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HIV Tests And New Diagnoses Declined After California Budget Cuts, But Reallocating Funds Helped Reduce Impact

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ABSTRACT Historically, California supplemented federal funding of HIV prevention and testing so that Californians with HIV could become aware of their infection and obtain lifesaving treatment. However, budget deficits in 2009 led the state to eliminate its supplemental funding for HIV prevention. We analyzed the impact of California's HIV resource allocation change between state fiscal years 2009 and 2011. We found that the number of HIV tests declined 19 percent, from 66,629 to 53,760, in local health jurisdictions with high HIV burden. In low-burden jurisdictions, the number of HIV tests declined 90 percent, from 20,302 to 2,116. New diagnoses fell from 2,434 in 2009 to 2,235 in 2011 (calendar years) in high-burden jurisdictions and from 346 to 327 in low-burden ones. California's budget crunch prompted state and local programs to redirect remaining HIV funds from risk reduction education to testing activities. Thus, the impact of the budget cuts on HIV tests and new HIV diagnoses was smaller than might have been expected given the size of the cuts. As California's fiscal outlook improves, we recommend that the state restore supplemental funding for HIV prevention and testing.

Dramatic reductions in mortality from HIV infection have occurred since highly effective antiretroviral treatment (ART) became available in 1996.¹ Yet the Centers for Disease Control and Prevention (CDC) estimates that 18 percent of the 1.1 million people living with HIV in the United States are unaware of their infection and therefore fail to benefit from life-prolonging medical treatment for this disease.²

Testing is a crucial component of HIV prevention, identification, and treatment because it is the first step in the treatment cascade that leads from knowledge of HIV status to health care services, including treatment with lifesaving antiretroviral drugs. In addition to the direct benefits of treatment for those diagnosed with HIV, testing for HIV confers benefits to the public because it promotes the prevention of HIV transmission.

Nearly half of all new HIV infections in the United States are estimated to come from the 18 percent of HIV-infected individuals who are unaware of their condition.³ Upon learning of their HIV diagnosis, most people choose to reduce their high-risk behavior.⁴

Suppression of the virus with ART has been shown to reduce the transmission of HIV to uninfected sexual partners by 96 percent.⁵ A “treatment as prevention” strategy—which would involve universal voluntary testing with immediate initiation of ART for people living with HIV, regardless of their clinical status—could have a significant impact on mitigating the spread of disease.^{5–7} Therefore, the CDC has emphasized in recent years that HIV testing should become a routine part of medical care.⁸

The National HIV/AIDS Strategy, published in 2010 by the Office of National AIDS Policy, made expanding HIV testing a priority.⁹ The strategy's

goals include decreasing the number of HIV-infected people who are unaware of their condition and, once those people become aware of their HIV status, linking them to care. The strategy described a number of anticipated results that could be realized by 2015 if federal, state, and local agencies coordinated their efforts to increase HIV testing.

One such result was an increase in the proportion of Americans living with HIV who are aware of their status to 90 percent, compared to the estimated 79 percent at the time the strategy was published.⁹ Another anticipated result was that 85 percent of HIV-positive people would be linked to care within three months of being diagnosed, compared to the estimated 65 percent who were doing so when the strategy was published.⁹

The strategy also predicted that increased diagnosis of HIV through expanded testing and improvements in linking HIV-positive people to care could contribute to a 25 percent decline in the annual incidence of HIV infection by 2015.⁹ The latest data from the CDC report that the annual number of new diagnoses of HIV infection nationally remained fairly constant, declining from 50,500 in 2008 to an estimated 46,300 in 2010.¹⁰ States have an important role to play in promoting HIV testing because a large share of federal funding for HIV prevention is distributed to the states, which then reallocate the money to local jurisdictions.

This article explores the effects of budget cuts in state fiscal year 2010 on California's General Fund support of HIV testing efforts (the state's fiscal year is from July 1 to June 30). We used a mixed-methods approach to address two policy questions. First, how did California's local health jurisdictions absorb the budget cuts, with particular emphasis on strategies used to shift or defray expenditures relating to HIV testing? Second, did California's elimination of General Fund support for HIV testing result in fewer publicly funded HIV tests' being performed and fewer new HIV cases' being detected?

