

PREDICTING CHANGES IN AIDS SPENDING IN THE AMERICAN STATES

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ABSTRACT. This research examines the factors shaping changes in AIDS spending in the American states. Data on spending in 1989 and 1992 were used to explore what variables were critical in explaining change. Two factors were considered: increases in numbers of AIDS cases; incrementalism. Data analysis suggests that incrementalism is an important element in changes in spending levels. However, it also appears that changes in number of AIDS cases has a role to pla. Implications are discussed.

INTRODUCTION

The AIDS epidemic in the United States has been one of the most important public health problems over the past decade and a half (In general, see such sources as Institute of Medicine, 1986; Malinowsky and Perry, 1991). AIDS is not a static disease; it has been dynamic over time, in terms of the vectors of this disease. The nature of the populations affected by AIDS has changed, according to CDC data. In its early stages, it was primarily viewed as a gay disease. Currently, though, the face of AIDS is white and gay west of the Mississippi; it is black and gay in the south; it primarily afflicts minorities and intravenous drug users in the east (Schubert and Peterson, 1998). This changing face would seem to be relevant for policy makers.

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This article studies what factors have shaped changes over time in states' spending policy choices toward AIDS. This is an important issue to explore, given evidence that state policy choices--including expenditure levels--have had some measurable effect on the course of AIDS in the states. For instance, greater spending on prevention policies results in lower than anticipated AIDS rates in the American states (Schubert and Peterson, 1996). But what has shaped states' spending choices? Has the incidence of AIDS affected the evolution of spending policy? Or something else?

Public policy has often had a dramatic impact on public health. For instance, witness the great reduction in deaths as American society attacked unsanitary living conditions in cities one hundred years ago, as well as the end of the scourge of smallpox. Thus, government planning must go forward as a part of the process of developing a coherent policy strategy to combat AIDS.

Particularly important to study are the American states, given their central role in trying to combat AIDS. As Bishop and Jones (1993: 45) stated with respect to AIDS discrimination in education: ". . .the states created policies when the Congress and the President chose not to lead, and the lower courts with the bureaucracy were only slowly acting on their own in adapting existing regulations to create a national antidiscrimination policy." More generally, states have been at the center of the battle against AIDS (Leichter, 1992, 1997). Daniel Fox (1992) has argued that the federal government essentially abdicated in the war against AIDS. Outside of research funding and surveillance, the federal government has left it to the states to act. However, Fox also observes that with recession in the early 1990s and ensuing tight budgets and government cutbacks, even the states withdrew somewhat from their earlier commitment. Sheer cost is one factor.

Howard Leichter (1997: 21) points out that "AIDS has placed an enormous burden on the state and local governments, including state Medicaid programs. . . ." During the 1980s and 1990s, a trend toward decentralization in health policy toward the state level became apparent (Leichter, 1997).

Two possible explanations for changes in states' spending on AIDS immediately come to mind: need for greater spending and incrementalist tendencies in the budgetary process. While these explanations are not mutually exclusive, they do present somewhat different logic and expectations.

First, need as a factor. One could argue that as more people within a state show symptoms of HIV infection and the development of full-blown AIDS, states will increase their spending to (a) treat those who have developed AIDS and (b) prevent the spread of the virus to the noninfected population. Simply, the spread of AIDS would galvanize government action to respond to the perceived public health crisis (a term that seemed apt even five years ago).

Second, the incremental budgeting perspective might also help to explain changes in AIDS spending levels over time in the American states. Lindblom (1959) described incrementalism as "muddling through" and stated that much of government decision-making is a process of successive, limited comparison of policies. As applied to budgeting, incrementalism is characterized by the phrase: "The best way to predict this year's budget is to know last year's budget." Richard Fenno (1966: 354) argued that Congressional appropriations committees developed stable linkages with government agencies, the end result being that "committee decisions are primarily incremental ones."

In the context of the current study, it is especially relevant to note that one study of fifty states over a 34 year period showed that incrementalism best explains health expenditures (Lowery, Konda, and Garand, 1984). The same study indicated that the following had little effect on budget decisions: (a) the state of the national economy; (b) interest group pressure and public opinion; (c) leader states within the region. Thus, AIDS spending at one point in time should be strongly predicted by AIDS spending at an earlier time.

HYPOTHESES

Variables that might account for change in spending levels include (a) change in the number of AIDS patients and (b) previous level of spending. The first variable leads to a needs-based hypothesis:

- (a) *Spending levels will increase more for those states that see larger increases in number of AIDS cases.*

The logic for this hypothesis is clear. Previous research suggests that higher AIDS rates generate greater AIDS-related expenditures at the state level (Peterson and Brofcak, 1997; Pascal et al., 1989; Peterson and Schubert, 1993). Thus, need appears to drive a portion of states' spending decisions.

The second hypothesis is based on incremental budgeting theory:

- (b) *Level of spending in 1989 will strongly predict level of spending in 1992.*

The logic behind this hypothesis has already been discussed in the literature review.

