Predictors of Success in Implementing HIV Prevention in Rural America: A State-Level Structural Factor Analysis of HIV Prevention Targeting Men who have Sex with Men

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Abstract

Relatively few studies have examined the impact of modifying structural factors on HIV prevention efforts in the United States despite their high potential for lowering HIV prevalence rates. The aim of this study was to identify state-level characteristics of successful HIV prevention implementation. Structured interviews with 73 key informants in 13 rural states identified 'more successful' and 'less successful' states in HIV prevention. States were compared on demographic, religious, gay community, and funding variables. The 7 more successful states had both a wider variety and more MSM-targeted interventions. Overall funding, degree of epidemic, and "ruralness" were not significantly associated with success. Rather, successful states had less religious and Evangelical Protestant adherents and more 'gay community' infrastructure. They also spent a greater proportion of funds contracting community-based organizations and on MSMtargeted programming. Success in HIV prevention varies across rural states. Key demographic, social and economic indicators distinguish success in HIV prevention.

Keywords

Rural HIV prevention; Prevention planning; structural research; MSM

Introduction

Structural factors are those variables beyond an individual's control, which nevertheless influence their behavior (Sumartojo, 2000). Physical, social, cultural, organizational, community, economic, legal, and policy dimensions of the environment can facilitate or impede individual efforts to avoid HIV infection (Sumartojo et al., 2000). Structural factors take both proximal and distal forms, with the former being more closely linked with individual behavior (Sumartojo, 2000). An example of proximal structural factors is laws that affect the availability and distribution of clean needles to injection drug users, while more distal factors include economic disparities and stigmatizing community attitudes toward high-risk populations. Relatively few studies have examined the impact of modifying structural factors on HIV prevention efforts in the United States despite their high potential for lowering HIV prevalence rates (Blankenship, Bray, & Merson, 2000).

Studies conducted in developing countries have identified a number of structural factors, such as poverty and political discord that facilitate the spread of HIV (Sumartojo, 2000). In North America, the role of structural factors remains under-researched (Parker, Easton, & Klein, 2000), and research that demonstrates the relationship between structural factors and HIV prevention is rare (Sumartojo, 2000). To address this lack of research, in 2000 the CDC sponsored an interdisciplinary meeting of researchers and policy makers, and commissioned a special issue of AIDS entitled *Structural Factors in HIV Prevention*. Reviews of structural factors in HIV prevention were published for adolescents (Rotheram-Borus, 2000), injecting drug users (Des Jarlais, 2000; Taussig, Weinstein, Burris, & Jones, 2000), HIV positive individuals (Shriver, Everett, & Morin, 2000), women (O'Leary & Martins, 2000), and gay and bisexual men (Wohlfeiler, 2000). For gay and bisexual men, bathhouses and sex clubs appear to be the environmental structures most researched (Bayer, 1989; De Wit, De Vroome, Sanfort, & Van Griensven, 1997; Morris & Dean, 1994), although the need for greater investigation of the role of economic and ethnic disparities, migration, and legislation was acknowledged (Wohlfeiler, 2000).

No previous research appears to have evaluated structural factors in HIV prevention for *rural* men who have sex with men (MSM). Although rates of HIV among men living in non-metropolitan areas (10.9%) are lower than in areas with higher population densities (e.g., 34.9% in metropolitan statistical areas greater than 500,000; [CDC, 2000a]), recent studies suggest that rural MSM are at risk for HIV (Horvath, Bowen, & Williams, 2006). Male-male sexual contact remains the dominant mode of HIV transmission in rural states (CDC, 2002). High rates of AIDS cases in rural communities are particularly evident in Northeastern and Southern United States, which have high percentages of African American residents (CDC, 2005).

