

1272. A Routine, HIV and HCV Testing and Treatment Program in a Large, Multi-Campus Emergency Department Finds High Prevalence of Acute HIV and Chronic Hepatitis C

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Background. One in seven people living with HIV in the United States are unaware of their serostatus. Approximately 11,280 annual HIV infections (30.2%) are caused by this subset of individuals (CDC, 2017). In addition, acute HCV infections have nearly tripled since 2011, with many states seeing a dramatic increase in incidence among younger people outside the birth cohort (CDC, 2017). Because many individuals still use emergency departments (EDs) for their healthcare needs, these institutions play an increasingly important role in screening patients for HIV and HCV and linking them to medical services. Routine, opt-out testing initiatives are particularly effective at identifying new cases of HIV and HCV that could have otherwise been missed by a risk-based approach to screening.

Methods. In early May 2017, physicians and advanced practice nurses from Sutter Health's Alta Bates Summit Medical Center (ABSMEC) and a nearby outpatient HIV clinic implemented a routine HIV and HCV screening program at the hospital's large, two-campus ED system in Oakland, CA. ED medical directors created a Nursing Standardized Procedure (NSP) to allow registered nurses (RNs) to independently order both blood tests using an automated, best practice authority (BPA) screen in the electronic health record (EHR) of any patient who met CDC-defined age criteria for testing.

Results. Of the 6,315 people screened for HIV between May 1, 2017 and March 31, 2018, 43 (0.7%) patients tested positive. Twelve (57%) of the 21 patients found to have a new HIV diagnosis also had symptomatic, acute HIV infection (AHI). All 12 patients with AHI initiated anti-retroviral therapy (ART) within five to 96 hours of their preliminary positive test result. Of the 5,820 patients screened for HCV, 424 (7.3%) were anti-HCV positive, while 185 (3.2%) patients had chronic infection. Thirty-nine percent of chronic HCV cases were among younger patients born before 1965. All patients with HIV or chronic HCV were referred to medical care at East Bay Advanced Care (EBAC).

Conclusion. An automated, routine HIV-HCV testing program integrated into standard nursing workflow at a community ED resulted in the timely screening, diagnosis, and treatment of many patients with acute HIV, and identified a high prevalence of chronic HCV infections among younger patients.

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1273. Routine Opt-out HIV Screening and Detection of HIV Infection Among Emergency Department Patients

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Background. The Southeastern United States bears a disproportionate burden of HIV infection, accounting for nearly half of all new cases. The Centers for Disease Control and Prevention released routine opt-out testing recommendations in 2006. Our emergency department collaborated with our infectious diseases clinic (ECU-ID) to implement suggested guidelines among adults since March 2017.

Methods. Our primary aim was to implement routine, opt-out HIV testing in the Vidant Medical Center Emergency Department (ED) for patients between 18 and 65 years of age who have blood work completed, and have not had a test documented in the electronic medical record (EMR) in the last year. A secondary aim was to successfully link HIV-positive patients to care at ECU-ID or preferred clinic. Methods defining programmatic success included developing nurse directed opt-out ordering protocol, integrating testing into normal ED workflow, utilizing the existing EMR to prompt testing, and hiring a linkage coordinator to initiate post-test counseling and linkage-to-care.

Results. Since March 2, 2017, a total of 7,109 HIV tests were performed; an average of 592 monthly tests conducted compared with a previous average of 10 stat tests. Testing increased 5,820% compared with 2015. Of the 21 HIV-positive patients found, 16 were newly diagnosed. Among those newly diagnosed, 14 (87.5%) were linked to care; and among the five known positives, two (40%) were linked to care. Reasons why patients could not be linked included incarceration, refusal to link to care, and re-location.

Conclusion. Joined with the implementation of a routinized ED HIV testing program, a seamless process was developed to link persons found to be positive in the ED to HIV care services; therefore, establishing a systems-level prevention model. Future plans include expanding testing to adolescents and utilizing similar methods to integrate Hepatitis C testing.

