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Johnathan Sheele, MD

**Patient:** Patients at risk for HIV who present to the ED

**Intervention:** HIV testing in the ED

**Comparison:** HIV testing at the health department or primary care physician or ED

**Outcomes:** Can ED HIV testing be done safely, does it increase the number of people tested, and should it be done

**Background:** ED docs rarely address HIV testing with patients and for those suspected of having HIV are commonly referred to the health department for testing and follow up. Is this the correct approach?

**Search strategy:**

Pubmed: (multiple searches with HIV, testing, emergency, etc.)

**Relevant papers:**

citation	Patient group	Study type	Outcomes	Key results	weaknesses
Coil CJ, et al. J Acquir Immune Defic Syndr. 2004 Jan 1;35(1):52-5	586 ED patients at risk for HIV referred for outpatient HIV testing	prospective cohort study, urban hospital	Referral compliance and HIV status	11% of patients (95% CI: 9-15%) arrived at the HIV clinic and completed pretest counseling. 8% tested HIV positive	Unknown how many got HIV testing outside of the referral
Haukoos JS, et al. Acad Emerg Med. 2005 Jul;12(7):617-21	372 at risk ED patients randomized to either HIV testing referral or HIV testing with \$25 upon completion of testing	Randomized trial	1) HIV status 2) % of patients who complete the HIV testing process	No \$\$\$: 8% completed HIV counseling and testing \$25: 23% of patients completed HIV counseling and testing 0% were HIV +	No HIV found.
Hutchinson AB, et al. AIDS Educ Prev. 2004 Apr;16(2):101-14.	Attitudes towards rapid HIV-testing and conventional enzyme immunoassay (EIA) HIV testing among at-risk people	Questionnaire	Patient preference	Rapid testing > EIA testing	questionnaire
Kuo AM, et al. AIDS Patient Care STDS. 2005 Apr;19(4):239-46	76 ED and clinic medical records for newly diagnosed HIV infection were analyzed to quantify delays in diagnosing HIV	retrospective cohort study; 1998-1999	Health care visits	23 patients made a total of 53 health care visits preceding the diagnosis of their HIV infection with a median delay in diagnosis was 112 days (2-1093 days). No specific risk factor, historical clue, physical examination finding, or laboratory finding reliably identified patients with HIV infection.	Delay to notification of HIV results not known
Rothman RE, et al. Acad Emerg Med. 2003 Mar;10(3):278-85	52 emergency medicine abstracts were reviewed; nine specifically to assess the appropriateness of routine HIV screening to ED patients	Literature review		7 ED studies found HIV rates of 2-17%. Two studies demonstrated feasibility of both standard and rapid HIV testing in the ED Several cost-benefit analyses lend indirect support for HIV screening in the ED.	Literature review
Altuna Egocheaga A, et al. Eur J Emerg Med. 2000 Jun;7(2):125-9	All patients (n = 202) treated in the "resuscitation room" in 1994	Retrospective	HIV testing on all patients	4% were HIV positive	Old study Done in Spain

