Published in final edited form as:
Acad Emerg Med. 2013 March ; 20(3): 279–286. doi:10.1111/acem.12084.

Providers' Perceptions Of The Factors Influencing The Implementation Of The New York State Mandatory HIV Testing Law In Two Urban Academic Emergency Departments

Rebecca Schnall, RN PhD, **Sunday Clark, ScD MPH**, **Susan Olender, MD**, and **Jeremy D. Sperling, MD**
School of Nursing (RS), Division of Infectious Diseases (SO), Columbia University, New York, NY; Department of Emergency Medicine, Weill Cornell Medical College, (SC, JDS) New York, NY

Abstract

Objectives—Of the 1.1 million people in the United States infected with human immunodeficiency virus (HIV), more than 20% are unaware of their infection. To increase early diagnosis and treatment, New York State recently passed legislation mandating that HIV testing be offered to all patients, ages 13 to 64 years, receiving health care services. Implementation of this legislation is complex, especially in the emergency department (ED). This study explores ED providers' perceptions of the factors affecting the implementation of the law.

Methods—The authors conducted six focus group sessions and three in-depth interviews with ED health care providers from two New York City teaching hospitals. Sessions were audiotaped and transcribed. Data were coded and summarized thematically through an iterative process after each session.

Results—A total of 49 providers participated and data saturation was achieved. Six factors were identified that predispose a provider to offer an HIV test: 1) self-efficacy, 2) behavioral intention, 3) the testing process, 4) provider knowledge of the legislation, 5) type of HIV test, and 6) follow-up procedures. Five factors were identified that enable providers to offer an HIV test: 1) resources related to time, 2) space, 3) staff, 4) type of test, and 5) timing of the offer. Improving access to HIV testing, linkage to care, and public health were all key factors in reinforcing providers' desire to offer HIV tests. Concerns regarding overall cost saving and coverage for the test were indicated as barriers that needed to be resolved in order to reinforce the providers to offer an HIV test.

Conclusions—Understanding the factors influencing the practice of ED providers charged with carrying out this mandate is critical. Despite earlier research that indicated that offering HIV testing to ED patients is largely influenced by cost, this study found additional factors that are important to consider to effectively implementing HIV testing in the ED.

INTRODUCTION

Recent estimates suggest that 1.1 million people in the United States are currently living with human immunodeficiency virus (HIV).[1] Despite intensive public health initiatives, approximately 25% of HIV-positive people in the United States remain unaware of their HIV status.[2,3] Early identification of persons living with HIV is critically important because it decreases HIV transmission and avoids treatment delays, which can compromise life expectancy.[4] For over a decade it has been acknowledged that the emergency department

Contact Author: Rebecca Schnall, RN, PhD Columbia University School of Nursing, New York, NY, 10032 rb897@columbia.edu.
Disclosures: The authors declare that they have no conflicts of interest.

(ED) visit may provide an important opportunity to initiate screening services for millions of Americans who have no other source for these services.[5,6] In 2000, the Society for Academic Emergency Medicine (SAEM) Public Health and Education Task Force (PHTF) published a set of recommendations that supported offering HIV screening as part of routine emergency care.[5,6,7] Despite these recommendations, most EDs do not routinely offer HIV testing.[8]

In recent years there have been a number of policy changes and recommendations aimed at increasing HIV testing. In 2006, the Centers for Disease Control and Prevention (CDC) published revised recommendations for rapid HIV testing in health care settings, including EDs.[9] The CDC called for non-targeted rapid HIV screening in locations where prevalence rates are estimated to be greater than or equal to 0.1%. Additionally, the CDC recommended: 1) incorporating informed consent for HIV testing into the general medical consent process using an opt-out approach (i.e., notifying patients they will be tested for HIV unless they specifically decline), and 2) uncoupling prevention counseling from testing.

In response to these recommendations, in 2010, New York State enacted legislation (S.8227/A.11487) aimed at increasing HIV testing and promoting linkage of HIV-positive persons to appropriate medical care. A key provision of the legislation states that HIV testing must be offered to all persons (universal) between the ages of 13 and 64 years receiving health care services, including care in the ED.[10] Implementation of this legislation is difficult, particularly in the ED, given the acute sporadic nature and often lack of structured follow-up.[11]

A number of studies have previously identified potential barriers to HIV testing implementation including lack of resources.[12,13] In addition, others have noted that ED staff buy-in[13] and linkage to follow-up care for newly diagnosed cases[14] are necessary for successful implementation.[15] Given the current legislation, it is important to understand the factors necessary for successfully implementing a mandatory offer for HIV testing in the ED. Our study seeks to use qualitative methods to explore ED providers' perceptions of the factors that predispose, enable, and reinforce the provision of offering universal HIV testing in the ED.

