

Approval of Syringe Exchange Programs in California: Results From a Local Approach to HIV Prevention

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Federal officials, medical societies and associations, and public health agencies in the United States have endorsed syringe exchange programs (SEPs) as a crucial component of any comprehensive strategy to prevent HIV among injection drug users.^{1–3} Yet the congressional prohibition on federal funding for these programs⁴ and state and municipal drug paraphernalia and syringe prescription laws have hindered the implementation of these programs in the United States.^{5–7} However, because of advocacy by activists and public health professionals, changes in state and local laws, and changes in viewpoint among law enforcement agencies and courts,^{6,8–13} there has been a steady, if slow, increase in the numbers and geographic availability of SEPs. As of 2002, there were at least 184 programs operating in 36 states, the District of Columbia, Puerto Rico, and Native American–owned lands,¹⁴ representing a near tripling of programs and an almost doubling of states covered since 1995.¹⁵ Still, many drug users in the United States do not have access to SEPs, suggesting that wider implementation is needed.

Achieving wide dissemination of effective prevention strategies is a persistent problem in public health.^{16,17} In the case of SEPs, 3 general approaches have been observed: Hawaii, New Mexico, and New York have funded programs at the state level, leading to rapid implementation¹⁸; Illinois, Ohio, and Pennsylvania have taken no state-level action, but local jurisdictions have acted on interpretations of state laws to approve programs; and California and Massachusetts have adopted statewide policies that formally permit local governments to implement and fund programs at their own discretion.^{19,20}

These various state-level approaches to SEP implementation are likely to affect program availability and performance. In the case of local implementation, the available

Objectives. We studied the effect of local approval of syringe exchange programs in California (through Assembly AB136) on program availability and performance.

Methods. We determined the number of active syringe exchange programs in California by conducting Internet searches and obtaining information from the state and from local programs. To track changes in program availability and performance between 2000 and 2002, we interviewed 24 program directors annually for 3 years about program characteristics, syringe exchange policies, law enforcement contact, and other issues. We conducted multivariate analyses to determine whether AB136 approval status was associated with changes in performance.

Results. Fifteen local governments (13 counties and 2 cities) enacted the new law by 2002, and operating syringe exchange programs increased from 24 to 35. The proportion of these programs that were not locally approved declined from 54% to 40%. No new approved programs were started in high-need counties. Total syringes exchanged increased by more than 1 million per year, average annual budgets increased by more than 50%, and police harassment of the program volunteers, clients, and operators declined. Improvements at approved syringe exchange programs accounted for these changes.

Conclusions. Statewide approval and funding appears necessary to further syringe exchange availability in California. (*Am J Public Health.* 2008;98:278–283. doi:10.2105/AJPH.2005.080770)

data are not promising. In Massachusetts, no local referendum on opening a program has been approved since 1997, and the few local governments that had approved new programs reversed themselves in response to negative public reactions.¹³ During this period, other local-implementation states—Ohio and Pennsylvania—appear to have fewer programs in 2002 (1 each) than in 1997 (2 each), although whether this decrease was the result of local governmental action is not clear.^{14,21,22} However, the local-implementation approach has not been examined in detail in California or in any other state.

Beginning in 2000, Assembly AB136 amended Section 11364.7 of the California Health and Safety Code to read, “No public entity, its agents, or employees shall be subject to criminal prosecution for distribution of hypodermic needles or syringes to participants in clean needle and syringe exchange projects authorized by the public entity pursuant to a declaration of a local emergency due to the existence of a critical local public

health crisis.” This change codified an interpretation of the California Emergency Services Act that had been used by local jurisdictions to approve SEPs in California. However, there were 2 complications in the application of this policy change.

First, because the California Emergency Services Act required renewal of declarations of public health emergencies every 14 to 21 days, many locales that enacted AB136 believed that repeated renewal was required,¹⁹ although the law establishes no such requirement. Following this unstated requirement, 2 programs ceased operating because of lapses in emergency declarations due to newly elected officials in one case and lack of quorum at a Board of Supervisor meeting in the other.¹⁹

Second, although the language of the legislation does not provide procedures for authorizing specific programs, both public officials and SEP personnel believed that approval status was not conferred unless the local jurisdiction formally endorsed specific

programs. In Los Angeles County, despite enactment of AB136 in August 2000, SEPs were still regarded as unapproved by the California State Office of AIDS, Department of Health Services, because the county in which the SEPs resided never authorized any of the programs.²³ Similar situations arose in San Francisco and San Mateo counties and the city of San Diego (Michael Cunningham, California State Office of AIDS, written communication, May 2003).¹⁹

Given these complications, the effect of AB136 on SEPs in California is uncertain. Therefore, we assessed the impact of AB136 during its first 3 years (2000–2002) in 5 areas: total number of programs, availability in high-need areas, number of locally approved programs, program performance over time, and association between performance and AB136–approval status.

