

National Survey of US HIV Clinicians: Knowledge and Attitudes About the Affordable Care Act and Opinions of its Impact on Quality of Care and Barriers to Care

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Background. The Affordable Care Act's (ACA's) major reforms started in 2014. In addition to assessing HIV clinicians' ACA knowledge and attitudes, this study aims to evaluate HIV clinicians' perspectives on whether the ACA has impacted the quality of HIV care and whether it addresses the main barriers to HIV care.

Methods. HIV clinicians were emailed a survey weblink in 2018. Descriptive statistics, Mann-Whitney *U* tests, and binary logistic regression were performed.

Results. Of the 211 survey participants, the majority (70%) answered all 4 knowledge questions correctly. About 80% knew correctly whether their state had expanded Medicaid. Participants from Medicaid expansion states were more likely to report an improved ability to provide high-quality care compared with participants from Medicaid nonexpansion states (50% vs 34%; *P* = .01). The average response to whether the ACA addresses the main barriers to HIV care was neutral and did not differ based on Medicaid status. The top 3 main barriers to HIV care cited were mental health, substance use, and transportation.

Conclusions. HIV clinicians in Medicaid expansion states were more likely to report an improved ability to provide high-quality care since ACA implementation compared with those in Medicaid nonexpansion states. However, HIV clinicians across the United States are concerned that the ACA does not address the main barriers to HIV care. To be successful, the "Ending the HIV Epidemic" initiative should address these identified barriers.

Keywords. health care reform; HIV; Medicaid; Patient Protection and Affordable Care Act; systems-based practice.

The goal of the Patient Protection and Affordable Care Act (ACA) was to provide affordable insurance coverage to people who were previously uninsured or underinsured. The largest insurance coverage gains for people with HIV (PWH) have occurred within Medicaid and have been driven by the ACA's Medicaid expansion option [1]. Additionally, many states purchased ACA insurance plans for PWH with low incomes [1–3]. While PWH have had robust access to HIV care through the national Ryan White HIV/AIDS Program (RWHAP), gaining insurance improves access to non-HIV health care [4]. Additionally studies have demonstrated that state-purchased ACA insurance plans are associated with improved viral suppression for PWH with low incomes [5–7].

The HIV health care delivery system in the United States is complicated, and clinicians' understanding of how health care

is delivered to PWH impacts patients [8]. Additionally, many decisions about health care delivery, such as deciding whether to expand Medicaid [9] and eligibility criteria for different RWHAP services [10], occur at the state level. Clinician education and information sharing must happen at the state and/or clinic level.

The United States' federal government's Ending the HIV Epidemic (EtHE) initiative is a plan to reduce new HIV infections in the United States by 75% in 5 years and by 90% by 2030 [11]. It was announced in 2019 and has a geographic focus on targeted Phase 1 Jurisdictions, including 48 counties, Washington, DC, San Juan, Puerto Rico, and the 7 states with a disproportionate occurrence of HIV in rural areas. Phase 1 Jurisdictions reported >50% of the new diagnoses in the United States for 2016 and 2017. Along with PWH, public health practitioners, and others, clinicians are joining EtHE teams, which are shaping local EtHE plans. The EtHE initiative is an opportunity to build upon the improvements in HIV care related to the ACA, and it may be able to address needs that the ACA does not address for PWH.

Our team previously conducted a study about national HIV clinicians' knowledge and attitudes about the ACA in 2015 [12]. Despite generally good knowledge, there were gaps. Three years later, we aim to revisit HIV clinician knowledge and attitudes

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about the ACA. We also sought to learn whether the ACA has impacted the quality of HIV care or mitigated barriers to optimal HIV care. Using the same sampling as our previous study, the objectives of this study were (1) to evaluate HIV clinicians' attitudes about the ACA's impact on quality of care and on barriers to engagement in HIV care and (2) to characterize HIV clinicians' knowledge and attitudes about the ACA. A secondary objective was to assess changes in knowledge and attitudes about the ACA from 2015.

