



SONIA Y. ANGELL, MD, MPH
State Public Health Officer & Director

State of California—Health and Human Services Agency
California Department of Public Health



GAVIN NEWSOM
Governor

HIV Testing in Hospital Emergency Departments: Findings and
Recommendations
(Assembly Bill No. 2439)

Report to the Legislature

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Office of AIDS
Center for Infectious Diseases
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Office of AIDS, MS 7700 • P.O. Box 997426 • Sacramento, CA 95899-
(916) 449-5900 • (916) 449-5909 FAX
Internet Address: www.cdph.ca.gov



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Executive Summary

Purpose

This report summarizes the California Department of Public Health's (CDPH), Office of AIDS (OA) findings, conclusions, and recommendations from the pilot project focused on the effectiveness of the routine offering of a human immunodeficiency virus (HIV) test in the emergency department (ED) of hospitals. This pilot project was authorized by section 120992(2) of the California Health & Safety Code (as amended by Assembly Bill 2439, Statutes of 2015-2016):

...(2) By December 1, 2019, the department shall complete a report to the Legislature on the findings of the hospitals in the pilot project and make recommendations about routine HIV testing in hospital emergency departments. In preparing the report to the Legislature, the department shall solicit input from a broad range of HIV testing and hospital stakeholders.

Methods

Findings for this legislative report were developed through qualitative and quantitative strategies for data collection and analysis. The qualitative assessment, which included a series of site visits and interviews with a broad range of HIV testing and hospital stakeholders, was conducted through a contract with a small public health consulting firm, Facente Consulting. The quantitative assessment consisted of an electronic survey designed to collect aggregate data on the topics noted in section 120992(g) of the California Health & Safety Code: (1) The frequency of HIV test offers; (2) The frequency of consent or non-consent to a HIV test and any reasons given by the patient for the consent or the non-consent; (3) The time taken to offer an HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990; (4) The aggregate HIV positivity rate; (5) The frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 and the reasons that patients gave for refusing to participate; (6) The frequency of patients leaving the emergency department without receiving their test results.

Findings

There was some variation in HIV testing strategies utilized in the EDs across the 16 medical centers / hospital systems interviewed; 63% (n= 10) had routine opt-out practices and protocols, 6% (n=1) had routine opt-in practices and protocols (i.e., patient is informed a HIV test is available, but patient must ask for the test), and 31% (n= 5) did not have a routine HIV screening program. Practices and protocols varied in terms of implementation of: consent requirements, use of electronic medical record (EMR) to help facilitate routine HIV testing, HIV test result disclosure, and linkage to and re-engagement in care. Interviewees identified multiple items that could impact the success of HIV screening program implementation, including: constructing and implementing EMR tools, garnering program buy-in, laboratory-related barriers, and covering the cost of HIV screening.

Of the 15 medical centers / hospitals the electronic survey was distributed to, a total of six provided aggregate HIV screening data for calendar year (CY) 2016 and/or 2017; three provided

both CY 2016 and 2017 data and the remaining three provided CY 2017 data only. For CY 2016 – 2017: (1) the frequency of HIV test offers was 28.5%, (2) the frequency of consent to an HIV test offer was 79.3% and the frequency of non-consent to a HIV test offer was 17.5% with no data available for reasons for consent or non-consent, (3) the average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling was 28 minutes, (4) the HIV positivity yield was 1.7%, (5) the frequency with which patients agreed to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 was 99.7% and the reasons ED patients declined HIV information and counseling sessions included: (a) do not want to talk about it, (b) want to seek second opinion, (c) prefer HIV follow-up elsewhere, and (d) previously diagnosed with HIV, and (6) the frequency of patients leaving the emergency department without receiving their test results was 0.1%.

Conclusions

Because HIV-infected patients visit an ED at more than twice the rate of the general population (Mohareb, Rothman, & Hsieh, 2013) and they may serve as the primary source of care for marginalized individuals most at risk for HIV infection, the routine offering of a HIV test in the emergency department of a hospital can be an effective means to diagnose, link, and re-engage patients in care. Practices and protocols, particularly those related to obtaining patient consent and EMR integration, may impact HIV screening program effectiveness. Program sustainability may hinge upon ED's ability to identify how to cover the actual costs of screening patients for HIV.

Recommendations

1. Additional evidence is needed on the effectiveness of the various HIV testing protocols, methods, and messages utilized by EDs implementing routine HIV screening programs.
2. Consider integrating routine opt-out HIV screening into ED standard of care consistent with the CDC revised national HIV testing guidelines.
3. Consider streamlining the HIV testing consent process.
 - a. Removing specific HIV testing consent requirements and including HIV screening within general medical consent may make routine HIV screening programs more feasible to implement.
4. ED HIV screening implementation plans should take into consideration:
 - a. Collaborating with local health departments, as they are responsible for reporting and tracking outcomes for HIV-positive cases such as test result disclosure, linkage to and re-engagement in care.
 - b. How routine HIV screening will best fit into ED work-flow.
 - c. How to best obtain buy-in from system administration, partner laboratories, IT, insurance and billing, and providers.
 - d. Including program performance metrics and a continuous feedback loop which minimally includes the following: eligibility for HIV screening, HIV test offers, testing uptake (including effectiveness of various EMR prompting methods and messages), positivity yield, linkage to / re-engagement in care, and barriers to implementation.

- e. Including a staff education and training program, including a commitment to serve underserved population at risk for acquiring HIV.
 - f. Including evidence-based HIV screening practices and protocols regarding: program messaging, the consent process, HIV test offer, how to handle discordant results, how to handle blood draw requests from the laboratory, results disclosure (including information on disclosing HIV test results to patients whose test result is not available prior to ED discharge), linkage to / re-engagement in care for patients who are either newly diagnosed with HIV or who were previously diagnosed with HIV and are out-of-care, and rapid anti-retroviral treatment (ART) initiation for patients who are either newly diagnosed with HIV or who were previously diagnosed with HIV and who are out-of-care.
5. Where feasible, automate routine HIV testing practices and protocols using structural strategies that minimize the need for provider intervention (e.g., automatic eligibility determination and ordering of the HIV test for patients deemed eligible per electronic records, requiring manual cancellation of the order by the provider for any patients who opts-out).

I. Purpose

This report summarizes the California Department of Public Health's (CDPH), Office of AIDS (OA) findings, conclusions, and recommendations from the pilot project focused on the effectiveness of the routine offering of a human immunodeficiency virus (HIV) test in the emergency department (ED) of hospitals. This pilot project was authorized by section 120992(2) of the California Health & Safety Code (as amended by Assembly Bill 2439, Statutes of 2015-2016):

...(2) By December 1, 2019, the department shall complete a report to the Legislature on the findings of the hospitals in the pilot project and make recommendations about routine HIV testing in hospital emergency departments. In preparing the report to the Legislature, the department shall solicit input from a broad range of HIV testing and hospital stakeholders.

Background

As designated by California Health and Safety Code Section 131019, the CDPH/OA has lead responsibility for coordinating state and local programs, services, and activities relating to HIV/AIDS. In 2015, California ranked second among states in the number of new HIV diagnoses, with 4,720 new cases reported statewide (National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, 2017). In 2017, roughly 135,000 persons were living with diagnosed HIV infection in California (California Department of Public Health, 2019). One driver of HIV transmission is that approximately 1 in 10 people living with HIV in California have not yet been diagnosed (California Department of Public Health, 2016).

More than 145 million patients visit a hospital emergency department (ED) each year in the United States (National Center for Health Statistics, 2017). HIV-infected patients visit an ED at more than twice the rate of the general population, with approximately 1,192,535 HIV-positive visitors from 2009-2010 (Mohareb, Rothman, & Hsieh, 2013). Moreover, EDs may be the primary source of care for marginalized individuals most at risk for HIV infection (Mohareb, Rothman, & Hsieh, 2013; Lin, et al., 2017; Doupe MB, et al., 2012; Hunt, Weber, Showstack, Colby, & Callahan, 2006).

White and colleagues at Highland Hospital in Oakland, CA found that the acceptance yield in their opt-in HIV screening program was 63% and the acceptance yield in their opt-out screening program was 78% ($p < .001$) (White, Sadoun, Tran, & Alter, 2011). The opt-out screening acceptance yield remained greater than for opt-in testing even after adjusting for patient demographics, acuity, screening/treatment area, and screening staff (adjusted odds ratio: 2.0, 95% CI: 1.7 to 2.4). White and colleagues also conducted three separate studies comparing patient satisfaction between opt-in and opt-out consent methods. These studies found no difference between the two methods, nor a preference for opt-out testing (White, Sadoun, Tran, & Alter, 2011; White, Scribner, Martin, & Tsai, 2012; White, et al., 2011). In 2006, Dr. Bernard Branson and colleagues from the Centers for Disease Control and Prevention (CDC) revised national HIV testing guidelines to include routine, opt-out HIV testing (i.e., patient is informed they will be tested for HIV unless they decline) for EDs in areas where the prevalence of undiagnosed HIV was $> 0.1\%$ (Branson, et al., 2006). However, testing in EDs is not yet a

prevailing practice in California, potentially resulting in repeated missed opportunities for undiagnosed individuals to learn their HIV status.