A number of control variables have been identified in the comparative state politics literature that must be employed in order to rule out other explanations. These must be accounted for in multivariate analysis. In the following analysis, the three key control variables are: states' fiscal resources, government capacity, and ideology.

In terms of the spread of AIDS and states' AIDS policies, prior literature indeed suggests the importance of these controls. Some evidence exists that more liberal states spend more on AIDS (Colby and Baker, 1988). Hence, we would expect that liberal states would have higher levels of AIDS spending. Wealthier states normally simply spend more on policy choices than less wealthy states (Dawson and Robinson, 1963). Wealthier American states spend more on AIDS policy (Pascal et al., 1989; Peterson and Schubert, 1993). Thus, any analysis must control for these other explanations in order to demonstrate the independent effect--if any--of incremental budgeting and need.

Government capacity shapes policy choices, too. Previous research indicates that states with more professional legislatures and more powerful governors tend to spend more to deal with problems (Morehouse, 1976). Other research suggests that increased professionalism is tied to more liberal spending policies (Barrilleaux, Crew, and Feiock, 1991). Thus, greater government capacity ought to predispose states to increase their spending on AIDS.

METHODS

The comparative state politics approach, gathering appropriate data at the state level, is used to examine and test the hypotheses (Jacob and Vines, 1971).

Dependent Variables

The dependent variables are expenditure data on three classes of AIDS-related spending--prevention spending, treatment spending, and total amount spent on AIDS. The basic data source for this information is the Intergovernmental Health Policy Project, headquartered at George Washington University. Data were derived from a nation-wide survey of the fifty states as well as the District of Columbia. This survey was carried out over a number of years, thereby providing the basis for a longitudinal study. This article compares spending on AIDS in 1992 with 1989.

Spending programs adopted by states have been placed under the following rubrics (Intergovernmental AIDS Report, 1993):

1. Education and information;
2. Testing and counseling;
3. Research;
4. Surveillance;
5. Health care and support services;
6. Administration.

Below, these variables are arranged into just three general categories: total spending on AIDS per capita; prevention spending per capita (education + surveillance + testing and counseling); treatment spending (health care and support services spending per capita). For each, spending information in both 1989 and 1992 is given.

For each of the following four items making up the dependent variables, information was obtained from Intergovernmental AIDS Report (1993) and Leeds (1993).

Education. Education program funding amounted to \$108,260,585 in 1992. It was most heavily targeted at high-risk populations. Seventy

percent of the total state dollars under this category were allocated for this purpose. General public information/education programs consumed 12%; programs aimed at health care workers, 10%; public employees, 2%; prevention programs, 2%; and public schools, 4%. Forty states placed funds into education; ten states spent not a penny on education or information programs. This category accounts for about 25% of states' AIDS spending.

Testing/Counseling. The bulk of the testing/counseling effort was trying to get people to voluntarily test to see if they are HIV positive. Counseling took place before testing as well as afterwards, especially if the person tested positively. Thirty-two states carried out this activity, spending a total of \$43,105,716 in FY 1992. About 10% of total AIDS spending in the American states went toward counseling and testing--down from 19% in 1989.

Surveillance. This includes reporting activities, partner notification, and seroprevalence studies. State funding for surveillance peaked in 1987 and has dropped since then. Thirty one states carried out such activities, with expenditures for 1992 of \$13,299,401, the least funded of all program categories. Three percent of all state funds went into this area in 1992. The federal government has taken the leadership role here.

Health Care/Support Services. This is by far the greatest emphasis of the American states (Landau-Stanton and Clements, 1993). Fifty percent of states' AIDS spending in 1992 went to health care, for a total of \$201,694,777. The two largest shares of the health care dollar were spent for outpatient/home care (29% of the health care total) and institution/patient care (27%). Large shares (11% each of the total health care spending) also went to HIV/AIDS drug assistance and case management. Thirty-nine states funded such activities.

Independent Variables

Incrementalism. As already indicated, this study uses AIDS spending data reported by the Intergovernmental Health Policy Project, stationed at George Washington University. Incrementalism would be assessed by the extent to which earlier spending (in 1989) is correlated with later spending (1992). Ideally, a longer time frame would be preferred, but

spending data could be gathered only into the early 1990s. This necessitated use of the medical price index to deflate spending at both points in time, thus using real dollars rather than nominal dollars as the measure of spending.

AIDS Levels. Data on number of AIDS cases per state were derived from Centers for Disease Control publications. This study used the data reported upon in the regularly published *HIV/AIDS Surveillance* on number of AIDS cases per state during the time period studied. The change in AIDS rates from 1985 to 1990 was calculated.

Control Variables

We carried out factor analysis to develop a smaller number of variables with which to explain the variation in states' AIDS spending policy. The following variables were used in this analysis:

- Conservative ideology;
- State economic structure (preindustrial, industrial, postindustrial); governor's power;
- Individualistic political culture;
- Policy innovativeness;
- Legislative professionalism;
- Number of AIDS organizations;
- Per capita income;
- Policy liberalism of states;
- Ranney's folded index of party competition;
- Republican party organization strength at the local level;
- Staff capacity of state government;
- State budget capacity;
- Traditionalistic political culture; and
- Urban population (percentage).