HIV Testing In California

California is home to the second-largest number of HIV-infected people in the country, behind New York.¹¹ Historically, California supplemented its federal HIV prevention funding with allocations from its General Fund. In addition, the CDC allocates funding directly to two California counties, Los Angeles and San Francisco, home to the third- and sixth-largest numbers of HIV cases across all US metropolitan areas.¹⁰ The CDC also makes HIV prevention grants to certain community-based organizations in California, as

shown in the online Appendix.¹²

In state fiscal year 2009 California provided \$42 million in assistance to local health jurisdictions for HIV prevention services—counseling and testing, prevention education, risk reduction, and partner notification—of which \$33 million came from the state General Fund and \$9 million from federal funding.^{13–15} This federal funding was used to support a statewide network of strategically placed free HIV testing sites to reach the poor and uninsured. The California Office of AIDS purchased rapid test kits directly from the manufacturer at discounted rates and distributed the kits at no cost to local health jurisdictions.

However, in state fiscal year 2010 an anticipated \$40 billion shortfall in the state budget, representing nearly 40 percent of the state's General Fund,¹⁶ resulted in cuts to nearly every program that received support from that fund. Few sectors of government were immune to the reductions, but the loss of support for the social services—education, health, and welfare—was particularly profound. State-administered HIV programs were not exempt from the cuts.

As part of the budget cuts in state fiscal year 2010, the Office of AIDS lost all General Fund support for HIV prevention. The cuts amounted to an 80 percent reduction in funding for HIV prevention programs, leaving the state with only \$12 million in CDC funding for HIV prevention to distribute to local health jurisdictions.^{13–15} This amount does not include the CDC's direct support for Los Angeles and San Francisco Counties.

To deal with the severe reduction in resources, the Office of AIDS developed a budget implementation plan that included a three-prong strategy to revise its prevention portfolio and the publicly funded HIV testing network.¹⁷ First, the office limited its funding for HIV prevention to the nineteen "high burden" local health jurisdictions: sixteen counties, including Los Angeles and San Francisco, and three subcounty jurisdictions that maintain their own health departments (Long Beach, Pasadena, and Berkeley).

High-burden jurisdictions were defined as those that had been allocated at least 1 percent of the resources distributed by the Office of AIDS for HIV prevention in state fiscal year 2009. These jurisdictions together accounted for more than 93 percent of the HIV cases in the state's HIV/AIDS case registry as of December 2008.¹⁷ The jurisdictions were Alameda, Berkeley, Contra Costa, Fresno, Kern, Long Beach, Los Angeles, Orange, Pasadena, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, and Sonoma. The remaining forty-two "low burden"

jurisdictions received no HIV prevention funding from the state.

Second, the allocations of direct funding to Los Angeles and San Francisco Counties were reduced because these counties received direct funding from the CDC. The counties contain the four local health jurisdictions of Long Beach, Los Angeles, Pasadena, and San Francisco.

Third, those jurisdictions that continued to receive funding from the state were given a block grant for HIV prevention and testing that gave the jurisdictions flexibility in allocating prevention funding between testing and programs for education and risk reduction. The Office of AIDS gave the jurisdictions the option to provide HIV testing with or without counseling. However, it encouraged the jurisdictions to continue counseling for people who tested positive.

Study Data And Methods

We used mixed methods, including both qualitative and quantitative analyses, to investigate how California's HIV resource allocation changed between state fiscal years 2009 and 2011 and how these changes affected the numbers of HIV tests being performed and the numbers of new HIV diagnoses being made.

QUALITATIVE ANALYSIS Qualitative information on how the budget cuts affected local testing efforts was gathered by surveying local health jurisdictions about the strategies they used to offset reductions in HIV prevention budgets.¹⁸ Program staff at the City of Long Beach Department of Health and Human Services pretested the survey, which was then disseminated via the Internet to the AIDS directors of all sixty-one local health jurisdictions in California in October 2010.