Previous studies have identified a number of structural factors that may impede HIV prevention efforts in rural areas. These including the lack of identifiable venues in which MSM congregate (e.g., bars, bookstores), few or no GLBT (gay, lesbian, bisexual, transgender) services, strong conservative norms regarding sexual behavior, and social hostility (Preston, D'Augelli, Cain, & Schulze, 2002; Williams, Bowen, & Horvath, 2005). The role of religion has not been traditionally accounted for in HIV prevention research. However, several studies have shown significant positive associations between religiosity and individuallevel health outcomes (Elifson, Klein, & Sterk, 2003; Matthews et al., 1998).

The broad objective of this study was to identify statelevel structural variables that facilitate or impede successful HIV prevention implementation. Specifically, we examined three state-level structural factors that impact the implementation of HIV prevention for MSM in 13 rural states. We examined the association between religious affiliation in rural states and HIV prevention implementation. Faith communities, including services provided by churches and attitudes of the congregation, are included in the list of possible system-level institutions that may be targets for structural interventions to reduce HIV transmission (Sumartojo, 2000). Next, we studied the role of gay community infrastructure that provide social and sexual networking opportunities for rural MSM, as well as potentially provide venues for sexual risk reduction messages. The third factor was state funding of HIV prevention services, and specifically those targeting MSM. In the US, the state is a critical structural variable for HIV prevention implementation. State policies directly determine risk group prioritization and the allocation of HIV prevention funds at the local level (CDC, 2001a). How state funds are allocated may directly influence whether HIV prevention efforts can be successfully implemented. We chose implementation of HIV services as the primary dependent variable, as opposed to HIV infection rates, since it is a direct and easily accessible measure of overall prevention efforts.

We hypothesized three outcomes. First, that across rural states, there would be a range of success in HIV prevention implementation; second, that having greater gay infrastructure would be associated with higher success in HIV prevention implementation; and third, that greater funding would predict success in HIV prevention implementation. An additional research question was to determine if certain demographic characteristics (e.g., race/ethnicity and poverty) would be related to success in HIV prevention implementation. This study is unique because, to the best of our knowledge, it is the first to evaluate HIV prevention implementation activities across states.

Methods

Study Population

This is a state-level study evaluating HIV prevention implementation targeting MSM in rural US states. There were two state-level inclusion criteria: *rural* was defined as a state where most of the population (>50%) resides outside of metropolitan areas (defined by the 2000 Census as a population nucleus of 50,000 persons or more [US Census, 2001]); and *majority MSM epidemic* was defined as the majority of AIDS cases in a state attributed to malemale sexual transmission by the Centers for Disease Control and Prevention surveillance report at the time this study was conducted (CDC, 2000a, b). AIDS cases were chosen because all states have mandated AIDS (but not HIV) reporting requirements to the CDC.

The 13 states which met inclusion criteria represented a diversity of geography (2 New England, 3 West North Central, 2 South Atlantic, 1 East South Central, 1 West South Central, and 4 Mountain [CDC, 2000a, b]), severity of HIV epidemic (0.6–15.2 AIDS cases per 100,000 [CDC, 2000a, b]), and racial/ethnic composition (US Census, 2000). The AIDS directors for Arkansas, Idaho, Iowa, Maine, Mississippi, Montana, New Mexico, North Dakota, South Carolina, South Dakota, Vermont, West Virginia, and Wyoming were sent a letter inviting them and their state to participate and requesting their assistance to facilitate their state's participation. All thirteen agreed to participate.

Key Informant Interviews

For each state, we identified five experts in rural HIV prevention as key informants: the CDC project officer, the state AIDS director, the state's HIV prevention planning group community co-chair, at least one experienced frontline HIV prevention educator targeting MSM, and at least one MSM/gay community leader. In addition, in states with significant racial/ethnic diversity, community leaders and frontline HIV prevention educators from each major racial/ethnic group were interviewed. Key informants were interviewed to obtain the following measures.

Measuring Success in HIV Prevention Implementation—To measure how successfully states implemented HIV prevention services, key informants were asked, "How well do you think HIV prevention concerns are being addressed in «name of state» …" overall, for MSM, and for Men of Color who have Sex with Men (MCSM), using an A+ to F- scale? Key informants were not given specific criteria for grade selection as to not bias their responses in any way; rather participants were encouraged to justify their grade selection in an open-ended interview format after their grade was voiced. In addition, key informants were asked to name and describe each specific HIV prevention intervention for MSM in their state (CDC, 2001b).

