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HIV Screening in a Sample of US Emergency Departments, 2022-2023

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Abstract

Despite serving populations emphasized in the Ending the HIV Epidemic Initiative, emergency departments (EDs) infrequently offer routine HIV screening. The objective of this study was to characterize US EDs by whether they screen for HIV and to explore factors associated with screening. We surveyed a random sample of US ED directors to obtain data on ED-level and patient-level characteristics, as well as information on directors' perceived barriers to implementing preventive health services. Using descriptive statistics and regression modeling, we found that EDs that routinely screen for HIV, compared with those that do not, had higher median visit volumes (21 000 vs 12 600), were more often a teaching hospital (12.7% vs 4.3%), and had more availability of social workers (23.6% vs 9.4% had 24 hour/day coverage); their directors also less often expressed strong worry about costs (5.9% vs 28.2%), all significant at $P < .05$; in the regression analysis, only worry about costs was significant (relative risk = 0.13; 95% CI, 0.03-0.51). Our findings may reflect a need for additional funding and resources allocated to EDs to promote HIV screening.

Keywords

HIV screening, emergency medicine, emergency department, cost

Emergency departments (EDs) provide an increasing share of all health care in the United States; this care includes serving populations emphasized in the Ending the HIV Epidemic in the US (EHE) Initiative, communities that disproportionately face social determinants of health associated with poor health care outcomes, and those with barriers to alternative forms of care (ie, other than EDs) or means to be tested for HIV.[1-3] As such, EDs are well positioned to reduce the number of undiagnosed HIV infections in the United States and more quickly link people with HIV to care. However, despite EDs across the United States offering a growing number of preventive health services, HIV screening remains one of the least commonly offered services.[4,5] Given EHE's call for enhanced screening across all health care settings, understanding barriers to routine screening in EDs is essential. The objective of this study was to characterize US EDs by whether they screen for HIV and to explore factors associated with screening status.

Methods

This study was a planned secondary study of a parent project that ran from winter 2022 to spring 2023 and focused on exploring preventive health services offered in a sample of US EDs.[5] As described in the parent project, after review and approval by the Stanford University Institutional Review Board (IRB #63860), which included a waiver of documentation of consent, we used the National Emergency Department Inventory–USA (NEDI-USA) as a framework to survey a 20% random sample of all US ED directors.[4,5] Similar to prior efforts by our group, this survey yielded an approximately 5% sample of all US EDs (28.4% response rate).[4,5] NEDI-USA is a comprehensive database of all nonfederal, nonspecialty US EDs.[4,5] The parent study characterized the availability of and preference for 11 preventive health services, including routine HIV screening (excluding post-needlestick HIV testing of health care workers). The parent study also identified ED-level and patient-level characteristics and described ED directors' perceptions of implementing preventive services

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Table 1. Characteristics of a sample of EDs and their populations served, stratified by whether they offer HIV screening, United States, 2022-2023[a]

Characteristic	No. (column %)[b]		*P* value[c]
	EDs that do not routinely screen for HIV (n = 235)	EDs that routinely screen for HIV (n = 55)	
EDs			
Median annual visit volume (IQR)	12 600 (4800-36 000)	21 000 (6000-45 000)	.04
Teaching hospital status			.03
Nonteaching hospital	225 (95.7)	48 (87.3)	
Teaching hospital	10 (4.3)	7 (12.7)	
Crowding status (by CDC criteria)[d]			.08
Crowded	95 (40.4)	30 (54.5)	
Not crowded	140 (59.6)	25 (45.5)	
Urban influence code			.07
Urban	113 (48.1)	35 (63.6)	
Large rural	34 (14.5)	3 (5.5)	
Small rural	88 (37.5)	17 (30.9)	
Region			.02
Northeast	23 (9.8)	13 (23.6)	
Midwest	84 (35.7)	14 (25.5)	
South	77 (32.8)	20 (36.4)	
West	51 (21.7)	8 (14.5)	
Social worker availability in ED			.01
None	88 (37.4)	17 (30.9)	
Some part of the day	125 (53.2)	25 (45.5)	
24 hours per day	22 (9.4)	13 (23.6)	
ED director worried about cost[e]			.008
Strongly not worried	14 (6.2)	6 (11.8)	
Not worried	30 (13.2)	7 (13.7)	
Neutral	49 (21.6)	11 (21.6)	
Worried	70 (30.8)	24 (47.1)	
Strongly worried	64 (28.2)	3 (5.9)	
Population served			
EHE priority jurisdiction status[f]			.08
Nonpriority jurisdiction	190 (80.9)	38 (69.1)	
Priority jurisdiction	45 (19.1)	17 (30.9)	
Proportion of ED patients lacking health insurance[g]			.42
<15%	125 (56.1)	23 (46.0)	
15%-34%	74 (33.2)	21 (42.0)	
≥35%	24 (10.8)	6 (12.0)	