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1274. Universal HIV and HCV Screening in San Diego Emergency Departments: Implications for Other Settings With a High Density of Free of Charge HIV Screening Programs

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Background. While HIV and HCV testing targeted to high-risk groups results in substantially higher proportions of HIV diagnoses, universal HIV and HCV screening in emergency department (ED) settings is expected to reach populations who do not perceive themselves to be at risk or are otherwise less likely to participate in HIV and HCV testing. As a consequence the CDC recommends routine HIV screening for persons 13–64 years of age, and routine HCV screening for the birth cohort (born between 1945–1965). The objective of this analysis was to evaluate the yield of universal opt-out HIV and HCV screening in the two EDs at the University of California San Diego (UCSD).

Methods. In July 2017, electronic medical record (EMR) based universal opt-out HIV screening (Architect HIV antibody [Ab]/HIV p24 antigen detection) for persons aged 13–64 years (excluding persons known HIV+ or reporting an HIV test within the last 12 months) was implemented in our EDs. The EMR algorithm also identified HIV+ individuals who had been out of care for >12 months. In March 2018, EMR based universal HCV screening for birth cohort was added in both EDs.

Results. Over a period of 9 months 7,303 HIV tests were conducted, resulting in 24 (0.3%) new HIV diagnoses, of which 21 were successfully linked to care. In five individuals without HIV infection Architect gave a false-positive result (specificity 99.93%). In addition, the EMR algorithm identified 38 out of care HIV+ individuals of which 21 were successfully relinked to care. During the 1-month HCV birth cohort screening 963 HCV Ab tests were conducted, of which 106 (11%) resulted positive. At the time being 78 of those seropositive individuals had HCV RNA testing, of which 36 (53%) resulted positive (3.7% of all participants).

Conclusion. In San Diego, a setting with a high density of free-of charge HIV screening programs, 1/300 HIV tests in the ED yielded a new HIV diagnosis and in total 21 newly diagnosed individuals were linked to care. Identification of HIV+ out of care individuals yielded in an equivalent number of individuals relinked to care. The rate of newly diagnosed HCV infections exceeded the rate of newly diagnosed HIV infections by >10-fold outlining the importance of screening for HCV in the ED.

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1275. Will an App-Optimized HIV Self-testing Strategy Work for South Africans? Results From a Large Cohort Study

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Background. HIV self-testing (HIVST) offers a potential for expanded test access; challenges remain in operationalizing rapid personalized linkages and referrals to care. We investigated if an app-optimized personalized HIVST strategy improved referrals, detected new infections and expedited linkages to care and treatment.

Methods. In an ongoing cohort study ($n = 2,000$) based in South Africa, from November 2016 to January 2018, to participants presenting to self-test at community township based clinics, we offered a choice of the following strategies: (a) unsupervised HIVST; (b) supervised HIVST. We also observed participants opting for conventional HIV testing (ConvHT) in geographically separated clinics. We observed outcomes (i.e., linkage initiation, referrals, disease detection) and compared it between the two (HIVST vs. ConvHT) for the same duration.

Results. Of 2,000 participants, 1,000 participants were on HIVST; 599 (59.9%) chose unsupervised HIVST, 401 (40.1%) on supervised HIVST; compared with 1,000 participants on ConvHT. Participants in HIVST vs. ConvHT were comparable young (mean age 27.7 [SD = 9.0] vs. 29.5 [SD = 8.4]); female (64.0% vs. 74.7%); poor monthly income <3,000 RAND (\$253 USD) (79.9% vs. 76.4%). With HIV ST (vs. ConvHT), many more referrals (17.4% [15.1–19.9] vs. 2.6% [1.7–3.8]; RR 6.69 [95% CI: 4.47–10.01]), and many new infections (86 (8.6% (6.9–10.5)) vs. 57 (5.7% (4.3–7.3)); Odds Ratio 1.55 [95% CI 1.1–2.2]) were noted. Break up: 45 infections in supervised HIVST (52.3%); 41 infections in unsupervised HIVST (47.6%). Preference for HIVST was at 91.6%. With an app-optimized HIVST strategy, linkages to care were operationalized within a day in all participants (99.7% (HIVST) vs. 99.2% (ConvHT); RR 1.005 [95% CI: 0.99–1.01]); 99.8% supervised HIVST, 99.7% unsupervised HIVST.