A brief word about each of the three classes of variable:

Ideology. Liberalism/Conservatism of public opinion is a measure already developed of ideology of the citizens within each of the 50 states. This was derived from a series of surveys carried out throughout the United States by the *New York Times* (Wright, Erikson, and McIver, 1987). We used the 1990 data, since we use 1992 spending information as the dependent variables (HIV/AIDS Surveillance, 1990). Number of AIDS-related organizations per state was calculated from material in the Malinowsky and Perry (1991) volume. We simply counted the number of AIDS-related groups--whether their goal was providing counseling or health care or political advocacy. Party competition was based on Austin Ranney's well-known index, folded to reveal competitiveness (Patterson and Caldeira, 1984). Organizational strength of the Republican Party at the county level was derived from a study carried out on party strength (Bibby et al., 1990).

Political culture was assayed by an index created by Morgan and Watson (1991), based on religious backgrounds of citizens of the respective states (with respect to explaining AIDS policy choices, see Schubert, 1997). State policy tendencies were examined in two different ways: (1) a standard index of policy innovativeness (Gray, 1973); (2) a recent metric designed to measure how "liberal" states' policies are (Wright, Erikson, and McIver, 1993).

Socio-Economic Factors and States' Wealth. Economic development was ascertained by census data on per capita income. In addition, state budget capability was operationalized in terms of total state expenditures per capita. Data were averaged from the 1990 and 1991 fiscal years, and were based on the *State Expenditure Report, 1991* and the *Fiscal Survey of the States*. The economic structure of states--preindustrial, industrial, postindustrial--was ascertained by an index developed by Boeckelman (1995), in which he used existing data on states' economies to label that state as one of the three categories. Census data were used to ascertain the percentage of a state's population living in urban areas.

State Government Capacity. Governor's power can be an important factor in state policy-making, so we used an index of formal governor's power to the analysis (Mueller, 1985). Legislative professionalism was

determined by the index created by Peverill Squire (1992). Staffing capacity is the factor score from a larger study, in which the extent of staff help in the governors office and state legislature were assessed (Bowman and Kearney, 1988).

These, then, represent the array of variables used in the factor analysis. After varimax rotation of principal components and with eigenvalues greater than 1, three interpretable factors emerged, as Table 1 illustrates.

TABLE 1
Factor Analysis (N=47)

	Ideology	Resource Capacity	Government Capacity
Conservatism	-.55	-.54	-.09
Economic structure	.08	.71	.38
Governor power	-.04	.64	.60
Individualism	.73	.43	.05
Innovativeness	.60	.06	.28
Legislative professional	.28	.28	.79
Number of AIDS organizations	.17	.15	.87
Per capita income	.38	.81	.19
Policy liberalism	.75	.44	.23
Party competition	.80	-.03	.09
Republican strength	-.58	-.31	-.20
Staff capacity	.09	.26	.92
Budget capacity	.22	.75	.08
Traditionalism	-.90	-.16	.07
Urban (%)	.21	.64	.41
Eigenvalue	7.12	2.30	1.16
Variance explained (%)	47.00	15.00	8.00
KMO Index = .82398			
Bartlett's Test = 500.50330 (P < .0001)			

The first factor represents an underlying liberal dimension. The most heavily loading variables defining this factor are individualism, policy liberalism, innovativeness, and greater party competition. Very strong negative loadings include conservatism of the citizenry, traditionalistic political culture, and Republican party strength.

The second factor can be termed resource capacity. The strongest positive factor loading is held by per capita income, followed by budget capacity of the state, postindustrial economic structure, urban population, and--somewhat out of line with the others--stronger governors. All except governor's strength clearly define this as a resource capacity dimension. Finally, Factor III represents government capacity. Staffing capacity loads the strongest, followed by number of AIDS organizations, legislative professionalism, and, again, governor's power.

In analysis to come, factor scores, derived by the regression method, were used for each of these as control variables. The factor scores, in tables, are labeled as government capacity, liberalism, resource capacity.

The dependent variables, again, are three spending indices in 1992. To test our two base hypotheses, we predicted 1992 spending based on: total state level of spending on AIDS in 1989, as well as prevention spending and treatment spending in that year; change in the percentage of new cases: the AIDS rate per 100,000 people in 1992 minus the same index in 1987. CDC data were used for this calculation. The first of these serves to test the incrementalism hypothesis; the second assesses the needs hypothesis.

FINDINGS

A series of multiple regression analyses provided the results needed to test the hypotheses. Table 2 (Panel A) examines the results for 47 states (3 states were excluded from analysis because of missing values among the variables). Both the unstandardized and standardized regression coefficients are reported for each of the three dependent variables---total spending on AIDS, AIDS prevention spending, and AIDS treatment expenditures.

Total spending levels, increased AIDS rates, spending levels in 1989, and resource capacity all predict higher levels of spending in 1992. With

respect to prevention spending, 1989 prevention expenditures and change in AIDS rate (respectively) are the key predictors. Treatment spending in 1992 is lower in liberal states (against expectations), although the coefficient is significant at only the .10 level. Explained variation is modest and the equation does not even reach the .10 level of statistical significance. Even though total spending and prevention spending are well explained, treatment spending is not successfully predicted by the independent variables that we have employed.