In order to better understand the role of EDs in identifying unknown cases of HIV infection in California, the Assembly passed AB 2439 in September, 2016. The Legislature required CDPH to create a pilot project resulting in a report that would assess and make recommendations regarding the effectiveness of the routine offering of an HIV test in the emergency department of hospitals.

II. Methods

Findings for this legislative report were developed through qualitative and quantitative strategies for data collection and analysis. The qualitative assessment, which included a series of site visits and interviews with a broad range of HIV testing and hospital stakeholders, was conducted through a contract with a small public health consulting firm, Facente Consulting. The quantitative assessment consisted of an electronic survey designed to collect aggregate data on the topics noted in section 120992(g) of the California Health & Safety Code: (1) The frequency of HIV test offers; (2) The frequency of consent or non-consent to a HIV test and any reasons given by the patient for the consent or the non-consent; (3) The time taken to offer a HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990; (4) The aggregate HIV positivity rate; (5) The frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 and the reasons that patients gave for refusing to participate; (6) The frequency of patients leaving the emergency department without receiving their test results.

Qualitative Assessment

Using a convenience sample, 22 key informant interviews were conducted with a broad range of HIV testing and hospital stakeholders including: (1) clinicians from a total of 18 EDs spanning 16 hospital systems and (2) other stakeholders, including personnel from the AIDS Healthcare Foundation, Gilead Pharmaceuticals, Inc., the California Hospital Association, the California chapter of the American College of Emergency Physicians, and the University of Southern California Schaeffer Center for Health Policy and Economics. Most of the ED clinicians interviewed have initiated or managed routine HIV screening programs in their hospitals, though some work at hospitals that have not yet successfully launched programs, or have considered and decided not to undertake such programs. Eleven of the 18 EDs whose personnel participated in key informant interviews also participated in an in-person site visit. See Appendix A for a copy of the Interview Guide and Table 1 for a list of medical centers / hospitals included in the qualitative assessment.

Table 1. Medical Centers / Hospitals Included in the Qualitative Assessment by Area Type

| Area Type | Medical Center / Hospital Included in Qualitative Assessment |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Urban | Alameda County Medical Center- Highland Hospital (Oakland; Alameda County) |
| Urban | Alta Bates Summit Medical Center (A Sutter Health hospital; both Berkeley and Oakland campuses) |
| Urban | Kaiser Permanente San Francisco Medical Center (San Francisco County) |
| Urban | Los Angeles County + University of Southern California Public Hospital (Los Angeles County) |
| Urban | St. Mary Medical Center (A Dignity Health hospital; Long Beach, Los Angeles County) |
| Urban | University of California, San Diego Medical Center (both Hillcrest and La Jolla campuses; San Diego County) |
| Urban | University of California, San Francisco Benioff Children's Hospital (formerly Children's Hospital Oakland; Alameda County) |
| Urban | University of California, San Francisco Medical Center at Mission Bay (San Francisco County) |
| Urban | Zuckerberg San Francisco General Hospital (San Francisco County) |
| Small-Urban | Desert Regional Medical Center (A Tenant Health hospital; Palm Springs, Riverside County) |
| Small-Urban | UC Davis Medical Center (Sacramento County) |
| Suburban | Santa Clara Valley Medical Center (Santa Clara County) |
| Suburban | Santa Paula Medical Center (Ventura County) |
| Suburban | UC Irvine Medical Center (Orange County) |
| Suburban | Ventura County Medical Center (Ventura County) |
| Rural | Arrowhead Regional Medical Center (San Bernardino County) |

Quantitative Assessment

An electronic survey, designed to capture calendar years (CY) 2016 and 2017 HIV screening data from EDs throughout California, was distributed to 15 medical centers / hospitals with an ED throughout California in May 2018 via an email from the Chief of the Office of AIDS, which included a link to the survey. The survey distribution list was sourced from the qualitative

assessment sample. One medical center included in the qualitative assessment (University of California, San Francisco Medical Center at Mission Bay) was excluded from the survey distribution list, as it was clear from the qualitative assessment that this site did not have HIV screening data for CY 2016 or 2017.

Of the medical centers / hospitals included in the survey distribution list, eight are located in urban areas, two represent small-urban areas, four are considered suburban, and one is from a rural area (See Table 2).

Table 2. Medical Centers / Hospitals Included in the Quantitative Assessment by Area Type

| Area Type | Medical Center / Hospital Included in Quantitative Assessment |
|--------------------|------------------------------------------------------------------------|
| Urban | Alameda County Medical Center-Highland Hospital |
| Urban | Alta Bates Summit Medical Center |
| Urban | Kaiser Permanente San Francisco Medical Center |
| Urban | Los Angeles County + University of Southern California Public Hospital |
| Urban | St. Mary Medical Center |
| Urban | University of California, San Diego Medical Center |
| Urban | University of California, San Francisco Benioff Children's Hospital |
| Urban | Zuckerberg San Francisco General Hospital |
| Small-Urban | Desert Regional Medical Center |
| Small-Urban | UC Davis Medical Center |
| Suburban | Santa Clara Valley Medical Center |
| Suburban | Santa Paula Medical Center |
| Suburban | UC Irvine Medical Center |
| Suburban | Ventura County Medical Center |
| Rural | Arrowhead Regional Medical Center |

The survey was managed through a web-based portal by the CDPH/OA, Surveillance and Prevention Evaluation and Reporting Branch, Prevention Evaluation and Monitoring Section (PEM). The survey response collector remained open from May 2018 to October 2018; during this time, OA made multiple follow-up attempts in an effort to optimize the response rate. Follow-up efforts included a follow-up email with a link to the survey, which was distributed by the Chief of the Office of AIDS in June 2018, as well as numerous outreach efforts to individual medical centers/hospitals whose survey response had not yet been received.

Participation was voluntary. The survey was designed to capture CY 2016 and 2017 self-reported aggregate data on the following topics: (1) the frequency of HIV test offers; (2) the frequency of consent or non-consent to a HIV test and any reasons given by the patient for the consent or non-consent; (3) the time taken to offer an HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990; (4) the aggregate HIV positivity rate; (5) the frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 and the reasons that patients gave for refusing to participate; (6) the

frequency of patients leaving the ED without receiving their test results (See Table 3 for additional information on how each of these reporting topics were measured).

Table 3. AB 2439 Reporting Topic / Requirement Measurement Specifications

| AB 2439 Data Reporting Topic / Requirement ¹ | Measurement Specifications <i>(numerator / denominator provided, where applicable)</i> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (1) The frequency of HIV test offers | Total ED patients offered a HIV test / total ED patients eligible for HIV screening |
| (2) The frequency of consent or non-consent to a HIV test and any reasons given by the patient for the consent or the non-consent | <p><u>Frequency of consent:</u> Total ED patients offered a HIV test and who accepted the offer / total ED patients offered an HIV test</p> <p><u>Frequency of non-consent:</u> Total ED patients offered a HIV test and who declined the offer / total ED patients offered an HIV test</p> <p><u>Reasons given by the patient for the consent or the non-consent:</u> Results based on the following data elements: (1) “What were the primary reasons ED patients declined HIV testing” and (2) “What were the primary reasons ED patients accepted HIV testing”</p> |
| (3) The time taken to offer an HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990 | Average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent for the HIV test) and providing information and counseling |
| (4) The aggregate HIV positivity rate | Total ED patients tested for HIV who tested HIV-positive (preliminary or confirmed) / total ED patients tested for HIV |
| (5) The frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 and the reasons that patients gave for refusing to participate | <p><u>Frequency which patients agree to participate:</u> Total ED patients offered session to receive information and counseling and who accepted the offer / total ED patients offered session to receive information and counseling</p> <p><u>Reasons patients gave for refusing to participate:</u> Results based on the following data element: “Please list the primary reasons emergency</p> |

| AB 2439 Data Reporting Topic / Requirement¹ | Measurement Specifications (numerator / denominator provided, where applicable) |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| | department patients declined HIV information and counseling session” |
| (6) The frequency of patients leaving the emergency department without receiving their test results | Total ED patients tested for HIV and who left the ED without receiving a HIV test result / total ED patients tested for HIV |

¹ http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2439

Of 15 medical centers / hospitals sent the survey, 60% (n= 9) responded to the survey and agreed to participate, 7% (n= 1) responded to the survey and declined to participate, and 33% (n= 5) did not respond to the survey. Of the nine medical centers / hospitals that responded to the survey and agreed to participate, aggregate ED HIV screening data for CY 2016 and/or CY 2017 was obtained from 67% (n= 6) of the medical centers / hospitals.

Survey data were analyzed by OA/PEM. See Appendix B for a copy of the electronic survey.