Conclusion. Our app-optimized HIVST strategy successfully increased test referrals, detected new infections, and operationalized linkages within a day. This innovative, patient preferred strategy holds promise for a global scale up in digitally literate populations worldwide.

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1276. Human Immunodeficiency Virus (HIV) Diagnostic Limbo: A Retrospective Review of Discordant HIV Test Results in a Large, Academic Health Center Over a 10-Year Period to Guide Clinicians in Distinguishing False-Positive vs. Acute HIV Infection

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Background. The Centers for Disease Control and Prevention (CDC) recommends universal HIV screening with a fourth-generation HIV-1/2 antigen-antibody immunoassay followed by an HIV-1/-2 antibody differentiation immunoassay. Discordant results require nucleic acid testing (NAT) to distinguish acute HIV from false positives. In practice, NAT can be delayed, leaving clinicians and patients in limbo. Better understanding of factors associated with acute HIV vs. false positivity among discordant HIV tests is needed.

Methods. From 2014 to 2018, positive fourth-generation HIV-1/-2 enzyme-linked immunosorbent assay (ELISA) tests were retrospectively analyzed across centers in the Harris Health system in Houston, Texas. Discordant results were defined as a positive fourth-generation HIV-1/2 ELISA with a negative HIV-1/-2 antibody confirmation test and were resolved via NAT (if possible). Duplicate results and patients with a previously positive HIV-1 viral load were excluded. Results were analyzed (Fisher's exact test or Chi square) by year, setting (clinic/hospital), sex, age, race, and comorbid conditions (pregnancy, rheumatoid arthritis, lupus, hepatitis B and syphilis [rapid plasma reagin, or RPR>1:4] for associations with acute HIV vs. false positivity).

Results. Of 7,077 positive fourth-generation HIV-1/2 ELISA tests, 488 (13%) discordant cases were identified. Eighty-six (18%) represented acute HIV while 322 (66%) were false positives; 80 remained unresolved (no NAT performed). Median time to resolution via NAT was 21 days. Clinic setting, female sex, older age, non-Black race, and negative RPR status were associated with significantly higher rates of false positivity vs. acute HIV ($P < 0.02$ for all associations).

Conclusion. In this large HIV testing program in a multicenter metropolitan health system, 66% of discordant fourth-generation HIV tests represented false positives. Several clinical factors correlated with a higher rate of false positivity, likely reflecting the impact of disease prevalence on the positive predictive value of any diagnostic test. Clinicians may consider these factors when counseling their patients during the limbo period. Efforts to expedite NAT to resolve discordant cases is paramount to reducing diagnostic uncertainty.

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1277. Universal Screening Is Key: Identifying Gaps in Adolescent HIV Infection Diagnosis at Local Pediatric Health System When Compared With Regional Adult Hospital

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Background. Undiagnosed sexual partners with HIV infection may contribute to up to 30% of new infections annually. Routine HIV screening of high-risk populations has been shown to be effective and is recommended by the CDC. Despite this recommendation, many adolescents are not screened. The negative impact on the adolescent population from inadequate screening has not been fully quantified.

Methods. Through a retrospective chart review, the course prior to diagnosis of HIV-infected adolescents diagnosed at Children's Medical Center Dallas (CMC) and Parkland Hospital (PH, the proximate adult county hospital with a universal HIV screening program) was reviewed. Subjects were included if they had a confirmed, positive HIV test between 13 and 21 years of age, and excluded if they had a previous HIV diagnosis. Inpatient, outpatient, and ED encounters at CMC and PH following the subjects' 13th birthday and before their HIV diagnosis were quantified. Missed opportunity encounters (MOE) were defined as above encounters where there was no HIV screen performed that took place after the date 3 months following their most recent HIV screen. Data were collated by facility and compared.