METHODS

The target participants were HIV clinicians at academic medical centers with Infectious Diseases fellowship programs accredited by the Accreditation Council for Graduate Medical Education (ACGME). Surveys were distributed to participants via email from a division chief or an HIV clinic director at their institution or from our research team. This is the sample sampling strategy that we employed in 2015 [12]. The survey was presented to participants through a Qualtrics website (Qualtrics Research Suite, Provo, UT, USA). The survey was in English. No identifying information was collected in the survey. The University of Virginia Social and Behavioral Institutional Review Board approved the study. The surveys were administered between March 2018 and July 2018.

Demographic information was collected, including age, type of clinician, length of time providing HIV care, political affiliation, and primary state where the clinician practices HIV medicine. Participants were asked to identify all of their major sources of knowledge about the ACA and their main source from the following list: clinic patients, clinic case managers, clinic social workers, clinic support staff, other hospital staff, television, newspaper, or magazine, websites, social networking sites, radio, mail, their health insurance company, friends and family, the ACA law, and other.

Questions were asked to assess participants' ACA knowledge and attitudes toward the ACA (Figure 1). Many of these questions had been asked in a 2015 survey [12]. The factual questions' answer options were "yes," "no," and "I don't know." The attitude questions' answer options were on a Likert scale from 1 to 5: "strongly disagree," "disagree," "neutral or I don't know," "agree," and "strongly agree." Participants were asked 2 questions adapted from a study about primary care providers' opinions about the ACA [13]. One was a question about their overall attitude toward the ACA with the options "very unfavorable," "somewhat unfavorable," "somewhat favorable," and "very favorable." The second was a question about their ability to provide high-quality care to PWH as the ACA was implemented, with the options "gotten worse," "stayed about the same," and "improved."

Participants were asked to identify the main barrier and the top 3 barriers to engagement in HIV care and HIV viral

<p>A. Factual Questions About Affordable Care Act Knowledge^a</p> <ol style="list-style-type: none"> 1. Does the Affordable Care Act provide subsidies for people with low incomes to purchase health insurance? 2. Does the Affordable Care Act make it illegal to exclude a person from an insurance plan due to a preexisting condition? 3. Does the Affordable Care Act eliminate the Ryan White HIV/AIDS Program? 4. Did your state decide to move forward with the Affordable Care Act's optional Medicaid expansion? <p>B. Statements About Affordable Care Act Attitudes^a</p> <ol style="list-style-type: none"> 1. The Affordable Care Act will improve the United States' health outcomes. 2. The Affordable Care Act will improve my HIV patients' HIV outcomes. 3. The Affordable Care Act will improve my HIV patients' non-HIV outcomes. 4. The ACA addresses the main barriers to engagement in HIV care and HIV viral suppression. <p>C. Additional Questions About Affordable Care Act Attitudes</p> <ol style="list-style-type: none"> 1. Overall, what is your opinion of the ACA? 2. Since January 2014, when the Affordable Care Act went into full effect, your ability to provide high-quality care to all people living with HIV has: <p>^aQuestions that were also asked in 2015 survey¹²</p>

Figure 1. Key survey questions included in study.

suppression at their HIV clinic from the following list: education, employment, social support, health coverage, stigma, housing, mental health, substance use, stable phone number, transportation, food security, literacy, incarceration, and other.

Statistics

Descriptive statistics were used for demographics and survey questions. Data are also presented by the participant's state's Medicaid expansion status [9]. All data analyses were performed using R (R Foundation for Statistical Computing, Vienna, Austria) and RStudio (RStudio, Inc., Boston, MA, USA).

Correct ACA knowledge was defined as answering all 4 ACA knowledge questions correctly, and "I don't know" was considered incorrect. A Fisher exact test assessed associations between an HIV clinician's state's Medicaid expansion status and correct ACA knowledge overall and on individual questions.

To assess the association of participant characteristics and sources of ACA knowledge with correct ACA knowledge, bivariable logistic regression was performed with the following variables: participant characteristics, main source of ACA knowledge, and individual sources of knowledge. Variables that were associated with correct knowledge were included in the multivariable model. Odds ratios and confidence intervals were calculated to measure the association between the included variables and correct ACA knowledge.

To understand the ACA attitudes that may be expressed in HIV clinics, a Mann-Whitney *U* test assessed whether the distribution of answers for ACA attitude questions differed for participants based on their state's Medicaid expansion status. A Mann-Whitney *U* test was used to assess associations between reported main barrier and an HIV clinician's state's Medicaid expansion status. The Kruskal-Wallis test was used when analyzing the results by region [14]. The same tests were performed to assess associations between the top 3 barriers

listed by participants and their state's Medicaid expansion status and their region.