Gay Community Infrastructure—Gay community infrastructure was estimated by having the MSM key informants inventory the number of gay-related establishments for

their state, separately for bars, cafes, guesthouses, organizations, churches, adult bookstores, and community centers. In addition, informants noted whether or not their state had one or more gay pride events and GLBT-related newspaper. Each state list was independently confirmed using local gay media and national listings of gay organizations (e.g., Spartacus. (Spartacus International Gay Guide, 2002) and Gayscape (JW Publishing, 2002)).

Additional Data Sources

State Demographic Characteristics—For each state, demographic data on rural status, ethnic composition, and percent persons below poverty were obtained from the 2000 US Census (US Census, 2000). Geographic information on size of state was obtained from Encyclopedia Britannica (Encyclopedia Britannica, 2002) and Infoplease.com (Family Education Network, 2002).

Religious Adherents and Affiliation—The percentage of state's residence who are religious adherents and affiliated with religious organizations as of 2000 were obtained from The Association of Religion Data Archives website (2006). Religious "adherents" was defined in the method as, "all members, including full members, their children and the estimated number of other regular participants who are not considered as communicant, confirmed or full members" (Jones et al., 2000 as cited on the Association of Religion Data Archives website). The adjusted total of percent religious adherents was used, as it takes into account historically African American denominations. Religious affiliation percentages (calculated as the number of affiliates in the denomination/total state population) were aggregated for the four largest religious affiliations in the states examined in this study: Roman Catholic, Mainstream Protestant, Evangelical Protestant, and the Church of Jesus Christ of Latter-day Saints (a.k.a., Mormon).

HIV Prevention Funding—Data on federal funding for each state was obtained internally at CDC. State AIDS directors are required to keep detailed information on how state and federal HIV prevention funds are allocated within their state, including the types of organizations that receive funds (e.g., communitybased organizations vs. state and city health department) and the at-risk populations which are being targeted with the funds (e.g., MSM versus youth). The funds allocated to community-based organizations (CBOs) were examined specifically since CBOs historically have played a critical role in HIV/AIDS prevention with stigmatized populations, such as MSM. The following funding data for FY 2001 were calculated: (a) whether or not states allocated any funds to HIV prevention (independent of federal funds), (b) the amount of HIV funding per state resident (total HIV prevention funds/state residency), (c) the combined state and federal funds allocated for HIV prevention, (d) the funding allocated to CBOs, and (e) the funding specifically to target MSM. In addition, the percentage of funds allocated to CBO contracts as a whole (funds in RFPs to CBOs/total funds for HIV prevention), CBO contracts to target MSM prevention (funds in RFPs to CBOs targeting MSM HIV prevention/total funds for HIV prevention), and MSM targeted prevention (funds to target MSM/total funds for HIV prevention) were calculated.

Procedure

A standardized protocol and set of interview questions were developed and piloted using mock interviews at CDC. In the fall of 2000, the state AIDS directors were sent letters inviting them to participate. These introduced the interviewer as a visiting scientist at CDC, and hence, an external evaluator. Upon confirmation of involvement, the state AIDS director identified potential key informants that met eligibility requirements, negotiated a suitable date for the interviewer to visit, and arranged the interview schedule. In states with significant racial and ethnic minorities, effort was made to identify key informants from

each racial/ ethnic minority. Prior to being interviewed, each informant was provided with a consent form outlining the study, risks and benefits, and an overview of interview questions. Participants were informed that their involvement was voluntary, all interviews would be face-to-face, that they could decline any question, and stop at any time. Each interview lasted 1–3 hours. In three of the states, weather prevented some key informants from participating. In these cases, the interviews were either re-scheduled or conducted by phone. The University IRB committee for the protection of human subjects reviewed and approved study procedures.