Representatives of nine of the nineteen high-burden jurisdictions (47.4 percent) completed the survey. Predictably, response rates were much lower (17 percent) in jurisdictions that had lost all state funding, which reflected the impact of that loss on the availability of staff to respond to the survey.

Responding and nonresponding jurisdictions differed significantly. Jurisdictions in urban areas were generally more likely to respond, although the Los Angeles jurisdiction did not. Respondents reported greater average numbers of new diagnoses (121) in the year before the cuts than the nonresponders did (95). This reflects the continued funding and greater staff retention in the jurisdictions with larger caseloads. The difference in new diagnoses would have been even greater if the Los Angeles jurisdiction had not been included in the average for the nonresponders, since it reported 2,357 new di-

Few sectors of government were immune to the reductions, but the loss of support for the social services was particularly profound.

agnoses in the year before the cuts.

The closed-ended questions on the survey were tabulated. Common themes from open-ended questions were identified by two analysts using thematic analysis.

QUANTITATIVE ANALYSES The quantitative analyses drew on data obtained from the HIV Education and Prevention Services Branch of the Office of AIDS for state fiscal years 2009–11 on state allocations to local jurisdictions for HIV prevention programs and numbers of publicly funded HIV tests supported by this funding in each jurisdiction.

HIV prevention budget allocations for high- and low-burden jurisdictions were summed separately. Funds that Los Angeles and San Francisco Counties received directly from the CDC^{19–21} were added to state funds to measure total prevention resources in these counties.

Numbers of newly diagnosed HIV infections within each local health jurisdiction for calendar years 2008–11 were obtained from the Surveillance, Research, and Evaluation Branch of the Office of AIDS. In both high- and low-burden jurisdictions, we pooled data for 2008 and 2009 (the period before the budget cuts) and data for 2010 and 2011 (after the cuts) to reduce the year-to-year variability in reported diagnoses.

State funding levels and numbers of tests are reported by state fiscal year, but numbers of new infections are reported by calendar year. To allow for delays in confirmatory HIV testing and reporting, we treated testing as affecting cases reported six months following the test. Thus, funding for state fiscal year 2010 related to new cases reported in calendar year 2010.

The analysis compared percentage changes from levels of prevention funding in state fiscal year 2009 to percentage changes in numbers of publicly funded HIV tests performed and new

diagnoses made. Funding and diagnosis data were available for San Francisco and Los Angeles Counties, but it was not possible for the investigators to isolate numbers of HIV tests by source of funding in those counties.

LIMITATIONS The qualitative survey's response rate was low, particularly in the local health jurisdictions that lost staff because of funding cuts. Twenty-six of the sixty-one jurisdictions completed all or part of the survey. Nine of the nineteen high-burden jurisdictions (47.4 percent) that received state support in state fiscal year 2010 returned surveys that were sufficiently complete for analysis.

It is important to note that California changed the way in which HIV cases were reported in the state's HIV/AIDS case registry in April 2006. Before that time HIV cases that had not advanced to AIDS could be reported using anonymous codes, although AIDS cases had to be reported to the state by name. After April 2006 HIV-only cases were also required to be reported to the state by name. Thus, every person previously listed by code in the registry had to be retested and his or her case reported by name. This led to a surge in newly registered HIV cases.

After the initial catch-up period, the number of new HIV cases registered declined over time in both high- and low-burden jurisdictions. Thus, some of the decline in new HIV cases might reflect this catching up in reporting rather than a response to budget cuts. However, the catching up should have affected low- and high-burden jurisdictions similarly. Differentially greater declines in new cases in the jurisdictions that lost funding can be attributed to the budget cuts.

By comparing percentage changes in newly identified cases between jurisdictions that lost all funding and those that did not, we were able

to partially control for the common time trend affecting both groups. However, we could not estimate how many new HIV cases would have been identified if previous funding levels had been maintained.

Study Results

QUALITATIVE FINDINGS Local health jurisdictions reported using a variety of strategies to deal with the budget cutbacks. These included eliminating or reducing testing activities, finding alternative sources of support for testing, and reducing staff (Exhibit 1).