METHODS

We used multiple data sources and methods to assess the effect of AB136 enactment. To determine the number of programs in California and their approval status, we used information provided by the 2003 California State Office of AIDS survey of local health jurisdictions, reports from the California Syringe Exchange Network and the North American Syringe Exchange Network, and Internet searches in Lexis/Nexus, Google, and other electronic databases that might identify the existence of an SEP in California between 2000 and 2002.

An SEP was classified as approved if its local jurisdiction both had declared a AB136 public health emergency and had authorized the specific program. Programs without both were regarded as not approved under AB136. We did not classify these programs according to legal status because of the absence of case law and the ambiguity of existing laws.⁸

To assess whether AB136 resulted in increased SEP availability in areas with greater numbers of AIDS cases attributable to drug injection, we calculated the AIDS case rate related to injection drug use per 100 000 population using 2001 AIDS report data and estimated county populations from California State Department of Finance data. We then

ranked counties by incident AIDS cases per population from highest to lowest for the 47 counties with sufficient AIDS cases related to injection drug use to report results.

To assess the effect of AB136 on SEP performance, we conducted 3 annual surveys with the directors of 24 of the 25 programs operating in California in 2000 (1 director declined to participate). The director survey was completed during a 2-hour interview and was composed of items drawn from the Beth Israel–North American Syringe Exchange Network annual survey of United States' SEPs, the California Syringe Exchange Network survey of SEPs, and additional items we identified as crucial to understanding the effect of AB136.^{15,24,25} Among the major areas covered in the director survey were legal history, program staffing, syringes exchanged, client contacts, syringe dispensation policies,²⁶ syringe disposal arrangements, operating days and hours, on-site services, referrals to other services, program obstacles, program allies, law enforcement contact, and budget information. We compared data by AB136–approval status and time (2000 as compared with 2002).

Study Measures

The number of SEPs in the state was determined annually. Programs were considered to have been operating if they exchanged syringes with injection drug users at any point during the calendar year. Some programs emerged out of existing collaborations, so we classified a program as independent once it began to obtain money for operations separately from the parent program.

Performance measures were assessed using data collected from the director survey. To measure dispensation policy, we assigned each program to 1 of 5 categories: (1) unlimited, need-based syringe exchange; (2) unlimited 1-for-1 syringe exchange plus 5 to 10 additional syringes; (3) limited 1-for-1 exchange plus 5 to 10 additional syringes (i.e. no more than 50 syringes received per visit); (4) unlimited 1-for-1 exchange; and (5) strict 1-for-1 exchange with a limit on syringes received per visit (i.e. no more than 20 syringes exchanged). This classification scheme was derived from empirical findings that clients of

programs with unlimited, need-based distribution had lower odds of syringe reuse^{26,27} and that clients of programs without limitations on the number of syringes that could be exchanged also reported lower syringe reuse.²⁷

Other annual performance measures included the following “yes” or “no” items. Were active injection drug users involved in program operations (as peer outreach workers)? Did the program experience syringe or supply shortages? Did the program or its clients observe or experience police contact at or near syringe exchange sites? Did the program lack political support? Did the program offer HIV or hepatitis C virus testing?

We compared program characteristics in 2000 with those in 2002 and examined whether differences in program characteristics were associated with AB136–approval status. We then assessed whether programs improved or worsened on each measure. Exchange policy, for example, was considered to have improved in programs that provided 1-for-1 syringe exchange plus 5 to 10 additional syringes in 2000 and unlimited, need-based syringe exchange in 2002. If a program's policy instead had changed to limited 1-for-1 syringe exchange, the program was classified as worse.