Analyses

After the interviews were completed, transcripts of key informant interviews were examined by the senior author. Internal consistency among key informants' grades within states and categories was high. The senior author averaged the informants' grades within state and target population category (overall, MSM, and MCSM). To establish reliability, an independent rater repeated the task of averaging the informants' grades (i.e., per category for each state). A priori, an inter-rater reliability estimate within one grade (e.g., A+ and A) was deemed acceptable. Initially, 23 out of 26 estimates matched (88% inter-rater reliability). The raters then met to resolve the 3 outstanding estimate differences. Two validity measures were employed. First, internal validity was confirmed by comparing each informant's grade estimate to her/his qualitative description of HIV prevention for that category. Second, as an external validity check, the inventory of MSM-specific interventions in each state was organized by category (outreach, individual, group, community, public information, structural and virtual), the number of interventions summed, and this number compared against the averaged grade estimates.

The final mean grade estimates of MSM prevention implementation were then used to rank each state from the most to the least successful. In cases where grades for MSM prevention implementation matched, the grade for overall prevention was used to rank states. Next, to allow for broad comparisons, states were divided into "more successful" (top seven states) and "less successful" (bottom six states) states by their rank. While other categorization schemes were considered, we believed that the dichotomous scheme was most useful as a first attempt to understand differences at the structural level. Thus, while this scheme allowed for states with similar profiles, such as G and H in Table 1, to be assigned to different categories, the critical comparisons are at the group level.

As a single broad measure of the degree of gay infrastructure, the first author assigned each state a value from 1 to 5 (1 = excellent, 2 = good, 3 = moderate, 4 = some, 5 = poor) based on the frequency and breadth of GLBTrelated businesses, organizations and events described by key informants and verified by print and web-based sources.

Comparisons of more and less successful states on categorical variables were undertaken using χ^2 statistics, while interval level data comparisons were estimated using t-tests.

Results

Participant Characteristics

From October, 2000 to April, 2001, 73 key informants (74% male) were interviewed, including 10 CDC project officers, 10 state AIDS directors, 29 community planning group members, 27 HIV prevention workers and 13 MSM (since some categories overlap, these numbers are not independent). The average age of participants was 42.0 years ($SD = 9.3$; Range: 25–67 years). Fifty (69%) identified as White, 16 (22%) Black, 5 (7%) Hispanic, and 2 (3%) Native American. Of the sample, 41 (59%) reported identifying as MSM, 27 (39%) as non-MSM, and 2 (3%) declined to answer this question. Average length of time

participants had worked in HIV prevention was 7.3 years ($SD = 5.5$, Range: 1–21 years). Most (89%) reported living in rural areas, with the average length of rural residence being 25.4 years ($SD = 16.4$; Range: 0–54 years).

State-level Demographics

No significant differences were found between more and less successful states with respect to total population, population density, ethnic and racial composition, or persons living below the poverty level.

Success in HIV Prevention Implementation (see Table 1)

In response to the question, "How well do you think HIV prevention concerns are being addressed in «your state»?," informants graded prevention overall as average (C), for MSM, as below average (C-/D+), and for MCSM as failing (D-/F). The seven more successful states had significantly more MSM-targeted interventions ($M = 14.7$; $SD = 6.5$) than the six less successful states ($M = 5.5$; $SD = 3.6$), $t(11) = 3.09$; $p < .01$. Of the seven types of interventions that were inventoried for this study (e.g. outreach, virtual), the range of missing intervention types within more successful states was one to three and one to seven for less successful states. Thus, more successful states appeared to have a wider variety of interventions than less successful states.

Religious Adherence and Affiliation (see Table 2)

More successful states had a lower percentage of "religious adherents" than less successful states (51.1% vs. 71.3%), $t(11) = 3.28$, $p < .01$. Of the four religious groupings investigated, only the proportion of Evangelical Protestant adherents distinguished the more successful states (8.8%) from the less successful states (24.5%), $t(11) = 2.68$; $p < .05$.

