Availability of HIV Postexposure Prophylaxis Services in Los Angeles County

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Postexposure prophylaxis after sexual exposure to human immunodeficiency virus (HIV) is recommended by state and national agencies. A cross-sectional survey of 117 Los Angeles County sites found that 17 sites (14.5%) offer postexposure prophylaxis. Ten sites (8.5%) offer postexposure prophylaxis to patients who are uninsured. General availability of post-exposure prophylaxis should be a public health priority.

Los Angeles County, spanning 4000 square miles and home to 9.95 million people, represents 3.5% of the US population and 27% of the population of California. Los Angeles disproportionately contributes 40% of California’s incident human immunodeficiency virus type 1 (HIV-1) infections. Men who have sex with men (MSM) represent 53% of persons with new HIV infections nationally [1] and 72% of persons with incident HIV infections in Los Angeles County [2].

In 2005, the Centers for Disease Control and Prevention endorsed a protocol for the administration of postexposure prophylaxis (PEP) after suspected high-risk sexual exposure to HIV [3]. The California State Office of AIDS has endorsed such a protocol since 2004 [4]. PEP, which is the administration of a course of antiretroviral therapy after a suspected HIV exposure, has been criticized for its high costs [5]. However, PEP is highly cost-effective when used appropriately and is cost-saving when used for individuals with the highest-risk exposures [6]. In San Francisco, PEP after sexual exposure to HIV-1 was demonstrated to be safe and feasible, with administration of PEP to 858 subjects in 2 studies over 15-month and 18-month enrollment periods [7–9].

In Los Angeles, finding health care providers and sites that are willing to accept referrals of patients seeking PEP services is difficult, particularly for patients without private insurance. Therefore, we sought to assess the prevalence of service availability in Los Angeles County, with a goal of quantifying the current deficit of programmatic service provision.

Methods. This was a cross-sectional survey of PEP knowledge and service availability in point-of-care health care venues in Los Angeles County, as defined by zip-code boundaries. The University of California at Los Angeles (UCLA) institutional review board was consulted and determined that this study did not require institutional review board approval.

The study sample was a random sample of point-of-care health care venues that were discovered by Internet search engine queries for each location type within Los Angeles County, identified by zip code (searching with key words of the location type; e.g., “primary care,” “urgent care,” “sexually transmitted disease,” etc.). More than 400 such sites were identified with use of the search engine, and every second facility was selected for listing, with a goal of surveying 200 facilities. Facilities were coded as belonging to 1 of the following 7 institution types: primary care clinics, HIV/infectious disease subspecialty care clinics, sexually transmitted disease clinics, community-based organizations offering HIV prevention services, university health clinics, urgent care clinics, and hospital emergency departments. An initial call list of 213 sites was randomly generated from the master Internet search results; 117 sites were willing to participate in the telephone survey.

Across service provision areas of Los Angeles County, MSM are uniformly the predominant group of infected individuals [10]. Although questions related to MSM-focused health service delivery were not part of this study, figure 1 details the locations of participating and nonparticipating sites relative to the incidence of HIV infections in Los Angeles County during the period 2006–2007 and demonstrates a broad distribution of service-provision sites across affected areas. At each participating site, the initial individual who answered the telephone was surveyed to best simulate the experience of a patient seeking services.

Predictors of PEP availability at health care venues were assessed using multiple logistic regression modeling with location type, neighborhood socioeconomic status, and distance from a major academic medical center as predictors. Neighborhood socioeconomic status, assessed as median household income of the zip code in which the health care venue resides, was eval-
Figure 1. Sites selected for telephone assessment of postexposure prophylaxis service availability in Los Angeles County, California

uated as a covariate. Socioeconomic status data were abstracted from the 2000 Decennial Census of Population and Housing Public Database using Beta Data Ferrett software, version 1.3.3 (US Census Bureau). Distance to 1 of 5 major academic hospital centers (UCLA Medical Center, County-University of Southern California Medical Center, Cedars-Sinai Medical Center, Harbor-UCLA Medical Center, and Olive View Medical Center) was calculated as the minimum value of the automobile driving directions to any of the 5 locales, obtained using Google Maps (available at http://maps.google.com). All statistical analyses were performed with SAS, version 9.1.3 (SAS Institute).