Next, the states were divided up into low (N=30) versus moderate to high threat (N=20) states, depending upon the incidence of AIDS.⁽¹⁾ We reasoned that dynamics of policy-making would differ by level of threat.

Those states with low risk of the spread of AIDS would be less apt to devote a great deal of effort to funding AIDS policies. On the other hand, need would be expected to drive policy to a greater extent in those states with a higher level of risk within the population and effects, consequently, would be much stronger.

Low threat states are examined in Table 2 (Panel B). With total AIDS spending, 73% of the variation is explained by the variables in the equation. Resource capacity is an especially strong influence, with a beta of .89. With prevention spending, the key predictor is spending levels in 1989. Finally, liberalism is very modestly (at .10) associated with lower levels of spending on treatment in 1992--once more against our expectations. However, the equation is not statistically significant and explained variation is modest when compared with other equations.

Table 2 (Panel C) reproduces the basic findings among high threat states. Results are very simple: spending in 1989 predicts strongly spending in 1992. No other independent variable has the remotest effect on spending levels in 1992.

In our discussion of hypotheses, we suggested that the two top candidates to explain states' spending choices were previous spending and need (assessed in terms of AIDS rates). In Table 3 (Panels A, B, and C), the relative power of these two variables was tested directly, excluding the other three independent variables (resource capacity, government capacity, and liberalism) from Table 2 (Panels A, B, and C).

TABLE 2
Predicting AIDS Spending Levels: Multiple Regressions

Predictor	Total AIDS		Prevention		Treatment	
	b	Beta	b	Beta	b	Beta
Panel A: Predicting 1992 Spending Levels (N=47)						
Spending 1989	.420	.34**	.672	.63***	.979	.28
Change in AIDS rates	.001	.36**	.000	.27**	.000	.09
Government capacity	.027	.04	.008	.03	-.012	-.01
Liberalism	.029	.04	.006	.02	-.204	-.24*
Resource capacity	.173	.26**	.024	.09	-.007	-.01
Multiple R		.82		.91		.39
Multiple R ²		.67		.82		.15
P		.00		.00		.1059
Panel B: Predicting 1992 Spending Levels in Low Threat States (N=27)						
Spending 1989	-.112	-.17	.366	.52***	.295	.02
Change in AIDS rates	.003	.08	.004	.19	.040	.24
Government capacity	-.068	-.12	-.022	-.08	-.366	-.16
Liberalism	.000	.00	-.010	-.09	-.414	-.41*
Resource capacity	.284	.89***	-.022	-.08	.050	.04
Multiple R		.85		.71		.44
Multiple R ²		.73		.51		.19
P		.0000		.0036		.2209
Panel C: Predicting 1992 Spending Levels in High Threat States (N=20)						
Spending 1989	1.192	.86**	1.149	.98***	1.530	.76***
Change in AIDS rates	.000	.03	.000	.05	.000	.00
Government capacity	@	@	@	@	@	@
Liberalism	-.046	-.06	-.036	-.11	.001	.00
Resource capacity	-.112	-.13	-.023	-.07	-.157	-.26
Multiple R		.81		.94		.65
Multiple R ²		.65		.89		.43
P		.0021		.0000		.0327

Notes: * = $P < .10$; ** = $P < .05$; *** = $P < .01$; @ = Excluded from equation because of multicollinearity.

As shown in Table 3 (Panel A), in all 50 states, 1989 spending levels predict 1992 levels in all three equations; change in AIDS rate predicts only total spending levels--not the other two dependent variables.

Next, the moderate to high threat states are considered. Table 3 (Panel B) summarizes findings. The picture is remarkably clear--1989 spending levels predict 1992 levels whereas change in AIDS rate is not associated with 1992 spending levels. Once more, the incrementalism thesis is most supported.

TABLE 3
Predicting AIDS Spending Levels: Unstandardized Regression
Coefficients and Multiple Regressions (1-tail probabilities)

Predictor	Total	Prevention	Treatment
Panel A: Predicting 1992 Spending Levels (N=50)			
1989 Spending level	.901***	.981***	.789**
Change in AIDS rate	.001**	.000	.000
Multiple R	.83	.86	.35
Multiple R ²	.69	.74	.12
P	.0000	.0000	.0231
Panel B: Predicting 1992 Spending Levels in High Threat States (N=20)			
1989 Spending level	.979***	.988***	1.158**
Change in AIDS rate	.000	.000	.000
Multiple R	.80	.94	.62
Multiple R ²	.65	.88	.39
P	.0001	.0000	.0079
Panel C: Predicting 1992 Spending Levels in Low Threat States (N=30)			
1989 Spending level	.786***	.889****	.365
Change in AIDS rate	.018**	.009*	.042*
Multiple R	.83	.76	.32
Multiple R ²	.70	.58	.11
P	.0000	.0000	.1112

Notes: * = P < .10; ** = P < .05; *** = P < .01.