Gay Infrastructure (see Table 3)

More successful states had significantly more 'gay community' infrastructure, both when this characteristic was assessed overall, $t(11) = 7.15$, $p < .001$, as well as on six of the nine specific measures: more gay cafes, $t(11) = 2.65$, $p < .05$, guest houses, $t(6.3) = 2.76$, $p < .05$, gay-affirming churches, $t(7.9) = 2.49$, $p < .05$, adult bookstores, $t(11) = 2.65$, $p < .05$), gay pride events, $\chi^2(1, N = 11) = 9.48$, $p < .01$, and gay papers, $?\chi^2(1, N = 11) = 9.55$, $p < .01$. No difference on mean number of gay bars, organizations, or community centers per sate was detected.

HIV Prevention Funding (see Table 4)

Amount of state and federal funding allocated to HIV prevention in a state did not distinguish the more successful states from the less successful. In 2001, more successful states received on average $1,778,286 ($SD = 1,168,376$) while less successful states received $1,568,833 ($SD = 1,376,950$), a non-significant difference, $t(11) = 0.30$, n.s. Similarly, when expressed as funding per capita, successful states received on average $1.48 ($SD = .88$) per person for HIV prevention, whereas less successful states received $0.99 ($SD = .36$), $t(11) = 1.30$, n.s.

More successful states may allocate their funds differently than less successful states. While in terms of dollars allocated, there was no difference in outsourcing contracts to CBOs (M[more successful]=$723,857, $SD = 563,900$ vs. M[less successful]=$319,167, $SD = 381,162$), when expressed as a proportion of funds outsourced, successful states spent a greater proportion of funds (41.7%; $SD = 23.0$) in outsourcing, compared with less successful states ($M = 15.3$%; $SD = 12.8$), $t(11) = 2.49$, $p < .05$. Similarly, more successful states may spend a greater proportion of funds in targeted HIV prevention for MSM. On

average, more successful states spent $236,714 ($SD = 223,570$) whereas less successful states spent $37,167 ($SD = 37,194$), $t(11) = 2.15$, $p < .05$. When expressed as a percentage of total funds received, more successful states spent 12.7% ($SD = 7.0$) of their budget targeting MSM, whereas less successful states spent 2.8% ($SD = 4.1$) of their budget, $t(11) = 3.02$, $p < .05$. Finally, funds allocated to CBO contracts targeting MSM significantly differentiated more successful from less successful states. More successful states spent, on average, 28.1% ($SD = 15.3$) of their funds on CBO contracts targeting MSM HIV prevention programming, whereas less successful states spent 9.3% ($SD = 8.5$) on average, $t(11) = 2.68$, $p < .05$.

Discussion

This study is among the first to examine structural factors in HIV prevention implementation in the US, and specifically for MSM. Past studies of structural factors as targets for HIV prevention with MSM have tended to focus on laws that regulate bathhouses and partner notification (Wohlfeiler, 2000). In contrast, religiosity, gay infrastructure, and HIV funding were the primary variables of interest in this study. Several key findings with implications for successful HIV prevention implementation emerged.

First, HIV prevention in rural America varies in perceived success, with grades ranging from above average to failing across categories. As a whole, HIV prevention in these rural states was given an average grade, with only two states evaluated as above average. This is consistent with a prior study of the social and sexual environment of 39 rural gay men, of whom none could identify an in-state HIV/AIDS prevention program (Williams et al., 2005). Thus, from both a prevention specialist and target population perspective, there is substantial room for improvement with respect to prevention activities in rural areas. Across states, there is also a clear hierarchy of success, with key informants rating overall HIV prevention efforts better than targeted MSM prevention. In turn, MSM prevention efforts were ranked higher than interventions for MCSM, which were universally seen as poor or, in most cases, non-existent. This is particularly worrisome since the vast majority of HIV/AIDS cases in rural areas are attributed to male-male sexual contact and men of color are at higher risk than their White counterparts in many rural areas of the US (Hall, Li, & Mckenna, 2005).

