed that personal experience with an HIV positive patient led to more vigilance for HIV testing (Davis et al., 2015).

Positive physician attitudes facilitating HIV testing include positive attitudes towards programs and guidelines. Clinician acceptance of the implemented HIV testing program was associated with its success in a pediatric ED (Minnear et al., 2009). In addition belief that guidelines should be instituted (Gongidi et al., 2010; Minniear et al., 2009) and willingness to test if HIV testing is reimbursable (Sison et al., 2013). In a successfully implemented HIV screening program nurses perceived that time was not a barrier and felt well trained in many aspects of HIV care (Weis et al., 2009).

**Perceived patient facilitators.** Providers believed that patients who were more comfortable with a physician would be more likely to agree to testing (Davis et al., 2015). Patient concern about STDS and interested in testing were facilitators to testing (Davis et al., 2015; Simmons et al., 2011; White et al., 2015). Providers also believed that female patients were more receptive to HIV testing, that a patient's sexual orientation indicated risk behaviors (Davis et al., 2015), and that younger patients were more likely to accept (White et al., 2015). Potential patient facilitators included educating patients about HIV risk, and increasing patient acceptance of HIV testing (White et al., 2015).

### **Discussion**

Numerous perceived barriers and facilitators at the societal, organizational, and individual level were identified in this literature search. Identified perceived barriers and facilitators were consistent with other literature presented in the introduction. Moreover, the use of the EMHP model allowed for the systematic analysis of interacting ecological levels and

factors that determine behavior at the individual level. The key theme identified through this literature review is that multiple levels of barriers must be addressed to improve implementation of routine HIV screening and testing in primary care settings. Analyzing perceived facilitators at all three levels allowed for the identification of potential solutions to addressing multi-level barriers.

Barriers overlapping societal, organization, and individual levels included financial barriers, guideline congruence with practice, and HIV-related stigma. Financial concerns included funding of programs and individual reimbursement practices. Increased availability of federal funding to support HIV testing programs within community clinics and community based organizations remained a primary facilitator to successful program implementation (Haynes et al., 2011). Reimbursement for HIV testing and counseling in primary care exists, but are not well known. Reimbursement barriers to testing can be addressed by providing health care providers with education regarding ICD-10 codes that may be used for reimbursement (Sison et al., 2013).

Guideline and policy congruence with practice at the organization and individual provider level can be addressed by evaluating existing clinic protocols, educating providers about recommendations, and educating providers about state law updates. Clinic protocols should not require informed consent for testing because southeastern state laws do not require informed consent because general medical consent including HIV testing is acceptable (Branson et al., 2006; CDC, 2015). Administrators of clinics and hospitals should be involved in the development, implementation, and evaluation of protocols. Administrators should also be educated on recommendations to increase support for HIV testing programs.

Perceived HIV-related stigma existed at all three levels of the EMHP. Implementation of routine HIV screening and testing has been suggested to reduce HIV related stigma, thereby

normalizing the practice. State policy should also continue to be reevaluated for consistency with recommendations and potential over criminalization of HIV (Lehman et al., 2014). In addition, availability of resources including patient-friendly literature, training for clinicians, and flexible implementation strategies may increase HIV testing in unused settings. Resources also provide opportunities for patient-provider conversations (Lanier et al., 2014). Flexible implementation strategies address barriers associated with integration into clinic flow and provider perception that there is not enough time to test. One implemented program noted that because nurses sometimes forgot to implement to protocol, reminders were helpful (Minniear et al., 2009).

Individual barriers that can be addressed at the societal level included increasing education of health care providers during the professional education of nurses, physicians, nurse practitioners and physician assistants and during residency training (Lanier et al., 2014). Suggested training included practice such as role playing sexual health assessments, and education regarding HIV screening/testing guidelines. Adding training to education allows practitioners to gain more experience and comfort with counseling on HIV and sexual health topics.

### **Limitations**

Limitations of this review included the exclusion of potentially relevant literature, methods, lack of additional researchers to verify data, and limitations of the selected literature. Seven articles that originally matched inclusion criteria for full text screening but full text were unavailable. The seven potential articles may have had additional barriers and facilitators that were not noted in the seventeen selected articles. The review was restricted to peer reviewed scholarly papers and excluded grey literature (e.g., provider opinion pieces, provider first hand experiences with HIV testing, unpublished HIV testing program reports) that may have been

instructive regarding the complex interaction between EMHP levels in addition to barriers and facilitators otherwise recognized in this review.

The methods of this literature review included all relevant literature, but Southeastern US geographical constraints were placed on the search based on the original research question. Some barriers and facilitators mentioned in literature conducted outside of the Southeastern US may be relevant to the HIV testing practices in the Southeastern US; however, epidemiological evidence suggested that some barriers to routine screening and testing may be specific to the Southeastern US.

The data presented was collected and analyzed by one researcher, potentially decreasing the reliability and validity of findings. The search strategy implemented in this study included both negative and positive connotations of perception, belief, and attitudes to address potential researcher bias. Studies were not selected for information supporting routine testing and screening, but instead were selected for potential insight into why or why not routine testing and screening is implemented.

Limitations regarding selected articles included quality and rigor of studies specifically credibility, and the lack of inclusion of relevant parties specifically nurses and other professionals who would potentially implement testing. The full results of the appraisal of quality and rigor of the selected studies is presented in Appendix II. The selected articles used a mix of survey, qualitative, and evaluation methods. Survey methods are subject to increased reporting bias. Qualitative methods were most appropriate to address the research question of perceived barriers and facilitators; however, the generalizability of these studies was limited by convenience and snowballing sampling methods. Five of the studies were evaluations of HIV testing or tools implemented at the provider level or at single sites (Haynes et al., 2011; Lanier et

al., 2014; Minniear et al., 2009; Weiss et al., 2009; Wright et al., 2013). Although these studies provided immense insight into the barriers and facilitators to implementation of programs at specific locations these results may not be generalizable to all settings in the Southeastern US.

### **Directions for Future Research**

Many barriers and facilitators for routine HIV testing in poorly utilized testing sites have been outlined in this regional literature review and other national literature reviews (Burke et al, 2007) Future research should include ongoing assessment of provider attitudes towards HIV testing specifically in the Southeastern US, program development that addresses regionally specific barriers, program implementation/evaluation studies at poorly utilized testing sites, and provider level educational interventions. The political and environmental context of the Southeastern US is constantly changing, most recently with the passing of House Bill 2 in N.C., a significantly socially conservative piece of legislature. Evaluation of the effects of policy changes on perceived and actual HIV-related stigma should also be conducted.

Implementation science is an up and coming field of research that may be useful in the evaluation of the feasibility of HIV testing programs in poorly utilized sites (Leeman et al., 2012). Program development should consider cultural context, feasibility, and sustainability. Additionally, the existing literature fails to adequately examine perspectives of other medical professionals that may be utilized to provide routine HIV testing in primary care settings including nurses, nurse aides, medical assistants, triage personnel, and substance abuse counselors. These professionals may have unique barriers to testing that are different from physician perspectives.

