

Emergency Department Utilization Among a Cohort of HIV-Positive Injecting Drug Users in a Canadian Setting

Nadia Fairbairn, M-J Milloy, Ruth Zhang, Calvin Lai, Eric Grafstein, Evan Wood, Thomas Kerr
British Columbia Centre for Excellence in HIV/AIDS, Vancouver, Canada

Background

HIV-positive injection drug users (IDU) are known to be at risk for multiple medical problems that may necessitate emergency department (ED) use, however, the relative contribution of HIV disease versus injection-related complications on ED use have not been well described. We examined factors associated with ED use among a prospective cohort of HIV-positive IDU in a Canadian setting.

Methods

We enrolled HIV-positive IDU into a community-recruited prospective cohort study with comprehensive health record linkages. We modeled factors associated with the time to first ED visit using Cox regression to determine factors independently associated with ED use. In sub-analyses, we examined ED diagnoses and subsequent hospital admission rates.

Results

Between December 5, 2005, and April 30, 2008, 428 HIV-positive IDU were enrolled, among whom the cumulative incidence of ED use was 63.7% (95% Confidence Interval [CI]: 59.1% – 68.3%) at 12 months after enrollment. Factors independently associated with time to first ED visit included: unstable housing (Hazard Ratio [HR] = 1.5, 95% CI: 1.1–2.0) and reporting being unable to obtain needed health care services (HR = 2.2, 95% CI: 1.2–4.1), whereas CD4 count and viral load were non-significant. Skin and soft tissue infections (17%) accounted for the greatest proportion of ED visits. Of the 2461 visits to the ED, 419 (17%) were admitted to hospital.

Figure 1: Time to first emergency department (ED) use among a prospective cohort of HIV-positive injection drug users, stratified by unstable housing at baseline.

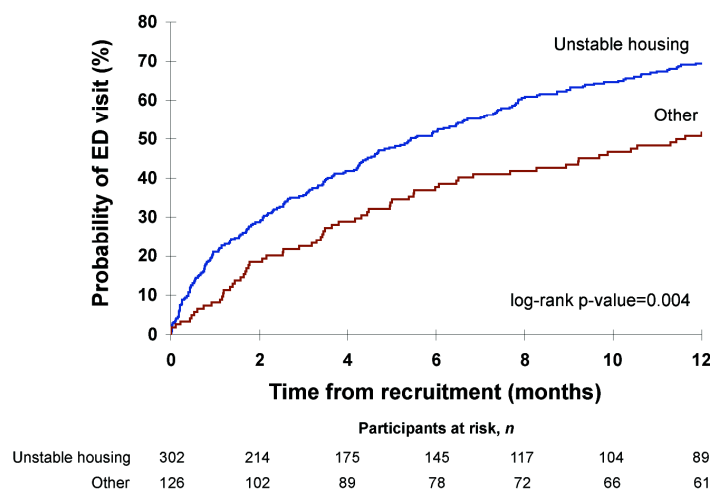


Table 1: Univariate and multivariate Cox proportional hazard analyses of time to first emergency department visit among 428 HIV-positive injection drug users.

Variable	Unadjusted Relative Hazard (RH)			Adjusted** Relative Hazard (RH)		
	RH	(95% CI)	p-value	RH	(95% CI)	p-value
Age (Per year old)	0.99	(0.98–1.01)	0.250			
Gender (Female vs. male)	1.10	(0.89–1.37)	0.376			
Ethnicity (Aboriginal vs. other)	0.94	(0.76–1.17)	0.573			
DTES Residence* (Yes vs. no)	1.37	(1.08 – 1.73)	0.009	1.12	(0.85 – 1.47)	0.431
Unable to access services* (Yes vs. no)	2.14	(1.17 – 3.91)	0.014	2.24	(1.22 – 4.12)	0.010
Unstable Housing* (Yes vs. no)	1.54	(1.21 – 1.96)	<0.001	1.47	(1.11 – 1.96)	0.007
Sex Trade Involvement* (Yes vs. no)	1.28	(0.94 – 1.73)	0.118			
Daily Crack Cocaine Smoking (Yes vs. no)	1.22	(0.98 – 1.52)	0.075			
Daily Heroin Injection* (Yes vs. no)	1.17	(0.90 – 1.54)	0.247			
Daily Cocaine Injection* (Yes vs. no)	1.22	(0.85 – 1.75)	0.273			
History of Assault* (Yes vs. no)	1.30	(1.00 – 1.69)	0.050	1.28	(0.98 – 1.66)	0.067
Viral load (copies/mL)† (per log 10)	0.99	(0.91 – 1.70)	0.807			
CD4+ count (cells/mm³)† (Per 100 cells)	1.01	(0.97 – 1.06)	0.634			
Methadone Use* (Yes vs. no)	0.84	(0.68 – 1.05)	0.126			

*Behaviours refer to activities in the last six months. †Indicates baseline value. **Model was fitted adjusting for all variables significant in unadjusted analyses.

Table 2: Most frequent reasons for ED visits among IDU

Reason	(N = 2242)	
	n	%
Skin and soft tissue infections eg. Abscesses, cellulitis	394	(17.6%)
Medication refills and aftercare*	392	(17.5%)
Respiratory infections and disorders	264	(11.8%)
Wounds, lacerations & contusions	252	(11.2%)
Gastrointestinal & urological disorders	203	(9.1%)
Miscellaneous bacterial and viral infections	191	(8.5%)
Cardiac and circulatory system diseases	147	(6.6%)
Substance misuse and overdose	134	(6.0%)
Neurological disorders or seizures	125	(5.6%)
Psychiatric disorders	69	(3.1%)
Fractures and dislocations	44	(2.0%)
Other	27	(1.2%)

*Aftercare includes wound care & IV antibiotic administration.

Conclusions

High rates of ED use were observed among HIV-positive IDU, a behavior that was predicted by unstable housing and reporting limited access to primary care services. Our findings suggest that factors other than HIV infection appear to drive ED use among this population in the post-HAART era.