METHODS

Study Design

This was an exploratory, qualitative study using focus groups. Institutional review board approval was obtained prior to recruitment of ED providers and all participants provided written informed consent before focus groups or interviews were conducted. Participants were compensated for their participation. The nurses and residents were given $50 for their participation, and the attendings were given a $10 coffee gift card.

Study Setting and Population

Participants were recruited from two urban EDs in New York City. Site 1 is tertiary care center and a Level I trauma center that has 850 inpatient beds and over 83,000 ED visits (pediatric and adult) annually.[16] Site 2 is a tertiary care center with 977 inpatient beds and more than 130,000 ED visits (pediatric and adult) annually. At the time of the focus groups, the process of implementing this legislation was already underway at both sites. An order set for HIV testing had been incorporated into the electronic medical record at site #1 five months prior to the study. Prior to the legislation, HIV testing had not been previously available to ED patients at this site. At site #2, HIV testing counselors who offered a rapid bedside test had been available during regular business hours for four years prior to the HIV

testing law. At the time of the study, site #2 was transitioning from its previous model to one similar to the one implemented at site #1.

The population of interest was clinicians at both study sites. To recruit subjects, we contacted all attending emergency physicians (EPs), residents, and nurses at both sites via e-mail and offered everyone the opportunity to participate. Recruitment was also facilitated by a nurse or physician at each site who informed potential participants about the study. For the EP focus group sessions, we conducted the session following a weekly staff meeting, and for the residents our session followed a weekly study session. Nurses' interviews and focus group sessions were conducted at mutually convenient times for the participants.

Our convenience sample included 19 nurses, 17 residents, and 13 EPs. The nurses and EPs each work only at one site, and the residents rotate at both sites. Each focus group included a homogenous group of providers (e.g., only residents) to allow for participants to comfortably share their views. In total, six focus groups were conducted, two each for nurses, ED residents, and EPs. The number of participants in each focus group session ranged from 4 to 12, with an average of seven participants per focus group session. Three interviews were conducted with nurses from site 2.

Study Protocol

Researchers have used qualitative methods to identify factors that influence implementation of clinical protocols and research protocols among ED personnel.[17–19] These same methods can be used to assess ED providers' implementation of policy initiatives and mandates. Focus groups and open-ended interviews were conducted with ED providers. The focus groups allowed for the gathering of a large amount of information in a relatively short amount of time, and permitted participants to use their own words to answer open-ended questions and to freely react to each other's responses.[20] Individual interviews were conducted with some participants due to the inability to coordinate their schedules for attendance at a focus group session. All interviews and focus groups were conducted using the same questions and by the same moderator (RS). Data collection continued until saturation of data was reached.

Following completion of the informed consent process, ground rules were introduced to improve the understanding of the purpose of the focus groups and interviews and to ensure flow. Each focus group session was moderated by the first author (RS) who has experience in conducting focus groups; a second member of the study team (RR) recorded field notes. The interviews were conducted by the first author (RS) in a private conference room. Each focus group session and interview lasted approximately one hour. The moderator summarized the key points at the end of each question, which served as member checks. Peer debriefing among the members of the research team occurred following the sessions.

Development of Qualitative Discussion Guide

The discussion guide included questions covering the opening, introductory, and transition periods of the session,[21] and was informed by the Predisposing, Reinforcing, and Enabling Constructs in Evaluation (PRECEDE) portion of the PRECEDE-PROCEED model of health program planning and evaluation.[22]

Predisposing factors appeal to people's motives for behavioral change and can include beliefs, attitudes, knowledge, values, self-efficacy, behavioral intentions, and existing skills.[23] Within the PRECEDE-PROCEED model, enabling factors facilitate behavior change. Enabling factors include resources, conditions of living, societal supports, and skills that facilitate a behavior's occurrence.[24] They can be as simple as available space, materials, or reminders.[25] Reinforcing factors include the incentives and rewards and increase the

probability that the behavior will recur at the next opportunity.[26] Focus group questions are listed in Table 1.