Limitations of this review suggest that a more integrative review including perspectives of all key stake holders—providers, community members, administrators, and patients—may



provide insight into better solutions for increasing routine testing. To date, a meta-analysis of facilitators and barriers to HIV screening has been published (Leblanc, Flores, & Barroso, 2016). The findings in this meta-synthesis provide useful information regarding enhancing HIV testing. The use of other frameworks other than the EMHP to guide analysis may also provide insight into implementation barriers and facilitators.

### **Conclusions**

This paper is the first to present systematically the barriers and facilitators to routine HIV testing in the Southeastern US using the EMHP model. These findings may help guide development of HIV testing programs and changes to existing testing programs. Ongoing research is necessary to improve testing rates in primary care settings and other poorly utilized settings.

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Table 1

State	<u>Rate of diagnosis of HIV infection among Adults and adolescents</u>	<u>Rate of adults and adolescents living with diagnoses HIV infection.</u>		
		<u>Black/African American</u>	<u>Hispanic/Latino</u>	<u>Total</u>
Alabama	17.2	749.7	245.3	297.4
Arkansas	13.8	604.9	209.8	204.4
Florida	31.3	1978.4	566.2	606.1
Georgia	27.0	1178.3	393.2	512.7
Louisiana	36.6	1108.1	495.3	502.2
Kentucky	9.9	669.7	351.2	159.4
Mississippi	21.0	747.1	385.6	366.9
North Carolina	17.0	992.6	303.8	326.3
South Carolina	20.7	1027.4	339.4	389.3
Tennessee	14.7	1037.5	316.4	297.2
Virginia	14.1	981.1	320.7	314.5
West Virginia	6.1	777.5	335.1	105.3
National Average	16.5	1243.8	462.0	353.2

Table 2

*Extracted results from Prevalence and Public Health Implications of State Laws that Criminalize Potential HIV Exposure in the United States, Lehman et al., 2014.*

<u>Type of Law</u>	<u>States</u>
States with HIV specific laws criminalizing low or negligible risk behaviors.	Va., N.C., Tenn., S.C., Ga., Fla., Ark., Miss., and La.
HIV specific laws criminalizing potential HIV exposure to sex partners.	Ark., Fla., Ga., La., Miss., N.C., S.C., Tenn., and Va.
HIV specific laws criminalizing potential HIV exposure to needle sharing	Ga., N.C., S.C., and Tenn.
HIV specific laws criminalizing high risk behaviors	Ky.
States without HIV-specific criminal laws	Al. and W. Va.

Table 3

Methods: Search Strategy

Description	Search String	MEDLINE # of Results	CINAHL # of Results	EMBASE # of Results
Location/ geographical sites of interest	("Southeastern United States" OR Alabama OR Arkansas OR Florida OR Georgia OR Louisiana, Kentucky OR Mississippi OR "North Carolina" OR "South Carolina" OR Tennessee OR Virginia OR "West Virginia" OR <b>(southeastern united states[MeSH Terms])</b> <i>**Southeastern united states [MeSH Terms] only applied to MEDLINE search</i>	631711	29306	269503
Perception	AND (Facilitator* OR barrier* OR problem* OR engag* OR accept* OR reluctan* OR concern* OR stigma* OR perspective* OR perception* OR attitude* OR belief*)	2520563	220040	905172
HIV/AIDS	AND (HIV OR <b>HIV/AIDS</b> OR "human immunodeficiency virus" OR "acquired immune deficiency syndrome") <i>** HIV/AIDS Excluded from EMBASE search due to database search requirements.</i>	308974	21,991	113110
Routine HIV Screening/ Testing	AND (Screen* OR teste* OR testi* OR diagnose* OR diagnosi* OR "point-of- care" OR "rapid testing" OR "mass screening" OR "mass testing" OR "routine screen*" OR "universal screen*" OR "routine test*" OR "universal test*")	4610845	180078	1849952
Health care provider perspective	AND (Nurse* OR provider* OR practitioner* OR worker* OR personnel OR RN OR Physician OR "health providers" OR "health care providers" OR "Medical Assistant*")	1348003	356214	401484
	Combined:	355	14	246

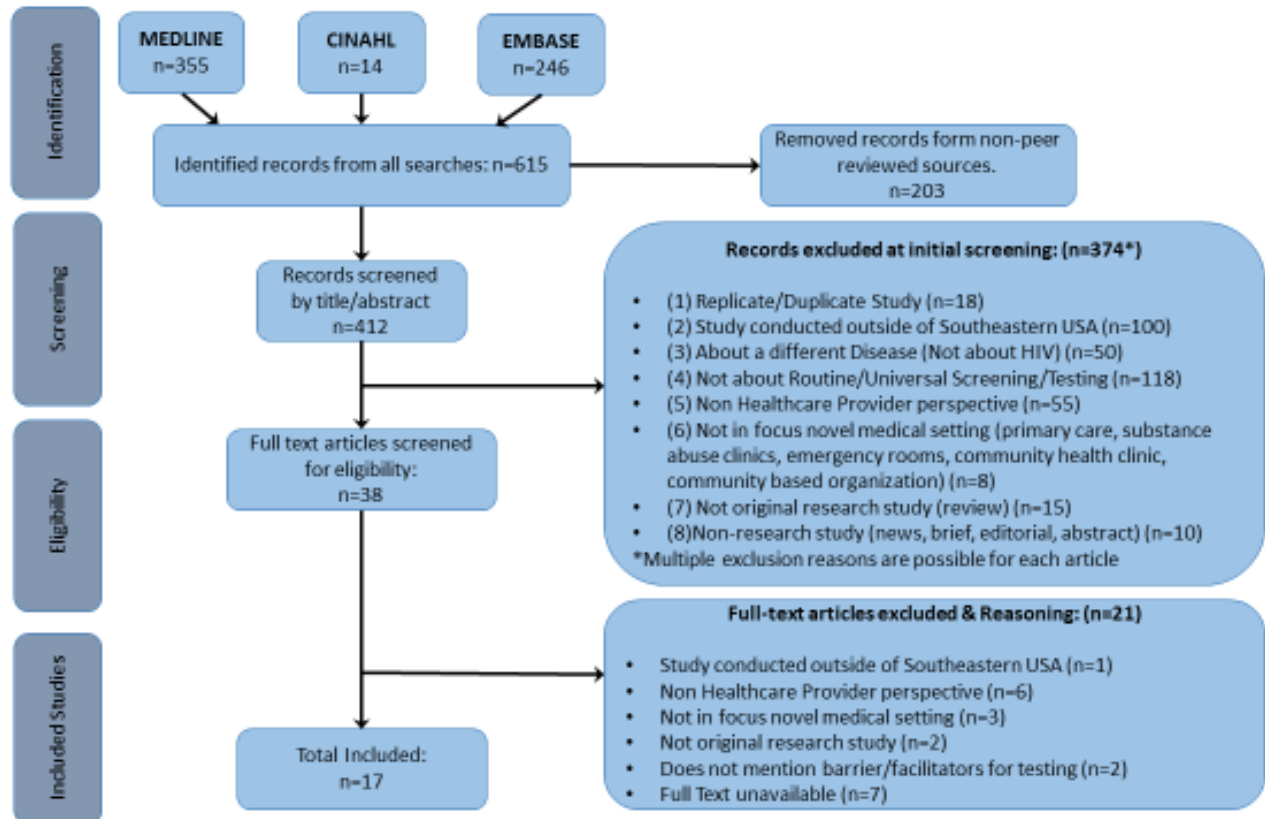


Figure 1: Search strategy flowchart. Developed according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher et al., 2009).