We quantitatively assessed annual totals of paid staff positions, volunteers, days of the week open, weekly hours open, client contacts, annual syringes exchanged, and total spending on operating the SEP. In the case of items such as paid staff and volunteers, we assessed the maximum number of people working at any point during the calendar year. We used client contacts rather than unduplicated clients because few SEPs collected reliable information on unduplicated clients. For budgets, we only considered actual expenditures. Continuous performance measures were summed and averaged for each program by AB136–approval status.

We had missing data on some items from the director surveys. Client contacts and syringes exchanged for a single year were missing for 2 programs. To create an estimate of the number of syringes exchanged for the missing year, we used data on average number of syringes exchanged per client contact in other years. This average was then multiplied by the client contacts for the missing

year. Similarly, if total annual syringes exchanged was known but client contacts were not, we estimated client contacts by dividing total number of syringes exchanged by average number of syringes exchanged per client from other years. This average was then divided by syringes exchanged to create an estimated client contacts for the missing year.

Statistical Methods

We used descriptive statistics (frequencies, means, ranges) to characterize changes in total number of programs, to illustrate differences in performance measures before and after enactment of AB136, and to compare AB136–approved programs (hereafter “approved programs”) and AB136–unapproved programs (hereafter “unapproved programs”). We also conducted separate repeated-measures random-effects regression models²⁸ for each of the performance measures using AB136–approval status and time, measured as study year (2000, 2001, 2002), as independent variables to assess the association of AB136–approval status and SEP characteristics and performance. These multivariate analyses were performed with Stata version 9.1 statistical software (StataCorp LP, College Station, Tex).

RESULTS

Number and Locations of SEPs

By December 2000, AB136–related public health emergencies had been declared in 13 counties and 2 cities. No other counties or cities declared AB136–related public health emergencies in 2001 or 2002. Enactment of AB136 was related directly to the initiation of 8 new SEPs in 4 counties (5 in 1 county and 1 in each of 3 counties). In addition, 3 programs in 3 different counties were started without a AB136 public health emergency declaration. The total number of programs in California grew from 24 in 2000 to 35 by the end of 2002—a 46% increase.

One approved program and 1 unapproved program were started in counties that did not previously have SEPs. Of the 30 counties without a program in 2000, the approved program was opened in a county with the 23rd (out of 30) lowest rate of AIDS cases related to injection drug use; the other program

was started in a county with the 14th lowest rate. Among the 5 California counties without a program in 2000 that ranked in the top 10 for injection drug use–related AIDS cases in California, none had implemented an SEP by the end of 2002.

By 2002, 30 SEPs operated in locales that had declared AB136–related public health emergencies and 5 operated in locales that had not. However, 9 programs operated in counties that had declared AB136 emergencies but had not authorized existing programs, so we classified these programs as not approved. Nonetheless, among all SEPs, there

were fewer unapproved programs (40%, or 14 of 35) in December 2002 than there were in January 2000 (54%, or 13 of 25).

SEP Performance

We assessed whether adoption of AB136 affected performance measures by comparing overall performance in 2000 and 2002 (Table 1). Mixed results were observed in syringe dispensation policy, with increases in the number of programs providing unlimited, need-based syringe distribution and those offering 1-for-1 syringe exchange with limits on syringes. The number of injection

TABLE 1—Overall Characteristics of 24 Syringe Exchange Programs (SEPs): California, 2000 and 2002

| | 2000, ^a No. (% or Range) | 2002, No. (% or Range) |
|---|--|--|
| Syringe dispensation category | | |
| Unlimited, need-based syringe exchange | 4 (17) | 5 (21) |
| Unlimited 1-for-1 syringe exchange plus 5 to 10 additional syringes | 7 (29) | 6 (25) |
| 1-for-1 exchange plus plus 5 to 10 additional syringes with a limit on syringes that could be exchanged | 1 (4) | 3 (13) |
| Unlimited 1-for-1 exchange | 11 (46) | 8 (33) |
| Strict 1-for-1 exchange with a limit on syringes exchanged per visit | 1 (4) | 2 (8) |
| Active injection drug users work at SEP | 12 (50) | 16 (67) |
| Syringe shortages during year | 7 (29) | 7 (29) |
| Supply shortages during year | 4 (17) | 4 (17) |
| Police harassment of SEP staff or volunteers | 10 (42) | 5 (21) |
| Police presence near SEP during year | 5 (21) | 8 (33) |
| Police harass SEP clients near site during year | 13 (54) | 10 (42) |
| Lack of political support reported | 13 (54) | 10 (42) |
| On-site HIV testing | 21 (87) | 20 (83) |
| On-site HCV testing | 13 (54) | 15 (63) |
| Average paid staff | 3.04 (0-14) | 3.75 (0-10) |
| Average volunteers | 10.66 (0-80) | 14.29 (0-112) |
| Average days open per week | 4.13 (1-7) | 4.54 (2-7) |
| Average hours open per week | 17.17 (1-77) | 26.08 (6-126) |
| Average client contacts ^b | 7 040 (148 to >40 000 ^c) | 7 092 (600 to >40 000 ^c) |
| Average syringes exchanged | 296 685 (1500 to >1 million ^c) | 341 162 (1000 to >1 million ^c) |
| Average budget for SEP | 121 296 (5000 to >500 000 ^c) | 186 065 (7046 to >500 000 ^c) |