Audio recordings of the focus groups and interviews were transcribed verbatim into Microsoft Word documents. Coding began after reading each transcript at least twice and highlighting the relevant ideas. The informants' words guided development of the codes. Theoretical saturation was achieved when no new patterns appeared in our data.[21] The PRECEDE portion of the PRECEDE-PROCEED model of health program planning and evaluation[22] was used to guide the coding framework.

RESULTS

Predisposing Factors

We identified six factors that predispose providers to offer an HIV test. These factors and representative quotations are presented in Table 2. Individual knowledge, attitudes, and beliefs that affect a provider's decision to offer an HIV test included: 1) self-efficacy, 2) behavioral intention, 3) testing process, 4) provider knowledge of the legislation, 5) type of HIV test, and 6) follow-up procedures.

Participants did not feel that HIV testing in the ED aligned with their personal vision of an EM provider. For instance, one EP said, “This is not within our scope of practice.” This sentiment was shared across providers as one nurse explained, “we believe in the true definition of emergency care.” Perhaps as a result of their attitudes towards this legislation, some providers described offering the test in a way that patients might refuse to be tested. One resident reported “I spin it in a certain way,” so that patients will not want to be tested. Another resident explained, “So if I was doing it in good faith then…I think I would probably be getting a lot more people that would be like, yes, absolutely, please.” Some providers reported that they routinely tell their patients the cost of a Rapid HIV test (about $85), and that it will likely not be reimbursed by their insurance company. In contrast, providers admitted that they do not routinely discuss the costs of other tests performed in the ED, which reflects their biased attitude towards performing HIV testing.

In addition to self-efficacy, there were many different views among participants on who should make the offer for HIV testing to patients. One resident questioned, “But I was wondering why it has to be the MD, himself?” An EP suggested that “And many other places, the nurses are the ones that ask… It's done in triage.” Yet, another nurse said, “in an ideal world, it would be a nurse!” Predisposing factors were also related to provider knowledge of the legislation, the test, and follow-up. There was a mixed level of knowledge about the actual legislation. For instance, one resident said “I didn't even realize we had that law.” The moderator asked participants in each group about the age range for which the legislation applies. One EP confidently stated “right, up to age 55,” when in fact the legislation includes persons through age 64 years.

Providers also expressed a lack of knowledge about follow-up after an HIV test. One nurse questioned, “So who is following up? …Who is making that phone call when the blood test comes in how ever many days later, to let them know, to counsel them over the phone, in Spanish?” Overall providers expressed frustration at their lack of knowledge, and as a result felt ill-equipped to offer HIV testing to their patients.

Enabling Factors

We identified five factors that enable providers to offer HIV tests. These factors and representative quotations are presented in Table 3. In particular, resources related to time,

space, and staff were highlighted as enabling factors. Moreover, the type of test and the timing of the offer have the potential to enable providers to offer HIV tests.

Providers at both sites felt that it was critical to have the proper resources to allow them to be able to do the testing properly. Participants discussed how patients already have long wait times, and testing patients for HIV would only lengthen their stays. One resident commented on the resource of time as being “the biggest complication in the whole thing is…two things, one, they're waiting longer, and then, two, the time from the ED staff.” There was an appreciation across disciplines about the value of everyone's time as one nurse said, “Frankly, our doc's time is valuable. I have a hard enough time getting them to see my moderately sick patients or a really sick patient.”

Another important resource that would enable implementation of this legislation is staff. Many participants explained that the EDs are already understaffed. A nurse said, “We're chronically short of staff.” In thinking of how to enable HIV testing, one EP suggested that a staff person be dedicated to HIV testing, “I'd rather not even ask the physician or the nurse, I'd rather have it just be a 100% the staff person.” Another resident had a similar idea: “you want to have separate state or federal or public health agents in an emergency department doing public health initiatives and using that as their gateway to the population and vice versa, I think it's great.”

Two issues related to space included privacy and overcrowding. Participants expressed concern about the ability to offer an HIV test in a private setting. One nurse explained, “There is not a lot of privacy out there, and people already get a little offended when you ask them in an open space in the waiting room.” The other issue related to space is overcrowding. Participants did not feel that their EDs were resourced with enough space to enable this legislation to be successfully implemented. Participants expressed their frustration at already not having enough space in their ED. One nurse said, “We opened a whole new area, and our ER was still full when we walked in last night.” As a result, without extra space being allotted for this testing initiative, it would cause even further overcrowding.