## Appendix

### Appendix I: Complete CDC Guidelines for Routine HIV Screening/Testing 2006:

CDC recommends that diagnostic HIV testing and opt-out HIV screening be a part of routine clinical care in all health-care settings while also preserving the patient's option to decline HIV testing and ensuring a provider-patient relationship conducive to optimal clinical and preventive care. The recommendations are intended for providers in all health-care settings, including hospital EDs, urgent-care clinics, inpatient services, STD clinics or other venues offering clinical STD services, tuberculosis (TB) clinics, substance abuse treatment clinics, other public health clinics, community clinics, correctional health-care facilities, and primary care settings. The guidelines address HIV testing in health-care settings only; they do not modify existing guidelines concerning HIV counseling, testing, and referral for persons at high risk for HIV who seek or receive HIV testing in nonclinical settings (e.g., community-based organizations, outreach settings, or mobile vans) (9).

#### Screening for HIV Infection

- In all health-care settings, screening for HIV infection should be performed routinely for all patients aged 13--64 years. Health-care providers should initiate screening unless prevalence of undiagnosed HIV infection in their patients has been documented to be <0.1%. In the absence of existing data for HIV prevalence, health-care providers should initiate voluntary HIV screening until they establish that the diagnostic yield is <1 per 1,000 patients screened, at which point such screening is no longer warranted.
- All patients initiating treatment for TB should be screened routinely for HIV infection (108).
- All patients seeking treatment for STDs, including all patients attending STD clinics, should be screened routinely for HIV during each visit for a new complaint, regardless of whether the patient is known or suspected to have specific behavior risks for HIV infection.

#### Repeat Screening

- Health-care providers should subsequently test all persons likely to be at high risk for HIV at least annually. Persons likely to be at high risk include injection-drug users and their sex partners, persons who exchange sex for money or drugs, sex partners of HIV-infected persons, and MSM or heterosexual persons who themselves or whose sex partners have had more than one sex partner since their most recent HIV test.
- Health-care providers should encourage patients and their prospective sex partners to be tested before initiating a new sexual relationship.
- Repeat screening of persons not likely to be at high risk for HIV should be performed on the basis of clinical judgment.
- Unless recent HIV test results are immediately available, any person whose blood or body fluid is the source of an occupational exposure for a health-care provider should be informed of the incident and tested for HIV infection at the time the exposure occurs.

#### Consent and Pretest Information

- Screening should be voluntary and undertaken only with the patient's knowledge and understanding that HIV testing is planned.
- Patients should be informed orally or in writing that HIV testing will be performed unless they decline (opt-out screening). Oral or written information should include an explanation of HIV infection and the meanings of positive and negative test results, and the patient should be offered an opportunity to ask questions and to decline testing. With such notification, consent for HIV screening should be incorporated into the patient's general informed consent for medical care on the same basis as are other screening or diagnostic tests; a separate consent form for HIV testing is not recommended.

- Easily understood informational materials should be made available in the languages of the commonly encountered populations within the service area. The competence of interpreters and bilingual staff to provide language assistance to patients with limited English proficiency must be ensured.
- If a patient declines an HIV test, this decision should be documented in the medical record.

#### **Diagnostic Testing for HIV Infection**

- All patients with signs or symptoms consistent with HIV infection or an opportunistic illness characteristic of AIDS should be tested for HIV.
- Clinicians should maintain a high level of suspicion for acute HIV infection in all patients who have a compatible clinical syndrome and who report recent high-risk behavior. When acute retroviral syndrome is a possibility, a plasma RNA test should be used in conjunction with an HIV antibody test to diagnose acute HIV infection (96).
- Patients or persons responsible for the patient's care should be notified orally that testing is planned, advised of the indication for testing and the implications of positive and negative test results, and offered an opportunity to ask questions and to decline testing. With such notification, the patient's general consent for medical care is considered sufficient for diagnostic HIV testing.

#### **Similarities and Differences Between Current and Previous Recommendations for Adults and Adolescents**

Aspects of these recommendations that remain unchanged from previous recommendations are as follows:

- HIV testing must be voluntary and free from coercion. Patients must not be tested without their knowledge.
- HIV testing is recommended and should be routine for persons attending STD clinics and those seeking treatment for STDs in other clinical settings.
- Access to clinical care, prevention counseling, and support services is essential for persons with positive HIV test results.

Aspects of these recommendations that differ from previous recommendations are as follows:

- Screening after notifying the patient that an HIV test will be performed unless the patient declines (opt-out screening) is recommended in all health-care settings. Specific signed consent for HIV testing should not be required. General informed consent for medical care should be considered sufficient to encompass informed consent for HIV testing.
- Persons at high risk for HIV should be screened for HIV at least annually.
- HIV test results should be provided in the same manner as results of other diagnostic or screening tests.
- Prevention counseling should not be required as a part of HIV screening programs in health-care settings. Prevention counseling is strongly encouraged for persons at high risk for HIV in settings in which risk behaviors are assessed routinely (e.g., STD clinics) but should not have to be linked to HIV testing.
- HIV diagnostic testing or screening to detect HIV infection earlier should be considered distinct from HIV counseling and testing conducted primarily as a prevention intervention for uninfected persons at high risk.

Appendix II:

Summary Table of Results

Author, Year, Study Title. [LOCATION]	Purpose. Study Type/Methods. [Sample Number]	EMHP Level	Barrier	Facilitator	Appraisal of Research Quality & Rigor
Anderson, J.E. et al., 2005, Achieving universal HIV screening in prenatal care in the united states: Provider persistence pays off. [NEW YORK, NORTH CAROLINA, CONNECTICUT, AND FLORIDA]	Purpose: To gain further understanding of the factors that both hinder and facilitate testing by obstetricians as well as other providers who deliver prenatal care. Methods: Survey of prenatal care providers (obstetric attending/resident physicians, family practice attending/resident physicians, nurse-midwives) conducted in 1999 in North Carolina, Connecticut, Brooklyn, New York, and Dade County, Florida assessing provider's knowledge, attitudes, and practices related to HIV counseling, testing, and treatment for pregnant women. [n=1354]	Societal		Adhering to CDC recommendation for opt-out routine HIV testing.	This study included a range of practitioners who provide prenatal care. Follow-up procedures resulted in an overall response rate of 70%. This study used a probability sampling design and estimates may be more generalizable. Methods were consistent with purpose and objectives.  Limitations include that survey methods are subject to potential errors including reporting errors and reporting bias.
		Organizational			
		Individual	Provider characteristic: Obstetricians have lower testing rates in some areas compared to midwives and family medicine practitioners	Provider strongly encourages or advises patient to accept testing when the women are perceived as low risk.	
Barnes, R.S. et al., 2003, Georgia Prenatal Care Providers' Perceptions of Barriers to Sexually Transmitted Disease Screening. [GEORGIA]	Purpose: To examine prenatal care providers' perceptions about barriers to routine STD screening of pregnant women. Methods: Secondary analysis of survey responses from a 1998 mailed survey of Georgia-licensed obstetrician/gynecologists, family practitioners, and nurse midwives who identified as prenatal care providers. Survey responses to a question of barriers to STD screening	Societal	1) Structural		Study findings have practical implications for health policy and health care delivery. Researchers use a conceptual framework to guide analysis.  Limitations of this study include a low survey response rate of 43%, and that not all participants responded to barrier questions. Self-reported
			71 % of respondents identified a structural barrier.		
			Inadequate or lack of reimbursement for STD screening (52% of respondents).		
			Lack of time, concerns about conflicting guideline recommendations, and lack of safety net providers to provide follow-up care for positive patients (10% of respondents).		