Second, success in HIV prevention does not appear randomly distributed across states, but is associated with structural characteristics. The proportion of religious adherents and Evangelical Protestants within a state was inversely associated with more successful HIV prevention implementation. A number of recent highly publicized GLBT legislative and court cases have demonstrated the opposition to homosexuality by many Evangelical churches' officials. In contrast to these results, prior studies have shown a positive effect of religiosity on physical and mental health behaviors (Matthews et al., 1998), including sexual activities that may place individuals at risk for HIV (Elifson et al., 2003). However, the current study differs markedly from prior reports both in the level at which religiosity was studied (population vs. individual level), as well as the study population (MSM v. heterosexual women). The findings presented in this study must be interpreted with caution since religious adherence and Evangelical Protestant membership might not directly impact prevention; rather, they may be markers for a third variable, such as social conservatism. The role of religiosity in facilitating or protecting against HIV risk behavior is a promising are for future research.

Gay community infrastructure also was associated with success in HIV prevention implementation targeting MSM. Key informants from more successful states reported more GLBT-related resources than informants in less successful states. Gay infrastructure may allow MSM greater opportunities to build social support and develop affirming attitudes

regarding their non-heterosexual identity. In turn, these factors may help buffer against the damaging effects of stigmatization within highly conservative rural areas (Preston et al., 2002; Williams et al., 2005). However, gay infrastructure may be undergoing an important revolution with the increasing use of the Internet to meet other MSM and sex partners. A recent study showed that using the Internet to meet sex partners was common among a sample of rural MSM, and using chat rooms and Internet ads to meet sex partners was associated with inconsistent condom use with casual partners (Horvath et al., 2006). Internet-based prevention studies targeting rural MSM are beginning to emerge in response to this technological and social shift (Bowen et al., 2007).

Although the total amount of funds spent on HIV prevention did not differentiate more successful from less successful states, a larger proportion of funds spent in contracts to CBOs and on MSM-specific programming was associated with greater success. By contrast, less than 3% of HIV prevention funds were used to target MSM in less successful states, and half of these states reported returning some federal HIV funds unspent. The way in which HIV prevention funds are allocated may reflect the overall political culture toward HIV/ AIDS prevention within that state. The NIH Consensus Conference Statement on Interventions to Prevent HIV Risk Behavior (NIH, 1997) noted:

> "Most urgent is the need to rapidly bridge the serious gap that is widening between clear scientific results and the law and policies of the United States ... There is no more urgent need than to remedy this dangerous chasm. National leaders, legislators, scientists, and service providers must unite to understand fully this growing catastrophe." (p. 29)

To maximize prevention efforts within states, legislators and HIV prevention stakeholders (e.g., health department officials) must coordinate efforts so that programs are available to residents who are at greatest risk for HIV and that those programs are adequately funded. Changes to HIV-related policies historically have yielded significant benefits in terms of reducing HIV infection rates (e.g., Fehrs et al., 1988).

Study Limitations

In terms of limitations, key informant approaches to state level evaluations are only as valid as the key informants' estimates. Although we attempted to standardize key informant opinion by matching informants in each state by profession or role, informants in different regions nonetheless may have used different standards of assessment. We considered selecting key informants with knowledge of all states, however we could not locate any such informants. In a related limitation, asking state HIV/AIDS directors to identify some of the key informants may have resulted in selection bias, in that the informants may share similar views about HIV prevention implementation in their state as the director. For these reasons, the results in this study should be used to generate hypotheses to be examined more closely in follow-up studies.

The small number of states examined in this study limited power and increased the likelihood of non-significant results. The results of this study are not generalizable to non-rural states, atypical states, and regions beyond the United States. Replication of this study using more states and expanding the number of structural factors and risk populations (e.g., injecting drug users, youth, HIV-positive persons) would be beneficial.

