

Opt-Out Rapid HIV Screening in the Emergency Department: Preliminary Results from a Prospective Clinical Trial

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BACKGROUND

The high prevalence of undiagnosed HIV infection in the United States continues to significantly contribute to its forward transmission.

Urban emergency departments (EDs) represent an important site for identifying undiagnosed HIV infection.

The revised CDC recommendations for HIV testing in healthcare settings call for increasing opportunities for identifying undiagnosed HIV infection by performing non-targeted, opt-out rapid HIV screening.

It is unknown if such methods of screening are clinically effective or efficient.

OBJECTIVE

The objective of this study is to evaluate the effectiveness of performing opt-out rapid HIV screening when compared to performing physician-based targeted and diagnostic rapid HIV testing in an urban ED.

METHODS

A prospective clinical trial performed in the ED at Denver Health Medical Center (DHMC) in Denver, Colorado. DHMC is an urban, inner-city hospital with an annual adult ED census of 55,000.

Opt-Out rapid HIV screening (intervention) and physician-based targeted / diagnostic rapid HIV testing (control) alternated in four-month time periods.

During intervention periods, all ED patients (≥ 16 years) are offered rapid HIV testing using opt-out consent. During control periods, ED physicians used a targeted / diagnostic approach to offer rapid HIV testing. Each method was fully integrated into ED operations (Figures 1 and 2).

Figure 1. Emergency Department: TARGETED/DIAGNOSTIC

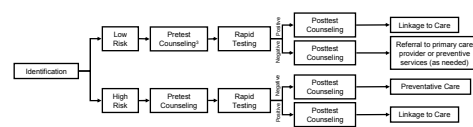


Figure 2. Emergency Department: OPT-OUT

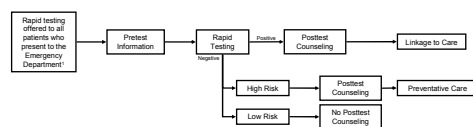


Table 1. Patient characteristics and comparisons of those who were tested for HIV infection and who were diagnosed with HIV infection for each study period

	Physician-Based Targeted and Diagnostic Rapid HIV Testing	Opt-Out Rapid HIV Screening
Total number of eligible patients	14,458	14,489
Total number of eligible patient-hours	83,943	81,223
Median age (IQR)	40 (27-51)	41 (27-51)
Male sex	8,341 (58%)	8,232 (57%)
Race/Ethnicity		
African-American	2,005 (14%)	1,974 (14%)
Asian	127 (1%)	147 (1%)
Caucasian	5,764 (40%)	5,354 (37%)
Hispanic	5,104 (35%)	4,942 (34%)
Other	217 (2%)	240 (2%)
Admitted to the hospital	3,011 (21%)	3,255 (22%)
Opt-Out		
Yes	Not applicable	10,781 (74%)
No		3,540 (24%)
Incomplete registration		168 (1%)
Tested	76 (0.5%)	2,624 (18%)
Diagnosed with HIV infection		
Yes	3 (4%)	7 (0.3%)
No	73 (96%)	2,616 (99.7%)

Table 2. Patient demographics for those who tested for HIV infection and those who were identified as HIV-positive

	Physician-Based Targeted and Diagnostic Rapid HIV Testing	Opt-Out Rapid HIV Screening
Total Tested for HIV Infection	76	2,624
Median age (range)	36 (19-61)	39 (16-96)
Male sex	51 (67%)	1,372 (52%)
Race/Ethnicity		
African-American	2,005 (14%)	1,974 (14%)
Asian	127 (1%)	147 (1%)
Caucasian	5,764 (40%)	5,354 (37%)
Hispanic	5,104 (35%)	4,942 (34%)
Other	217 (2%)	240 (2%)
Confirmed Positive	3	7
Median age (range)	46 (40-50)	38 (21-65)
Male sex	3 (100%)	6 (86%)
Race/Ethnicity		
African-American	0 (0%)	1 (14%)
Asian	0 (0%)	0 (0%)
Caucasian	1 (33%)	1 (14%)
Hispanic	2 (67%)	5 (71%)
Other	0 (0%)	0 (0%)

METHODS

Rapid HIV testing was performed by the hospital's laboratory using whole-blood and a two-step multiple testing algorithm (Uni-Gold™ Recombigen® HIV Test, Trinity Biotech and OraQuick Advance® HIV 1/2, OraSure Technologies).

RESULTS

As of December 15, 2007, the first two periods of this clinical trial were completed.

During the control period, 14,458 eligible patients presented to the ED and 76 (0.5%) were referred for testing. Of these 3 (4%, 95% CI: 1%-11%) were diagnosed with HIV infection.

During the intervention period, 14,489 eligible patients presented to the ED and 2,624 (18%) completed rapid HIV testing. Of these, 7 (0.3%, 95% CI: 0.1%-0.6%) were diagnosed with HIV infection.

Demographic characteristics and comparison of the number of patients who were tested during each period are provided in Tables 1 and 2.

The incidence densities of HIV identification during the control and intervention periods were 0.4 cases and 0.9 cases per 10,000 patient-hours, respectively.

The incident rate ratio for intervention to control periods was 2.3 (95% CI: 0.6-8.7).

All but one HIV-positive patients were linked into care.

CONCLUSIONS

Preliminary findings suggest a modest increase in new HIV diagnoses using opt-out rapid HIV screening when compared with a physician-based targeted / diagnostic approach in the ED.

DENVER EMERGENCY DEPARTMENT HIV TESTING STUDY GROUP