

November 1995

RYAN WHITE CARE
ACT OF 1990

Opportunities to
Enhance Funding
Equity



**Health, Education, and
Human Services Division**

B-265841

November 13, 1995

The Honorable Nancy Kassebaum
Chairman, Committee on Labor
and Human Resources
United States Senate

The Honorable Hank Brown
United States Senate

The human immunodeficiency virus (HIV) epidemic has become one of the most serious health threats to the American public. The HIV infection rate is estimated to be as high as 1 in every 250 persons nationwide. Metropolitan areas are especially affected by HIV with rates as high as 1 in 25. By December 1994, nearly 450,000 people with HIV had been reported to have progressed to acquired immunodeficiency syndrome (AIDS), and more than 270,000 had been reported to have died of the disease. Currently, only one federal program provides funds specifically for medical and support services to individuals with AIDS and HIV. Established by the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act of 1990, the program distributed more than \$579 million in fiscal year 1994 to eligible metropolitan areas (EMA) through title I of the act and to states through title II.

Citing examples of disparities in per-case funding, you expressed concerns that the existing title I and II funding formulas may lead to an inequitable distribution of funds to states and EMAs. For this reason, you asked us to determine (1) how equitably the existing formulas are distributing title I and II funds, (2) which factors inhibit the formulas from achieving greater equity, and (3) what formula changes could improve equity.

To assess the title I and II formulas, we reviewed the enacting legislation and conducted interviews to examine the basic rationale for the factors used in the current CARE Act formulas. We compared the funding distributions resulting from the existing formulas against two widely recognized equity criteria.

The first criterion—beneficiary equity—considers the degree to which a formula allocates funds to ensure that EMAs and states are able to purchase a comparable level of services for their HIV populations. Under this criterion, dollars would be distributed according to two indicators: (1) the potential number of people with AIDS (that is, caseload) and (2) the cost of

providing services. The second criterion—taxpayer equity—considers the degree to which EMAS and states are able to finance a comparable level of services with comparable burdens on their taxpayers. This second standard is broader than the first one. In addition to including the two indicators used in the first standard (caseload and cost), it uses a measure of each EMA's and state's capacity to fund AIDS and HIV services from its own resources.¹

On the basis of interviews with experts and a review of available literature, we identified data with which to apply these standards to assess the equity of the title I and II formulas.² We used Centers for Disease Control and Prevention (CDC) data to develop a proxy measure of people living with AIDS, Health Care Financing Administration (HCFA) data to measure differences in service costs, and Department of Treasury data to determine fiscal capacities. We used regression analysis to determine how closely the distribution of CARE Act funds reflected our equity standards.

We conducted our work from February 1994 through October 1995 in accordance with generally accepted government auditing standards.

Results in Brief

Although the title I and II funding formulas currently include some factors used in equity-based formulas, they result in wide variations in per-case funding for several reasons. The most important is that EMAS' AIDS cases are double counted; once when calculating funding for EMA medical services under title I and again when calculating funding for state medical and other services under title II. A state without an EMA does not benefit from double counting and receives substantially less funding than a state with an EMA.

In addition to double counting, the indicators used to target funds to high-need states and EMAS are inaccurate and could be improved. For example, we found evidence of large geographic differences in the cost of serving AIDS patients, yet neither the title I nor the title II formula takes these differences into account. Also, the title I formula targets funding to EMAS on the basis of their cumulative number of reported AIDS cases, yet over 60 percent of these reported cases have since died. As a result, the

¹See the bibliography for other studies that describe these criteria.

²The experts we interviewed were officials of the Agency for Health Care Policy and Research, the Centers for Disease Control and Prevention, the Health Care Financing Administration, and the Health Resources and Services Administration.

oldest EMAS receive the most generous funding, and newly emerging EMAS with more recent growth in AIDS cases receive less funding.