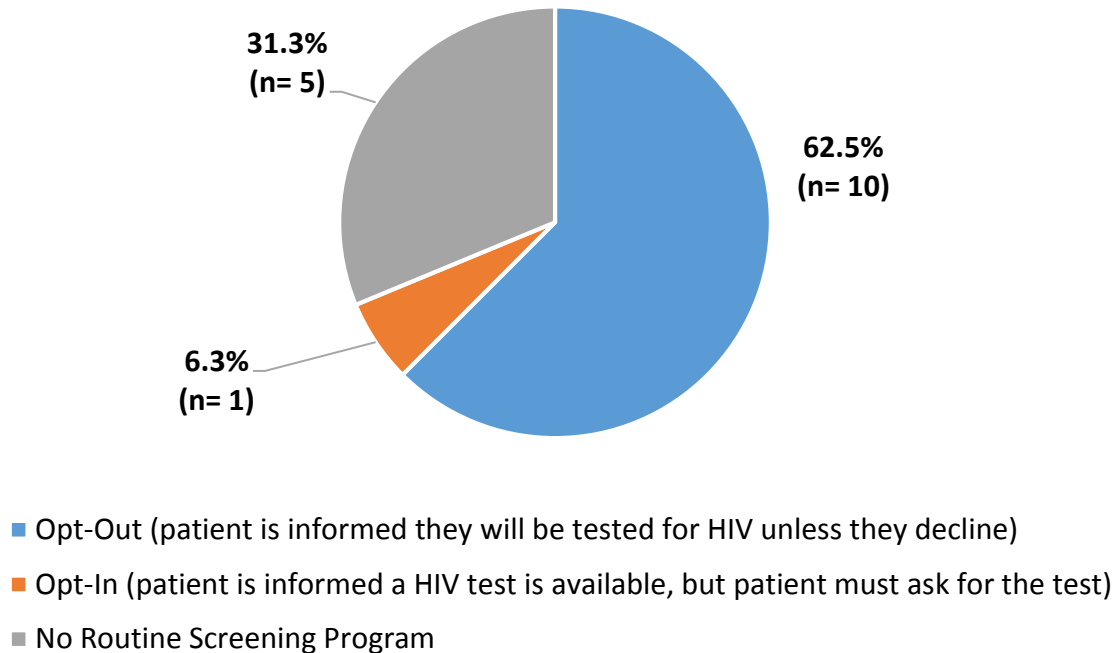
III. Findings

Qualitative Assessment

HIV Testing Strategy in EDs

There was some variation in HIV testing strategies utilized in the EDs across the 16 medical centers / hospital systems interviewed; 63% (n= 10) had routine opt-out practices and protocols, 6% (n=1) had routine opt-in practices and protocols (i.e., patient is informed an HIV test is available, but patient must ask for the test), and 31% (n= 5) did not have a routine HIV screening program (See Figure 1).

Figure 1. Medical Center / Hospital (N= 16)
ED Routine HIV Testing Practices and Protocols by Protocol Type



Practices and Protocols: HIV Testing Consent in EDs

The HIV testing requirements outlined in the California HSC § 120990 by AB 2640 specify:

- Prior to ordering a test that identifies infection of a patient with HIV, a medical care provider shall inform the patient that the test is planned, provide information about the test, inform the patient that there are numerous treatment options available for a patient who tests positive for HIV and that a person who tests negative for HIV should continue to be routinely tested, and advise the patient that he or she has the right to decline the test. If a patient declines the test, the medical care provider shall note that fact in the patient's medical file.
- Subdivision (a) does not apply when a person independently requests an HIV test from a medical care provider.
- Except as provided in subdivision (a), a person shall not administer a test for HIV infection unless the person being tested or his or her parent, guardian, conservator, or other person specified in Section 121020 has provided informed consent for the performance of the test. Informed consent may be provided orally or in writing, but the person administering the test shall maintain documentation of consent, whether obtained orally or in writing, in the client's medical record. This consent requirement does not apply to a test performed at an alternative site pursuant to Section 120890 or 120895. This section does not authorize a person to administer a test for HIV unless that person is otherwise lawfully permitted to administer an HIV test...

There was some variation in how EDs implemented the HIV testing requirement. For example, some EDs used technology and/or printed materials to notify patients of HIV testing protocols (e.g., displayed clear signage in multiple locations, utilized an educational video, slide show or commercial in the waiting room or ED lobby, distributed educational postcards or brochures to every patient, utilized a form about HIV testing at intake), while others relied on providers to notify patients verbally.

Physicians who participated in an impromptu discussion during one ED site visit noted that systematized consent is the only way to be sure it really happens. One physician remarked, “To be honest, relying on doctors in the ED to obtain consent for an HIV test is problematic. Oftentimes it just doesn’t happen. It needs to be part of general consent, or systematized in some other way, for it to really work.” One ED that was considering implementing testing with a waiting room video noted that post implementation, the goal would be to implement automatic HIV test ordering via the EMR, without provider intervention, unless the patient opted-out and the provider manually canceled the order. During interviews with other, non-ED stakeholders, two stakeholders identified the removal of HIV testing-specific consent requirements and the inclusion of HIV screening within general medical consent as important steps in making systematized testing programs more feasible.

Practices and Protocols: Use of EMR to Help Facilitate Routine HIV Testing in EDs

Of the 10 hospital systems with routine opt-out HIV testing protocols in their ED(s), 90% (n= 9) utilized an EMR system to help facilitate HIV testing. Strategies included: (1) EMR pop-up or *prompt requiring triage nurse or ordering clinician intervention*, each with some programmed decision tree (at least related to patient age) that helped automatically screen out patients inappropriate for testing, (2) *scripts/messages* to assist the clinician in notifying the patient about the screening program, and (3) *automatic ordering of a HIV test* for patients deemed eligible per electronic records, requiring manual cancellation of the order by the clinician or nurse at triage for any patients who opted out. In some instances, EMR prompts were utilized in conjunction with scripts/messages to assist the clinician in notifying the patient about the screening program.

One ED indicated they achieved substantially higher testing uptake by automating the test ordering process for patients having a blood draw. Another ED mentioned that when a patient presents to this ED, they first see a nurse and specify their primary complaint. When the nurse enters the primary complaint into the EMR, it pulls up a set of standard orders based on that complaint, which helps dictate specimen collection and laboratory testing for the visit. HIV, hepatitis C virus (HCV), and syphilis were added to every pre-loaded order set of required blood draws; while the tests are included in the order by default, clinicians were still required to answer a series of questions related to consent for HIV testing (e.g., “Did you make the patient aware that a HIV test will be conducted unless they decline?”).

EDs that utilized EMR prompts and/or scripts requiring provider intervention commonly reported challenges with HIV test uptake. One ED attributed low HIV test uptake to low provider uptake rather than patients choosing to opt out of testing. This ED reported that providers have said the Best Practice Advisory (BPA) is annoying, and that they are likely to click

“Dismiss” to make it disappear rather than engaging with the patient to determine whether they are open to HIV testing. This ED said substantial effort has been invested in talking with nurses about the importance of the HIV screening program and instructing them to order the test(s) when the BPA pops up, verbally notify the patient, and then manually cancel the order later in the visit if appropriate. The discussion and instructions improved uptake rates. Similar challenges were reported by another ED, which noted patients receiving a blood draw are eligible for HIV testing unless they have had a test in the last year, or already know they are HIV-positive. This ED said that, when EMRs were reviewed, many more patients’ records than expected stated “testing not indicated” (an option selected via the EMR prompt). Program staff noted this high incidence may indicate lack of provider buy-in for systematized testing. Another ED indicated that if the triage nurse dismisses the EMR prompt without either ordering the test or noting that the patient has opted out (or is ineligible), the EMR prompt re-appears when the ordering clinician enters the EMR later during the patient visit, a strategy that may improve testing uptake.

Some ED interviewees reported that the timing of the EMR prompt or pop-up is important and suggested prompting at an inopportune time can lead to providers dismissing the prompt instead of engaging with it. “Ideally we want the BPA to fire during an encounter, but not at an inopportune time, when someone’s asking about chest pain. It was (and is) annoying, which makes providers click out of it instead of actually engaging,” one interviewee explained. Another described their ideal timing scenario, “In the notes section it’s too late – sometimes you’re already done. When you open the chart? Too early; you haven’t even seen the patient yet. On the orders tab is when we have it pop up. You’ve already seen the patient, you know what’s up, you go to place the orders, and then it reminds you.” In addition to EMR prompt or pop-up timing, the importance of considering HIV testing history when utilizing EMR to help facilitate HIV test ordering was highlighted by one ED; the ED noted their EMR did not consider recent HIV testing history when adding HIV to the ED panel, resulting in some patients receiving several HIV tests within a short timeframe.

At the medical center with a routine opt-in HIV testing protocol, clinicians could order an HIV test through the EMR, but no prompt or default test order was established.