	<p>were classified into one of four a priori barrier categories: (1) provider (2) patient (3) organizational (4) structural. [n=565]</p>		<p>Legal issues related to obtaining informed consent for HIV testing (&lt;10% of respondents).</p>		<p>data responses may not accurately reflect actual barriers. Or the degree of effect of barriers. Used specific barrier examples that may have produced response bias.</p> <p>In addition, the study did not address providers who did not perceive barriers. Do these providers routinely screen and test for HIV?</p>
		<p>Organizational</p>	<p>2) Organizational: Lack of personnel to perform routine STD screening (1 respondent)</p>		
		<p>Individual</p>	<p>3) Provider 7% of respondents identified provider barriers Lack of motivation to perform preventative care, perception that patient is low risk for STDs and screening being cost ineffective. Lack of consensus of individual providers within practice to provide STD screening 4) Patient 17.5% of respondents identified patient barriers Patient expectations/concerns: (1) Patient perceives low risk, (2) Patient refuses testing because offended/appalled, (3) patient does not share important sexual history information with provider.</p>		
<p>Bogart, L.M. et al., 2008, Provider-related barriers to rapid HIV testing in U.S. urban non-profit community clinics, community-based organizations (CBOs) and hospitals. [CALIFORNIA, NEW YORK, FLORIDA, ILLINOIS, GEORGIA,</p>	<p>Purpose: To investigate differences in perceived barriers between rapid HIV test providers and non-providers; and to examine whether perceived barriers were independently associated with availability of rapid HIV testing. Methods: Multi-site telephone interviews and survey of hospitals (laboratory staff, laboratory director, emergency department staff, labor and delivery staff,</p>		<p>Note: Reported below are the significantly different (P&lt;0.05) endorsed barriers. All noted barriers were significant for rapid test non-providers.</p>		<p>This study is a nationally-representative multisite sample of hospitals and community based organizations/clinic employees.</p> <p>Authors present potential interventions that address translational issues. The study findings are congruent with the literature.</p>
		<p>Societal</p>	<p>There are too many state and federal regulations for rapid tests (HDS)</p>		

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<p>MASSACHUSETTS, INDIANNA, NEW JERSEY, AND MISSOURI]</p>	<p>occupational health staff, and other departments) and community based organizations/clinics (medical directors/executive directors, other staff members) across the US (Northeast, Midwest, South, and West) and their agreement or disagreement (5-point scale) with statements regarding translational and staffing barriers. [n=158 (hospital laboratory staff, HLS), n=136 (hospital department staff, HDS), n=118 (Community clinic/CBO staff, CC/CBO staff)]</p>			<p>Limitations of this study include that appropriate organizations may have been excluded through eligibility criterion. Researchers did not survey organizations not providing any form of rapid HIV testing. These organizations may have different or stronger barriers. In addition public health clinics were not surveyed. This location may be utilized by people with lower income and at higher risk for HIV.</p>	
		Organizational	There are too many administrative hassles associated with rapid HIV test use (HLS, HDS)		
			The hospital administration does not support the use of rapid HIV tests (HDS)		
			The quality assurance procedures for rapid tests are too complex (HDS)		
			The counseling session is difficult to integrate with other patient services (Hospital department staff)		
			My organization does not have enough space to confidentially conduct rapid HIV tests (CC/CBO staff)		
			It is difficult to design a rapid testing protocol for my organization (CC/CBO staff)		
			It is difficult to fit rapid test counseling into one session (HDS)		
			My organization is unable to employ dedicated staff members to perform rapid testing (CC/CBO staff)		
		Individual	Laboratory staff are worried about the possibility of false positive results		
OTHER:	The procedures for running rapid tests are difficult to learn (HLS, HDS, CC/CBO staff)				

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			Rapid testing does not allow more people to know their HIV status (CC/CBO staff)		
Davis, T. et al., 2015, Primary care providers' HIV prevention practices among older adults [KENTUCKY]	Purpose: To explore primary care providers HIV prevention practices for older adults. Methods: Qualitative semi structured interviews with primary care providers (physicians, physician assistants, and nurse practitioners) who see patients older than 50 years exploring practice behaviors, individual, patient, institutional, and societal factors that influence HIV prevention practices. [n = 24 (6 Nurse practitioners, 2 Physician assistants, 16 physicians)]	Societal	Stigma and stereotype surrounding HIV/AIDS. Stigma greater in rural areas.	CDC and U.S. Preventative Task Force guidelines congruent.	Analysis and interview guide creation was guided by Ecological Perspective conceptual framework. Reliability ensured by transcription checking, and cross-checking of a subset of coded materials  A limitation of this study is that participants were recruited through snowballing and convenience sampling methods which can lead to sampling bias. Additionally the survey had a low response rate (23%).  Only interviewed physicians, physician assistants and nurse practitioners working with older adults. A more diverse sample would be beneficial in understanding of barriers to HIV prevention practice in primary care settings.
			Stigma among physicians.		
			Ageism: forgetting that older adults are at risk for HIV.		
			Cultural differences across populations		
			Low perceived prevalence of HIV in state.		
		Organizational	Lack of guidelines or unaware of guidelines for providing educational information to patients.		
			Guidelines inconsistent with CDC recommendations: only perceived high risk patients screened and tested for HIV		
			Time constraints		
			Off-site/referral HIV testing		
		Individual	Physician	Physician	
			-Medical education did not include specific discussion about HIV/AIDS and aging	-Personal experience with HIV positive patient leads to more vigilance for HIV testing.	
			-May feel uncomfortable talking to older adults about their sexual practices	-Experience with HIV/AIDS and aging during residency training.	
			-Uncomfortable answering patient questions about HIV	-Good rapport with patient	
			-Age of physician contributes to patient comfort level.		
-Unaware of cost of HIV testing					
-Low prioritization of HIV screening of older adults					