An additional enabling factor for implementation of this legislation is the type of test being offered. Providers felt that to enable efficient testing and proper follow-up then a point-of-care test was necessary. One EP stated, “There has to be a point-of-care testing or rapid testing.” In addition, there were concerns over using a blood draw as a means of testing patients because as one EP said, “They find out it's a needle, they don't want it.” Another nurse explained, “This population believes if you take multiple tubes of blood from them you're draining their blood.” Cheek swabs were seen as an enabler in that they are “about 99.9% accurate, so it's not like patients are getting false positives when you're doing that” [nurse], but other nurses said they would prefer to do blood draws because “I do it all the time and feel comfortable and won't need to be trained.”

The final enabling factor that we identified is timing of the offer. A resident explained that “if it's done from the very beginning, then this does not lengthen the patient's ED length of stay.” However, as one nurse exclaimed, “and not that that is every patient, but it tends to be that if it's not done with those initial labs, it's much later in the process.” More specifically, another nurse described, “I've had one or two occasions where the blood was drawn and then three or four hours later we get around to the question, and then they (patient) say yes, and that is an annoyance.”

Reinforcing Factors

We identified five factors that have the potential to reinforce providers to offer HIV testing. These factors and representative quotations are presented in Table 4. Improving access to HIV testing, linkage to care, and public health were all key factors in reinforcing providers' desire to offer HIV testing. Concerns regarding overall cost savings and coverage for the test were indicated as barriers that needed to be resolved in order to reinforce the providers to offer HIV testing.

There was an overwhelming sense that this legislation would increase access to HIV testing. In particular, one resident said that this will "catch the population that would not otherwise be tested." Despite the predisposing factor that many ED providers do not want to be primary care providers, there was an acceptance at least among some; as one resident said, "We are, as much as we don't like it, at the forefront of primary care for a lot of people." Another resident added that "I would think for the public…some people who are disconnected with medicine would come in and this would be an opportunity for them to be tested."

In addition to access to HIV testing, participants reported that this legislation has the potential to link people to HIV care. One resident recalled, "I just had a person the other day who I felt he had no clue when he tested positive, and now he's going to be plugged into CSS (HIV clinic at site 2)…and I just think that for me (that) completely made a difference." Another resident acknowledged the potential for improving access to care as she explained, "If you think about the benefits to people who are randomly getting tested and coming up positive and getting CSS follow-up here."

Participants also thought that the legislation had the potential to improve public health. One nurse said, "This is the way of seeing a public health initiative to really help identify people and save people from going undiagnosed." Another resident appreciated that this legislation had the potential to "control the ripple effect," which could be achieved because as one nurse said, "if people know they're HIV positive, like you said, the risky behaviors may stop."

Providers wanted to know if this legislation would ultimately be cost-saving. One EP questioned, "The other thing that we don't talk about is the cost and the cost to society, the cost to the health care system. And you know for sending all these tests, you know for the amount you're really going to identify, it clearly is an overall beneficial cost benefit." Participants thought that it was important to understand and capture the actual cost savings involved in implementing this legislation.

Coverage for the testing was a concern among many participants, with a sentiment that if the test was covered then providers would be more willing to offer the test. A nurse was concerned over, "So who pays for this? The majority of our patients are not insured. " There was an acknowledgement as one resident said, "This idea is actually a great idea if the state is willing to foot the bill and the resources."

DISCUSSION

While EDs may have an increasingly important role in mitigating the HIV epidemic,[27,28] it is not clear how best to screen patients. Our study informs current practice and provides useful information on factors necessary for offering HIV testing in the ED. Findings from this study demonstrate that legislation alone will not allow for the successful implementation of a mandatory offer for HIV testing. This is the first qualitative study to examine ED health care providers' perceptions of factors that predispose, enable, and reinforce the provision of

offering universal HIV testing in the ED. Future efforts at implementation of mandatory HIV testing should consider the factors described in this study.