[Practices and Protocols: HIV Test Result Disclosure, Linkage to, and Re-Engagement in Care](#)

Test result processing time can be a barrier to prompt disclosure. An on-site laboratory can return confirmatory results within a few hours, whereas when a hospital send the confirmatory test to an off-site laboratory, results may be received 3 or 4 days later. One ED reported negative tests results are usually available in the patient’s chart within one hour of the blood draw. Positive tests require longer (as they need to be confirmed), but the result appears as “pending” in the patient chart, notifying the clinician that the patient may be HIV-positive and should not be discharged until the result is finalized. Ordering clinicians have the option of disclosing positive results themselves, or paging a HIV fellow (on-call 24/7) who will respond and disclose the result in person. When people living with HIV are discharged before disclosure, which does occasionally happen, fellows from the HIV clinic are notified and conduct active follow-up with the patient to disclose the result and link the patient to care. If not successful after about a week, the patient information is referred to health department DIS for additional

follow-up. Another ED reported that HIV screening results are available to both the patient and a nurse within minutes; if the result is reactive, the nurse discloses the result to the patient (or works with a physician to do so, if preferred), draws blood for lab-based confirmation, connects the patient to the hospital social worker, and links the patient to a nearby community-based organization for linkage support and further follow-up. One ED reported that only confirmed results are disclosed to patients, even if that means the result is not ready until after discharge.

Laboratory setup was noted as a barrier to results disclosure by one ED, who indicated the laboratory is not on-site, and all specimens from the ED must be transported to the laboratory for testing. At the laboratory utilized by this ED, during the evening hours (11pm – 6am), no HIV tests are run. The laboratory utilized by this ED also will not report a differentiated antigen/antibody test result, leading to further delays for confirming positive screening tests before disclosure. As a result of the laboratory-related delays in this ED, most of their patients are discharged prior to results disclosure.

Before linkage to care can happen, results must be disclosed to patients. Practices and protocols for results disclosure varied among interviewees. Some EDs utilized in-house staffing resources to disclose positive HIV test results to patients, while others relied on partnerships with their local county linkage to care team.

Multiple ED interviewees mentioned that in instances where a patient tests HIV-positive, a linkage to care coordinator is notified and discloses the result to the patient before helping facilitate referral and linkage to care. One ED reported a linkage to care coordinator is on-call 24/7. Another ED noted the linkage coordinator is paged and responds immediately to the ED for disclosure if the result is available while the patient is still in the ED during normal working hours; otherwise, the linkage coordinator contacts the patient after discharge through phone calls or letters. Other EDs reported less reliable linkage to care resources for test result disclosure. For example, linkage to care staff may have limited availability. One ED reported the Linkage to Care Coordinator works 8am – 5pm on weekdays and that responding to a page is not required outside of normal work hours. EDs also often noted that they work with the local county linkage to care team / disease intervention specialists (DIS), who disclose test results to the patient and link them to care, which takes this responsibility off the ordering physician. Some EDs noted that follow-up activities of the hospital's internal linkage to care coordinator are supported by county DIS.

ED interviewees and other stakeholders highlighted the importance of ED-based HIV screening programs for not only informing patients of their HIV status and linking them to care, but for re-engaging patients in care who are aware of their infection, but have fallen out of care. A physician from one ED said, "All California EDs are seeing people living with HIV. It's a very positive experience, directly helping someone. Our providers now have real access to those systems [of care], and our patients have real access. It's a very different feeling. If you're willing to do this, there are people here who need help. The relationship with HIV and care in general is bolstered. You get more bang for your buck [re-engaging these patients in care], than you do with diagnosing the undiagnosed, which is what people always talk about."

Practices and protocols pertaining to linkage to / re-engagement in care varied across EDs. Some EDs described using existing hospital systems, such as a quality care nursing team that does chart reviews and follows up with patients on a variety of diseases, while others utilized existing public health department structures to provide this service.

Some EDs participating in this assessment, especially those funded by the Gilead FOCUS program, had dedicated Linkage to Care coordinators on the hospital screening team, and couldn't imagine having it any other way. A provider from one ED said, "We are close to linking 100% of our positive patients to care. We could not run without a full-time case manager who follows up with new diagnoses and HIV-positive patients out of care." Staff from another ED reported, "Now we've evolved so we have a 24-hour on-call person who does linkage to care. Not only is there someone who can link them, but there's a place to link them to – our in-house C.A.R.E. Program."

For many California EDs, however, dedicated linkage-to-care staff may not be feasible, especially without program-specific funding to support it. For this reason, looking for alternative, "next best" strategies will also be very important. An alternative strategy to an ED hiring dedicated linkage-to-care staff is utilizing existing public health department structures to provide this service. One provider noted, "A full-time linkage to care coordinator is so important... but if volume is really, really low, it's possible to work with the county. You still need some kind of regional on-call person, though, not just a county DIS from 9-5, Monday through Friday. You need a social worker or someone who's available to talk to someone immediately. The patient is going to get a bond with that person, and they'll have the best luck with getting that person linked to care." Providers at four of the EDs interviewed for this assessment recounted successful relationships with their public health departments to support disclosure and linkage to care. "We've had zero issue with the follow up," said one interviewee. "The linkage to care team [at the health department] picks it up, and the ordering doc doesn't have to worry about it." On the other hand, more than one provider pointed out that utilizing the existing public health structure was not always as easy as it sounded. "The vast majority of [health department DIS staff] have no experience with HIV. They've prioritized syphilis and gonorrhea, maybe TB. We have to get these people into care ASAP, not via the slow trickle-down bureaucracy," one clinician noted.

Providers at two EDs described HIV screening programs that had been stopped as a result of difficulties linking patients to care and following up within the ED structure.

[Other HIV Screening Program Barriers Reported by Interviewees](#)

Interviewees mentioned barriers related to starting an HIV screening program; tasks such as developing a Nursing Standardized Procedure, constructing and implementing a BPA for the EMR, obtaining approval from corporate-based headquarters, and developing billing strategies were called out as challenges that could slow down or stall the start-up of a HIV screening program. One provider explained, "You really do need a champion, specifically within the ED. You need buy-in not just from providers, but from the lab, from IT, from insurance and billing...this takes a champion to negotiate and make happen." In regards to garnering program buy-in, one interviewee noted the importance of external support for HIV screening programs,

“If CDPH really began championing this, it would help. People want external support, and they want to be cutting edge, be making a difference.”

Another HIV screening program barrier reported by interviewees, particularly those with HIV screening programs that rely on provider intervention in order to initiate the HIV test order, was low provider buy-in, which was considered to be related to low testing uptake. One ED had high rates of patient opt-out or ineligibility according to the EMR. During the site visit for this assessment, a triage nurse was asked if she thought the nurses had buy-in for the HIV screening program. Shrugging, she said, “Many of the nurses just click ‘opt out’ because they’re busy and don’t want to be bothered. I don’t think it’s that they’re uncomfortable asking about HIV, they just don’t want to deal with it.” In addition, clinicians in two separate EDs explained that some providers were wary of notifying patients about HIV screening because they didn’t want patients to feel judged or embarrassed. A provider in another ED explained that one nurse was very worried about patients leaving the ED assuming they were HIV-negative, when in fact their results had just not posted yet. She frequently spoke up against the program, and convinced many of her colleagues to resist efforts to improve testing uptake. Ultimately this had a very negative effect on testing numbers overall in this ED. Additionally, there was some indication from interviewees that HIV screening was not a part of standard medical training programs. Many of the hospitals that had successful starts to their HIV screening programs had clinicians who spoke of their extensive efforts to train residents, attendings, and nursing staff beforehand, so they saw the value of the program, saw HIV screening as part of their role, and felt confident in knowing what to do. Strategies utilized by interviewees to minimize the impact of low provider buy-in included utilizing AIDS Education and Training Center training to inform providers about program messaging and automating the test ordering process.

Multiple EDs also reported laboratory-related barriers. One ED reported their lab was at capacity and waiting for higher-capacity equipment. Another ED reported that although they utilized a 4th generation test that allowed for identification of acute infection, their laboratory did not provide differentiated results and the reflex viral load testing took around three days to complete; this resulted in staff providing preliminary positive screening results, many of which turned out to be false positive screens rather than acute infections. Obtaining an extra tube of blood for reflex viral load testing after a patient received a discordant HIV test result was noted as another laboratory-related barrier. Numerous hospital EDs overcame this challenge by drawing an extra tube of blood for reflex viral load testing during the initial blood draw even though most specimens were not needed, and were disposed of, because the HIV test result was not discordant. Another challenge reported by one ED was that a small number of patients had HIV orders according to the EMR, but were never tested for HIV; the reasons why were unclear, but the ED suspected the reasons may have included: (1) the lab did not have enough blood for testing, (2) the tube was not properly labeled, (3) laboratory error, and/or (4) the patient refused the blood draw. Along the same lines, another ED had a series of hemolyzed blood specimens early in the project. Per standard protocol, the laboratory called and said the patient should be redrawn. The Medical Director did not want to delay the length of stay, so objected. He requested that the lab not call the ED with redraw requests related to the HIV program, but instead that they simply not complete the test. According to the interviewee, this

has resulted in patients sometimes thinking they are HIV negative (“no news is good news”) when in fact they were never tested and their HIV status is unknown.