Note. HCV = hepatitis C virus.

^aFor comparison purposes we included data from 2001 for 1 SEP where 2000 data was not available.

^bTwo programs were missing data on client contacts or number of syringes exchanged for 2000 or 2002. For these programs, we estimated client contacts and number of syringes exchanged using the averages of number of syringes exchanged per client from other years.

^cRanges for client contacts, syringes exchanged, and budget are listed as “greater than” to protect the confidentiality of individual programs.

drug users actively involved in program operations increased, as did the average number of paid staff (by 0.71 staff members), volunteers (by 3.63 volunteers), days open (by 0.41 days), and hours open per week (by 8.91 hours). No changes were observed in syringe or supply shortages. Substantial reductions were reported in police harassment of volunteers and clients, but police presence near the programs was reported by 3 more SEPs in 2002 than in 2000. The number of programs offering HIV testing had decreased by 1 in 2002, but 2 more offered hepatitis C virus testing. Overall, client contacts grew from 168 970 in 2000 to 170 218 in 2002, a 0.7% increase. The number of syringes exchanged also grew, from 7 120 496 in 2000 to 8 187 899 in 2002, a 15% increase. The average program spent a mean of nearly \$65 000 more per year in 2002 than in 2000, a 53% increase.

Changes in SEP performance were examined by approval status and year in 2 different ways. First, we looked at changes in performance measures by approval status in 2000 and 2002 (Table 2). We found that approved programs, compared with unapproved programs, did not become more restrictive in their dispensation policies. In addition, approved programs reported fewer syringe and supply shortages. On all of the police-contact measures, approved programs had less police contact than did their unapproved counterparts. Political support for SEPs improved and worsened at about the same rates for both approved and unapproved programs. Changes in availability of HIV and hepatitis C virus testing were similar among the programs, regardless of AB136–approval status.

We also examined quantitative changes in SEP performance (Table 3). Approved programs reported substantial improvements on several measures; unapproved programs remained unchanged or worsened. For instance, the average number of paid staff at approved programs increased by almost 1 person, but there was no substantial change at unapproved programs. Approved programs reported substantial growth in the number of syringes exchanged (average increase of more than 50 000 syringes exchanged) and in budgets (which nearly doubled); syringes exchanged at unapproved programs remained

TABLE 2—Changes in Performance of 24 Syringe Exchange Programs (SEPs), by Assembly AB136 (AB136) Status: California, 2000–2002

| | AB136 Approved (n = 14), No. (%) | AB136 Unapproved (n = 10), No. (%) |
|--|---|---|
| Syringe dispensation category ^a | | |
| Improved | 2 (14) | 1 (10) |
| Worsened | 1 (7) | 3 (30) |
| Active injection drug users | | |
| Improved | 3 (21) | 3 (30) |
| Worsened | 1 (7) | 1 (10) |
| Syringe shortages | | |
| Improved | 3 (21) | 1 (10) |
| Worsened | 0 (0) | 4 (40) |
| Supply shortages | | |
| Improved | 1 (7) | 2 (20) |
| Worsened | 1 (7) | 2 (20) |
| Police harassment of SEP | | |
| Improved | 6 (43) | 3 (30) |
| Worsened | 0 (0) | 2 (20) |
| Police presence near SEP | | |
| Improved | 4 (28) | 0 (0) |
| Worsened | 3 (21) | 3 (30) |
| Police contact with SEP clients | | |
| Improved | 2 (14) | 0 (0) |
| Worsened | 1 (7) | 1 (10) |
| Political support | | |
| Improved | 4 (28) | 3 (30) |
| Worsened | 3 (21) | 1 (10) |
| On-site HIV testing | | |
| Improved | 1 (7) | 0 (0) |
| Worsened | 2 (14) | 0 (0) |
| On-site HCV testing | | |
| Improved | 3 (21) | 2 (20) |
| Worsened | 2 (14) | 1 (10) |