Abbreviations: CDC, Centers for Disease Control and Prevention; ED, emergency department; EHE, Ending the HIV Epidemic.
[a] Data source: National Emergency Department Inventory-USA.[4,5]
[b] Unless otherwise indicated; percentages may not total to 100 because of rounding.
[c] Determined by the Pearson χ^2 test, Fisher exact test, and Wilcoxon rank-sum test as appropriate; $P < .05$ considered significant.
[d] An ED was classified as crowded if it met at least 1 of 3 CDC criteria: average waiting time ≥1 hour, patient left without being seen rate ≥3%, or ambulance diversion rate (the percentage of patients diverted to other facilities) >0%.[4,5]
[e] ED directors responded to the following statement: "I worry that implementing preventive services would lead to increased financial costs to my ED due to lack of reimbursement for added tests, vaccines, and/or counseling." Data missingness for this question was 4.1%; missing data were not imputed; only available data were analyzed.
[f] An EHE priority jurisdiction is one that is located in any of the jurisdictions identified in the US Department of Health and Human Services' Ending the HIV Epidemic: A Plan for America.[3]
[g] Data missingness was 5.9% for this question; missing data were not imputed; only available data were analyzed.

(Appendix).[4,5] The analytic sample consisted of 290 EDs. We used Stata version 15.1 (StataCorp, LLC) and RStudio (R Foundation for Statistical Computing) to stratify EDs by whether they screen for HIV and summarized data with counts and proportions along with medians and IQRs. We used the Pearson χ^2 test, Fisher exact test, and Wilcoxon

rank-sum test as appropriate to compare stratified data. We then used multivariable logistic regression modeling to summarize data with relative risks and 95% CIs. We considered $P < .05$ significant.

Results

Of the 290 EDs in the sample, 55 (18.9%) reported offering routine HIV screening (Table 1). EDs that routinely screen for HIV, compared with EDs that do not, had higher annual median visit volumes (21 000 vs 12 600 visits), were more often a teaching hospital than not (12.7% vs 4.3%), and had more availability of social workers (eg, 23.6% of EDs that routinely screen for HIV vs 9.4% of EDs that do not routinely screen for HIV had 24-hour availability of social workers). We also found some geographic differences in screening: for example, of the 55 EDs that routinely screen for HIV, 23.6% (n = 13) were in the Northeast, whereas of the 235 EDs that do not routinely screen for HIV, 9.8% (n = 23) were in the Northeast. Directors of EDs that routinely screen for HIV, compared with directors of EDs that do not routinely screen for HIV, less often expressed strong worry about the costs of preventive health services (5.9% vs 28.2%). However, in regression modeling, only strong worry about costs among ED directors was significant (relative risk = 0.13; 95% CI, 0.03-0.51) (Table 2).

Table 2. Multivariable model of factors associated with HIV screening availability in a sample of EDs (n = 290), United States, 2022-2023[a]

Characteristic	Relative risk (95% CI)
Teaching hospital	1.64 (0.59-3.38)
Located in an EHE HIV priority jurisdiction[b]	1.55 (0.83-2.58)
Social worker available in ED 24 hours per day	1.55 (0.76-2.73)
Crowded by CDC criteria[c]	1.52 (0.89-2.38)
Proportion of ED patients without health insurance ≥35%[d]	1.20 (0.45-2.62)
ED director strongly worried about cost[e]	0.13 (0.03-0.51)