In addition to the barriers above, one interviewee reported that HIV test results always appear as “Negative” in the medical record, but are noted as “Negative*” if the test result is in fact positive; according to the interviewee, the clinician needs to right click on the word to see the real test result. The interviewee noted that sometimes HIV is overlooked when clinicians don’t realize that the asterisk means they should look further for the real diagnosis.

Funding was mentioned as a concern regarding the sustainability of HIV screening programs. Hospitals participating in this pilot project ranged from 100% grant-funded to a model where the hospital absorbed almost the entire cost of infrastructure and laboratory services, with grant funding paying only for one or two dedicated staff members. One provider, from a program that was fully grant-funded, shared that the hospital had not yet figured out how to appropriately bill for HIV screening. “As we move into the second year of this grant,” he said, “that has been our major internal conversation. We need to make it sustainable by working with the hospital to try to figure out how to pay for the true costs of screening our patients.”

Quantitative Assessment

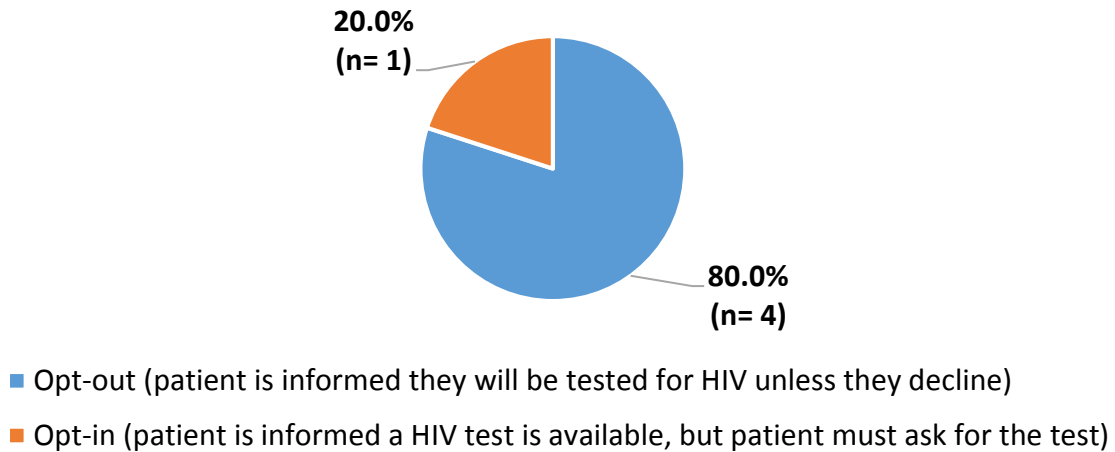
Of the 15 medical centers / hospitals the survey was distributed to, a total of six provided aggregate HIV screening data for CY 2016 and/or 2017; three provided both CY 2016 and 2017 data and the remaining three provided CY 2017 data only (See Table 4). Response completion varied among medical centers / hospitals reporting CY 2016 and/or 2017 data.

Table 4. Number of Medical Centers / Hospitals: Survey Distribution and those that Provided Quantitative HIV Screening Data by Type and Calendar Year(s)

| Area Type | Number of Medical Centers / Hospitals Survey Distributed To | Number of Medical Centers / Hospitals that Provided CY 2016 and 2017 Aggregate HIV Screening Data | Number of Medical Centers / Hospitals that Provided CY 2016 Aggregate HIV Screening Data Only | Number of Medical Centers / Hospitals that Provided CY 2017 Aggregate HIV Screening Data Only |
|-------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Urban | 8 | 3 | 0 | 2 |
| Small-Urban | 2 | 0 | 0 | 0 |
| Suburban | 4 | 0 | 0 | 0 |
| Rural | 1 | 0 | 0 | 1 |

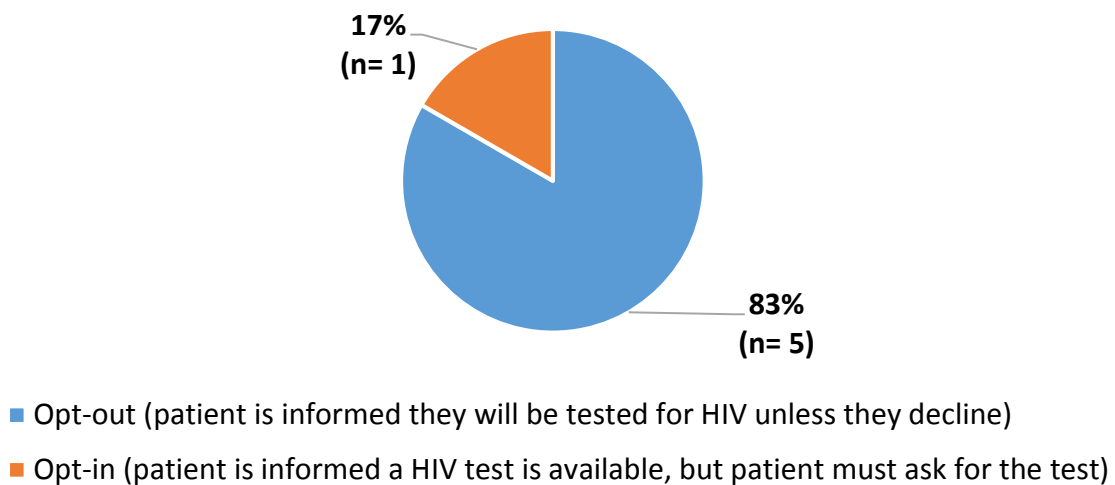
Of the medical centers / hospitals who responded to the survey and specified their protocol for the HIV testing offer (CY 2016: N=5; 2017: N=6), the majority reported utilizing an opt-out protocol, where the patient was informed they would be tested unless they declined (See Figures 2-3).

Figure 2. Calendar Year 2016:
Medical Center / Hospital (N= 5)
ED Routine HIV Testing Practices and Protocols by Protocol Type¹



¹ As reported in survey question, "What type of routine offering of HIV testing was done by your ED in 2016?"

Figure 3. Calendar Year 2017:
Medical Center / Hospital (N= 6)
ED Routine HIV Testing Practices and Protocols by Protocol Type¹



¹ As reported in survey question, "What type of routine offering of HIV testing was done by your ED in 2017?"

Additional survey findings are presented below by AB 2439 data reporting topic / requirement.

(1) The frequency of HIV test offers

The frequency of HIV test offers was measured by dividing the total ED patients offered an HIV test by the total ED patients eligible for HIV screening. This information was provided by two EDs in CY 2016 and six EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the frequency of HIV test offers was 28.5% (CY 2016: 19.0%; CY 2017: 33.2%) (See Table 5). In CY 2016, the frequency of HIV test offers ranged from 17.1% to 56.9%. In CY 2017, the frequency of HIV test offers ranged from 8.2% to 100%.

Table 5. Frequency of Test Offers by Calendar Year (CY)

| CY | Total ED Patients Eligible for HIV Screening (among EDs that also reported a response for test offered) (a) | Total ED Patients Offered a HIV Test (b) | Frequency of HIV Test Offers (b / a) |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|
| Total (CY 2016 + 2017) | 439,084 | 124,926 | 28.5% |
| CY 2016¹ | 146,284 (Range: 6,712 – 139,572) | 27,732 (Range: 3,817 – 23,915) | 19.0% (Range: 17.1% – 56.9%) |
| CY 2017² | 292,800 (Range: 7,038 – 144,135) | 97,194 (Range: 4,174 – 47,833) | 33.2% (Range: 8.2% – 100%) |

¹ Includes data from two EDs

² Includes data from six EDs

(2) The frequency of consent or non-consent to a HIV test and any reasons given by the patient for the consent or the non-consent

The frequency of consent to an HIV test was measured by dividing the total ED patients offered a HIV test who accepted the offer by the total ED patients offered an HIV test. This information was provided by two EDs in CY 2016 and five EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the frequency of consent to an HIV test offer was 79.3% (CY 2016: 90.8%; CY 2017: 72.8%) (See Table 6). In CY 2016, the frequency of consent to a HIV test offer ranged from 33.5% to 100%. In CY 2017, the frequency of consent to a HIV test offer ranged from 17.4% to 100%.