Finally, both title I and title II attempt to target more funds to states and EMAS where resources are most strained by the epidemic. However, the indicators used in both formulas are inadequate. The indicator used in the title I formula (AIDS incidence rate) does not directly take into account an EMA's tax base, which determines the area's own capacity to provide services to people with HIV. The opposite is true for the title II formula. A tax base indicator is used (state per capita income), but the effect of a high AIDS incidence rate on the tax base is ignored.

Funding equity can be improved by changing the structure of the two formulas to eliminate the inappropriate double counting of AIDS cases and by using more appropriate measures of EMA and state funding needs.

Background

The Congress enacted the Ryan White CARE Act on August 18, 1990, to "improve the quality and availability of care for individuals and families with HIV disease." The CARE Act makes funds available through four titles to states, EMAS, and nonprofit entities for developing, organizing, coordinating, and operating more effective and cost-efficient service delivery systems. The Health Resources and Services Administration, part of the Department of Health and Human Services' U.S. Public Health Service, administers the program.

Over \$579 million in CARE Act funds were appropriated in fiscal year 1994 for services to people with AIDS and HIV. About \$326 million (56 percent) of these funds were appropriated for title I, which provides "emergency assistance" to EMAS—metropolitan areas disproportionately affected by the HIV epidemic. Half of title I funds are distributed by formula, and half are distributed competitively. To be eligible, a metropolitan area must have a cumulative count of more than 2,000 cases of AIDS since reporting began in 1981 or a cumulative count of AIDS cases that exceeds one-quarter of 1 percent of its population. In fiscal year 1994, there were a total of 34 EMAS in 17 states, the District of Columbia, and Puerto Rico. Since fiscal year 1991, the number of EMAS has more than doubled.

For title II, \$184 million (32 percent of total CARE Act funds) were appropriated in fiscal year 1994. Title II provides funds to states to improve the quality, availability, and organization of health care and support services for people with HIV. Of the title II funds distributed to the

states in fiscal year 1994, 90 percent were distributed by formula, and 10 percent were distributed competitively through Special Projects of National Significance.³

The remaining titles—titles IIIb and IV—were funded at about \$48 million (8 percent) and \$22 million (4 percent), respectively, in fiscal year 1994. Title IIIb funds are intended for early intervention programs, and title IV funds are intended for pediatric AIDS programs. Under both of these titles, funds are awarded competitively.

The Existing Formulas Meet Neither Equity Criterion

Our examination of the existing title I and II formulas indicates that neither formula meets the beneficiary and taxpayer equity criteria. Per-case funding is not systematically related to either EMA or state service costs or their fiscal capacity. (See app. II for details of our analysis.)

The Title I Formula Does Not Meet Either Equity Criterion

The title I formula does not meet the beneficiary equity criterion because per-case funding is not systematically related to the cost of treating people with HIV. Specifically, our analysis of fiscal year 1994 funding for EMAs showed that per-case funding ranged from \$818 to \$2,663—a difference of over 200 percent. However, only 10 percent of this variation was related to cost differences⁴—though the cost differences themselves were significant. As an illustration, the Dallas and Oakland EMAs each received title I allocations of approximately \$1,200 per person with AIDS, but the cost of providing health care services in Oakland is about 37 percent higher than in Dallas.

The title I formula also does not meet the taxpayer equity criterion because, in addition to not being systematically related to cost differences, EMA grant amounts are not highly related to the EMAs' fiscal capacity. Our analysis of fiscal year 1994 funding for all EMAs showed that more than 40 percent of the variation in EMAs' per-case funding was unrelated to differences in cost and fiscal capacity. For example, the Dallas and Oakland EMAs received about the same per-case funding, but Oakland's

³Special Projects of National Significance (SPNS) are competitive grants awarded to public and nonprofit organizations to advance knowledge and skills in the delivery of health and support services to people with HIV.

⁴The two EMAs located in Puerto Rico—Ponce and San Juan—were excluded from this analysis. With these EMAs included in the analyses, cost differences account for only 2 percent of the variation in per-case funding.

funding capacity when measured in terms of its tax base, costs, and concentration of AIDS cases is about 17 percent lower than that of Dallas.