► **CURTAILED TESTING ACTIVITIES:** Nearly all of the responding local health jurisdictions reported reducing the number of publicly funded HIV testing programs, testing sites, or both (Exhibit 1). None of the high-burden jurisdictions eliminated testing services, but two of the seven low-burden jurisdictions did.

Reductions in testing occurred in county jails, alcohol and drug rehabilitation facilities, and mobile outreach programs. Testing was also reduced at agencies that provided fewer tests, reached lower-risk populations, or identified fewer HIV-positive people, compared to other test sites. Respondents in jurisdictions that lost all funds from the Office of AIDS reported that they had curtailed outreach to at-risk populations and testing in high-risk settings, and that—as one respondent observed—clients had “more hoops to jump through for free HIV testing.”

► **ALTERNATIVE SOURCES OF SUPPORT:** High-burden local health jurisdictions were more successful than low-burden ones in obtaining additional funds for testing from the CDC and the Ryan White Program, a program of the Health

EXHIBIT 1

Strategies Used by Sixteen Local Health Jurisdictions in California To Absorb HIV Prevention Budget Cuts In State Fiscal Year 2010

Strategy	Jurisdictions		
	High burden (n = 9) ^a	Low burden (n = 7) ^b	All (N = 16)
Eliminate publicly funded HIV testing	0	2	2
Reduce the number of publicly funded HIV testing sites or programs	8	6	14
Supplement HIV testing budgets with local funding sources	2	3	5
Supplement HIV testing budgets with federal funding sources	4	1	5
Reduce associated expenditures by reducing staff positions or time	3	6	9

SOURCE Authors' analysis of data from an October 2010 survey of local health jurisdictions. **NOTES** High-burden jurisdictions are those that received more than 1 percent of the state's HIV prevention funding in 2009. Three of the high-burden jurisdictions and five of the low-burden jurisdictions reported that budget cuts impeded residents from obtaining a publicly funded HIV test. ^aAlameda, Contra Costa, Fresno, Kern, Long Beach, Orange, San Bernardino, San Francisco, and Solano. ^bMono, Napa, Plumas, San Luis Obispo, Santa Barbara, Sierra, and Sutter.

Resources and Services Administration designed to fill gaps in HIV care.²²

Both types of jurisdictions were able to draw on local sources, including local general funds and support from Kaiser Permanente, one of the region's largest providers of care. The prevention funding that the high-burden jurisdictions received was in the form of block grants, which allowed these jurisdictions to reallocate the funds they received from HIV education and risk reduction programs to HIV testing activities.

► **REDUCED STAFFING:** More than half of the responding local health jurisdictions eliminated staff positions as a result of the budget cuts (Exhibit 1). Staffing cuts were more common in low-burden jurisdictions than in high-burden ones.

QUANTITATIVE FINDINGS The elimination of support for HIV testing from the state's General Fund substantially reduced the resources that local health jurisdictions had available for HIV prevention, even in those areas that continued to receive some support from the state. In state fiscal year 2010 the funding level for the high-burden jurisdictions was only 42 percent of the level for the previous year. Funding for high-burden jurisdictions other than Long Beach, Los Angeles, Pasadena, and San Francisco fell from \$13 million to \$5.5 million (Exhibit 2). In state fiscal year 2011 the state was able to allocate somewhat more funds to high-burden jurisdictions, but the level was still only 49 percent of the level before the budget cuts. Low-burden juris-

dictions received no state HIV prevention funding after the budget cuts.

The four jurisdictions in Los Angeles and San Francisco Counties experienced greater state funding cuts than other jurisdictions did (Exhibit 2). However, the cuts in these two counties amounted to a smaller percentage of their total HIV prevention and testing budgets (10–11 percent) because of the direct funding they received from the CDC.

As a result of lower funding levels, local health jurisdictions were able to provide fewer free HIV tests. In the first year after the budget cuts, the high-burden jurisdictions provided 30 percent fewer publicly funded tests (Exhibit 3). The number of publicly funded tests performed in these jurisdictions rebounded slightly over time, reaching 53,760 in state fiscal year 2011, which was 81 percent of the number two years before. However, the number of tests in low-burden jurisdictions continued to decline in state fiscal year 2011.