			-Complicated process of ordering an HIV test.		
			Patient	Patient	
			-Low literacy and health literacy levels	-Comfort with physician	
			-Fear of results	-Female patients more receptive to HIV testing	
			-Misconceptions about their risk for HIV. Do not feel HIV screening is appropriate for them	-Patient requesting medication for sexual dysfunction prompts conversation.	
				-Patient concerned about STIs	
				-Sexual orientation - indication of risk behaviors	
Gongidi, P. et al., 2010, Survey of Attitudes and Practices of Osteopathic Primary Care Physicians Regarding Taking of Sexual Histories and HIV Screening. [FLORIDA]	Purpose: To understand osteopathic primary care physicians' attitudes and practices toward HIV testing and sexual history taking and to examine factors associated with osteopathic physicians' recommendations of HIV testing at the initial patient visit. Methods: Cross-sectional survey of osteopathic physicians attending the 106th Annual Convention of the Florida Osteopathic Medical Association. The survey consisted of 36 questions about the physician, patient sociodemographic factors, physician attitudes, and office practices regarding HIV testing and sexual history taking. [n=160]	Societal			Instrument was pilot tested with Nova Southeastern University College of Osteopathic Medicine faculty osteopathic physicians.  Limitations of this study include that convenience sample of osteopathic primary care physicians attending an annual convention was used. These results are not generalizable to all primary care physicians or osteopathic medical professionals.  Additionally the number of survey items was limited to maximize participation, may have caused exclusion of relevant information. And survey self-reports are subject to reporting bias.
		Organizational		1) General Consent that included HIV testing	
				2) More time spent during initial visit	
		Individual	1) Physician Attitude: Low scoring on Physician Attitude Scale (5 questions on 5 point Likert scale 1-strongly disagree to 5-strongly agree, score for each question summed to one number)	3) Physician Attitude: High scoring on Physician Attitude scale	
				4) Physician Characteristic: Black or Hispanic	
		5) Physician Characteristic: Female			

					Physician attitude scale addressed participants' attitudes towards five statements on sexual history taking and HIV testing; scale had a Cronbach's alpha reliability coefficient of 0.75.
Haynes, L. F et al., 2011, HIV rapid testing in substance abuse treatment: Implementation following a clinical trial. [SOUTH CAROLINA]	Purpose: To identify the specific challenges a community substance abuse treatment program faced in implementing an evidence-based practice for HIV testing, to describe lessons learned, and to make recommendations to other programs implementing this practice. Methods: Implementation evaluation of a rapid testing program which included informal interviews with providers and statistical analysis of testing rates[n=1 , One Substance Abuse Clinic]	Societal	1) State requirements: SC state Health department requires all testing locations to have policies, procedures, and quality assurance to manage a testing program. 2) Lack of successful model to base implementation plan on	Funding: Multi-source funding to support salary of full time counselor designated for HIV testing in addition to research.	Multi-phase implementation study.  Limitations include that this was a single program implementation evaluation at a substance abuse clinic. Barriers and facilitators noted may not be generalizable to all substance abuse clinics in S.C.  It is unclear how many providers were asked about barriers and facilitators to implementation of this program. Interviews of providers were not rigorously analyzed or transcribed using proven qualitative methods, researcher bias may have led to selection of believed facilitators.
		Organizational		Integration into routine clinic activities	
				Leadership: Change champion that drives the implementation/intervention.	
	Individual		Support of frontline staff		
Lanier, Y. et al., 2014, Brief sexual histories and routine HIV/STD testing by	Purpose: To evaluate a pilot study of a sexual history training program for primary care physicians and to	Societal	Reimbursement		Evaluation of a sexual history tool training program.
		Organizational	Lack of administrative support.	Normalization of sexual history taking	

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<p>medical providers. [GEORGIA, MARYLAND, NEWYORK, ILLINOIS, TEXAS, MISSOURI, CALIFORNIA, FLORIDA, LOUISIANA, AND PENNSYLVANIA]</p>	<p>evaluate physician perspective on sexual history taking and routine HIV/STD testing. Methods: Quantitative and qualitative methods used to evaluate the sexual history tool training program. Quantitative methods included: demographics, practice, patient demographics, number of tests conducted, number of sexual histories conducted. Qualitative methods included a feedback forum of open-ended questions regarding: (1) physicians' baseline HIV testing and sexual history-taking practices and comfort level; (2) any changes in sexual history and HIV testing practices after sexual history training and implementation; (3) barriers and facilitators to routine sexual history tool utilization; and (4) recommendations for improving utilization of the sexual history tool. [n=26 (n=15 implemented tool, n=11 did not implement tool)]</p>	<p>Individual</p>	Time constraints	Availability of gender-neutral sexual history tool.	<p>Quantitative methods were primarily descriptive, identifying physician practices. Pre and post test data was analyzed using t-test which is an appropriate statistical method.</p> <p>Qualitative methods included open ended questions on a digitally recorded feedback forum. Audiotapes were transcribed verbatim, and coded for common themes by three authors. It is unclear if cross checking was conducted post coding.</p> <p>Limitations include that a convenience sample of Black physicians at the National Medical Association attending a training to conduct HIV screening. These providers may be more attuned to screening and testing. Results may not be generalizable to physicians of all races.</p> <p>Additionally feedback data was collected from participants of a subsequent smaller sexual history trainings were conducted. These participants may be more motivated than their peers</p>
			Justification of sexual history taking and HIV/STD testing efforts to administrators		
			Intermittent staff compliance with guidelines.		
			Physician	Physician	
			-Baseline lack of comfort in having sexual history discussions.	-Belief that there is a need for increased sexual history training for a range of health care providers: physicians, physician assistants, nurses, medical students, and clinical office staff.	
				-Provider willingness to find solutions for their communities.	
			Patient	Patient	
			-Concerns about confidentiality and stigma	-Relief after sharing sexual history.	

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					to adhere to HIV testing guidelines.
Minniear, T.D. et al., 2009, Implementation of and barriers to routine HIV screening for adolescents. [TENNESSEE]	Purpose: To develop, implement, and evaluate a routine HIV screening protocol of adolescents in a pediatric Emergency Department. Methods: Mixed methods approach evaluating a routine HIV screening program in a pediatric ED which included a survey of health care providers regarding knowledge and beliefs about HIV which guided protocol development; focus group at nurse staff meetings to assess implementation and acceptance; and analysis of rates of screening, test acceptance among patients/guardians, and reasons for opting out. [n = 118 (pre-implementation survey: n = 49 physicians, n=17 social workers, n=52 nursing staff) n = 49 (nursing staff at meetings regarding implementation and acceptance)]	Societal	HIV-related stigma.	No laws in Tennessee restricting the use of HIV testing or defining the manner of pretest and posttest counseling.	This was the first study with adolescents that showed that guardians and patients accepted routine, opt-out, HIV screening regardless of race.  There were many limitations in this study. This was a single site pilot program study. Results may not be generalizable to all settings.  Additional information collection was limited by researcher desire to provide opt-out HIV screening in the most routine manner.  Rapid test kits were provided free of charge. Results may not be generalizable to programs that are unable to get test kits for free and may be subject to financial barriers.  Implementation and acceptance of program was conducted a round table focus groups. Focus groups are subject to response bias due to participant discomfort voicing concerns in group settings.
			State legislation allowing adolescents to consent on issues regarding reproductive health.		
		Organizational	Lack of follow-up care (53%)	Computer prompts and reminders to screen.	
			Lack of Privacy in the Emergency Department.	HIV screening did not interfere with throughput times or delivery of medical services.	
		Individual	Provider:	Provider:	
			-Unaware of revised CDC guidelines on HIV testing (78%)	-Believe guidelines should be instituted (62%)	
			-Staff members have a lack of knowledge about HIV	-Acceptance of program among staff members.	
			-Staff thought of HIV as a stigma		
			-Nurses forgetting to implement the procedure.		
			-Nurses uncomfortable with offering HIV screening.		
Patient:					
-Patients thought of HIV as a stigma.					
-Refusal to be screened (58%)					