Combined Title I and II Funding Meets Neither Equity Criterion

The distribution of combined title I and II funds across states does not meet either the beneficiary or the taxpayer equity criterion.⁵ Total per-case funding for California and New York is about 20 percent and 30 percent above the national average, respectively, while Hawaii, Ohio, and Vermont have total per-case funding levels about 50 percent below the national average. These funding differences are not strongly related to differences in states' costs and fiscal capacity to provide services. Our statistical analysis found that differences in service costs and fiscal capacity account for 33 percent of these differences in per-case funding.⁶ That is, 67 percent of the variation in state funding per AIDS case is unrelated to states' funding needs. (See app. II for details.)

Funding Inequities Result From the Structure and Components of the Formulas

Several features of the title I and II formulas contribute to the funding inequities we have identified. Specifically, inequities occur because EMA cases are counted in both the title I and II formulas, an inappropriate caseload measure is included in the title I formula, an inappropriate measure of EMAS' and states' fiscal capacity is included in both formulas, and neither formula includes a measure of EMAS' and states' service costs. (See appendixes for details.)

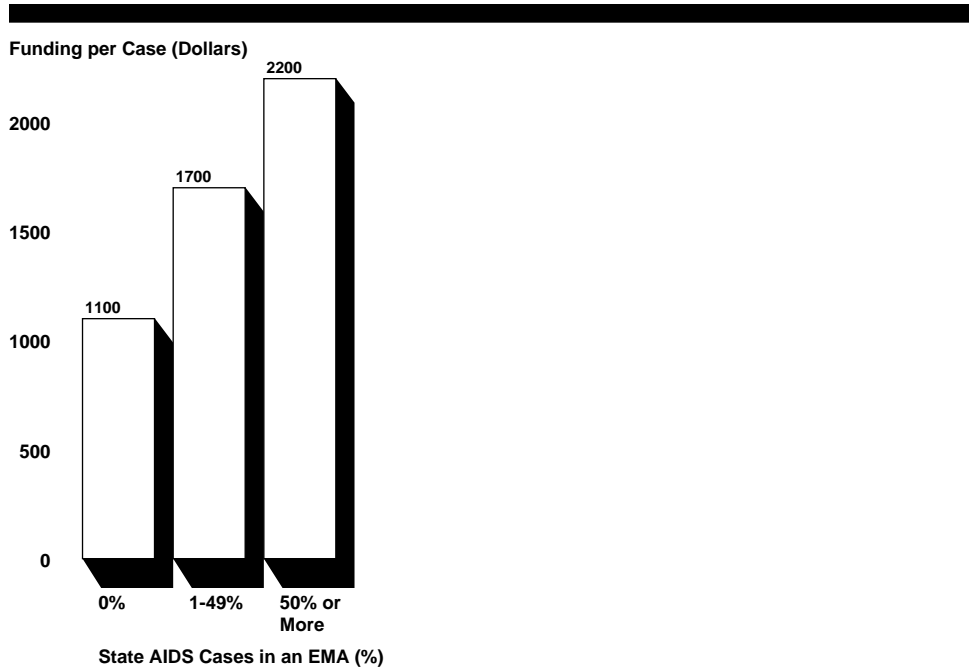
Double Counting EMA Cases

Our analysis of differences in states' per-case funding amounts indicates that about half of the variation is due to the double counting of EMA cases in both the title I and II formulas rather than differences in funding needs (that is, cost or fiscal capacity differences). States where most cases live in EMAs receive the largest amounts per case, since larger proportions of their caseloads are double counted. For example, per-case funding was about \$1,100 in states without an EMA, \$1,700 in states where less than half the state's caseload lived in an EMA, and \$2,200 in states where more than half of the caseload lived in an EMA (see fig. 1). Thus, most of the variation in per-case funding can be explained by the extent to which a state's caseload is double counted rather than by the state's funding needs.

⁵We compared the total amount of title I and II funds within each state to assess interstate funding equity. We did not conduct a separate assessment of title II funds because of the difference in the purposes of these funds between states with and without EMAs.