RESULTS

Of the 1554 surveys sent out, 211 clinicians participated, yielding a response rate of 14%. Missing data on each question was <5%. Each question was analyzed with the available data. The number of participants who answered a given question is noted in the text or tables.

For characteristics of respondents, see [Table 1](#). The District of Columbia and 29 states were represented in the survey, with an average of 7 respondents from each state. Twenty-one states were not represented, 81% of which had Medicaid expansion. Two of the nonrepresented states were from the Northeast, 5 from the Midwest, 4 from the South, and 10 from the West.

Sources of ACA Knowledge

Almost one-third of respondents reported that newspapers or magazines were their main source of information for learning about the ACA (30%), followed by Web sites (19%) and clinic social workers (10%). One in 5 respondents cited a clinic staff member (clinic case managers, clinic social workers, or other clinic support staff) as their main source of information for learning about the ACA. In terms of all sources used, 72% reported newspapers or magazines, 63% Web sites, and 51% clinic social workers. See [Supplementary Figure 1](#) for additional data on sources of knowledge used.

ACA Knowledge

The majority (70%) of participants had correct ACA knowledge ([Supplementary Table 1](#)). Almost 20% of respondents answered "I don't know" to at least 1 question. More than 90% knew that the ACA provides subsidies for people with low incomes to purchase health insurance (91.4%), that the ACA made it illegal to exclude a person from an insurance plan due to a preexisting condition (94.3%), and that the ACA does not eliminate the RWHAP (96.7%). About 80% of participants correctly answered whether their state had expanded Medicaid, while 4.3% incorrectly answered this question and 14.3% answered "I don't know." There was no difference in getting all 4 questions correct or answering an individual knowledge question correctly based on participants' state's Medicaid expansion status.

Association of Participant Characteristics and Sources of Knowledge With Correct ACA Knowledge

[Supplementary Table 2](#) presents unadjusted and adjusted odds ratios for the association of correct ACA knowledge with participant characteristics and sources of ACA knowledge. Gender, state's Medicaid expansion status, region, and main source of ACA knowledge were not associated with correct ACA knowledge. In multivariable logistic regression controlling for age, clinician type, political affiliation, and years of experience, the

factors associated with correct ACA knowledge were obtaining ACA knowledge from newspapers/magazines and obtaining ACA knowledge directly from the ACA law ([Supplementary Table 2](#)).

Attitudes Toward the ACA and Perceptions of the ACA

[Figure 2](#) shows ACA attitudes and perceptions by participant's state's Medicaid expansion status. The mean response for "The ACA will improve the United States' health outcomes" was 4.4 (Standard Deviation [SD] 0.8). Participants in Medicaid expansion states were more positive, with 92% agreeing/strongly agreeing, compared with 83% agreeing/strongly agreeing in nonexpansion states ($P = .002$). The mean response for "The ACA will improve my HIV patients' HIV outcomes" was 4.1 (SD 0.9). Participants in Medicaid expansion states were more positive, with 84% agreeing/strongly agreeing, compared with 69% agreeing/strongly agreeing in nonexpansion states ($P = .03$). The mean response for "The ACA will improve my patients' non-HIV outcomes" was 4.3 (SD 0.8). Participants in Medicaid expansion states were more positive, with 91% agreeing/strongly agreeing, compared with 78% agreeing/strongly agreeing in nonexpansion states ($P = .02$).

In terms of overall opinion of the ACA, 92% reported a favorable or very favorable opinion, and this did not differ based on state's Medicaid expansion status. Only 8% reported an unfavorable or very unfavorable opinion. Close to half of respondents reported that their ability to provide high-quality care to all PWH improved after the ACA's major coverage and antidiscrimination reforms were implemented in 2014. Only 3% reported a decreased ability to provide high-quality care. Participants from nonexpansion states were less optimistic, with 34% reporting improved ability, compared with 50% of participants in Medicaid expansion states ($P = .01$).