					Implementation changes were made throughout the study to improve testing rates.	
Nichols, S.A. et al., 2002, Prenatal HIV counseling, testing, and antiretroviral prophylaxis by obstetric and family medicine providers in Alabama. [ALABAMA]	Purpose: To assess the implementation of recommendations for routine universal prenatal counseling and voluntary HIV testing among Alabama physicians who provide prenatal care. Methods: Mail survey of Obstetrician/gynecologists and family practice/general practice physicians. The survey consisted of 20 questions in 5 categories: demographics, experience and current practice regarding perinatal HIV care; practice characteristics/systems issues potentially impacting implementation and compliance of USPHS recommendations; education tools used for HIV counseling of pregnant women; and information sources for physicians regarding antiretroviral prophylaxis against perinatal HIV transmission. [n = 522 (159 OB/Gyn, 357 FP)]	Societal	Lack of insurance to pay for HIV testing and/or ZDV prophylaxis would be a factor that might hinder HIV counseling/testing/ZDV prophylaxis in their practice (13%)		This study provides some insight into the failure of some Alabama physicians to offer HIV screening to all pregnant women.	
		Organizational	Lack of trained personnel to handle medical needs of HIV-positive pregnant women (46%)		Limitations of this study include low response rate, bias, and tool validity. Low response rate of 27%. May not be generalizable to all OB/Gyns and FP physicians.	
		Individual	Provider:			Volunteer bias may have created response bias because physicians filling out the form may be more motivated than their peers. Self-reporting bias, responding physicians may perceive higher rates of testing than actual.
			-Low/medium familiarity with CDC recommendations for perinatal testing and counseling (low 21.3%, medium 41.8%).			
			-Physician feels uncomfortable/neutral discussing HIV risk factors and other HIV counseling issues (29.8%).			
Patient:	-More than half of patients refused HIV counseling and testing when offered (15%).			Survey tool was not tested for validity and reliability. Formatting of questions may have caused reporting bias.		
Simmons, E. et al., 2006, Routine testing for HIV in the united states: The intersection between recommendations	Purpose: To examine the current practices of family practice (FP) providers and their allied staff with regard to routine HIV testing. Methods: Mail survey sent to family	Societal		Accessible and less costly FDA approved rapid tests for HIV using oral fluids, finger stick whole blood, venipuncture whole blood, and plasma samples	The authors did not note any limitations in this study.  Mail survey included both physicians and ancillary	



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<p>and practice. [MISSISSIPPI &amp; RHODE ISLAND]</p>	<p>doctors in MS and RI and ancillary staff in RI on HIV testing practices in the primary care setting. The survey consisted of 5 items: patient demographics, current and past HIV testing practices, and their attitudes toward HIV testing. [n= 106 (RI) n= 203 (MS)]</p>	<p>Organizational</p>			<p>staff at primary care clinics. The survey response rate was increased by using follow-up phone call procedures, but it is unclear what the actual response rate was.</p> <p>Additional limitations include that a convenience sample of physicians registered in both Miss. And R.I. was used. And actual testing rates were not assessed.</p>
		<p>Individual</p>	<p>Provider:</p> <p>-Mismatch in belief and practice: 98% of surveyed MS providers offered HIV testing to less than 50% of patient's (only 2% of surveyed MS providers offered HIV testing to more than 50% of patient's)</p> <p>-Mismatch in belief and guidelines: Recommend that high risk patients should be tested (94%) compared to recommend that sexually active patients aged 18-50 have HIV testing (31%)</p> <p>-Belief that routine HIV testing should be conducted outside of the primary care settings.</p>		
<p>Simmons, E. M. et al., 2011, Barriers and facilitators to HIV testing in primary care among health care providers. [MISSISSIPPI &amp; RHODE ISLAND]</p>	<p>Purpose: To describe barriers and facilitators to HIV testing in primary care among health care providers in MS and RI. Methods: Qualitative individual, open-ended semi structured interviews conducted with primary care providers and administrators to obtain their views on HIV testing and barriers and facilitators to implementing routine HIV testing in their respective practices. Transcribed verbatim, analysis done using Analysis Software</p>	<p>Societal</p>	<p>Lack of education materials for implementation of HIV testing</p> <p>Lack of financial support for implementation of HIV testing</p> <p>Lack of dissemination and implementation strategies</p> <p>Absence of patient-friendly literature</p>	<p>More HIV literature and HIV-specific training for clinic staff.</p>	<p>The interview guide was pilot tested among research peers not associated with the study.</p> <p>Qualitative analysis was consistent with rigorous design including verbatim transcription and use of standardized inductive iterative coding approach.</p> <p>Limitations include that convenience sampling was used based on proximity to principal investigators.</p>
		<p>Organizational</p>	<p>Lack of time - rapid pace of primary care office visits</p> <p>Additional financial burden on clinic from HIV testing and diagnosis</p> <p>Lack of staff initiative</p>	<p>On-site or easily accessible testing and treatment</p> <p>Clinic assurance of confidentiality of test results and testing.</p>	

	<p>for Word-based Records (AnSWR). [n = 24]</p>	<p>Individual</p>	<p>Provider:</p>	<p>Provider:</p>	<p>Additionally, the study may have had a homogeneous sample due to overlapping roles and functions of participants and greater female to male ratio. Results may not be generalizable to all practitioners.</p> <p>Qualitative methods included open-ended, face-to-face individual interviews. Discomfort with researcher may have affected results.</p>
<p>-Different definitions of routine testing.</p>	<p>-More proactive primary care providers: providers that offer testing to their patients.</p>				
<p>-Lack of HIV specific training</p>					
<p>-Incorrect assumptions about patients' risk</p>					
<p>-Provider cultural/linguistic competency</p>					
<p>-Primary care provider discomfort in initiating conversations with patients about HIV counseling and testing</p>					
<p>-Provider resistance to changing the status quo or changing behaviors: "knowing the patient personally", "that's not any of my patients. My patients don't have that behavior".</p>					
<p>Patient:</p>	<p>Patient:</p>				
<p>-Patients' fear of test results and blood work in general</p>	<p>-Patient interest and willingness to be tested.</p>				
<p>-Patient concerns about confidentiality.</p>					
<p>-Patient belief that they are not at risk for HIV despite presence of risk behaviors.</p>					
<p>Sison, N. et al., 2013, Healthcare provider attitudes, practices, and recommendations for enhancing routine HIV testing and linkage to care in the</p>	<p>Purpose: To understand local provider attitudes and practices regarding HIV testing and care. Methods: Qualitative loosely structured interviews with health care providers from the Mississippi Delta during 2012 including</p>	<p>Societal</p>	<p>Financial: Inability to bill for HIV testing. Insufficient reimbursement for HIV screening.</p>	<p>Increased education regarding billing for HIV test and screening</p>	<p>This is one of the first studies among medical providers about HIV practices in the Miss. Delta. The study was inclusive of different providers and specialties.</p>
<p>Limited access to health care services.</p>					
<p>Societal stigma towards HIV/AIDS and poor understanding of HIV</p>					