Abbreviations: CDC, Centers for Disease Control and Prevention; ED, emergency department; EHE, Ending the HIV Epidemic.
[a] Data source: National Emergency Department Inventory-USA.[4,5]
[b] An EHE priority jurisdiction is one that is located in any of the jurisdictions identified in the US Department of Health and Human Services' Ending the HIV Epidemic: A Plan for America.[3]
[c] An ED was classified as crowded if it met at least 1 of 3 CDC criteria: average waiting time ≥1 hour, patient left without being seen rate ≥3%, or ambulance diversion rate (the percentage of patients diverted to other facilities) >0%.[4,5]
[d] Data missingness was 5.9% for this question; missing data were not imputed; only available data were analyzed.
[e] ED directors responded to the following statement: "I worry that implementing preventive services would lead to increased financial costs to my ED due to lack of reimbursement for added tests, vaccines, and/or counseling." Response options were strongly not worried, not worried, neutral, worried, and strongly worried. Data missingness for this question was 4.1%; missing data were not imputed; only available data were analyzed.

Discussion

Overall, of the 290 EDs studied, 81.0% reported not routinely screening for HIV. Although this study was not designed to explore geographic differences in screening, most EDs in each of the 4 regions studied reported not routinely screening for HIV. The major factor associated with not screening was strong worry about costs among ED directors. These findings are consistent with prior work on the topic of screening for HIV in EDs and are in spite of national efforts to increase HIV screening in EDs[4] and previous work demonstrating that HIV screening is cost-effective in health care settings (including EDs).[6,7] These findings also likely reflect a need for additional funding and resources allocated to EDs, where an increasing number of people in the United States receive not only acute unscheduled care but also preventive care and care for chronic conditions. Funding and resources targeted toward US EDs could alleviate concerns about costs among ED directors, support widespread implementation of routine HIV screening, and serve as the basis for routine HIV risk counseling and initiation of preexposure prophylaxis in EDs. In the absence of such support, some emergency physicians may perceive calls for increased screening as yet another unfunded mandate.

Limitations

This study had several potential limitations. First, the study design was observational and reflected a random sample of EDs, with questions to directors about perceived barriers to ED-based services. Our findings might not be generalizable to all US EDs or to all EDs in a particular region.[5] Second, the study did not investigate the connectivity between EDs and local HIV programs and health departments, which can facilitate testing and linkage to care and alleviate costs for patients without health insurance. Third, reliance on the perceptions of ED directors could have introduced subjectivity and bias in the reported availability of, and preference for, HIV screening. Addressing these points was beyond the scope of this study but is the focus of new research projects by our group.

Conclusion

The majority of US EDs studied do not routinely screen for HIV, with cost concerns among ED directors emerging as a major barrier to screening. These findings suggest a need for targeted funding and resources to support routine HIV screening in ED settings. More routine screening in US EDs could enhance early detection and linkage to care, aligning with national public health initiatives aimed at ending the HIV epidemic.

Declaration of Conflicting Interests

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Supplemental Material

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References

1. Marcozzi D, Carr B, Liferidge A, Baehr N, Browne B. Trends in the contribution of emergency departments to the provision of hospital-associated health care in the USA. *Int J Health Serv*. 2018;48(2):267-288. doi:10.1177/0020731417734498
2. Bennett CL, Detsky AS, Clay CE, et al. Comparison of US emergency departments by HIV priority jurisdiction designation: a case for geographically targeted screening in teaching hospitals. *PLoS One*. 2023;18(10):e0292869. doi:10.1371/journal.pone.0292869
3. Centers for Disease Control and Prevention. Ending the HIV Epidemic in the US. March 20, 2024. Accessed June 26, 2024. https://www.cdc.gov/endhiv/index.html
4. Delgado MK, Acosta CD, Ginde AA, et al. National survey of preventive health services in US emergency departments. *Ann Emerg Med*. 2011;57(2):104-108.e2. doi:10.1016/j.annemergmed.2010.07.015
5. Bennett CL, Delgado MK, Pasao M, et al. Preventive health services offered in a sampling of US emergency departments, 2022-2023. *West J Emerg Med*. Posted online July 17, 2024. doi:10.5811/westjem.18488
6. Sanders GD, Bayoumi AM, Sundaram V, et al. Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy. *N Engl J Med*. 2005;352(6):570-585. doi:10.1056/NEJMsa0426572
7. Prabhu VS, Farnham PG, Hutchinson AB, et al. Cost-effectiveness of HIV screening in STD clinics, emergency departments, and inpatient units: a model-based analysis. *PLoS One*. 2011;6(5):e19936. doi:10.1371/journal.pone.0019936