Results. 204 subjects met inclusion criteria: 140 (69%) male, 155 (76%) black, and 87 (43%) followed by CMC. There were 412 total encounters (2.02 per subject) out of which 284 (1.39 per subject) qualified as MOE. Seventy-two subjects had at least one MOE. At the CMC ED, there were 6.7 MOE for every new HIV adolescent diagnosis, compared with PH ED where there were 0.9 ($P < 0.01$) (Figure 1). Adolescents identified through the PH ED were older (PH, 18.8 years vs. CMC, 16.1 years, $P < 0.01$) (Figure 2), and had a trend toward a lower CD4 count (PH, 337 cells/m³ vs. CMC, 449 cells/m³, ns). Three adolescents were identified with AIDS (CD4 <200) through HIV screening at PH, vs. 1 at the CMC ED.

Conclusion. Missed opportunity encounters for HIV screening of adolescents are greater in number in pediatric emergency departments without universal

screening programs, when compared with similar adult settings with such a program. Implementing a universal HIV screening protocol at pediatric EDs in HIV endemic areas may help to identify HIV-positive adolescents at younger ages and improve long-term outcomes.

Fig 1. Comparison of Total Adolescent Missed Opportunity Encounters Prior to HIV Diagnosis, to the Number of HIV-infected Adolescents, By Facility

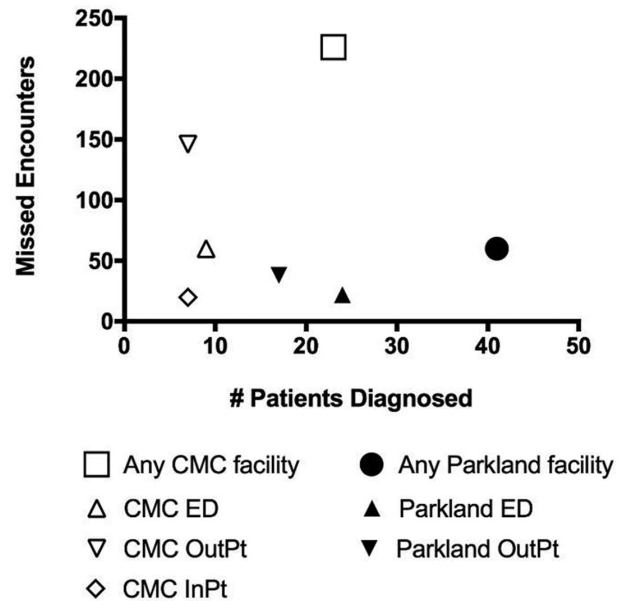
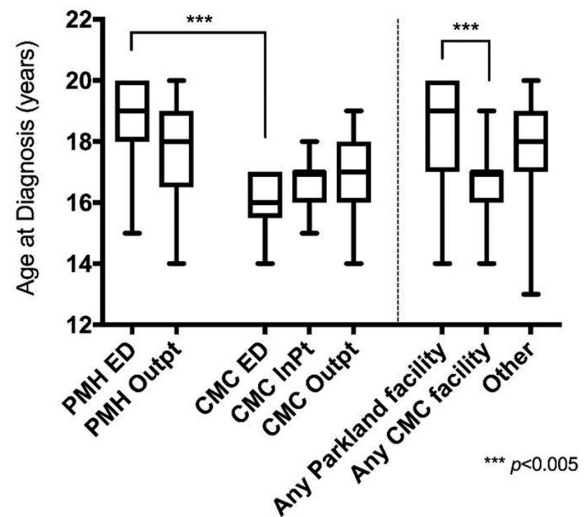


Fig 2. Median Age of Adolescents at Time of HIV Diagnosis, by Facility



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1278. Comparing Rates of Routine HIV and HCV Screening to Estimate the Impact of Consent on Identifying Patients With Undiagnosed HIV

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