⁶To develop a more valid estimate, we excluded from our analysis those states that received the minimum title II grant amount of \$100,000.

Figure 1: State Funding by Proportion of AIDS Cases Residing in an EMA



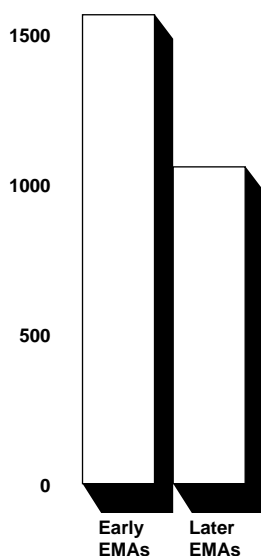
Inappropriate Title I Caseload Measure

The title I caseload measure is based on the cumulative number of people with AIDS that EMAs reported to CDC since 1981 when reporting began. By the end of 1993, however, two-thirds of these people had been reported to have died and were, therefore, no longer using services funded by title I.

Because the formula includes deceased persons, the EMAs that experienced the first outbreak of AIDS receive substantially more per-case funding than do newer EMAs. For example, in fiscal year 1994, the 18 EMAs that were eligible to receive title I funds in the first 2 years of eligibility—1991 and 1992—were funded at about \$1,500 per case. In contrast, the 16 EMAs that became eligible in 1993 and 1994 were funded at only about \$1,000 per case—one-third less than the older EMAs (see fig. 2).

Figure 2: Fiscal Year 1994 Funding Per Case

Funding per Case (Dollars)



Note: Early EMAs are the 18 that entered the program during 1991 and 1992; later EMAs are the 16 that entered in 1993 and 1994.

Absence of a Cost Measure

While the cost of providing AIDS and HIV services varies among EMAs and states, neither the title I nor title II formula includes a factor to measure those differences. Information on the actual costs of providing health and support services to people with AIDS and HIV within different geographic areas is not available. However, most of the delivery costs appear to be associated with the personnel who provide the labor-intensive outpatient health, support, and case management services titles I and II primarily fund. A proxy measure for these labor costs is available through the Medicare Hospital Wage Cost Index.⁷

Using this index for title I cities, we estimated that the cost of providing medical services was about 30 percent above the national average in the New York, Oakland, and San Francisco EMAs and about 10 percent below the national average in the Miami EMA—a difference of about 40 percent. This suggests that the New York, Oakland, and San Francisco EMAs must spend much more than the Miami EMA to provide a comparable level of services to their patients. Similarly, under title II, we estimated that the

⁷The Medicare Hospital Wage Cost Index was designed to reflect personnel costs in hospitals subject to the Medicare prospective payment system; it was derived from hospital salary surveys.

cost of providing medical services was more than 15 percent above the national average in the states of Alaska, California, and New York, about 15 percent below the national average in Alabama and Arkansas, and about 20 percent below the national average in Mississippi.

Inappropriate Fiscal Capacity Measures

State and EMA fiscal capacity depends on the size of the tax base and the service demands placed on that tax base. The current title I formula measures the demand for services through the use of an AIDS incidence rate factor, but the strength of each EMA's tax base is not included. As a result, the title I formula does not adequately adjust EMAS' allocations to target those with smaller tax bases and fewer resources to draw upon to meet the needs of the cases they must serve.

The title II formula does measure the strength of each state's tax base through the use of per capita personal income. However, it does not consider the demand for services that is placed on state tax bases. As a result, the title II formula does not adequately adjust state allocations to target states with tax bases that are burdened by a heavy demand for services.

Greater Funding Equity Can Be Achieved

Greater funding equity can be achieved by changing the formulas' structure and components. The formulas can be modified to make their funding distribution meet either the beneficiary equity criterion or the taxpayer equity criterion. Alternatively, although no formula can completely satisfy both criteria simultaneously, the formulas could be modified to partly meet both criteria, emphasizing beneficiary equity over taxpayer equity or vice versa. Regardless of which criterion is emphasized, however, the following changes could make the title I and II formulas more equitable. (See appendixes for details.)