Table 6. Frequency of Consent to an HIV Test by Calendar Year (CY)

| CY | Total ED Patients Offered a HIV test (among EDs that also reported a response for offer outcome) (a) | Total ED Patients Offered a HIV test Who Accepted the Offer (b) | Frequency of Consent to a HIV test (b / a) |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| Total (CY 2016 + 2017) | 77,093 | 61,108 | 79.3% |
| CY 2016¹ | 27,732 (Range: 3,817 – 23,915) | 25,194 (Range: 1,279 – 23,915) | 90.8% (Range: 33.5% – 100%) |
| CY 2017² | 49,361 (Range: 4,174 – 18,767) | 35,914 (Range: 878 – 11,758) | 72.8% (Range: 17.4% – 100%) |

¹ Includes data from two EDs

² Includes data from five EDs

The frequency of non-consent to a HIV test was measured by dividing the total ED patients offered a HIV test who declined the offer by the total ED patients offered a HIV test. This information was available for two EDs in CY 2016 and five EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the frequency of non-consent to an HIV test offer was 17.5% (CY 2016: 9.2%; CY 2017: 22.2%) (See Table 7). In CY 2016, the frequency of non-consent to a HIV test offer ranged from 0.0% to 66.5%. In CY 2017, the frequency of non-consent to a HIV test offer ranged from 0.0% to 82.6%.

Table 7. Frequency of Non-consent to an HIV Test by Calendar Year (CY)

| CY | Total ED Patients Offered a HIV test (among EDs that also reported a response for offer outcome) (a) | Total ED Patients Offered a HIV test Who Declined the Offer (b) | Frequency of Non-consent to a HIV test (b / a) |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------|
| Total (CY 2016 + 2017) | 77,093 | 13,500 | 17.5% |
| CY 2016¹ | 27,732 (Range: 3,817 – 23,915) | 2,538 (Range: 0 – 2,538) | 9.2% (Range: 0.0% – 66.5%) |
| CY 2017² | 49,361 (Range: 4,174 – 18,767) | 10,962 (Range: 0 – 6,802) | 22.2% (Range: 0.0% – 82.6%) |

¹ Includes data from two EDs

² Includes data from five EDs

The survey included a question on primary reasons ED patients accepted HIV testing and a question on primary reasons ED patients declined HIV testing, however EDs either did not respond to these questions or reported that the information was not collected. Although quantitative data were not available, one ED shared that a reason patients give consent for a HIV test is because they want to know their HIV status.

(3) The time taken to offer a HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990

The time taken to offer a HIV test and secure consent from a patient and the time taken to provide information and counseling pursuant to subdivision (h) of Section 120990 was measured using the following survey question: “Average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling?” This information was provided by two EDs in CY 2016 and four EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling was 28 minutes (CY 2016: 31 minutes; CY 2017: 27 minutes) (See Table 8). In CY 2016, the average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling ranged from two minutes to 60 minutes. In CY 2017, the average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling ranged from 0 minutes to 60 minutes.

Table 8. Time Taken to Offer a HIV Test, Secure Consent from a Patient and Provide Information and Counseling Pursuant to Subdivision (h) of Section 120990 by Calendar Year (CY)

| CY | Average Number of Minutes Spent Per ED Patient Offering the HIV test, Securing Consent, and Providing Information and Counseling |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Total (CY 2016 + 2017) | 28 |
| CY 2016 ¹ | 31 <i>(Range: 2 – 60)</i> |
| CY 2017 ² | 27 <i>(Range: 0 – 60)</i> |

¹ Includes data from two EDs

² Includes data from four EDs

(4) The aggregate HIV positivity rate (i.e. yield)

The aggregate HIV positivity yield was measured by dividing the total ED patients tested for HIV who tested HIV-positive (preliminary or confirmed) by the total ED patients tested for HIV. This information was provided by three EDs in CY 2016 and six EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the HIV positivity yield was 1.7% (CY 2016: 1.7%; CY 2017: 1.6%) (See Table 9). In CY 2016, the HIV positivity yield ranged from 0.3% to 2.2%. In CY 2017, the HIV positivity yield ranged from 0.4% to 3.7%.

Table 9. HIV Positivity Yield by Calendar Year (CY)

| CY | Total ED Patients Tested for HIV (among EDs that also reported total ED patients tested for HIV who tested HIV-positive) (a) | Total ED Patients Tested for HIV Who Tested HIV-Positive (Preliminary or Confirmed) (b) | HIV Positivity Yield (b / a) |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------|
| Total (CY 2016 + 2017) | 70,579 | 1,190 | 1.7% |
| CY 2016¹ | 32,281 (Range: 1,286 – 23,915) | 561 (Range: 6 – 536) | 1.7% (Range: 0.3% – 2.2%) |
| CY 2017² | 38,298 (Range: 827 – 11,758) | 629 (Range: 3 – 431) | 1.6% (Range: 0.4% – 3.7%) |

¹ Includes data from three EDs

² Includes data from six EDs

(5) The frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 and the reasons that patients gave for refusing to participate

The frequency with which patients agree to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 was measured by dividing the total ED patients offered a session to receive information and counseling and who accepted the offer by the total ED patients offered a session to receive information and counseling. This information was provided by one ED in CY 2016 and three EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the frequency with which patients agreed to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 was 99.7% (CY 2016: 80.8%; CY 2017: 99.9%) (See Table 10). In CY 2016, only one ED reported the frequency with which patients agreed to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990, so a range of reported values is not available. In CY 2017, the frequency with which patients agreed to participate in a session to receive information and counseling pursuant to subdivision (h) of Section 120990 ranged from 96.3% to 100%.

Table 10. Frequency with which Patients Agree to Participate in a Session to Receive Information and Counseling by Calendar Year (CY)

| CY | Total ED Patients Offered a Session to Receive Information and Counseling (among EDs that also reported total ED patients offered a session to receive information and counseling and who accepted the offer) (a) | Total ED Patients Offered a Session to Receive Information and Counseling and Who Accepted the Offer (b) | Frequency with which ED Patients Agreed to Participate in a Session to Receive Information and Counseling (b / a) |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Total (CY 2016 + 2017) | 9,925 | 9,895 | 99.7% |
| CY 2016¹ | 125 (Range: NA) | 101 (Range: NA) | 80.8% (Range: NA) |
| CY 2017² | 9,800 (Range: 15 – 9,624) | 9,794 (Range: 15 – 9,624) | 99.9% (Range: 96.3% – 100%) |

¹ Includes data from one ED

² Includes data from three EDs

The survey included a question allowing EDs to specify reasons ED patients gave for declining HIV information and counseling sessions. Reasons included: (1) do not want to talk about it, (2) want to seek second opinion, (3) prefer HIV follow-up elsewhere, and (4) previously diagnosed with HIV. Survey respondents also specified the following reasons, but the responses may not represent a reason given by the *ED patient* for declining HIV information and counseling sessions: (1) in denial, (2) mental health issue, (3) patients who left against medical advice, and (4) 5150 patients who were unable to receive information.

(6) The frequency of patients leaving the emergency department without receiving their test results

The frequency of patients leaving the emergency department without receiving their test results was measured by dividing the total ED patients tested for HIV and who left the ED without receiving a HIV test result by the total ED patients tested for HIV. This information was provided by two EDs in CY 2016 and four EDs in CY 2017; findings exclude EDs for which this information was not provided.

For CY 2016 – 2017, the frequency of patients leaving the emergency department without receiving their test results was 0.1% (CY 2016: 0.1%; CY 2017: 0.0%) (See Table 11). In CY 2016, the frequency of patients leaving the emergency department without receiving their test

results ranged from 0.1% to 0.1%. In CY 2017, the frequency of patients leaving the emergency department without receiving their test results ranged from 0.0% to 0.1%.

Table 11. Frequency of Patients Leaving the ED without Receiving their HIV Test Results by Calendar Year (CY)

| CY | Total ED Patients Tested for HIV (among EDs that also reported total ED patients tested for HIV and who left without receiving a HIV test result) (a) | Total ED Patients Tested for HIV and Who Left Without Receiving a HIV Test Result (b) | Frequency of ED Patients Leaving the ED Without Receiving a HIV Test Result (b / a) |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Total (CY 2016 + 2017) | 63,671 | 33 | 0.1% |
| CY 2016¹ | 30,995 (Range: 7,080 – 23,915) | 17 (Range: 5 – 12) | 0.1% (Range: 0.1% – 0.1%) |
| CY 2017² | 32,676 (Range: 4,174 – 11,758) | 16 (Range: 0 – 11) | 0.0% (Range: 0.0% – 0.1%) |

¹ Includes data from two EDs

² Includes data from four EDs

Data Limitations

Findings and conclusions cannot be generalized to all California EDs; EDs throughout California were selected for inclusion in this project based on a convenience sample and participation was optional. Only self-reported aggregate data were provided.

Findings and conclusions are based on a small sample size. The number of EDs for which findings and conclusions are based on varies by reporting topic due to availability of data.

IV. Conclusions

Because HIV-infected patients visit the ED at more than twice the rate of the general population (Mohareb, Rothman, & Hsieh, 2013) and they may serve as the primary source of care for marginalized individuals most at risk for HIV infection, the routine offering of a HIV test in the ED of a hospital can be an effective means to diagnose, link, and re-engage patients in care. Positivity yield reported by the EDs included in this pilot project (1.7%) were substantially higher than the average yield recorded for federally-funded focused testing activities. Practices and protocols, particularly those related to obtaining patient consent and EMR integration, may impact HIV screening program effectiveness. Testing uptake may depend on buy-in from a wide variety of stakeholders, including medical providers, hospital system administrators, and local

and state health departments. Program sustainability may hinge upon ED's ability to identify how to cover the actual costs of screening patients for HIV.