Barriers to Optimal HIV Care and the ACA's Impact

The average response to whether the ACA addresses the main barriers to engagement in HIV care and HIV viral suppression was neutral (3.2, SD 1.0) ([Figure 2A](#)). The distribution of responses was not associated with Medicaid expansion status, with 42% and 40% agreeing/strongly agreeing in Medicaid expansion and nonexpansion states, respectively.

Mental health was the most commonly cited main barrier to engagement in HIV care and viral suppression (41%). In Medicaid expansion states, the 3 options most often selected by respondents as the main barrier were mental health (40%), substance use (32%), and social support (6%). In nonexpansion states, the 3 options most often selected as the main barrier were mental health (40%), substance use (12%), and transportation (12%). Compared with respondents from nonexpansion states, respondents from Medicaid expansion states were more likely to cite substance use as the main barrier to HIV care ($P = .002$) and less likely to cite transportation as the main

Table 1. Characteristics of Respondents

	No. (%)
No. of respondents	211
Age ^a	
<40 y	74 (35.4)
40–49 y	51 (24.4)
50–59 y	39 (18.7)
60+ y	45 (21.5)
Gender	
Cis-gender female	108 (51.2)
Cis-gender male	100 (47.4)
Transgender	3 (1.4)
Type of clinician ^b	
Fellow physician	35 (16.7)
Physician assistant	7 (3.3)
Nurse practitioner	15 (7.2)
Attending physician	152 (72.7)
Political party	
Democrat	156 (73.9)
Republican	5 (2.4)
Independent	37 (17.5)
No preference	7 (3.3)
Other party	2 (0.9)
Don't know/refuse	4 (1.9)
Length of time providing HIV care	
0–3 y	31 (14.7)
4–10 y	59 (28.0)
10–15 y	25 (11.8)
15–20 y	26 (12.3)
>20 y	70 (33.2)
State of HIV practice ^c	
New York	20 (9.5)
Maryland	17 (8.1)
North Carolina	16 (7.6)
Ohio	15 (7.1)
Georgia	13 (6.2)
California	12 (5.7)
Illinois	11 (5.2)
Additional states and DC	107 (50.7)
Medicaid expansion status of state of HIV practice ^d	
Medicaid expansion	136 (64.5)
Medicaid nonexpansion	75 (35.5)
Region of HIV practice ^e	
Northeast	50 (23.7)
Midwest	42 (19.9)
South	97 (46.0)
West	22 (10.4)

^aOf the 211 respondents, 209 provided information about their age.

^bOf the 211 respondents, 209 provided information about their profession.

^cStates with >5% of respondents are shown individually. The District of Columbia was included in the study.

^dMedicaid expansion status of state of HIV practice at time of survey distribution.

^eState of HIV practice was categorized into region according to the US Census Bureau [14].

barrier ($P = .005$). Region of HIV practice was also associated with different reporting of substance use ($P < .001$). It was more likely to be cited as the main barrier by respondents from the Northeast (39%) and West (55%) than those from the Midwest (5%) and South (19%).