Predisposing Factors

A predisposing factor that will be difficult to address is the lack of self-efficacy that the providers felt when carrying out this legislation. Many of the ED clinicians felt that this mandate was beyond their scope of practice, which is to care for patients with emergent or acute complaints. Providers felt the mandate was distracting and a burden for them, and that they were already overwhelmed with their current clinical responsibilities. Moreover, providers described that this effort was best left to primary care physicians who have established relationships with their patients, and could discuss the issues surrounding HIV in a quiet and private setting that is not rushed. These findings are similar to those of previous studies that have found that EPs support this effort as a public health measure as long as it does not interfere with patient care delivery.[29]

Another predisposing factor that should be addressed is lack of knowledge on the part of clinicians. It is unclear whether the lack of knowledge is reflective of ineffective training, or a lack of “buy-in” and concern that the ED is not the appropriate location for HIV testing. Future research should focus on how to best motivate ED staff to carry out a public health initiative of this type.

Enabling Factors

Emergency department providers identified a number of enabling factors that would allow for HIV testing in the ED to be more effective. They identified that the HIV tests should be offered earlier in the ED stay, perhaps in triage; as many providers forget to ask the patient until the end of the ED visit when the patient is ready to leave, at which time the patient almost always declines. Second, ED providers expressed the need for additional resources, such as dedicated HIV counselors and technicians who could perform rapid testing, which has been cited in other studies.[13] The original SAEM PHTF recommendations for HIV screening in the ED setting were based on the assumption that sufficient resources were available to support these activities.[6] Despite the mandatory nature of the current screening program, NY State has not dedicated resources to support HIV screening. Third, use of rapid HIV cheek swab might be more appealing to patients,[30] and could be performed by staff dedicated for this purpose. Rapid bedside oral testing was not chosen in these two EDs primarily because of the need to train many providers, including those who rotate through the ED. As a result, a rapid blood lab testing model was chosen, which eliminated the need for ordering test kits and providing staff training.[14,31]

In our study, time was an important enabling factor to implementing routine HIV testing. Similar to other studies, EPs reported spending less than 10 minutes with each patient at the bedside, and they used this time to address only acute problems.[8] Finally, providers explained that they did not know what to do about follow-up care if the patient were to test positive, or what to say to a patient who tests positive. Previous studies have shown similar results where lack of opportunity for follow-up of HIV test results may prevent EPs from obtaining the test.[32] To successfully implement this legislation, coverage for test kits as well as for additional staff or provider time is critical, as long waits in the ED have become a chronic and prevalent problem, especially in large urban settings.[33,34]

Reinforcing Factors

Addressing issues related to resources is a key factor in successfully implementing this legislation. There is a widespread perception that funding and reimbursement options do not exist to cover the costs of routine HIV testing,[35] which was echoed by providers in this

study. The cost of rapid test kits is not currently reimbursed by many private or public funders, and as a result, providers were concerned about passing the out-of-pocket cost onto their patients.[36]

Despite the fact that the providers were in many cases resistant to the concept of routine HIV testing in the ED, when explored further providers understood the potentially positive affect of HIV testing in the ED, and its achievement as a public health measure. Providing ED clinicians with data from their own practice, which highlights the effect of their HIV testing efforts, has the potential to reinforce providers' screening efforts.

LIMITATIONS

This study was conducted at two large academic urban EDs and the findings may not be generalizable to all EDs; providers in community, suburban, and non-academic EDs may have different perspectives regarding this legislation. Our sample was a convenience sample and the participants may have particular biases about HIV testing, which may have influenced their decisions to participate in the study.

CONCLUSIONS

Findings from our study illustrate the factors necessary to successfully implement a mandatory offer for an HIV screening test in the ED. Despite New York State legislation, which mandates providers to offer HIV testing to all ED patients, there are a number of factors that need to be addressed before this will be effectively carried out by ED providers. Particular attention should be paid to providers' self-efficacy related to and knowledge of the legislation, appropriate supportive resources, and the testing type and process, in order to allow for effective implementation of HIV testing in the ED.

Acknowledgments

This work was supported by a grant from the Columbia University School of Nursing Center for Health Policy grant (PI: R. Schnall) and was supported in part by Columbia University's CTSA grant No. UL1 RR024156 from NCATS-NCRR/NIH. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. The authors would like to thank Drs. Patricia W. Stone and Peter C. Wyer for their thoughtful review of the article and Raquel Ramos for her assistance with the data collection.