Table 3 (Panel C) looks at spending choices in low risk states. In two of three equations, prior spending levels are strong predictors. However, change in AIDS rates are associated with all three spending measures, although the relationship is a modest .10 with prevention and treatment spending. Once more, the incrementalism hypothesis is generally born out. In this instance, though, the need hypothesis receives some support as well.

Summary

Table 4 summarizes results, taking Tables 2 and 3 as the units of analysis. Variables in the first five rows stand for the results in Panels A, B, and C of Table 2; the two variables at the bottom of the table represent findings from Panels A, B, and C of Table 3. A "1" indicates that the relationship in that cell is statistically significant at the .05 level.

A "0" indicates that the regression coefficient for that variable did not attain at least .05. In this manner, we can get a sense of the overall effects of each independent variable.

The top part of the table makes the basic finding even clearer than the discussion in the preceding pages: previous spending levels are the best predictors of current spending in 1992. In the nine separate equations counted, prior spending was statistically significantly associated with

TABLE 4
Summary of Findings
(All unstandardized Coefficients Significant at .05 or Less)

Predictor	Total Spending			Prevention Spending			Treatment Spending		
	All	High	Low	All	High	Low	All	High	Low
Previous spending	1	1	0	1	1	1	0	1	0
Change in AIDS rate	1	0	0	1	0	0	0	0	0
Government capacity	0	0	0	0	0	0	0	0	0
Liberalism	0	0	0	0	0	0	0	0	0
Resource capacity	1	0	1	0	0	0	0	0	0
Previous spending	1	1	1	1	1	1	1	1	0
Change in AIDS rate	1	0	1	0	0	0	0	0	0

1992 spending six times. Change in AIDS rates and resource capacity emerged as successful predictors in just two of the nine equations.

The bottom half of the table makes this point more dramatically. When we used just two independent variables--prior spending and change in AIDS rates--spending in 1989 is statistically associated with spending in 1992 in eight equations. Change in AIDS rate emerges as a successful predictor only two times.

One final set of statistical tests was undertaken to provide every possible chance for change in AIDS rate to demonstrate explanatory power⁽²⁾ In this instance, eighteen regression equations were run. In the first nine, the three control variables plus the previous spending measure were included to determine how well these predicted spending in 1992. Then, the three control variables plus the change in AIDS rate metric were used to predict the spending levels in 1992. As in Table 4, a "1" indicates that the independent variable had an association of .05 or less; a score of "0" testifies to no effect. Table 5 summarizes.⁽³⁾

Table 5 shows that change in AIDS rate now has a more consistent impact on spending rates. In four of nine equations, change in AIDS rate exhibits a relationship statistically significant at the .05 level with spending in 1992. By contrast, previous spending emerges as a successful predictor in six of nine equations. Thus, change in AIDS rates appears to be somewhat more successful as a predictor using this methodology. Why this finding?

TABLE 5
Summary of Findings: Independent Variables Entered in Separate Equations with All Control Variables Entered in Equations
 (All Coefficients at .05 or Less)

Predictor	Total Spending			Prevention Spending			Treatment Spending			Total
	All	High	Low	All	High	Low	All	High	Low	
Previous spending	1	1	0	1	1	1	0	1	0	6
Changes in AIDS rates	1	1	0	1	0	0	0	1	0	4



It might be that change in AIDS rates and prior spending are not fully independent of one another. That is, changing AIDS rates might well drive earlier spending, which--in its turn--pushes spending in 1992. Below, we present some suggestive information along these lines. Pearson's correlation coefficients between change in AIDS rates and spending variables in 1989 are fairly highly correlated. Change in the AIDS rate across the states is associated with spending in 1989 as depicted in Table 6.

The findings indicate the spending levels--treatment, prevention, and total spending--in 1989 are strongly associated with change in AIDS rates over time. Thus, we must test the expectation that change in AIDS rate does indeed affect the policy outcome.

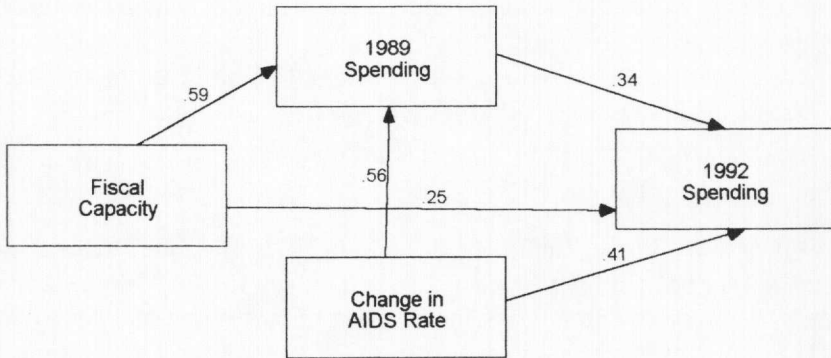
TABLE 6
AIDS Spending, 1989: Pearson's Correlation Matrix (N = 50)

Variable	Change in AIDS rates	Treatment	Prevention	Total
Change in AIDS Rate	1.00			
Treatment Spending	.41	1.00		
Prevention Spending	.60	.85		
Total Spending	.54	.88	.89	1.00

How should this speculation be tested? Path analysis provides one point of departure. We use structural equation modeling (SEM), based on the AMOS software package, to determine if this line of reasoning is accurate. Figure 1 represents the most parsimonious model, using the variables from prior analysis, with total spending in 1992 as the dependent variable.