Goggin MA, et al. J Emerg Med. 2000 Jul;19(1):13-9	2,155 consecutive ED patients (age 18-55)	retrospective	HIV rates	3. 5% of ED patients HIV + and 20% of whom were previously undiagnosed.	Retrospective HIV rates differ geographically
Schoenbaum EE, et al. Am J Public Health. 1993 Mar;83(3):363-8	856 consecutive ED patients over age 13 seen in Bronx, NY in 1989	prospective	HIV testing in the ED with excess blood	8% HIV + in women and of those 5% had AIDS; ~87% newly diagnosed with HIV  15% HIV + in men and of those 26% had AIDS; and ~70% newly diagnosed	Old study
Kendrick SR, et al. AIDS. 2004 Nov 5;18(16):2208-10	1652 consecutive at risk ED patients tested for HIV	prospective	1) HIV status 2) % of patients to get their results 3) % of patients entering HIV treatment	99% got HIV test results 2.8% tested positive 80% entered medical treatment for HIV	All EDs different
Landau RJ, et al. Accid Emerg Med. 1997 Sep;14(5):304-6	32 people presenting to the ED with an AIDS defining illness (ADI)	Retrospective review	Previously known HIV status	13/32 (41%) did not know their HIV serostatus and all had an acute respiratory disease (Pneumocystis carinii pneumonia or pulmonary tuberculosis). 19/32 patients who were known HIV positive presented with a wide range of non-pulmonary ADI.	Small study England
Beckmann KR, et al. Ann Emerg Med. 2004 Mar;43(3):333-8	19,000 girls aged 12-19 who were diagnosed with a sexually transmitted disease between 1992-1998 in a U.S. ED	Retrospective review	HIV testing	0.3% had a HIV test performed	retrospective
Del Rio, C, et al. MMWR Weekly. June 29, 2001 / 50(25);538-541	All urgent care patients between 1999 and 2000 (~20,000 pts each year). Risk factor based HIV testing in 1999. HIV testing "everyone" in 2000	prospective	HIV detection	1687 more patients tested in 2000 vs. 1999 27 additional HIV infections diagnosed in 2000 vs. 1999 HIV detected earlier in disease course in 2000 vs. 1999	Unknown baseline rate of HIV in community
Nagachinta T, Infect Control Hosp Epidemiol. 1996 Mar;17(3):174-7	1,945 urban ED patients	Retrospective	HIV rates	2.1% (40) of ED patients were HIV +  1.8% (11) HIV + in nontrauma versus 3.0% (29) HIV + in trauma patients.	retrospective
Jenkins TC, Sex Transm Dis. 2006 May;33(5):329-33	348 newly diagnosed HIV+	retrospective		88% patients had at least 1 prior encounter in the emergency department or urgent care center, but just 10% HIV diagnoses were made in these 2 sites. 28% patients previously presented with an HIV clinical indicator condition or sexually transmitted infection.	Not all area EDs examined
Alpert PL, Ann Emerg Med. 1996 Aug;28(2):159-64	1744 consecutive ED patients in Bronx, NY got anonymous HIV testing	prospective	1. HIV risk factors  2. prevalence of HIV	38% reported HIV risk behaviors 13% tested HIV positive 4% did not know they were HIV positive 25% of those HIV positive had no known risk factors	Patients can be missed early in HIV disease course
Pincus JM, et al. Clin Infect Dis. 2003 Dec 15;37(12):1699-704	499 patients at an urban urgent care center with any symptom of a viral illness	Prospective	1. acute HIV infection	1% diagnosed with acute HIV infection. 1.2% diagnosed with chronic HIV infection.	Patients can be missed early in HIV disease course

Coco, A, et al. Ann Fam Med. 2005;3:400-4	2000 National Ambulatory Medical Care and National Hospital Ambulatory Medical Surveys of 13-54 year olds who present with symptoms of acute HIV illness	retrospective	Prevalence of acute HIV illness with the following chief complaint	0.7% of all patients with fever 0.5% of all patients with rash 0.2% of all patients with pharyngitis	HIV rates not equal across the country
Liddicoat RV, et al. J Gen Intern Med. 2004 Apr;19(4):349-56	221 patients seen at an HIV intake clinic between 1994-2001	10-year retrospective chart review of patients who: 1). tested HIV + 12 months prior to their presentation 2). had at least one encounter recorded in the medical record prior to their HIV-positive status.	To assess missed opportunities for diagnosing HIV	Median number of visits per patient prior to HIV diagnosis = 5 40% of these visits were either to the emergency department or urgent care clinic HIV was addressed in 27% of visits in which triggers were identified Patients were more likely to have testing addressed in urgent care clinic (39%), sexually transmitted disease clinic (78%), primary care clinics (32%), and during hospitalization (47%), compared to the emergency department (11%), obstetrics/gynecology (9%), and other specialty clinics (10%) (P <.0001).	England
Glick NR, et al. AIDS Educ Prev. 2004 Apr;16(2):126-36. Links	HIV testing to high-risk and symptomatic patients attending an urban emergency department (ED)	prospective	rates of consent, HIV infection, and demographic and risk characteristics	>50% agreed to consent across the various demographics and risk groups. HIV prevalence rate = 3% (ranged from 0% to 50% across groups) 69% attended their first infectious disease clinic appointment.	HIV prevalence rates not equal across the country
Lyons MS, et al. Public Health Rep. 2005 May-Jun;120(3):259-65	26,382 patients tested for HIV; 5,232 ED patients, and 21,150 from community sites	prospective	prevalence of HIV	0.9% of people tested in the ED and 0.7% tested elsewhere were HIV positive The ED program accounted for 20% of all tests and 25% of all positive results The ED notified 77% of HIV + and 84% of HIV – of results	Low HIV + rate
Whetten K, et al. Am J Public Health. 2006 Apr;96(4):716-21. Epub 2006 Feb 28	611 HIV-positive individuals	interview	Attitudes associated with HIV	>25% believe that the government created AIDS to kill minorities. >50% believed that a significant amount of information about AIDS is withheld from the public. 10% do not trust their provider to give them the best care possible.	Interview bias
Fanburg JT, et al. J Adolesc Health. 1999 Nov;25(5):354-7	49 HIV positive adolescents presenting to the ED 124 ED visits over 10 years	Retrospective review of ED medical records	HIV status documented	38% of the ED visits had no documentation of HIV status	Old study
Froschle G, et al. Arch Orthop Trauma Surg. 1996;115(6):37-8	202 patients who presented to the “trauma room” at a German University ED with open wounds were screened for HIV	Prospective	HIV status	3% HIV positive	Germany Old study
Lindsay MK, et al. Obstet Gynecol. 1993 Jun;81(6):1012-5	Voluntary HIV testing and risk behavior profiles in 1033 women at an urban gynecology emergency department	Cross-sectional survey	HIV testing and risk profiles	2% tested positive for HIV, and of those: 35% have history of intravenous drug use, 29% have a history of crack cocaine use, 29% reported no risk factors for infection, and were more likely to have PID	Gyn specific ED