Note. HCV = hepatitis C virus. Beginning in January 2000, Assembly AB136 protected operators of SEPs authorized by local jurisdictions (city or county) from criminal prosecution for distributing syringes and needles.

^aPolicy that program uses for dispensing syringes to clients; 5 program types were observed: 1) unlimited, need-based syringe exchange, 2) unlimited 1-for-1 exchange plus 5 to 10 additional syringes, 3) limited 1-for-1 exchange plus 5 to 10 additional syringes that could be exchanged, 4) unlimited 1-for-1 exchange, and 5) strict 1-for-1 exchange with a limit on syringes exchanged per visit.

nearly the same, and average budgets actually declined. Unapproved programs reported growth in several areas, including doubling of volunteers, increased weekly hours of exchange, and increased client contacts. Nonetheless, with the exception of client contacts, most of the overall gains in SEPs (Table 1) after AB136 enactment were attributable to improvements at approved programs.

Because performance may change over time, we used regression models to determine if significant differences between approved and unapproved programs existed after we controlled for time. We found that the annual budgets of approved SEPs included on average \$141 052 more than those of unapproved programs ($z=3.25$; $P=.001$). However, of the total money spent on approved programs in 2002, nearly 75% of the funding went to the 4 programs with the largest budgets. Average spending at the remaining approved programs was \$99 879 per year on average, only \$10 000 more than at the unapproved programs.

The odds of an approved program reporting a syringe shortage were significantly lower (adjusted odds ratio [AOR]=0.005; 95% confidence interval [CI]=0.0002, 0.015) than for unapproved programs, despite increased odds of SEPs reporting a syringe shortage each year independent of approval status (AOR=3.21; 95% CI=1.04, 9.91 per year). Approval status was not significantly associated with any of the other program characteristics or performance measures examined after we controlled for time.

DISCUSSION

Three years after its enactment, AB136 resulted in a 46% increase in the total number of SEPs in California, but only 1 approved program opened in a county that did not previously have one. In addition, among counties with the highest proportion of AIDS cases related to injection drug use (e.g., Kern, Riverside, and San Bernardino) no programs were started, and where they already existed, none were approved (e.g., Fresno, Sacramento).²⁹ Enactment of AB136 had a limited effect on syringe exchange availability in high-need counties.

At present, several approaches to increasing SEP availability without federal funding

TABLE 3—Comparison of Mean Performance Measures of 24 Syringe Exchange Programs (SEPs), by Assembly AB136 (AB136) Status: California, 2000 and 2002.

| | AB136 Approved Programs | | AB136 Unapproved Programs | |
|-----------------------------|-------------------------|------------|---------------------------|------------|
| | 2000, Mean | 2002, Mean | 2000, Mean | 2002, Mean |
| Paid staff | 3.5 | 4.4 | 2.5 | 2.4 |
| Volunteers | 16.0 | 20.9 | 3.2 | 7.7 |
| Days open per week | 3.9 | 4.4 | 4.5 | 4.7 |
| Hours open per week | 18.9 | 23.5 | 14.7 | 29.7 |
| Client contacts | 8 184 | 7 096 | 5 439 | 7 088 |
| Syringes exchanged | 333 973 | 387 246 | 275 981 | 276 645 |
| Budget for SEP ^a | 136 357 | 260 593 | 100 210 | 89 180 |

Note. Beginning in January 2000, Assembly AB136 protected operators of SEPs authorized by local jurisdictions (city or county) from criminal prosecution for distributing syringes and needles.