First noted is that change in AIDS rate clearly affected the earlier 1989 spending levels--as well as 1992 expenditures. Thus, change in AIDS rates in this model had a direct effect on 1992 spending--plus an indirect impact through its effects on 1989 spending. Thus, earlier tables might actually understate the effect of changing AIDS rates in states'

FIGURE 1
Path Model: Predicting Total Spending Levels in 1992 (N=47)



Notes: RMSEA = .18; TLI = .91; GFI = .97; CFI = .99

spending policy, since they did not account for indirect effects of changing AIDS rates on spending choices in 1992.

Some further information on the model. The chi-square is .114, indicating that, by the logic of SEM, we cannot reject the null hypothesis that the model does not fit the data. That proves that this model appears to be sound. The RMSEA of .18 is not indicative of a good model (one would want .08 or less for an adequate fit). However, the Tucker-Lewis Index (TLI) of .91 suggests an adequate fit--if not a strong fit. The goodness of fit index (GFI) is well above the cutoff level of .95 as a metric of a good fit, as is the comparative fit index (CFI). Overall, this model is acceptable if not outstanding. Explained variation in 1992 spending levels is 62%.

DISCUSSION

The role of incremental budgeting is clearly evident from our analysis. Aaron Wildavsky (1984: 13, 15) spoke in great depth about budgetary incrementalism, stating:

The largest determining factor of the size and content of this year's budget is last year's budget. Most of the budget is a product of previous decisions. . . Budgeting is incremental, not comprehensive. The beginning of wisdom about an agency budget is that it is almost never actively reviewed as a whole every year. . . . Instead, it is based on last year's budget with special attention given to a narrow range of increases or decreases.

Certainly, incrementalism is applicable at the state level (Sharkansky, 1968; Thompson, 1987).

Of course, incrementalism has been criticized as both theory and description (LeLoup, 1978; Gist, 1998; Parker, 1997). For instance, agency requests are not always incremental. Studies on data from 1946 to 1971 show that requests vary from -12% to over 50%, with a mean requested increase of 11% (Fesler and Kettl, 1996). Irene Rubin has contended that incrementalism no longer accurately described budgetary decision-making, in part because of the new context of high budget deficits and other changes in the political context of budgeting (Rubin, 1996; Rubin, 1997; Caiden, 1983). Wildavsky (1988) recognized changes in the budgetary environment but has argued that the new has been layered onto the old--incrementalism continues. In terms of national health care policy, of course, efforts at nonincremental health reform founder can be seen as witness the fate of President Clinton's health plan (Rushefsky and Patel, 1997).

Incremental budgeting theory, again, does well in this analysis. Prior spending levels were clearly strong influences on 1992 spending decisions by the American states. Thus, we appear to reaffirm the age-old wisdom that the best way to predict this year's budget is to look at last year's.

Still, other conclusions are worth noting, too. Regression equations suggest that change in AIDS rates are somewhat influential on spending decisions in low threat--but not higher threat--states. This makes sense. In high threat states, the governments are normally already deeply involved in a variety of policy choices to deal with the problem. In lower threat states, normally little is being done. As AIDS cases begin to develop, these governments start with a very low base and their response is, thereby, more dramatic.

The path model, finally, does indicate that change in AIDS rates may have a greater impact on AIDS spending decisions in the American states than the regression analyses alone speak to. It appears that changes in AIDS rate affect earlier spending decisions and--in turn--1992 budgeting choices. We may be, then, better able to explain the 1992 decision by simultaneously considering the effects of both the change in AIDS rates and earlier spending decisions.

In essence, one must take into account both incrementalism and the need created by the course of the AIDS epidemic to understand why states made the choices that they did in the late 1980s and early 1990s.

However, some negative implications of these results must be noted. Overall, states have not been terribly responsive to changing incidence and prevalence rates of HIV. Change in AIDS rates as a gross measure does have an effect on states' spending strategies. However, past spending decisions, as the path model shows, reduces the effect of change in AIDS rates. Thus, given that the focus of the epidemic has changed--from gays to minorities and IVUDs as noted in the introduction to this essay--budgetary incrementalism may have been a part of the picture of transforming AIDS into a nonwhite and IVDU epidemic as opposed to, earlier, a predominantly white gay disease. We cannot address that question here, but it might well warrant future follow up research.

CONCLUSION

Well before Allison (1969) formally differentiated his three models, observers of public policy were concerned with rationality in policy responses to public problems and they remain so to this day. However adequate or inadequate the level of response to AIDS has been nationwide, proportionality in the relationship between public threat and policy response provides objective evidence bearing on the theoretical question of rationality in public policy making. This study's findings provide both good news and bad news on this question.