Recommendations and Conclusions

This study is the first to attempt to demonstrate a relationship between several structural factors and success in HIV prevention implementation. HIV prevention planning groups, state health departments, and others involved in promoting public health may find it helpful

to reflect on their state's success in HIV prevention in light of these findings. We offer the following recommendations from these findings. First, state level outcome evaluations for HIV prevention can and should be undertaken. Such evaluations should include structural evaluation when appropriate. Second, success in HIV prevention implementation appears to vary across states. Rural HIV prevention targeting MSM and MCSM needs to be strengthened. Third, religious opposition to HIV prevention within a state is negatively associated with success. Where barriers are identified, strategies to overcome these barriers to public health need development. Involving key religious and political leaders may be helpful. Elsewhere, faith-based initiatives are potential mechanisms for bridging religious persons and affected populations to work together on HIV prevention. Fourth, having adequate infrastructure to access affected populations and implement prevention activities may be essential to success in HIV prevention. In states with insufficient infrastructure, specific interventions to build infrastructure and to promote involvement by the target population may have high impact. Fifth, in situations where HIV prevention implementation is less successful, the proportion of funds allocated to CBO contracts, the promotion of funds directed for targeted intervention, and the amount of funding spent on those most at risk for acquiring and transmitting HIV appear should be closely evaluated.

Acknowledgments

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Table 1

Mean key informant grade for HIV prevention overall, for men who have sex with men (MSM), and for men of color who have sex with men (MCSM) and number of MSM-targeted intervention by state

	"More Successful" States							"Less Successful" States						
	A	B	C	D	E	F	G	H	I	J	K	L	M
Mean grade													
Overall	B	B−	C+	C+	C+	C+	C	C	C	D+	D	D	D+
MSM	C+	C+	C+	C−	D+	D+	D+	D+	D	D+	D−	D	D−
MCSM	–	–	D−	–	–	–	–	F	D−	F	–	F	D−
Inventory of MSM-targeted interventions													
Outreach	7	2	3	2	2	4	2	3	0	1	0	1	0
Individual	3	3	3	2	3	3	1	2	3	1	1	1	0
Group	6	5	2	2	2	5	7	3	2	2	1	2	0
Community	5	2	3	0	1	4	1	1	1	0	1	1	0
Public Info	1	1	0	0	1	2	0	2	0	0	1	0	0
Structural	3	1	2	1	2	0	0	0	0	2	0	0	0
Virtual	2	0	3	0	0	0	0	0	0	0	0	1	0
Total	27	13	16	7	11	18	11	11	6	6	4	6	0
	$M = 14.7$; $SD = 6.5$							$M = 5.5$; $SD = 3.6$						

Table 2

Percentage of population within a state who are religious adherents and affiliated with a major religion[a]

State	Religious adherents	Mainstream protestant	Evangelical protestant	Catholic	LDS[b]
"More successful" states					
A	49.4	10.8	11.2	18.8	3.6
B	65.3	26.6	11.7	19.1	0.5
C	40.1	9.0	3.3	22.2	0.6
D	43.2	10.2	2.4	24.3	0.5
E	40.4	18.0	11.1	5.8	0.5
F	65.8	4.9	13.1	36.9	2.3
G	53.6	5.1	9.0	10.1	24.1
A Mean	51.1[c]	12.1	8.8[d]	19.6	4.6
A SD	11.0	7.8	4.3	10.1	8.7
"Less successful" states					
H	71.0	8.9	43.2	4.3	0.6
I	66.8	13.3	29.4	3.4	0.5
J	81.9	10.1	39.7	4.1	0.5
K	81.0	34.6	9.7	27.9	0.6
L	51.8	9.3	11.4	16.3	9.5
M	75.2	28.9	13.8	24.0	0.8
B Mean	71.3[c]	17.5	24.5[d]	13.3	2.1
B SD	11.2	11.3	14.9	11.0	3.6
Total Mean	60.4	14.6	16.1	16.7	3.4
Total SD	14.9	9.5	13.0	10.6	6.7

[a] Rates are based on data from the Association of Religion Data Archives website (http://www.thearda.com/mapsReports/reports/select-State.asp)

[b] Church of Latter Day Saints (a.k.a., Mormon)