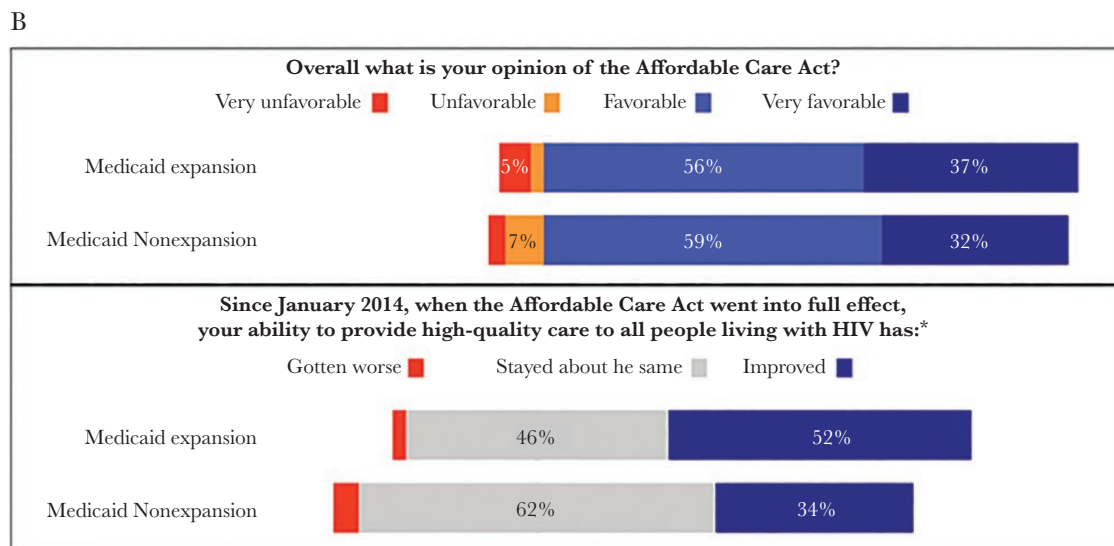
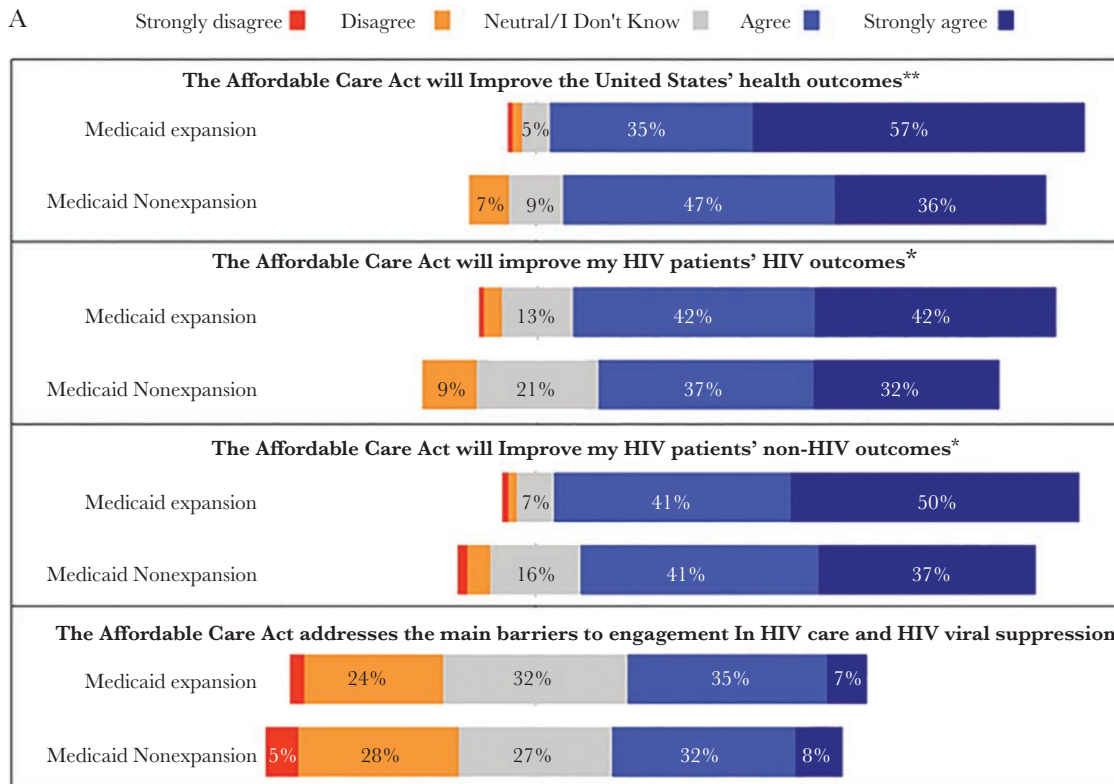
The 3 answers most often selected as 1 of the top 3 barriers to engagement in HIV care and viral suppression were the same regardless of Medicaid expansion status (Figure 3): mental health (expansion, 78%; nonexpansion, 71%), substance use (expansion, 71%; nonexpansion, 49%), and transportation (expansion, 29%; nonexpansion, 47%). Compared with respondents from nonexpansion states, respondents from Medicaid expansion states were more likely to cite substance use (71% vs 49%; $P = .003$) and housing (20% vs 9%; $P = .05$) as 1 of the top 3 barriers to HIV care.