On the one hand, the findings that, across the states as a whole, a worsening public health threat was associated with increased total and prevention spending with resource capabilities and prior spending level controlled, are encouraging in their support for the rational model. In a

policy area very much infused with interest group pressures, media dramatics, occasional public hysteria and legislative grand standing, spending at least was systematically related with objective need.

On the other hand, the discouraging result is that these findings are conditional on the absolute prevalence of AIDS. In the twenty states with the greatest public health threat spending was driven exclusively by prior budgetary commitments. All along the Atlantic coast and particularly in densely populated urban areas with sizable minority populations into which HIV was moving almost without restraint, public spending was governed by budgetary incrementalism, not the threat to minority populations, women and children that was posed along the vector of transmission associated with intravenous drug use. Thus, by 1996 HIV/AIDS had become transformed from an epidemic of white, male, largely middle class homosexuals to one increasingly non-white, heterosexual and concentrated among the very poor. The prospective long term social and financial costs associated with incrementalism in the high threat states indicate an outcome very much inconsistent with a rational policy response.

NOTES

1. Level of threat was determined in the following manner: (1) CDC data from the 50 states were used at six month intervals from 1982-1987; (2) data included gay exposure, gay + IVDU exposure, Caucasian cases, IVDU exposure, female cases, other exposure; (3) cluster analysis was carried out on these variables; (4) four clusters were identified--low, low-moderate, moderate, high risk states; (5) two groups were created for analysis--low plus low-moderate were identified as low threat states in our analysis; moderate plus high threat states were identified as moderate to high threat states.
2. This approach was suggested by an anonymous referee, whose input is greatly appreciated.
3. Individual tables are not shown for reasons of parsimony in presentation of data.

REFERENCES

- Allison, G. T. (1969), Conceptual Models and the Cuban Missile Crisis," *American Political Science Review*, 63(3): 689-718.
- Barrilleaux, C., Crew, R. E., Jr., and Feiock, R. C. (1991), "Political Institutions and Public Policy in the American States," Presented at American Political Science Association, Washington, DC.
- Bibby, J. F., Cotter, C., Gibson, J. L., and Huckshorn, R. J. (1990), "Parties in State Politics," in V. Gray, H. Jacob, and R. Albritton (Eds.), *Politics in the American States*, 5th ed., Glenview, IL: Scott, Foresman/Little, Brown, pp. 85-122.
- Bishop, P. C. and Jones, A. J., Jr. (1993), "New Federalism in Social Policy? State Responses to AIDS in the Schools," in F. A. Mayer, Jr. and R. Baker (Eds.), *State Policy Problems*, Chicago: Nelson-Hall, pp.33-51.
- Boeckelman, K. (1995), "The American States in the Post-Industrial Society," *State and Local Government Review*, 27(2): 182-187.
- Bowman, A. O'M and Kearney, R. C. (1988), "Dimensions of State Government Capability," *Western Political Quarterly*, 41(2): 341-362.
- Caiden, N. (1983), "The Politics of Subtraction," in Allan Schick (Ed.), *Making Economic Policy in Congress*, Washington, DC: American Enterprise Institute, pp. 100-130.
- Colby, D. C. and Baker, D. G. (1988), "State Policy Responses to the AIDS Epidemic," *Publius*, 18(2): 113-130.
- Dawson, R. E. and Robinson, J. A. (1963), "Interparty Competition, Economic Variables, and Welfare Policies in the American States," *Journal of Politics*, 25(2): 265-289.
- Fenno, R. (1966), *The Power of the Purse*, Boston: Little, Brown.
- Fesler, J. W. and Kettl, D. F. (1996), *The Politics of the Administrative Process*, 2nd ed., Chatham, NJ: Chatham House.
- Fox, D. M. (1992), "The Once and Future Payers of Last Resort: The States and AIDS," in H. M. Leichter (Ed.), *Health Policy Reform in America*, Armonk, NY: M. E. Sharpe, pp. 24-48.

- Gist, J. R. (1998), "Decision-making in Public Administration," in J. Rabin, W. B. Hildreth, and G. J. Miller (Eds.), *Handbook of Public Administration*, 2nd ed., New York: Marcel Dekker, pp. 265-292.
- Gray, V. (1973), "Innovation in the American States," *American Political Science Review*, 62(4): 1174-1185.
- HIV/AIDS Surveillance (1990, June), *HIV/AIDS Surveillance*, 2: 1-35.
- Institute of Medicine/National Academy of Sciences (1986), *Confronting AIDS*, Washington, DC: National Academy Press.
- Intergovernmental AIDS Report (1993, May), *Intergovernmental AIDS Reports*, 6(2): 1-8.
- Jacob, H. and Vines, K. N. (1971), "The Study of State Politics," in Jacob, H. and Vines, K. N. (Eds.), *Politics in the American States*, 2nd ed., Boston: Little, Brown, pp. 3-23.
- Kirp, D. L. and Bayer, R. (Eds.) (1992), *AIDS in the Industrialized Democracies*, New Brunswick, NJ: Rutgers University Press.
- Landau-Stanton, J. and Clements, C. D. (1993), *AIDS: Health and Mental Health*, New York: Brunner/Mazel.
- Leeds, H. (1993), *National Survey of State HIV/AIDS Funds--FY 1992*, Washington, DC: Intergovernmental Health Policy Project.
- Leichter, H. M. (1992), "The States and Health Care Policy: Taking the Lead," in H. M. Leichter (Ed.), *Health Policy Reform in America*, Armonk, NY: M. E. Sharpe, pp. 3-23.
- Leichter, H. M. (1997), "Health Care Reform in America: Back to the Laboratories," in H. M. Leichter (Ed.), *Health Policy Reform in America*, 2nd ed., Armonk, NY: M. E. Sharpe, pp.4-25.
- LeLoup, L. (1978), "The Myth of Incrementalism: Analytic Choices in Budgetary Theory," *Polity*, 10: 488-509.
- Lindblom, C. E. (1959), "The Science of Muddling Through," *Public Administration Review*, 14(1): 79-88.