References

1. Centers for Disease Control and Prevention. [Accessed Dec 20, 2012] Cases of HIV Infection and AIDS in the United States and Dependent Areas. 2007. Available at: http://www.cdc.gov/hiv/topics/surveillance/basic.htm.
2. Hall HI, Song R, Rhodes P, et al. Estimation of HIV incidence in the United States. JAMA. 2008; 300:520–9. [PubMed: 18677024]
3. Advancing HIV prevention: new strategies for a changing epidemic--United States, 2003. MMWR Morb Mortal Wkly Rep. 2003; 52:329–32. [PubMed: 12733863]
4. Schackman BR, Freedberg KA, Weinstein MC, et al. Cost-effectiveness implications of the timing of antiretroviral therapy in HIV-infected adults. Arch Intern Med. 2002; 162:2478–86. [PubMed: 12437408]
5. Rhodes KV, Gordon JA, Lowe RA. Preventive care in the emergency department, Part I: Clinical preventive services--are they relevant to emergency medicine? Society for Academic Emergency Medicine Public Health and Education Task Force Preventive Services Work Group. Acad Emerg Med. 2000; 7:1036–41. [PubMed: 11044001]
6. Babcock Irvin C, Wyer PC, Gerson LW. Preventive care in the emergency department, Part II: Clinical preventive services--an emergency medicine evidence-based review. Society for Academic

Emergency Medicine Public Health and Education Task Force Preventive Services Work Group. Acad Emerg Med. 2000; 7:1042–54. [PubMed: 11044002]

7. Rothman RE, Ketlogetswe KS, Dolan T, Wyer PC, Kelen GD. Preventive care in the emergency department: should emergency departments conduct routine HIV screening? a systematic review. Acad Emerg Med. 2003; 10:278–85. [PubMed: 12615596]
8. Rothman RE. Current Centers for Disease Control and Prevention guidelines for HIV counseling, testing, and referral: critical role of and a call to action for emergency physicians. Ann Emerg Med. 2004; 44:31–42. [PubMed: 15226706]
9. Branson BM, Handsfield HH, Lampe MA, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep. 2006; 55:1–17. [PubMed: 16988643]
10. New York State Department of Health. [Accessed Dec 20, 2012] Frequently Asked Questions regarding the HIV Testing Law. Available at: http://www.health.ny.gov/diseases/aids/testing/law/faqs.htm.
11. Brown J, Shesser R, Simon G. Establishing an ED HIV screening program: lessons from the front lines. Acad Emerg Med. 2007; 14:658–61. [PubMed: 17483399]
12. Sattin RW, Wilde JA, Freeman AE, Miller KM, Dias JK. Rapid HIV testing in a southeastern emergency department serving a semiurban-semirural adolescent and adult population. Ann Emerg Med. 2011; 58:S60–4. [PubMed: 21684410]
13. Mumma BE, Suffoletto BP. Less encouraging lessons from the front lines: barriers to implementation of an emergency department-based HIV screening program. Ann Emerg Med. 2011; 58(Suppl 1):S44–8. [PubMed: 21684407]
14. Hoxhaj S, Davila JA, Modi P, et al. Using nonrapid HIV technology for routine, opt-out HIV screening in a high-volume urban emergency department. Ann Emerg Med. 2011; 58(Suppl 1):S79–84. [PubMed: 21684414]
15. Moran GJ, Talan DA. Processes and models for HIV screening in the emergency department: can and should we do this? Ann Emerg Med. 2011; 58(Suppl 1):S172–3. [PubMed: 21684400]
16. New York State Department of Health. [Accessed Dec 20, 2012] New York State Hospital Profile. Available at: http://hospitals.nyhealth.gov/index.php?PHPSESSID=ea42335cd805a2277728fc403e9a5a1f.
17. Sasson C, Forman J, Krass D, et al. A qualitative study to understand barriers to implementation of national guidelines for prehospital termination of unsuccessful resuscitation efforts. Prehosp Emerg Care. 2010; 14:250–8. [PubMed: 20144019]
18. Bigham BL, Aufderheide TP, Davis DP, et al. Knowledge translation in emergency medical services: a qualitative survey of barriers to guideline implementation. Resuscitation. 2010; 81:836–40. [PubMed: 20398994]
19. Leonard JC, Scharff DP, Koors V, et al. A qualitative assessment of factors that influence emergency medical services partnerships in prehospital research. Acad Emerg Med. 2012; 19:161–73. [PubMed: 22320367]
20. Kitzinger J. Qualitative Research: introducing focus groups. Br Med J. 1995; 311:299–302. [PubMed: 7633241]
21. Krueger, RA.; Casey, MA.; Focus Groups. A Practical Guide for Applied Research. 3rd ed. Sage Publications; Thousand Oaks, CA: 2000.
22. Green, L.; Kreuter, M.; Deeds, S.; Partridge, K. Health Education Planning: A Diagnostic Approach. Mayfield; Mountain View, CA: 1980.
23. Calabretta N. Consumer-driven, patient-centered health care in the age of electronic information. J Med Libr Assoc. 2002; 90:32–7. [PubMed: 11838457]
24. Klein-Fedyshin MS. Consumer health informatics--integrating patients, providers, and professionals online. Med Ref Serv Q. 2002; 21:35–50. [PubMed: 12238015]
25. Green L. What can we generalize from research on patient education and clinical health promotion to physician counseling on diet? Eur J Clin Nutrition. 1999; 53:S9–18. [PubMed: 10406430]
26. Jandorf L, Fatone A, Borker PV, et al. Creating alliances to improve cancer prevention and detection among urban medically underserved minority groups. The East Harlem Partnership for Cancer Awareness. Cancer. 2006; 107:2043–51. [PubMed: 16977600]