Region was associated with different reporting of the top 3 barriers (Figure 4). Substance use was more likely to be cited as a top barrier by respondents from the Northeast (86%) and West (81%) than those from the Midwest (52%) and South (53%; $P < .001$). Transportation was more likely to be cited as a top barrier by respondents from the Midwest (41%), South (43%), and West (38%) than those from the Northeast (14%; $P = .004$).

DISCUSSION

Almost half of all participants said that their ability to provide high-quality HIV care has improved since the ACA implementation, with more participants in Medicaid expansion states having this opinion. This is more optimistic than the 20% of primary care physicians who answered the same question positively in a 2015 Commonwealth Fund study [13]. Additionally, about 9 out of every 10 HIV clinician participants had a favorable or very favorable view of the ACA, which is more than twice the proportion of primary care physicians who had a positive outlook on the ACA [13]. HIV clinicians' opinions may be swayed by the fact that they provide care for people who are more likely to rely on the ACA's Medicaid expansion or ACA Qualified Health Plans purchased by AIDS Drug Assistance Programs [1, 3]. It is estimated that 18% of PWH were uninsured in 2012 before the ACA was fully implemented, and by 2015, the second year of ACA implementation, 11% of nonelderly PWH were uninsured, as was found in a Kaiser Family Foundation study [1]. Due to the high uninsured and underinsured rate of PWH before the ACA was implemented, HIV clinicians likely had difficulty providing affordable comprehensive non-HIV care and prescribing affordable non-HIV medications for many PWH [15].

Participants reported positive perceptions of the impact of the ACA on the United States' health outcomes overall, as well as both HIV and non-HIV health outcomes for PWH. Participants in Medicaid expansion states did have significantly more positive opinions on these statements. This may reflect the positive impact of Medicaid on PWH cared for by the surveyed clinicians because the greatest insurance coverage gains for PWH were due to Medicaid expansion [1]. While uninsured or underinsured PWH have been able to access HIV-related care through RWHAAP clinics, Medicaid expansion has increased access to non-HIV-related health care [16].



* $P < .05$, ** $P < .005$

Figure 2. Attitudes toward the Affordable Care Act by participant's state's Medicaid expansion status.

In contrast, participants do not think that the ACA addresses the main barriers to engagement in HIV care and HIV viral suppression. The main barriers cited by participants were mental health, substance use, and transportation. It was surprising that, in Medicaid expansion states, the ACA was not viewed more positively relative to its ability to address these barriers. Given these findings, there is an opportunity for the EtHE initiative to focus its efforts on these barriers as well as other ones that

are voiced by PWH and participants in the local jurisdictional plans [11]. Leaders of the EtHE initiative have recently written about the importance of addressing the care of PWH holistically alongside efforts to end the HIV epidemic [17]. This is an important call. However, the focus on medical comorbidities such as cardiovascular disease, chronic kidney disease, osteopenia, osteoporosis, hepatic disease, and cancer leaves out mental health and substance use, which were 2 of the most cited