Mississippi delta region. [MISSISSIPPI]	nurse practitioners and physicians practicing in primary care and infectious disease specialty clinics. Open ended interview questions included: attitudes about the local HIV/AIDS epidemic, current HIV testing practices, personal beliefs about routine HIV testing, beliefs about the impact of testing on the staff and patient population, racial disparities in HIV infection rates, and recommendations for enhancing linkage to care for individuals who tested positive. [n= 25]	Organizational			Interview guides were loosely structured and included as many open-ended questions as possible.  Methods consistent with rigorous qualitative methods. Interview tapes were professionally transcribed. Transcript were coded by emerging theme patterns and contextualizing strategies. Cross checking of all interviews was conducted.  The study was limited by the use of a convenience sample of 25 health care providers in the Miss. Delta recruited from the Mississippi Primary Healthcare Association, Mississippi Center for Justice network and snowballing.  In addition, some providers may have been deterred by the long length of time of interviews (1-2 hours).
		Individual	Provider:	Provider:	
			-Lack of knowledge regarding reimbursement rates and how to be reimbursed.	-Nearly all providers willing to provide routine testing for all patients if reimbursed.	
			-Confusion about local laws governing informed consent: MS law no longer requires separate written informed consent for HIV testing.	-Most providers are aware of the high HIV infection rates in the Mississippi Delta	
			-Provider belief that the health department was responsible for conducting all HIV testing in the region		
-Providers testing patients based on their own perception of patients' HIV risk or patients' self-perceived risk.					
Patients:					
-Low perceived risk for HIV.					
Sullivan, K.A. et al., 2015, Perspectives from the field: HIV testing and linkage to care in North Carolina. [NORTH CAROLINA]	Purpose: To examine the perspectives of professionals in the testing and linkage to care system in North Carolina regarding HIV testing and linkage to care. Methods: In-depth semi structured	Societal	Hard to reach populations: Victims of domestic violence, sex workers, undocumented immigrants, young MSM of color, and financially insecure/impoverished.	North Carolina Department of Health and Human Services engagement with Community Based Organizations	Interviewers were trained personnel. Additionally, interview guides were loosely structured to allow for exploration of perceptions.
			Strong stigma in the South	NCDHHS support of non-traditional testing	

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	interviews conducted with professionals in the HIV prevention and care systems in N.C. exploring barriers and facilitators that participants perceived in HIV testing, linkage to care, and retention/reengagement in NC. [n=21]		Lack of strategies for hard-to-reach populations.	NCDHHS provision of rapid test kits	<p>Purposive sampling of providers representing a range of organization types and geographical locations in North Carolina.</p> <p>Methods consistent with rigorous qualitative methods. Interviews were digitally recorded and professionally transcribed verbatim.</p> <p>Limitations of this study include that only the perspective of professionals working in NC's HIV prevention and treatment systems were included. May not be barriers and facilitators experienced by primary care physicians in private settings.</p>
		Organizational	Lack of feedback from hospitals about patients who test positive for HIV	Rapid results from state laboratory	
		Organizational	Lack of resources for prevention and testing		
		Individual	Provider:		
			-Lack of HIV education		
			-Do not believe it is their responsibility to offer tests		
			-Misperceive patients' HIV risk		
			-Uncomfortable talking about sex		
Troccoli, K. et al., 2002, Human immunodeficiency virus counseling and testing practices among North Carolina Providers. [NORTH CAROLINA]	Purpose: To estimate the percentage of prenatal care providers who offer HIV testing to pregnant women, investigate how strongly testing is encouraged and explore testing barriers. Methods: Mailed 14-question, self-administered questionnaire sent to prenatal care providers in the American College of Obstetricians and Gynecologists, the North Carolina Academy of Family Physicians, and the American College of Nurse-Midwives' North Carolina Chapter. The survey contained multiple choice questions regarding	Societal			<p>This survey was conducted to expand on earlier studies of N.C. prenatal care provider practices.</p> <p>A convenience sample of three professional groups was used, and follow-up procedures were used to increase response rate. This study had a moderate response rate of 47.3%.</p> <p>The authors did not note any limitations in this study.</p> <p>Limitations of this study</p>
		Organizational		Low literacy/translated patient education materials	
		Individual	Provider feels unprepared to treat an HIV-positive pregnant woman		
			Provider concerned about informing a pregnant woman she is HIV positive		
			Late entry into prenatal Care		
Pretest counseling requirements					
Managing a woman who refuses testing: poor follow up for patients who refuse testing.					

	<p>practice procedures and experiences with HIV testing during pregnancy. And included Likert scale and yes-no items including: HIV testing recommendations, information provided to patients, actions taken when patients refuse testing, documentation practices, perceived barriers to HIV testing, and questions about information that might be helpful to prenatal care providers in practices. [n = 653]</p>		<p>Obtaining informed consent</p> <p>Unfamiliar with NC law that requires providers to offer the test to all pregnant patients.</p> <p>Practitioner differences: Nurse-Midwives less likely than obstetricians or family physicians to strongly recommend testing to all pregnant patients and least likely to strongly agree that prenatal care providers should universally recommend HIV testing to all pregnant women.</p>		<p>include that self-administered surveys are subject to response bias.</p> <p>It is unclear how valid and reliable the survey tool is for the purposes of this study.</p> <p>Additionally, this study was published before 2006 CDC recommendations, and may not be indicative of current HIV testing status.</p>
<p>Weis, K.E. et al., 2009, A routine HIV screening program in a South Carolina community health center in an area of low HIV prevalence. [SOUTH CAROLINA]</p>	<p>Purpose: To describe a routine screening program at a multisite community health center in Aiken County, South Carolina, and to report on testing uptake. Methods: Evaluation of the implementation of a routine screening program at all locations of the Margaret J. Weston Community Health Center as part of a multisite pilot program by the National Association of Community Health Centers. Survey of all eligible patients including those who opted out of testing. Descriptive statistics of staff involvement. [n=3 Community Health Centers (Clinical Staff members). Staff member who offered testing at visit: n= 505 (Nurse/nursing staff), n=4 (provider), n=5 (other). Staff member giving</p>	<p>Societal</p>	<p>Rapid test supply shortage: All three sites exhausted their oral rapid test supply in February 2007.***</p> <p>Funding restrictions: rapid oral test more expensive than rapid finger stick test, so the test type was changed part way through the study.</p>		<p>This was the first routine HIV screening program implemented in S.C. and the first in a Community Health Clinic since the introduction of the 2006 CDC recommendations.</p>
		<p>Organizational</p>		<p>Staff buy in/involvement: Nurses offered HIV testing at the majority (96%) of eligible visits. Nurses provided results 45% of the time while providers provided results during their regular clinic visit 55%.</p> <p>Voluntary involvement of staff.</p> <p>Dedicated time to screening/testing: 96% of screening/testing was performed during triage.</p> <p>Authors note that CHD staff and specifically nurse involvement was a main strength in this program.</p>	<p>Nurse involvement was seen as a strength in this implementation study.</p> <p>Limitations noted by the authors are in reference to the implementation of the program. These include the temporary suspension of the program from February to March 2007, nurses were not trained in data collection procedures.</p> <p>Qualitative methods and results from feedback interviews with clinic staff were not readily available.</p>