27. Rothman RE, Lyons MS, Haukoos JS. Uncovering HIV infection in the emergency department: a broader perspective. Acad Emerg Med. 2007; 14:653–7. [PubMed: 17538079]

28. Bernstein SL, Haukoos JS. Public health, prevention, and emergency medicine: a critical juxtaposition. Acad Emerg Med. 2008; 15:190–3. [PubMed: 18275450]

29. Torres GW, Heffelfinger JD, Pollack HA, Barrera SG, Rothman RE. HIV screening programs in US emergency departments: a cross-site comparison of structure, process, and outcomes. Ann Emerg Med. 2011; 58(Suppl ??):S104–13. [PubMed: 21684388]

30. Apoola A, Brunt L. A randomised controlled study of mouth swab testing versus same day blood tests for HIV infection in young people attending a community drug service. Drug Alcohol Rev. 2011; 30:101–3. [PubMed: 21219504]

31. White DA, Tran T, Dideum PJ, et al. Physician-initiated rapid HIV testing in an urban emergency department: comparison of testing using a point-of-care versus a laboratory model. Ann Emerg Med. 2011; 58:S53–9. [PubMed: 21684409]

32. Beckmann KR, Melzer-Lange MD, Cuene B, Dietz M, Havens PL. The effectiveness of a follow-up program at improving HIV testing in a pediatric emergency department. Wisconsin Med J. 2002; 101:30–4.

33. Olshaker JS. Managing emergency department overcrowding. Emerg Med Clin North Am. 2009; 27:593–603. [PubMed: 19932394]

34. Olshaker JS, Rathlev NK. Emergency department overcrowding and ambulance diversion: the impact and potential solutions of extended boarding of admitted patients in the emergency department. J Emerg Med. 2006; 30:351–6. [PubMed: 16677993]

35. Bozzette SA. Routine screening for HIV infection--timely and cost-effective. N Engl J Med. 2005; 352:620–1. [PubMed: 15703428]

36. Clark HA, Bowles KE, Song B, Heffelfinger JD. Implementation of rapid HIV testing programs in community and outreach settings: perspectives from staff at eight community-based organizations in seven U.S. cities. Public Health Rep. 2008; 123(Suppl 3):86–93. [PubMed: 19166092]

Table 1

Focus Group and Interview Questions

1) What is your interpretation of the legislation?
2) What is the current strategy for implementing this law in the ED?
3) What do you perceive as barriers to implementation of the NY State HIV testing law?
4) What are your ideas about strategies for overcoming these barriers?
5) What are some of the ways that the care that you provide might benefit through implementation of the NY State HIV testing law?
6) What are the necessary steps or changes in the old system to achieve higher testing rates in the ED?
7) Can you describe step by step what happens when a patient enters the ED?
8) Are there any other thoughts about the implementation of the NY State HIV testing law that you did not get a chance to share that you would like to share now?