The numbers of new HIV cases reported fell in both high- and low-burden local health jurisdictions from the period before the budget cuts (calendar years 2008 and 2009) to the period after the cuts (calendar years 2010 and 2011) (Exhibit 4). The numbers declined by 6.7 percent in high-burden jurisdictions, despite the fact that their HIV prevention funding was halved and the numbers of HIV tests supported by public funds fell by 19 percent (Exhibit 3). In comparison, the numbers declined by 14 percent in

EXHIBIT 2

State Allocations To Local Health Jurisdictions In California For HIV Counseling And Testing, State Fiscal Years 2009–11

State fiscal year	Jurisdictions			
	High burden, with reduced state funding (n = 15) ^a	Low burden, with no state HIV funding (n = 42) ^b	High burden, with direct CDC funding (n = 4) ^c	
	OA allocation (millions)	OA allocation (millions)	OA allocation (millions)	CDC allocation (millions)
2009	\$13.05	\$4.24	\$10.82	\$30.08
2010	5.48	0.00	2.25	34.38
2011	6.40	0.00	2.67	33.71

SOURCE Authors' analysis of data from California Department of Public Health, Office of AIDS. State of California AIDS/HIV program funding detail (Note 13 in text) and Office of AIDS FY2009–2010 budget planning and stakeholder surveys (Note 17 in text); Centers for Disease Control and Prevention, DHAP HIV funding awards (fiscal year 2011) (see Note 19 in text), fiscal year 2010 (see Note 20 in text), and fiscal year 2009 (see Note 21 in text). **NOTES** Changes in the Office of AIDS (OA) allocation between state fiscal year 2009 and state fiscal year 2010 were –58 percent for high-burden jurisdictions with formula funding, –100 percent for low-burden jurisdictions, and –10 percent for high-burden jurisdictions with direct funding from the Centers for Disease Control and Prevention (CDC). Changes between state fiscal year 2009 and state fiscal year 2011 were –51 percent, –100 percent, and –11 percent, respectively. ^aAlameda, Berkeley, Contra Costa, Fresno, Kern, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Joaquin, San Mateo, Santa Clara, Solano, and Sonoma. ^bAlpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Imperial, Inyo, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Mono, Monterey, Napa, Nevada, Placer, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Ventura, Yolo, and Yuba. ^cLong Beach, Los Angeles, Pasadena, and San Francisco. CDC funds to support surveillance, the Medical Monitoring Project, and Enhanced Comprehensive HIV Prevention Planning not included.

EXHIBIT 3

HIV Tests Funded By The California Office Of AIDS, State Fiscal Years 2009–11

	Local health jurisdictions		
	High burden (n = 15) ^a	Low burden (n = 42) ^b	All (N = 57)
2009	66,629	20,302	86,931
2010	46,782	3,239	50,021
2011	53,760	2,116	55,876
Change, 2009 to 2010	-30%	-84%	-42%
Change, 2009 to 2011	-19%	-90%	-36%

SOURCE Authors' analysis of data from Brian Lew, assistant division chief, California Department of Public Health, Office of AIDS, personal communication, November 27, 2012. **NOTES** Data on numbers of publicly funded tests supported by Centers for Disease Control and Prevention (CDC) funding were not available for Long Beach, Los Angeles, Pasadena, and San Francisco. These four jurisdictions are not included in the exhibit. ^aSee Exhibit 2 for a list of high-burden counties. ^bSee Exhibit 2 for a list of low-burden counties.

San Francisco and 10 percent in Los Angeles Counties (data not shown). And in the local health jurisdictions that received no state HIV prevention funding in state fiscal year 2010, the numbers fell by 15.7 percent (Exhibit 4).

Discussion

The elimination of support for HIV prevention activities from California's General Fund for state fiscal year 2010 caused the Office of AIDS to reallocate its funds for local health jurisdictions' HIV prevention programs. The impact on funding was dramatic, even in those jurisdictions that still received some state funding. The jurisdictions in San Francisco and Los Angeles Counties experienced an average 11 percent decline in total resources (CDC funds as well as state funds) for HIV prevention and testing between state fiscal years 2009 and 2011.