[c] significant difference, $p < .01$

[d] significant difference, $p < .05$

Table 3

Estimates of gay community infrastructure by state

	Bars	Café	Guest house	Organization	Church	Adult bookstore	Comm. center	Gay Pride	Gay paper	Infra-structure[a]
"More successful" states										
A	2	6	6	6	2	5	1	Yes	Yes	Moderate
B	11	4	2	35	8	10	3	Yes	Yes	Good
C	8	13	24	21	2	4	1	Yes	No[b]	Good
D	2	9	19	7	10	1	1	Yes	Yes	Moderate
E	7	6	6	1	4	7	0	Yes	Yes	Moderate
F	5.5	6	13	30	6	10	1	Yes	Yes	Good
G	4	1	2	14	3	4	1	Yes	Yes	Moderate
A Mean	5.6	6.4	10.2	16.3	5.0	5.9	1.1			2.6 (mod)[e]
A SD	3.3	3.8	8.6	12.9	3.1	3.3	0.9			0.5
"Less successful" states										
H	10	4	0	6	3	1	0	No[b]	No[b]	Some
I	10	4	0	20	3	1	3	No[b]	No[b]	Some
J	6	0	2	12	2	2	0	No	No[b]	Poor
K	0	0	0	9	0	?	0	No[c]	No[b]	Poor
L	0	3	3	2	1	5	0	No	No	Poor
M	3	0	2	12	2	2	0	Yes[d]	No	Poor
B Mean	4.8	1.8	1.2	10.2	1.8	1.8	0.5			4.7 (poor)[e]
B SD	4.6	2.0	1.3	6.1	1.2	1.7	1.2			0.5
Total Mean	5.2	4.3	6.1	13.5	3.6	4.0	0.8			3.5 (mod)
Total SD	5.7	3.8	7.8	10.4	2.8	3.3	1.1			1.2

[a]Infrastructure was assessed using the following scale: 1 = excellent; 2 = good; 3 = (mod)erate; 4 = some; 5 = poor.

[b]Key informants mentioned these used to exist (especially in the early 1990's).

[c]Pride held out of state.

[d]First time held pride.

[e] significant difference, $p < .001$

Table 4

Estimates of HIV funding allocation and overall evaluation of HIV prevention efforts targeting MSM by state

State provides at least some funding		Funding				As percentage of funds		
		Total funds (state and federal)						dollars allocated to MSM targeted prevention
		Per state resident per annum	Total funds (× $1,000)	Funds to Community-based Organizations (CBOs) (× $1,000)	Funds to target MSM (× $1,000)	dollars allocated to CBO contracts	CBO contracted dollars to MSM prevention	
"More Successful" states								
A	No	$1.48	$1,185	$766	$110	65	14	9
B	No	$0.56	$1,544	$380	$150	25	39	10
C	Yes	$1.43	$1,754	$1,300	$405	74	31	23
D	No	$2.46	$1,385	$610	$226	46	37	16
E	No	$0.81	$1,452	$70	$0	6	0	0
F	Yes	$2.86	$4,337	$1,639	$656	38	40	15
G	No	$0.79	$791	$302	$110	38	36	14
A Mean		$1.48	$1,778	$724	$237	42	28	13
A SD		0.88	1,168	563	224	23	15	7
"Less Successful" states								
H	Yes	$0.68	$1,660	$235	$32	14	14	2
I	Yes	$1.33	$4,127	$1,000	$100	25	10	2
J[a]	No	$0.71	$1,837	$500	$50	27	10	3
K	No	$0.94[b]	$598[b]	$0	$0	0	0	0
L	No	$1.53[b]	$691[b]	$180	$41	26	22	6
M	No	$0.72[b]	$500[b]	$0	$0	0	0	0
B Mean		$0.99	$1,569	$319	$37	15	9	2
B SD		0.36	1,377	381	37	13	8	4
Total Mean		$1.25	$1,682	$537	$145	30	19	8
Total SD		0.67	1,139	478	179	21	15	7

[a] This state has an atypical profile because majority of cases are "NIR" or no identified risk

[b] States where a significant portion of the federal funds were returned. Hence, these figures are overestimates of what was actually spent