Table 2

Predisposing factors: individual knowledge, attitudes, and beliefs that hinder offering an HIV testing

Factor	Explanation	Quotes
1. Self-efficacy	HIV testing in the ED is not aligned with the vision of an ED provider	• "This is not within our scope of practice (attending physician)"
		• "There are too many other fires to put out to take up this preventive health cause… and none of us signed up for careers in preventative medicine (attending physician)"
2. Behavioral intention	Offering the test in a manner that patients will decline to be tested	• "I think a lot of us actually ask at the end of the visit because there is a lot of opposition to this law, like quite a bit from the attendings and the residents (resident)"
		• "And they (residents) want them to decline it because they'll say it at the end of discharge, and the patient is like, "No, no, I'm good, I'm good, just get me out of here (nurses)"
3. Testing process	Responsibilities for each step of the HIV testing process	• "The other day I wanted to test a patient for HIV and they [nurses] wouldn't draw it themselves and they told me I had to do it (resident)"
4. Provider knowledge of the legislation	Providers knowledge of the existence and details of the legislation	• "I didn't even realize we had that law (residents)"
5. Provider knowledge about the type of HIV test	Knowledge about the types of available test and their specificity and sensitivity	• "How many of the positive tests are false-positive? (nurse)"
		• "Do a lot of emergency rooms use cheek swabs across the country? (resident)"
6. Provider knowledge about follow-up procedures	Knowledge in what to tell a patient who tests positive	• "I know enough from the discussions in here to be able to say to them that that's not necessarily a true positive. But I don't really know what else to tell them. And I don't know where to tell them to go, if they don't have insurance (attending physician)"

Table 3

Enabling factors: organizational expertise, structure, resources, and processes that affect an HIV testing offer to patients

Factor	Explanation	Quotes
1. Time	Developing a model which will allow for HIV testing and not increase waiting time	• "It's kind of hard because your time is already limited as it is, and to explain all the…like he was saying, you come in with a sprained ankle and then you're spending an extra ten minutes explaining all of the risk factors with HIV (resident)"
		• "And that's going to be an extra thing that we have to go to draw the blood. And if that's the only thing that they're waiting for (nurse)"
2. Staff	EDs are already understaffed and this legislation would require additional staffing to be successful.	• "If you had a dedicated person we could potentially discharge them from the emergency department knowing that this dedicated person in real time had obtained a real phone number and was going to really call them back an hour later or maybe they could call them when they were sitting in the waiting room having a snack (nurse)"
		• "Or if the state wants to hire their own person and do their own HIV rapid tests and then could permit some outside facility and just send a letter or phone call or something (resident)"
3. Space	Offering the test and communicating results in a private space	• "It's very different than being in the primary care clinic, when you have a closed office door… (attending physician)"
4. Type of test	Optimum type of test e.g. point-of-care, blood draw, cheek swab	• "And a lot of them don't want it unless it's the swab. They find out it's a needle, they don't want it (attending)"
		• "Yes, cheek swab is easy but it requires training, multiple personnel. It's also a quality issue in point-of-care testing. You know you want to make sure people are doing it right and not missing anything (attending physician)"
5. Timing of the offer	When patients are offered the test during their visit to the ED	• "The easiest thing that could be done, honestly, is when they walk in the door, hand them a slip of paper, yes or no. By doing that, you can build it into everything (resident)"

Table 4

Reinforcing factors: rewards and feedback that encourage ED providers to offer an HIV test

Factor	Explanation	Quotes
1. Access to HIV testing	This legislation would increase access to HIV testing	• "There are people in the world who are concerned they have HIV who do not have a primary care provider and don't know where they can go for testing (resident)."
2. Linkage to care	Providers wanted to ensure that after their patients tested positive that they were being linked to HIV care	• "Are there any studies that say the patients or people who have found out that they're HIV positive, what is the percentage of those that actually go and get treatment (nurse)?"
3. Improve public health	The legislation has the potential to improve public health	• "So I do see the benefit globally (nurse)."
4. Save overall health care costs	Providers wanted to know if this legislation would ultimately be cost saving	• "It would probably save tons of money by doing it. The problem is the government has to issue some money up front and then get the investment back in the long-term (resident)."
5. Coverage	Providers felt that it was important for the test to be covered	• "This idea is actually a great idea if the state is willing to foot the bill and the resources (resident)."