In contrast, the other high-burden jurisdic-

tions lost half of their state funds, and low-burden jurisdictions lost all of their state funds, for HIV prevention and testing. Jurisdictions in these groups received no CDC funds.

Our survey of local health jurisdictions found that high-burden local health jurisdictions used a number of strategies to continue to provide publicly funded HIV testing in a time of severe budget cuts. These strategies included the restructuring of programs and staffing and increased reliance on external funding mechanisms.

In addition, high-burden jurisdictions reallocated funding from health education and risk reduction, which had accounted for 73 percent of the HIV prevention budget in state fiscal year 2009, to HIV testing activities.²³ Consequently, HIV testing's share of the prevention budget rose to 54 percent in state fiscal year 2010, but the total prevention budget was smaller.

These findings are consistent with those of

EXHIBIT 4

New HIV/AIDS Cases Reported In California, Calendar Years 2008–11

	Local health jurisdictions		
	High burden (n = 15) ^a	Low burden (n = 42) ^b	High burden, with direct CDC funding (n = 4) ^c
2008 and 2009	4,858	739	5,513
2008	2,424	393	2,887
2009	2,434	346	2,626
2010 and 2011	4,534	623	4,915
2010	2,299	296	2,540
2011	2,235	327	2,375
Change, 2008 and 2009 to 2010 and 2011	-6.7%	-15.7%	-10.8%

SOURCE Authors' analysis of data from Brian Lew, assistant division chief, California Department of Public Health, Office of AIDS, personal communication, June 11, 2013. ^aSee Exhibit 2 for a list of high-burden counties. ^bSee Exhibit 2 for a list of low-burden counties. ^cLong Beach, Los Angeles, Pasadena, and San Francisco.

Emily Arnold and coauthors.²⁴ Their qualitative interviews also documented reductions in staff and HIV prevention programming as a result of the prevention budget cuts.

Despite reducing the hours and locations at which testing was available, the numbers of state-funded tests in high-burden local health jurisdictions fell by only 19 percent (Exhibit 3)—considerably less than the 51 percent decline in prevention funding (Exhibit 2). High-burden jurisdictions were able to minimize the reduction in HIV testing by shifting resources from HIV risk reduction and education programs to HIV testing, whose efficacy in prevention is supported by the strongest evidence.^{25,26}

High-burden local health jurisdictions also increasingly targeted their HIV testing activities to populations most likely to be HIV-positive. In these jurisdictions, the numbers of new cases reported in calendar years 2010–11 fell by 6.7 percent, compared to the number reported in 2008–09 (Exhibit 4). This was a smaller percentage decline than in funding (51 percent) and in numbers of tests performed (19 percent).

The low-burden jurisdictions that lost all of their prevention funding had fewer options, and tests in these jurisdictions fell by 90 percent (Exhibit 3). Some people with HIV may have sought HIV testing in the private sector or in other jurisdictions when free publicly funded testing became less accessible in their own areas. These counties experienced twice as large a percentage drop in new HIV cases identified (15.7 percent) than did those areas that continued to receive some state funding (Exhibit 4).

Across the state of California, 1,038 (9.3 percent) fewer new HIV infections were reported in the two-year period following the budget cuts, compared to those reported in the two years before the cuts.

Not all of the decline that we found in new HIV cases can be attributed to decreased prevention funding. New cases fell by an average of 11 percent in Los Angeles and San Francisco Counties in the same period, even though the four local health jurisdictions in these counties experienced smaller reductions in HIV prevention funding than did other high-burden jurisdictions. This suggests that cases reported in calendar years 2008–09 may include some “catch-up” registration resulting from the introduction of reporting by patient name in 2006. Thus, the 1,038 estimate represents an upper bound on the number of cases missed as a result of reduced funding for HIV prevention.