## **Comments:**

### **United States:**

Approx 1,000,000 people are living with HIV in the U.S., 250,000 of which don't know they are infected. Approximately 40,000 new infections occur annually.

70 percent of these new infections occur in men and 30 percent occur in women. Women with HIV are less likely than men to know of their infection, and less likely to receive HIV-related risk assessments.

Heterosexuals are more likely to be diagnosed later in the progression towards AIDS than homosexuals, and 35% of people have advanced HIV/AIDS at the time of diagnosis.

By race, 54% of the new infections in the United States occur among African Americans, and 64% of the new infections in women occur in African American women.

75% of the new HIV infections in women are heterosexually transmitted, and 50% of all new infections in the United States occur in people 25 years of age or younger.

0-17% HIV seroprevalence in the ED, with unrecognized HIV rates of 0–5%.

11% annual transmission rate for unknown HIV positive status vs. 2% for known HIV positive

47% of high school students have had sex at least once; 37% of those did not use a condom during most recent episode of sex

### **Virginia:**

Virginia HIV seropositive rate ~0.7% and ~1% known HIV prevalence rate in Norfolk

Anonymous HIV testing sites throughout Virginia in 2004 reported a 1.84% seropositive rate

156 total syphilis cases in Virginia in 2003; Norfolk now leads the state with 333 new syphilis cases in 2005. In Virginia there were 8,565 cases of gonorrhea (rate is constant) and 21,635 cases of Chlamydia (increasing rate) in 2000 (0.3% of everyone that lives in Virginia diagnosed with Chlamydia in the last year.)

CDC "high risk" **individuals** include: men who have sex with men, persons with STDs, intravenous drug users (IDUs) and their sex partners, recipients of transfusions between 1978 and 1985, persons who have had multiple sex partners or exchanged sex for money or drugs, and pregnant women in these categories.

CDC and USPSTF "high risk" **populations** include: those with an HIV seroprevalence rate of 1% or greater or an AIDS diagnosis rate greater than 1 per 1,000 hospital discharges.

High-risk groups benefit most from screening: minority patients aged 25–44 years, heterosexuals ( $\geq 3$  partners in the last year, sex with a high-risk partner, sex exchanged for money, multiple STDs), and IDUs. Minority populations and those with limited or no access to health care (i.e., those who most frequently use the ED for their health care) are disproportionately infected with HIV. However, up to 25% of ED patients with unrecognized HIV deny *all* risk factors.

Society for Academic Emergency Medicine (SAEM) Public Health and Education Task Force (PHTF) gave HIV testing in the ED an alpha rating, meaning that there is sufficient evidence to support its benefit. HIV is cost-beneficial to patients even in settings where HIV seroprevalence is as low as 0.3%. Rapid HIV testing has been shown to be more cost-effective than standard HIV testing.

### **Clinical bottom line:**

Evidence based recommendations from the CDC, USPSTF, and SAEM state that HIV testing in the ED can and should be done. All patients aged 13-64 should have yearly HIV screening done routinely in all clinical encounters. Written consent and prevention counseling are not needed for HIV testing. Few people follow-up for outpatient HIV testing. ED HIV testing is cost-effective. Studies show: 1) improvements in prognosis for those offered earlier antiretroviral treatment; 2) proven changes in high-risk behavior and decreased disease transmission in selected test populations offered counseling and testing; and 3) favorable cost-benefit associated with early detection and intervention with regard to spread of disease in the community, progression of HIV to AIDS, and reduction of opportunistic infections in HIV-infected individuals.