Inequities Created by Double Counting Could Be Avoided

The current title I and II structure could be revised to avoid inequities created by counting EMA cases in both formulas. Presently, funding for titles I and II does not always reflect the division of service responsibilities between EMAS and state governments. Through title I, EMAS provide medical and support services to people who reside in their areas of coverage. Through title II, states provide medical and support services to people living outside EMAS and commonly provide these services to people living in EMAS as well. In addition, through title II, states administer services such as medication assistance and insurance continuation

statewide for cases both within and outside of their EMAs.⁸ Nonetheless, while EMAs typically provide the bulk of medical services to people living within their areas, title II provides funding as if states were providing both medical and statewide services to the EMA cases. This results in a higher level of per-case funding for states with EMAs because the EMA cases are double counted.

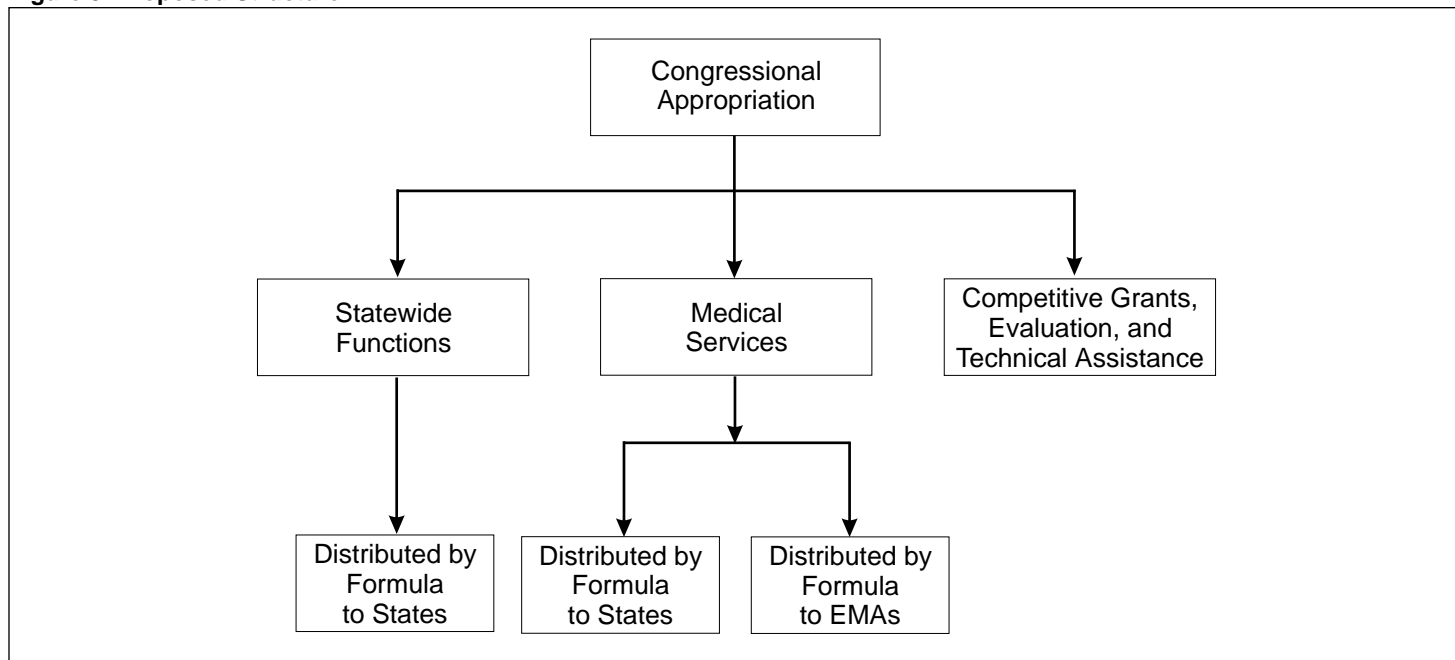
A more equitable structure would, in effect, double count all cases. Cases would be counted once for the statewide services such as medication assistance and insurance continuation, and again for medical services that are jointly provided by states and EMAs.