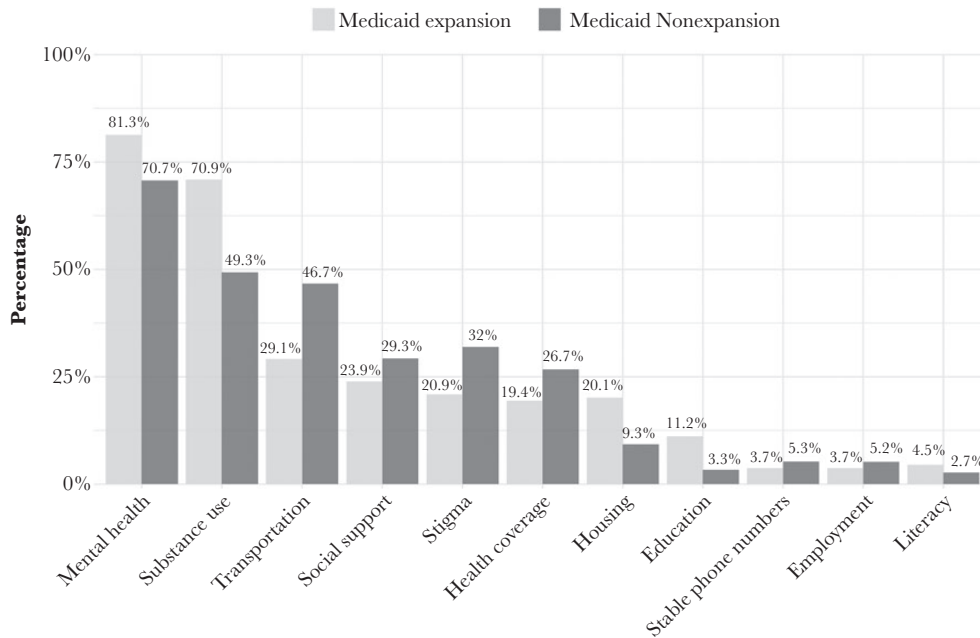


Figure 3. Frequency of barriers listed by respondents from Medicaid expansion states and nonexpansion states as 1 of the top 3 barriers to engagement in HIV care and HIV viral suppression. Not shown due to low response rate: Food security, Incarceration, Literacy, Other.

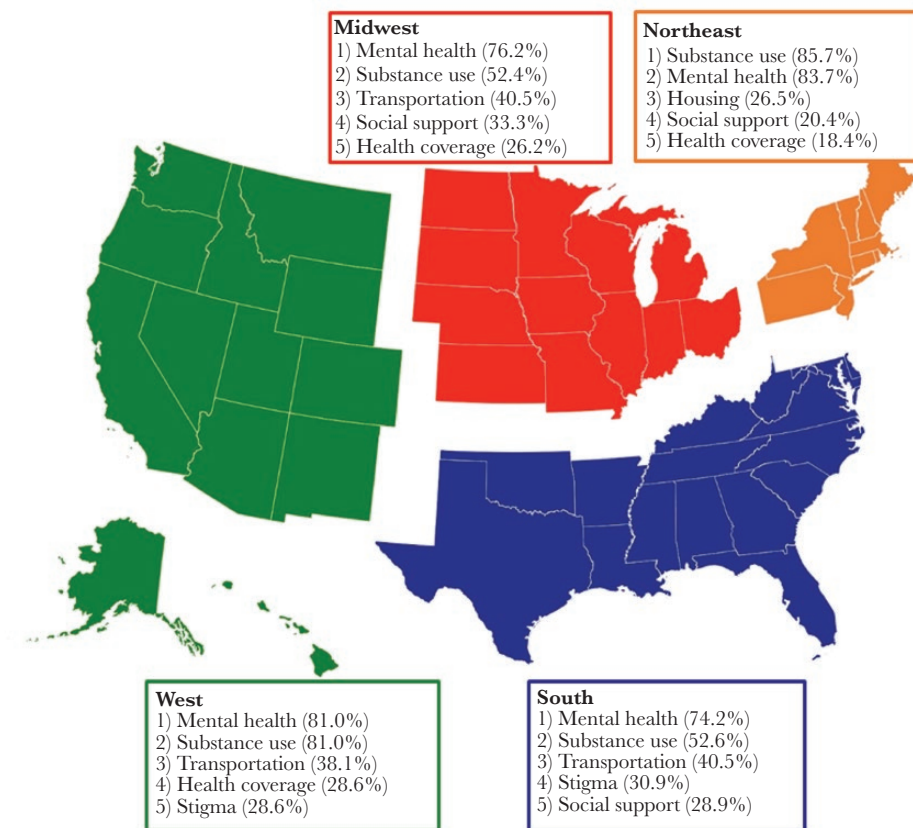


Figure 4. Frequency of answers listed as top 3 barriers to engagement in HIV care by region

barriers to HIV care in the United States in our study. These medical issues are barriers to viral suppression [18–21], and they are associated with higher rates of morbidity and mortality [22, 23]. Additionally, addressing mental health and substance use results in improved quality of life [24–28].

Integrating mental health care and substance use related care into HIV care has been modeled by a Health Resources and Services Administration (HRSA)–Substance Abuse and Mental Health Services Administration (SAMSA) collaboration at RWHAP Clinics [29]. Based on the clinicians’ perspectives collected in this survey, continuing to support or expanding funding for service integration would improve HIV care in the United States [30, 31]. Additionally, within the past year, the federal HRSA announced a Special Projects of National Significance Initiative entitled “Strengthening Systems of Care for People Living with HIV and Opioid Use Disorder” [32]. As more people are diagnosed with HIV through EtHE outreach, the RHWAP is going to need increasing levels of support to continue to provide excellent, comprehensive, and co-located care for HIV, mental health, and substance use disorder to an increasing number of clients [33].