- Lowery, D., Konda, T., and Garand, J. (1984), "Spending in the States: A Test of Six Models," *Western Political Quarterly*, 37(1): 48-60.
- Malinowsky, H. R. and Perry, G. J. (1991), *AIDS Information Sourcebook*, Phoenix: Oryx Press.
- Morehouse, S. M. (1976), "The Governor as Political Leader," in H. Jacob and K. N. Vines (Eds.), *Politics in the American States*, 3rd ed., Boston: Little, Brown, pp. 196-241.
- Morgan, D. R. and Watson, S. S. (1991), "Political Culture, Political System Characteristics, and Public Policies among the American States," *Publius*, 21(1): 31-49.
- Mueller, K. J. (1985), "Explaining Variation and Change in Gubernatorial Powers," *Western Political Quarterly*, 38(3): 424-431.
- Parker, S. (1997), "Political Dimensions of Federal Budgeting in the United States," in R. T. Golembiewski and J. Rabin (Eds.), *Public Budgeting and Finance*, 4th ed., New York: Marcel Dekker, pp. 521-545.
- Pascal, A., Cvitanic, M., Bennett, C., Gorman, M., and Serrato, C. A. (1989), "State Policies and State Financing of Acquired Immunodeficiency Syndrome Care," *Health Care Financing Review*, 11(1): 91-104.
- Patterson, S. and Caldeira, G. (1984), "The Etiology of Partisan Competition," *American Political Science Review*, 78(3): 691-707.
- Peterson, S. A. and Brofcak, A. (1997), "Street Level Bureaucrats and AIDS Policy: The Case of the School Psychologist," *Professional Psychology*, 28(1): 81-86.
- Peterson, S. A. and Schubert, J. N. (1993), "AIDS Policy in the American States," Paper presented at Northeastern Political Science Association, Newark, NJ.
- Rubin, I. S. (1996). "Strategies for the New Budgeting," in J. L. Perry (Ed.), *Handbook of Public Administration*, 2nd ed., San Francisco: Jossey-Bass.

- Rubin, I. S. (1997), *The Politics of Public Budgeting*, 3rd ed., Chatham, NJ: Chatham House.
- Rushefsky, M. E. and Patel, K. (1997), *Politics, Power, and Policy-Making: The Case of Health Care Reform in the 1990s*, Armonk, NY: M. E. Sharpe.
- Schubert, J. N. (1997), "Political Culture and Public Health Strategies in State Policy Responses to AIDS," in A. Somit and S. A. Peterson (Eds.), *Recent Explorations in Biology and Politics*, Greenwich, CT: JAI Press, pp. 301-324.
- Schubert, J. N. and Peterson, S. A. (1996), "The Impact of State Policy on the Incidence of AIDS," Paper presented at Northeastern Political Science Association, Boston.
- Schubert, J. N. and Peterson, S. A. (1998), "Faces of AIDS among the American States: Epidemiology as a Policy Stimulus," (Unpublished working paper).
- Sharkansky, I. (1968), "Agency Requests, Gubernatorial Support, and Budget Success in State Legislatures," *American Political Science Review*, 62(4): 1220-1231.
- Squire, P. (1992), "Legislative Professionalism and Member Diversity in State Legislatures," *Legislative Studies Quarterly*, 17(1): 69-79.
- Thompson, J. A. (1987), "Agency Requests, Gubernatorial Support, and Budget Success in State Legislatures Revisited," *Journal of Politics*, 49(3): 756-779.
- Wildavsky, A. (1984), *The Politics of the Budgetary Process*, 4th ed., Boston: Little, Brown.
- Wildavsky, A. (1988), *The New Politics of the Budgetary Process*, Boston: Scott, Foresman.
- Wright, G. C., Erikson, R. S., and McIver, J. P. (1987), "Public Opinion and Policy Liberalism in the American States," *American Journal of Political Science*, 31(4): 980-1001.
- Wright, G. C., Erikson, R. S., and McIver, J. P. (1993), *Statehouse Democracy*, Cambridge, MA: Cambridge University Press.