Results. A total of 117 sites participated in the telephone assessment. Venues participating in the survey were not different in distribution from those not participating (P = .16, by χ² test). Seventeen of the 117 sites offer PEP services (14.5%; 95% confidence interval [CI], 8.1%–20.9%). Ten (58.8%) of those 17 sites are able or willing to provide such services to uninsured and/or Medicaid patients, which represents 8.5% (95% CI, 3.5%–13.6%) of health care venues surveyed (table 1).

Hospital emergency departments were associated with 5.67-fold increased odds (95% CI, 1.79–17.90) for finding services, compared with all other venue types. In multivariable analysis adjusted for neighborhood socioeconomic status and distance from a major academic center, a primary care physician’s office (odds ratio [OR], 0.05; 95% CI, 0.01–0.50) or a sexually
transmitted disease clinic (OR, 0.10; 95% CI, 0.01–0.99) was statistically significantly less likely to provide PEP than was an emergency department. Uninsured subjects were also more likely to find access to PEP services in hospital emergency departments than in non–emergency department locations ($P = .003$) (table 1).

Median income values for the zip code in which the venue resides were not different between locations offering PEP and those not offering PEP ($39,747 vs. $32,339; \ P = .41$). However, median income levels were significantly lower in areas that contained health care venues that offered PEP to uninsured subjects, compared with areas containing venues that offered PEP only to privately insured subjects ($29,657 vs. $53,891; \ P = .025$). Driving proximity to 1 of 5 major academic medical centers in metropolitan Los Angeles was not associated with availability of PEP services.

**Discussion.** In this randomly selected sample of 117 health care venues in Los Angeles County, 17 (14.5%) were able to offer PEP services. This is consistent with clinical reports of patients being unable to access such services in Los Angeles. Only 10 (8.5%) of these health care venues reported being able to offer services to individuals who were not privately insured.

The venue type that provided the greatest likelihood of finding PEP services was emergency departments; however, emergency departments are strained for resources [11, 12] and, in our clinical experience, are suboptimal venues for providing PEP services. PEP services are a time-sensitive service package that requires extraction of sensitive information, triage, and rapid and skilled management of testing and medication administration with coordination of follow-up. In our survey, 38.9% of emergency departments provide PEP for privately-insured patients; and those emergency departments that do so also offer them to non–privately insured patients. The county hospital system in California, which is the primary emergency service system for uninsured and MediCal (California State Medicaid) patients, is particularly strained [12]. Numerous examples have come to our attention of patients who have sought PEP services and have been turned away from emergency departments after being deemed “inappropriate” for emergency department evaluation; even if these individuals were evaluated in emergency departments, most emergency departments will, at best, provide a 3- or 4-day “starter” supply of PEP medication and leave patients to arrange their own follow-up, including finding the remainder of the recommended 28-day course of treatment.

A major limitation of this study is that we did not investigate the details of the precise service package of medications and follow-up services provided at each site that endorsed PEP provision. This study is also limited by potential selection bias; it is possible that sites offering PEP services are not referenced in the search engines that were used to identify sites. In addition, only the initial telephone respondent at each site was surveyed, which may underestimate PEP service availability if the primary respondents were not well informed; however, the goal was to simulate a patient’s experience in the seeking of such services. Service availability is only relevant if those seeking it can access it. We also classified each health care venue site solely on the basis of its self-identification, determined via the use of an Internet search engine. This may have resulted in misclassification of some sites with regard to venue type and may have obscured or created artificial associations.