Below are conclusions based on information provided by stakeholders interviewed as part of this project:

1. Successfully starting an HIV screening program in an ED may require buy-in from system administrators, laboratory partners, IT, insurance and billing, and providers.
 - a. External support for HIV screening programs may help facilitate internal buy-in for HIV screening programs.
 - b. External support will likely need to include local or state health departments.
2. There was some variation in how EDs implemented HIV testing requirements outlined in the California HSC § 120990 by AB 2640.
 - a. Some EDs used technology and/or printed materials to notify patients of HIV testing protocols, while others relied on providers to notify patients verbally.
 - b. Messages utilized to inform patients of the HIV test varied from ED-to-ED.
3. The method of obtaining patient consent and EMR integration matters.
 - a. Simply offering a HIV test will not increase testing uptake in EDs.
 - b. Relying on providers in the ED to obtain consent for a HIV test instead of systematizing the consent process may be a barrier to HIV screening program implementation.
 - c. For HIV testing protocols where provider intervention is required, prompting at an inopportune time can lead to providers dismissing the prompt instead of engaging with it.
4. Lack of provider buy-in and/or frustration with EMR prompts/scripts may negatively affect a HIV testing protocol where provider intervention is required.
 - a. Informing providers about program messaging and automating the test ordering process may help minimize the impact of low provider buy-in.
5. Not all patients receive their HIV test result prior to discharge due to test processing barriers, such as inability to follow up on discordant results, inadequate blood sample, or processing lag which can result in inaccurate assumptions about HIV test results.
6. ED-based HIV screening programs can help facilitate linkage and re-engagement in care.
7. Practices and protocols for results disclosure and linkage to care varied from ED-to-ED.
 - a. Some EDs utilized in-house staffing resources to disclose positive HIV test results to patients.
 - b. Other EDs relied on partnerships with their local county health department linkage to care team.
 - c. Not all EDs had 24/7 access to linkage to care staff.
8. Lack of linkage to care resources within the ED structure can be a barrier to implementation of routine screening programs in EDs.

Below are conclusions based on aggregate ED HIV testing data provided by medical centers / hospitals who responded to the electronic survey:

1. Frequency of HIV test offers varied across EDs. Overall, the majority of ED patients eligible for HIV screening frequently did not receive a HIV test offer.
2. Frequency of consent and non-consent to receive an HIV test varied across EDs. Overall, the majority of patients offered a HIV test consented to receive the test. Overall, less than one quarter of patients offered a HIV test did not consent to receive the test. Quantitative data on reasons given by the patient for the consent or the non-consent were not available.
3. Time spent per ED patient offering an HIV test, securing consent, and providing information and counseling varied across EDs. Overall, EDs spent less than 30 minutes per patient offering an HIV test, securing consent, and providing information and counseling.
4. The HIV positivity yield varied across EDs. Overall, the HIV positivity yield was 1.7%.
5. The frequency with which patients agreed to participate in a session to receive information and counseling varied across EDs. Overall, the majority of ED patients offered a session to receive information and counseling agreed to participate in the session. EDs reported that ED patients gave the following reasons for declining HIV information and counseling sessions: (1) do not want to talk about it, (2) want to seek second opinion, (3) prefer HIV follow-up elsewhere, and (4) previously diagnosed with HIV.
6. Overall, the frequency of patients leaving the emergency department without receiving their test results was very low (0.1%) and did not vary much across EDs.

V. Recommendations

1. Additional evidence is needed on the effectiveness of the various HIV testing protocols, methods, and messages utilized by EDs implementing routine HIV screening programs.
2. Consider integrating routine opt-out HIV screening into ED standard of care where appropriate as specified by the CDC revised national HIV testing guidelines.
3. Consider streamlining the HIV testing consent process.
 - a. Removing specific HIV testing consent requirements and including HIV screening within general medical consent may make routine HIV screening programs more feasible to implement.
4. ED HIV screening implementation plans should take into consideration:
 - a. Collaborating with local health departments, as they are responsible for reporting and tracking outcomes for HIV-positive cases such as test result disclosure, linkage to and re-engagement in care.
 - b. How routine HIV screening will best fit into ED work-flow.
 - c. How to best obtain buy-in from system administration, partner laboratories, IT, insurance and billing, and providers.
 - d. Including program performance metrics and a continuous feedback loop which minimally includes the following: eligibility for HIV screening, HIV test offers, testing

- uptake (including effectiveness of various EMR prompting methods and messages), positivity yield, linkage to / re-engagement in care, and barriers to implementation.
- e. Including a staff education and training program, including a commitment to serve underserved population at risk for acquiring HIV.
 - f. Including evidence-based HIV screening practices and protocols regarding: program messaging, the consent process, HIV test offer, how to handle discordant results, how to handle blood draw requests from the laboratory, results disclosure (including information on disclosing HIV test results to patients whose test result is not available prior to ED discharge), linkage to / re-engagement in care for patients who are either newly diagnosed with HIV or who were previously diagnosed with HIV and are out-of-care, and rapid anti-retroviral treatment (ART) initiation for patients who are either newly diagnosed with HIV or who were previously diagnosed with HIV and who are out-of-care.
5. Where feasible, automate routine HIV testing practices and protocols using structural strategies that minimize the need for provider intervention (e.g., automatic eligibility determination and ordering of the HIV test for patients deemed eligible per electronic records, requiring manual cancellation of the order by the provider for any patients who opts-out).

VI. References

- Branson, B. M., Handsfield, H. H., Lampe, M. A., Janssen, R. S., Taylor, A. W., Lyss, S. B., & Clark, J. E. (2006, September 22). Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Recommendations and reports*, 55(RR-14), pp. 1-17. Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>
- California Department of Public Health. (2016). *California Needs Assessment for HIV, 2016*. Sacramento: California Department of Public Health, Center for Infectious Diseases, Office of AIDS. Retrieved from <https://www.cdph.ca.gov/Programs/CID/DOA/CDPH%20Document%20Library/California%20Needs%20Assessment%20-%202016%20-%20FINAL%2030Sept.pdf>
- California Department of Public Health. (2019). *California HIV Surveillance Report — 2017*. Sacramento: California Department of Public Health, Center for Infectious Diseases, Office of AIDS. Retrieved from <https://www.cdph.ca.gov/Programs/CID/DOA/CDPH%20Document%20Library/California%20HIV%20Surveillance%20Report%20-%202017.pdf>
- Doupe MB, P. W., Doupe, M. B., Palatnick, W., Day, S., Chateau, D., Soodeen, R.-A., . . . Derksen, S. (2012). Frequent users of emergency departments: developing standard definitions and defining prominent risk factors. *Annals of Emergency Medicine*, 60(1), 24-32. doi:<http://dx.doi.org/10.1016/j.annemergmed.2011.11.036>
- Hunt, K. A., Weber, E. J., Showstack, J. A., Colby, D. C., & Callahan, M. L. (2006). Characteristics of frequent users of emergency departments. *Annals of Emergency Medicine*, 48(1), 1-8. doi:<http://dx.doi.org/10.1016/j.annemergmed.2005.12.030>
- Lin, M. P., Blanchfield, B. B., Kakoza, R. M., Vaidya, V., Price, C., Goldner, J. S., . . . Schuur, J. D. (2017). ED-based care coordination reduces costs for frequent ED users. *The American Journal of Managed Care*, 23(12), 762-766.
- Mohareb, A. M., Rothman, R. E., & Hsieh, Y. H. (2013). Emergency department (ED) utilization by HIV-infected ED patients in the United States in 2009 and 2010 - a national estimation. *HIV Medicine*, 14(10), 605-613. doi:<http://dx.doi.org/10.1111/hiv.12052>
- National Center for Health Statistics. (2017, January 19). *Emergency Department Visits*. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/nchs/fastats/emergency-department.htm>
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. (2017). *California – State Health Profile*. Atlanta: Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/nchhstp/stateprofiles/pdf/california_profile.pdf
- Skarbinski, J., Rosenberg, E., Paz-Bailey, G., Hall, H. I., Rose, C. E., Viall, A. H., . . . Mermin, J. H. (2015). Human immunodeficiency virus transmission at each step of the care continuum

in the United States. *JAMA Internal Medicine*, 175(4), 588-96.
doi:doi:10.1001/jamainternmed.2014.8180

White, D. A., Sadoun, T., Tran, T., & Alter, H. (2011). Increased Acceptance Rates of HIV Screening Using Opt-Out Consent Methods in an Urban Emergency Department. *Journal of Acquired Immune Deficiency Syndromes*, 58(3), 277-282.
doi:10.1097/QAI.0b013e318231916d

White, D. A., Scribner, A. N., Martin, M. E., & Tsai, S. (2012). A Comparison of Patient Satisfaction with Emergency Department Opt-In and Opt-Out Rapid HIV Screening. *AIDS Research and Treatment*, 2012: 904916. doi:10.1155/2012/904916

White, D. A., Scribner, A. N., Vahidnia, F., Dideum, P. J., Gordon, D. M., Frazee, B. W., . . . Heffelfinger, J. D. (2011). HIV screening in an urban emergency department: comparison of screening using an opt-in versus an opt-out approach. *Annals of Emergency Medicine*, 58(1 Suppl 1), S89-95. doi:10.1016/j.annemergmed.2011.03.032

VII. Appendices

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| Appendix A: Interview Guide |
| Appendix B: Electronic Survey |

Appendix A: Interview Guide

Interview with NAME(S), PLACE

10/XX/17

Please tell me a little bit about your experience with routine HIV testing in this emergency department. What has your program looked like?