Multiple social determinants of health were cited as barriers to optimal HIV care in our study. The barriers reported differed based on participants’ state’s Medicaid expansion status and region. It is a strength that the EtHE initiative will have local individualized plans so that interventions can target jurisdiction-specific barriers [11]. HIV clinicians from Medicaid expansion states and non-Medicaid expansion states concurred on 2 of the 3 biggest barriers to HIV care (mental health and substance use), whereas participants from nonexpansion states were concerned about a greater variety of barriers. Five barriers (substance use, transportation, social support, stigma, health insurance coverage) received between 25% and 50% of votes. Transportation was listed less often by participants from Medicaid expansion states, possibly because Medicaid coverage includes nonemergency medical transportation, which includes rides to medical appointments [34]. Moreover, transportation was in the top 3 barriers for the South, the Midwest, and the West. This may be because they have more rural areas than the Northeast. A recent study found that population-weighted drive time, an approximation of individual-level drive time, is more than 5 times longer in rural counties than in urban counties [35].

In terms of evolution of ACA knowledge, almost three-quarters of participants correctly answered all 4 knowledge questions, compared with about 60% of participants in the 2015 survey [12]. Importantly, the previously identified knowledge gap, with participants from Medicaid expansion states having more incorrect answers about the ACA than those from nonexpansion states [12], was no longer apparent. The improvement in knowledge between the 2 surveys suggests that in the time between the studies, HIV clinicians have learned more

about the ACA and how it interacts with the complex system of HIV care in the United States. This is important, as many of the participants in this study are attendings who are responsible for helping to educate the next generation of HIV clinicians. Systems-based practice is deemed important by the ACGME [36], but more importantly, it should be important to us as clinicians and citizens. At a time when health care complexities are in the press, are being regulated [37], and are being challenged at the Supreme Court level [38], role modeling the importance of continuing to learn about systems-based care is essential.

It is promising that participants knew more about the ACA than the 2015 survey participants, but knowledge gaps about Medicaid expansion persist. One out of every 5 participants was unsure or wrong about the status of Medicaid in their state. This is important to note, as Medicaid represents the largest source of health insurance coverage for PWH [1]. Clinicians who do not know that their state expanded Medicaid are missing the opportunity to educate PWH about insurance options. These missed opportunities could have an impact on access to care and medications for PWH and on reimbursement for the clinician.

As with the 2015 survey, newspapers or magazines and Web sites were most often cited by participants as their main source of information [12]. As was seen in our previous study, reporting newspapers or magazines as a source of information was associated with answering correct knowledge. The ACA law was not an option for an information source in the 2015 study. It was added based on a 2015 participant’s write-in answer, and in this study, it emerged as a source that is associated with correct knowledge.

This study has several limitations. The study population was limited to HIV clinicians who were affiliated with an ACGME-accredited infectious diseases fellowship program. This was done because there was no systematic way to obtain the email addresses of private practice HIV clinicians. Academic HIV clinicians may be more likely to practice in RWHAP clinics. The study had a low response rate, and no information is available on the HIV clinicians who declined to participate. HIV clinicians who responded may have been more likely to know about the ACA and/or regard it positively, so we may overestimate the population’s knowledge or positivity about the ACA. The question about political affiliation was asked before the ACA questions, and this may have affected participants’ answers. Additionally, the information that we elicited about barriers to HIV care were reported by HIV clinicians rather than PWH. The barriers that we report may not reflect the highest priorities of PWH.

Overall, HIV clinicians value the implementation of the ACA and Medicaid expansion, but the impact of these health policies has not been judged sufficient to address barriers to optimal HIV care. With the EtHE initiative, there is an opportunity to build upon the parts of the ACA and Medicaid that are working for PWH, as well as the possibility to create new solutions.

Supplementary Data

Supplementary materials are available at *Open Forum Infectious Diseases* online. Consisting of data provided by the authors to benefit the reader, the posted materials are not copyedited and are the sole responsibility of the authors, so questions or comments should be addressed to the corresponding author.

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