Los Angeles represents a challenging setting for the implementation of biomedical HIV infection prevention services, because it includes a large and diverse geographical area. Even though, nationally, the epidemic is consistently driven by MSM [13], cultural, ethnic, and sociodemographic compartmentalization of Los Angeles county obligates a locally defined model for service delivery, rather than a “one-size-fits-all” program.

### Table 1. Predictors of human immunodeficiency virus (HIV) postexposure prophylaxis (PEP) availability in Los Angeles County, California.

<table>
<thead>
<tr>
<th>Health care venue type</th>
<th>No. of sites with PEP services available*</th>
<th>Venue type vs. all other, OR (95% CI)</th>
<th>Unadjusted OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
<th>No. (%) of sites with PEP services available to uninsured individualsb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care</td>
<td>33</td>
<td>0.13 (0.02–1.05)</td>
<td>0.05 (0.01–0.45)</td>
<td>0.05 (0.01–0.50)</td>
<td>0</td>
</tr>
<tr>
<td>Urgent care</td>
<td>15</td>
<td>0.89 (0.18–4.36)</td>
<td>0.24 (0.04–1.41)</td>
<td>0.27 (0.04–1.64)</td>
<td>0</td>
</tr>
<tr>
<td>Community-based organization</td>
<td>10</td>
<td>1.53 (0.30–7.93)</td>
<td>0.39 (0.06–2.42)</td>
<td>0.38 (0.06–2.58)</td>
<td>0</td>
</tr>
<tr>
<td>Sexually transmitted disease clinic</td>
<td>17</td>
<td>0.33 (0.04–2.65)</td>
<td><strong>0.10 (0.01–0.92)</strong></td>
<td><strong>0.10 (0.01–0.99)</strong></td>
<td>1 (5.9)</td>
</tr>
<tr>
<td>Emergency departmentc</td>
<td>18</td>
<td><strong>5.67 (1.79–17.90)</strong></td>
<td>1</td>
<td>7 (38.9)</td>
<td></td>
</tr>
<tr>
<td>HIV/infectious disease subspecialty</td>
<td>10</td>
<td>2.85 (0.66–12.31)</td>
<td>0.67 (0.13–3.51)</td>
<td>0.70 (0.13–3.84)</td>
<td>2 (20.0)</td>
</tr>
<tr>
<td>University health clinic</td>
<td>14</td>
<td>0.42 (0.05–3.43)</td>
<td>0.12 (0.01–1.14)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE.** Boldface type indicates statistical significance. CI, confidence interval; OR, odds ratio.

*\ P = .01, by Fisher’s exact test, for overall nonequality of distribution among all 7 venue types.

b \ P = .003, by Fisher’s exact test, for overall nonequality of distribution among all 7 venue types.

c Reference.
Despite state and national guidelines that endorse PEP after high-risk sexual and injection drug-use exposure, uptake and demand for such services has not been widespread, although pilot research programs of such services have been well received in Los Angeles, San Francisco, and Boston [8, 14–16]. Amid concerns that PEP availability might increase risk-taking sexual behavior [17, 18] and because of budgetary constraints, the optimal role for PEP within prevention-services programming has remained unclear. Although direct efficacy data for PEP in a nonoccupational setting is likely to continue to be absent from the literature, analogy to occupational (e.g., needle stick) PEP strategies, literature on the prevention of mother-to-child transmission of HIV, and animal models suggest substantial (>80%) protective efficacy if treatment is administered rapidly (<72 h) after an exposure and continued for 28 days [19]. If a vaccine with 80% efficacy were available, there would be considerable excitement in the prevention community. The sparse adoption of PEP by health care providers and public health agencies demonstrates the suboptimal use of currently available prevention technologies in an era in which safe and effective vaccines and microbicides are elusive [20, 21] and in which the HIV epidemic continues to devastate communities.

Conclusions. PEP services are available at limited sites in Los Angeles County; fewer options are available for non–privately insured patients. Public and private initiatives are required to integrate biomedical technologies, such as PEP, into current behavioral risk reduction programming as part of comprehensive prevention services.

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References