Answer

What are the things that have worked really well with your routine HIV testing efforts?

Answer

What barriers did you encounter in implementing your program? How did you overcome them? Are there any that still challenge you today?

Answer

What data/information do you have that you think makes the case (or not) for requiring routine testing, if any? Are you willing/able to share?

Answer

What do you think about the idea that the State of California could require EDs to integrate routine HIV testing into their workflow? What about adding it to every chem panel? Doing bedside testing (i.e. with the POC INSTI) for anyone not having blood drawn?

Answer

Are you concerned at all about the potential for HIV testing costs to be borne by patients, if this were implemented in a widespread way?

Answer

If routine HIV testing were expected to be integrated into California EDs, do you think it would actually happen? How do you think it would best be enforced?

Answer

Who do you think I should talk to for this project – both models of success, or people who have struggled/resisted implementation?

Answer

Do you have any other thoughts to share about routine HIV testing in California EDs?

Answer

In an effort to determine the effectiveness of implementing the routine offering of HIV tests in hospital emergency departments (EDs), the California State Legislature has required the development of a pilot project that looks at numerous aspects of routine testing in EDs of hospitals (AB2439).

Your hospital has been selected to participate. Participating in this pilot program includes entering your ED routine HIV test offering data for CY 2016 and CY 2017 into this survey and providing some additional information regarding your routine testing program.

This data will help the California Department of Public Health identify barriers and facilitators to implementing routine HIV test offering in ED settings and allow the State Legislature to make recommendations that can help EDs streamline testing procedures.

Your participation is voluntary and greatly appreciated. If your agency does not wish to participate in this pilot study, please indicate this in the survey by answering questions one and two. Thank you for your time.

Contact Kolbi Parrish at kolbi.parrish@cdph.ca.gov if you have any questions or concerns.

* 1. Select your agency from the drop-down menu

* 2. Does your agency agree to participate in this pilot study?

Yes

No

General ED Routine Test Offering Information

3. Does your ED have practices and protocols for implementing the offer of an HIV test?

Yes

No

4. If yes, does your ED measure the effectiveness of the above practices and protocols?

Yes

No

Calendar Year 2016 Emergency Department (ED) Reporting

5. What type of routine offering of HIV testing was done by your ED in 2016?

- Opt-out (patient informed they will be tested unless they decline)
- Opt-in (patient informed HIV test is available but required them to ask for test)
- Active choice (patient asked to choose whether they would like to be tested or not)
- Other (please specify)

6. Please enter the requested numeric data for CY 2016:

a. Total number of ED patients?

b. Total number of ED patients eligible for HIV screening?

c. Total number of ED patients who were offered an HIV test and declined?

d. Total number of ED patients who were offered an HIV test and accepted?

e. Total number of ED patients who were offered an HIV test and it is unknown if they declined or accepted?

f. Total number of ED patients who were offered an HIV test (Q6.c + Q6.d + Q6.e).

7. What were the primary reasons ED patients declined HIV testing (Q6.c). *Select all that apply*

- Patients did not believe they were at risk for HIV.
- Patients had a recent HIV-negative test.
- Patients had a previous HIV-positive test.
- Patients worried about stigma connected to an HIV positive test result/did not want to know their status.
- Patients wanted to test elsewhere.
- Information not collected.
- Other reasons (please specify)

8. What were the primary reasons ED patients accepted HIV testing (Q6.d). *Select all that apply*

- Patients believed they were at risk for becoming HIV-positive.
- Patients had not had a recent HIV test.
- Patients wanted to know their HIV status.
- Information not collected.
- Other reasons (please specify)

9. What were the primary reasons it is unknown whether ED patients accepted or declined HIV testing (Q6.e). *List all that apply*

1.
 2.
 3.
 4.
 5.
- Information not collected
(mark with 'x')
-

10. Please enter the requested numeric data for CY 2016:

g. Total number of ED patients tested for HIV?

h. Total number of ED patients tested for HIV and left without receiving their HIV test results?

i. Total number of ED patients tested for HIV and tested *preliminary* HIV-positive?

j. Total number of ED patients tested for HIV and tested *confirmed* HIV-positive?

k. Total number of ED patients tested for HIV and tested HIV-positive (preliminary or confirmed) (Q10.i + Q10.j)?

11. If possible, please stratify the confirmed HIV-positive ED patients.

Newly confirmed HIV-positive

Acute HIV infection

12. What type of informed consent did patients give for HIV testing at your ED in 2016?

- Verbal consent given by patient.
- HIV testing language incorporated into the general consent for treatment.
- Separate written consent specific for HIV testing.
- Other consent type, please specify.

13. Please enter the requested numeric data for CY 2016:

l. Total ED patients tested for HIV and offered a session to receive information and counseling and declined offer?

m. Total ED patients tested for HIV and offered a session to receive information and counseling and accepted offer?

n. Total ED patients tested for HIV and offered a session to receive information and counseling (Q13.l + Q13.m)?

o. Average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling?

14. Please list the primary reasons emergency department patients declined HIV information and counseling session (Q13.I).

1.

2.

3.

4.

5.

Calendar Year 2017 Emergency Department (ED) Reporting

15. What type of routine offering of HIV testing was done by your ED in 2017?

- Opt-out (patient informed they will be tested unless they decline)
- Opt-in (patient informed HIV test is available but required them to ask for test)
- Active choice (patient asked to choose whether they would like to be tested or not)
- Other (please specify)

16. Please enter the requested numeric data for CY 2017:

p. Total number of ED patients?

q. Total number of ED patients eligible for HIV screening?

r. Total number of ED patients who were offered an HIV test and declined?

s. Total number of ED patients who were offered an HIV test and accepted?

t. Total number of ED patients who were offered an HIV test and it is unknown if they declined or accepted?

u. Total number of ED patients who were offered an HIV test (Q16.r + Q16.s + Q16.t).

17. What were the primary reasons ED patients declined HIV testing (Q16.r). *Select all that apply*

- Patients did not believe they were at risk for HIV.
- Patients had a recent HIV-negative test.
- Patients had a previous HIV-positive test.
- Patients worried about stigma connected to an HIV positive test result/did not want to know their status.
- Patients wanted to test elsewhere.
- Information not collected.
- Other reasons (please specify)

18. What were the primary reasons ED patients accepted HIV testing (Q16.s). *Select all that apply*

- Patients believed they were at risk for becoming HIV-positive.
- Patients had not had a recent HIV test.
- Patients wanted to know their HIV status.
- Information not collected.
- Other reasons (please specify)

19. What were the primary reasons it is unknown whether ED patients accepted or declined HIV testing (Q16.t). *List all that apply*

1.
 2.
 3.
 4.
 5.
- Information not collected
(mark with 'x')
-

20. Please enter the requested numeric data for CY 2017:

v. Total number of ED patients tested for HIV?

w. Total number of ED patients tested for HIV and left without receiving their HIV test results?

x. Total number of ED patients tested for HIV and tested *preliminary* HIV-positive?

y. Total number of ED patients tested for HIV and tested *confirmed* HIV-positive?

z. Total number of ED patients tested for HIV and tested HIV-positive (preliminary or confirmed) (Q20.x + 20.y)?

21. If possible, please stratify the confirmed HIV-positive ED patients.

Newly confirmed HIV-positive

Acute HIV infection

22. What type of informed consent did patients give for HIV testing at your ED in 2017?

- Verbal consent given by patient.
- HIV testing language incorporated into the general consent for treatment.
- Separate written consent specific for HIV testing.
- Other consent type, please specify.

23. Please enter the requested numeric data for CY 2017:

aa. Total ED patients tested for HIV and offered a session to receive information and counseling and declined offer?

bb. Total ED patients tested for HIV and offered a session to receive information and counseling and accepted offer?

cc. Total ED patients tested for HIV and offered a session to receive information and counseling (Q23.aa + Q23.bb)?

dd. Average number of minutes spent per ED patient offering the HIV test (inclusive of time taken to secure patient consent) and providing information and counseling?

24. Please list the primary reasons emergency department patients declined HIV information and counseling session (Q23.aa).

1.

2.

3.

4.

5.