	result: n=212 (Provider), n=94 (Nurse/nursing staff)]	Individual		Sufficient time for routine HIV screening: "Nurses at MJW CHC did not perceive insufficient time as a barrier to routine HIV screening"	
				HIV-related care training: "the majority [of nurses] felt well-trained in many aspects of HIV-related care"	
White, B.L. et al., 2015, What makes me screen for HIV? Perceived barriers and facilitators to conducting recommended routine HIV testing among primary care physicians in the southeastern United States. [NORTH CAROLINA]	Purpose: To explore the barriers and facilitators of implementing routine HIV testing from the perspective of community primary care physicians to inform the development of new approaches to promoting routine HIV testing in the south. Methods: Qualitative semi-structured in-depth interviews with North Carolina primary care physicians. Self-administered 1-page questionnaire assessing their awareness, agreement, and adherence to routine HIV testing recommendations. [n=18]	Societal	Lack of insurance coverage, lack of third-party reimbursement.	Third-party reimbursement	This was one of the first studies to elicit perceived barriers to routine HIV testing among primary care physicians in the Southeastern US.  The Information, motivation, behavioral skills model of health behavior change guided interview guide and questionnaire development.  Methods were congruent with mixed-methods approach, however analysis of each approach did not significantly inform the other.
			Parental consent needed for children (including adolescents)	Elimination of written HIV consent	
			Societal stigma	US Preventive Services Task Force recommendation (USPSTF)	
			Lack of public acceptance	Streamline HIV counseling	
			Socially and politically conservative communities	Require HIV testing for college enrollment	
				Require physicians to routinely test.	
				Decrease stigma	
		Organizational	Nursing resistance	Nurse and staff-initiated HIV screening and counseling	Rigorous qualitative methods were used. Interviews were conducted by a single researcher, audiotaped and transcribed verbatim. A codebook was developed from emergent themes, and used to systematically code all transcripts.
			Employer policies not consistent with the 2006 CDC recommendations	Educate medical directors, nurses and office staff about HIV testing recommendations	
			Lack of time	Systems to routinize HIV testing into clinical work flow	

			Lack of provider reimbursement for time involved in counseling	Use of oral HIV tests	<p>Quantitative methods were used to characterize the sample.</p> <p>Limitations include small nonrandom sample size due to convenience and snowballing recruitment methods. Results may not be generalizable to all N.C. primary care physicians. Additionally other relevant parties were not included: nurses, medical assistants, and administrators.</p>		
			Oral HIV tests	Decrease stigma			
			HIV testing and primary care at different locations.	Screen for HIV during initial or wellness visit			
			Small practices (less likely to be up to date on new recommendations)	University practice setting more likely to be up to date on new recommendations			
		Individual				4) Physician	4) Physician
						-Competing clinical priorities	-Physician education (HIV prevalence and HIV screening recommendations)
						-Misperception regarding HIV risk	-Increase physician awareness of HIV prevalence in the communities where they practice
						-Stigma about HIV	
						-Unawareness of HIV as a problem in their community	
						-Clinician inertia	
						-Discomfort communicating about HIV testing	
						-Belief that routine HIV testing is not cost effective	
						5) Patient	5) Patient
						-Lack of education about HIV/AIDS	-Educate patients about HIV risk
						-Lack of time	Increase patient acceptance of HIV screening
						-Stigma	-Adopt universal HIV testing
						-Fear of needles	-Patient request for routine HIV screening
-Fear of being HIV positive	-Younger age (more likely to accept HIV routine testing)						
-Patient costs associated with HIV testing							
-Fear of losing confidentiality							

			<p>-Patient refusal</p> <p>-Older patients (more likely to refuse routine HIV testing)</p> <p>-Patients do not think they are at risk for HIV</p>		
<p>Wright, P.B. et al., 2013, A Qualitative Analysis of Provider Barriers and Solutions to HIV Testing for Substance Users in a Small, Largely Rural Southern State. [ARKANSAS]</p>	<p>Purpose: Identify barriers to incorporating HIV testing with substance use treatment from the perspectives of treatment and testing providers in Arkansas. Methods: Exploratory study of providers from state, organization, and individual levels. Semi structured interviews, transcribed verbatim, ATLAS.ti software used. [n=28]</p>	<p>Societal</p>	<p>1) Environmental constraints: Larger societal environment (Conservative moral values and politics, lack of strong political advocates to heighten awareness, competing health needs and priorities, few IVDU and low HIV/AIDS compared to other states)</p>	<p><b>** NOTE**</b> <i>n=1 for facilitator qualities, one organization was a federally qualified health center (FQHC) that provided on-site HIV education, testing, and counseling services for substance use programs in 10 counties, funded by a Substance Abuse and Mental Health Services Administration (SAMHSA) grant.</i></p>	<p>This was one of the first studies examining barriers and solutions to routine HIV testing in Substance abuse clinics.</p> <p>The study was inclusive of key stake holders in substance abuse clinics: Administrators, team leaders/unit managers, and individual providers.</p>
<p>2) Policy Constraints: State regulations and requirements (No state regulation or policy addressing HIV testing in substance use treatment programs)</p>	<p>1) Lack of regulatory barriers: Arkansas does not require written consent for HIV testing. No regulations or restrictions about rapid HIV testing (nonclinical staff, mobile van, and rapid testing could be used)</p>		<p>The results are limited by generalizability to other states or delivery systems due to the unique setting and sample.</p> <p>Additionally some eligible providers were not able to be contacted after initial recruitment. Findings may not be representative of the perspective of all Ark. Substance abuse providers.</p>		
<p>3) Funding Constraints: Limited revenues and resources to pay for expanded HIV testing (complex and limited separate federal funding systems for testing and treatment, limited overall or state funding for substance use or HIV testing programs, competing health needs for distribution of available funds)</p>	<p>2) External funding: 5 year SAMHSA grant, funding is specific for HIV education and testing to substance users.</p>				



		Organizational	<p>4) Organizational Structure: Program culture, internal processes and decision-making, and external partnerships (Health system silos - lack of coordinating services, scattershot approach- up to each program to make arrangements for HIV testing, inefficient/ineffective use of limited resources, no shared goals or leadership)</p>	<p>3) Committed Leadership: Leaders of the program support HIV testing program and actively seek available funds.</p>
<p>5) Limited intra- and inter-agency communication: No shared responsibility, no shared patient information, no shared data collection, little shared knowledge and training.</p>	<p>4) Strong Internal and External Referral Network: Parent organization provides umbrella for wrap-around HIV medical services by seeking out contracts and collaboration with treatment centers and a referral network.</p>			
	<p>5) Dedicated Program: Singular purpose and priority of the program is to test substance users and link them to care. Program provides: expertise, staff, patient incentives, transportation, and HIV services at no cost to other programs or clients.</p>			

		Individual	<p>6) Burden of responsibility: Provider concerns and uncertainty about extent of their responsibility if HIV testing was provided by their program or agency. Process concerns (obtaining confirmatory testing, linkage to care for positive clients, obtaining treatment medicines, protecting client confidentiality, providing clients psychological support) Self-efficacy concerns (Feel inadequately trained to give clients positive test results.)</p>	<p>6) Dedicated Staff: Staff seek to create contracts with substance use programs and provide them with HIV services. Staff are experts in HIV services</p>	
			<p>7) Client Fragility: Providers fear introducing HIV testing could threaten clients recovery or be too much for them to handle (jeopardize sobriety, too anxious/angry/confused/involuntary commitment to treatment, short-stay treatments).</p>	<p>7) Social Marketing: Social marketing used to reduce stigma associated with HIV testing. Opt out testing supported by social marketing, clients receive a shirt and gift card for getting tested.</p>	