Feng Lin and coauthors, who used a different methodology, estimated that the California budget cuts resulted in 31,209 fewer HIV tests and 384 fewer new HIV diagnoses in state fiscal

Our evidence suggests that in response to the budget cuts, HIV testing became more targeted over time.

year 2011 across California than would have been the case without budget cuts.²³ Lin and coauthors applied the percentage of all tests that were positive for each risk group in state fiscal years 2009–10 to the numbers of people in each HIV risk group tested in preceding years to estimate the numbers of HIV cases identified.

However, our evidence suggests that in response to the budget cuts, HIV testing became more targeted over time. That would result in a higher percentage of positive tests in state fiscal years 2009–10 than in earlier periods. Thus, Lin and coauthors likely overestimated the number of HIV cases identified in the baseline period and did not account for the substitution of private testing when publicly funded tests became less accessible. Our study did allow for this substitution because it relied on the number of new HIV cases registered with the state, instead of estimate from a model.

Despite differences in methods, both this study and that of Lin and coauthors suggest that as a result of the budget cuts, fewer than 520 people a year in California were not informed that they had been infected with HIV. Nonetheless, the consequences were costly. In addition to the delay that many of these people experienced in receiving medical treatment, Lin and coauthors estimated that an additional fifty-five HIV transmissions occurred each year. These infections were estimated to result in an additional \$20 million in lifetime treatment costs—a number greater than the short-term budget savings.²³

There is a growing medical and health policy consensus about the advisability of pursuing a strategy of “treatment as prevention”—reducing HIV transmission by initiating voluntary and regular HIV testing, followed by early and intensive ART for all people living with HIV. However, the success of this strategy depends on widespread testing to identify people who have been infected with HIV.^{25,26} To support this goal, the California State Legislature passed a bill (AB1894) in 2008 that required private health plans to cover beneficiaries’ costs for HIV test-

ing, whether or not the testing was related to a primary diagnosis.²⁷

However, even in conjunction with the expanded insurance coverage that the Affordable Care Act will provide, AB1894 will not ensure ready access to HIV testing for many people with undetected HIV. Mandating insurance coverage for HIV testing promotes additional testing in clinical settings. However, it does little to increase access to testing for people who do not have health insurance and do not receive regular medical care. Even regular users of medical care may fear the perceived stigma of being HIV-positive and, as a result, be reluctant to ask their medical care provider for an HIV test.²⁸

Nearly 22 percent of Californians under age sixty-five are uninsured.²⁹ Many of these people are undocumented immigrants and therefore ineligible for Medicaid or subsidized insurance through the health insurance exchanges.³⁰ Therefore, even after the implementation of the Affordable Care Act, there will continue to be a need for publicly funded HIV screening programs outside of clinical settings. The broad coverage for testing required to identify the large numbers of people living with undiagnosed HIV will require making free or low-cost testing available in nonmedical settings—a role historically assumed by public health agencies.²⁵

Knowledge about the effectiveness of different HIV prevention strategies is growing, and the emphasis in the National HIV/AIDS Strategy⁹ on treatment as prevention reflects this improved knowledge base. Yet it has been more difficult at the state and local levels than at the federal level to redirect funding to the most ef-

fective strategies.

California's budget crunch provided the impetus to do just that: shift HIV prevention funding from risk reduction education to testing. However, California's success in ensuring that the numbers of free HIV tests declined by a smaller percentage than the cuts in funding did was possible only because agencies were given flexibility in how they absorbed the budget cuts. The results would have been different if across-the-board cuts had been imposed.

Policy makers should not become overly optimistic about our finding that substantial cuts in the budget for HIV prevention resulted in only modest declines in the numbers of new HIV infections identified. Further funding cuts would lead to much greater adverse consequences because the least difficult cuts in services have already been made.

Conclusion

California's fiscal situation has improved, and there is a strong argument to be made that it is time to consider restoring General Fund support for HIV prevention. Increased funding could provide support in some areas—such as Marin, Santa Barbara, and Santa Cruz—that were considered low-burden local health jurisdictions but that have substantial HIV prevalence levels. Increased funding could also be used to expand HIV testing in jurisdictions that still receive state funds for this purpose. Testing is the first step on the HIV care continuum and an important strategy for reducing transmission of HIV. ■

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