^aExcludes 1 approved program for which complete budget information was not available.

exist. Statewide funding and implementation appear most effective in obtaining rapid and comprehensive deployment of this HIV prevention strategy.^{14,18} Local-approval approaches have been unsuccessful in other states (Massachusetts, Ohio, and Pennsylvania), and our study found mixed results in California. From an HIV prevention perspective, these data suggest that achieving approval and funding of SEPs at the state level is preferable to the local-approval option even in a state such as California, where local activism and political support around this issue have been successful and ongoing for almost 20 years.^{10,12} In this respect, the situation in California resembles the US national situation, where federal guidance is mixed (endorsement of SEPs but no funding) and reliance on state governments has resulted in a failure to implement comprehensive public health approaches to HIV prevention among injection drug users.³⁰

Recently, California took a similar approach to pharmacy sales of syringes (Senate Bill 1159), empowering counties to legalize nonprescription sales of up to 10 syringes (provided the pharmacy registered with the county to sell syringes). One concern that arises from the experience with AB136 is that nonprescription syringe sales will be made available only in counties where SEPs are already approved, thus providing no assistance to injection drug users residing in high-need counties without these programs.

Enactment of AB136 resulted in an increase in the proportion of approved programs. This effect might have been even greater except for a perceived need to authorize SEPs. In 1 county, 8 programs were not authorized during our study period, and in another, city officials approved the implementation of a pilot program without approving the existing program. Approved programs were also impaired by the perceived need to reissue the emergency declaration every 14 to 21 days.¹⁹ Several local jurisdictions in the 5 years since the enactment of AB136 have failed to renew their emergency declarations, resulting in closures. Closure of SEPs has resulted in dramatic and sudden increases in HIV risk among injection drug users.^{31,32} In 2005, the law related to SEP approval was amended to permit annual renewal of AB136-related public health emergencies.³³

Performance measures improved in our SEP sample following enactment of AB136. But these improvements occurred primarily among approved programs; unapproved programs remained unchanged or worsened. One unintended consequence of the enactment of AB136 appears to be an emerging gap between the quality of services provided at approved and unapproved programs. A separate concern was that approval might lead to less effective SEP models because of increased governmental regulation.^{34,35} However, approval in this case did not result in adoption of more restrictive syringe dispensation policies.

Another issue was whether an unapproved program could be considered tolerated because local police had formally or informally agreed not to arrest program operators. To our knowledge, only 1 SEP operator has been arrested in California between 2000 and 2002. This is in stark contrast to the situation between 1988 and 1996, when operators were arrested in at least 8 California cities.¹⁰ Perhaps 1 unanticipated benefit of the enactment of AB136 has been that law enforcement agencies no longer regard SEPs as criminal activities.

On the other hand, should program operators in an unapproved area be arrested, their criminal defense options may be restricted. In the only case of an operator being arrested since AB136 went into effect, the judge ruled that the necessity defense could not be used, because if a public health emergency existed a local jurisdiction would have declared one.³⁶ Prior to enactment of AB136, no person arrested for nonprescription possession of syringes in the context of operating an SEP had been convicted in California.¹⁰

Our results should be viewed in light of the following limitations. Data on program characteristics are from self-reports, although we attempted to confirm key data by triangulating evidence obtained from state and local governments, foundations, and direct observation of SEPs. In some cases, because of confidentiality concerns or the politically sensitive nature of this work, a few programs did not provide complete information for our study measures. We also examined only the first 3 years of the policy effect. However, since 2000, no new cities or counties had adopted AB136 through 2002, suggesting that the first 3 years adequately captured changes related to this new policy.

This study provides unique information on the effect of local approval on SEP operations and performance and provides valuable new information on the advantages of approving existing programs. Research on client-level effects of these changes is under way, and considerations of the longer-term effects on programs (5 to 6 years after implementation) are planned. Policymaking in the area of HIV prevention has often been controversial in the United States. It is clear from our study that moving controversial public health decisions

from the state level to the local level did not result in optimal public health outcomes. ■

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Contributors

R.N. Bluthenthal originated the study, supervised all aspects of its implementation, conducted data analyses, and wrote this article. K.G. Heinzerling assisted with the study and conducted data analyses. R. Anderson, N.M. Flynn, and A.H. Kral helped originate the study and supervised implementation of the study. All authors contributed ideas, interpreted findings, and reviewed and approved drafts of this article.

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Human Participation Protection

The study was approved by the institutional review boards at the Rand Corp; University of California, Davis; and University of California, San Francisco.

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