Targeted Rapid HIV Screening Using the Denver HIV Risk Score Outperforms Nontargeted Screening in the Emergency Department

Jason Haukoos, MD, MSc, Emily Hopkins, MSPH, Brooke Bender, MPH, Alia Al-Tayyib, PhD, Mark Thrun, MD for the Denver Emergency Department HIV Testing Research Consortium

Denver Health Medical Center, Denver, Colorado, USA; University of Colorado School of Medicine, Aurora, Colorado, USA; Colorado School of Public Health, Aurora, Colorado, USA; Denver Public Health, Denver, Colorado, USA

BACKGROUND, OBJECTIVES & DESIGN

The CDC recommends nontargeted HIV screening in healthcare settings, including emergency departments (EDs).

Since 2006, 11 studies have reported only modest effectiveness of nontargeted screening in this clinical setting.

Recently, a risk prediction tool – the Denver HIV Risk Score (DHRS) – was developed to help more effectively target HIV screening.

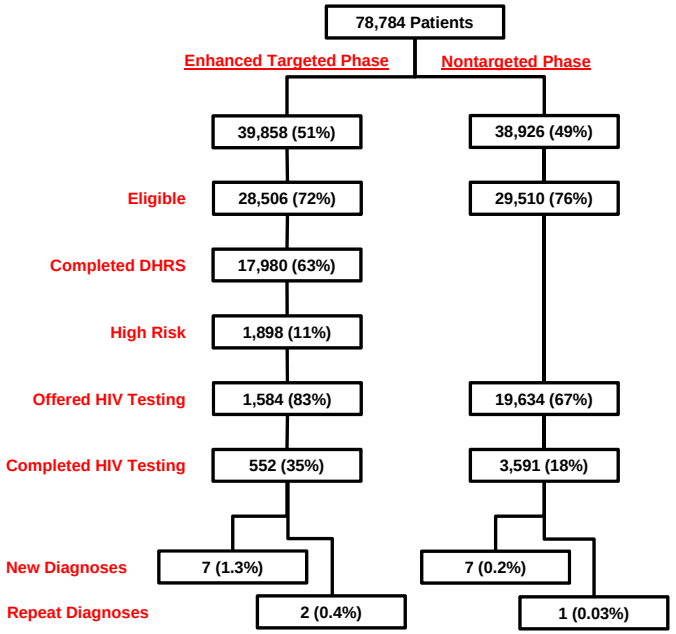
Goal: Compare the effectiveness of enhanced targeted rapid HIV screening using the DHRS to nontargeted rapid HIV screening in an urban ED and urgent care setting.

Design: Before-after quasi-experiment at Denver Health Medical Center in Denver, CO.

The Denver HIV Risk Score.

Variable	Score
Age	
<22 or >60 years	0
22-25 or 55-60 years	+4
26-32 or 47-54 years	+10
33-46 years	+12
Gender	
Female	0
Male	+21
Race/Ethnicity	
Black	+9
Hispanic	+3
Other*	0
White	0
Sexual Practices	
Sex with a male	+22
Vaginal intercourse	-10
Receptive anal intercourse	+8
Other Risks	
Injection drug use	+9
Past HIV test	-4

*Represents American or Alaskan Native, Native Hawaiian, or non-Hawaiian Pacific Islander.



Adjusted associations between enhanced targeted HIV screening and HIV diagnoses.*

	Newly-Diagnosed HIV Infection	
	RR	(95% CI)
Enhanced targeted screening	10.3§	(3.4 – 31.4)
Nontargeted screening	ref	
Age (years)	1.0	(0.9 – 1.0)
Male gender	12.4	(1.9 – 80.0)
Race/Ethnicity		
Black	0.4	(0.04 – 3.3)
Hispanic	1.2	(0.3 – 3.9)
White/other†	ref	
Payer status		
State sponsored	0.8	(0.1 – 5.5)
Self-pay	0.4	(0.03 – 4.9)
Medicare/Medicaid	0.4	(0.02 – 7.5)
Commercial insurance	ref	

RR = relative risk; CI = confidence interval; ref = reference.
*Performed using Generalized Estimating Equations and accounting for repeated visits and adjusted for the probability of being screened using a propensity score.
†Defined as Asian, American or Alaskan Native, Native Hawaiian, or non-Hawaiian Pacific Islander.
§To verify the stability of the results, confirmatory bootstrap analyses using 1,000 resampled datasets were performed and included a RR range for enhanced targeted screening from 1.8 – 42.1 for newly-diagnosed HIV infection.

CONCLUSIONS

Targeted HIV screening using the DHRS was strongly associated with new HIV diagnoses when compared to nontargeted HIV screening.

Although both HIV screening methods identified the same absolute number of newly-diagnosed patients, significantly fewer tests were required during the targeted phase to achieve the same effect.

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