One means for achieving this would be to make separate appropriations for the major activities funded by the CARE Act. One appropriation would be made for services that state governments provide statewide, and a second appropriation would be made for medical services that are jointly provided by states and their EMAs (see fig. 3).⁹

⁸In some cases, EMAs provide funds to the state for the statewide medication assistance program.

⁹A third appropriation could be made for discretionary purposes (that is, for competitive grants, evaluations, and technical assistance).

Figure 3: Proposed Structure



Funding for statewide services would be allocated to state governments on the basis of each state's total AIDS caseload. Funding for medical services would be divided into two separate allocations for state governments and EMAs. The allocation to state governments would be based on AIDS cases living outside a state's EMAs. The allocation to EMAs would be based on AIDS cases living in their service delivery areas. With this method, each state's entire caseload is counted twice: once for funding statewide services and again for funding state-EMA medical services.

The approach would only be a means of allocating federal funds to the entities responsible for delivering services and would not change the latitude currently afforded local governments and states in deciding how to best use those funds. Consequently, this approach should have only a minimal effect on existing service delivery structures because it leaves EMA and state responsibilities essentially unchanged.

Better Indicators of Caseload, Cost, and Capacity Would Improve Equity

In addition to changing the structure of the formulas, funding equity could be improved by changing the formulas' components. Specifically, funding equity could be improved by modifying the existing caseload and fiscal capacity measures, and by including a cost measure.

First, funding equity could be improved by including a caseload measure that better reflects the number of people living with AIDS and excludes deceased persons. We have developed a proxy measure of people living with AIDS from existing CDC data.

Funding equity could also be improved by including a cost measure, such as the Medicare Hospital Wage Cost Index. Use of such a measure would better compensate the EMAs and states that must pay more to provide services to their patients because of their higher private sector health care costs.

Finally, to increase resources in states and EMAs with poorer fiscal capacity, the current fiscal capacity factors could be revised to better measure the EMAs' and states' AIDS incidence rates and tax bases. Currently, the title I fiscal capacity factor lacks a measure of EMAs' tax bases, and the title II factor lacks a measure of states' AIDS incidence rates. By having more complete measures of EMA and state fiscal capacities, the formulas could adjust grants on the basis of both the demand for services and the strength of tax bases. In addition, using total taxable resources (TTR) in the state formula instead of personal income could result in a more comprehensive measure of state tax bases. (For the effects of these changes on specific state and EMA grants, see app. V.)

Conclusions

Our analysis of the existing formulas demonstrates that federal funding under titles I and II of the CARE Act can be made more equitable. An important purpose of the Ryan White CARE Act was to target emergency funding to areas of greatest need. At the time the law was enacted, high incidences of HIV were found in fewer areas of the country, service delivery networks were just beginning to form, and these service delivery systems had to rely primarily on private and volunteer resources. In the past 5 years, however, the HIV epidemic has become more widespread and less localized. Hence, areas where the AIDS caseload has burgeoned recently need per-case funding levels comparable to those in areas where AIDS was initially concentrated.

Recommendations to the Congress

To achieve greater equity in the distribution of funds, we recommend that the Congress modify the funding formulas to

- reduce the double counting of EMA cases so that comparable medical services funding is available for people with AIDS, regardless of where they live,
- adopt a caseload indicator that better reflects the number of people living with AIDS who are in need of services, and
- include an indicator that reflects the relative differences across states and EMAs in the cost of serving people with AIDS.

Matters for Congressional Consideration

If the Congress wishes to target more aid to states and EMAs with limited fiscal capacity, then it may consider adopting an indicator that reflects the relative strength of local tax bases and concentrations of people with AIDS. Alternatively, the Congress may wish to discontinue the use of AIDS incidence rates in the title I formula and per capita income in the title II formula because of the funding inequities that these components produce.

Finally, modifying the formulas to achieve a more equitable distribution of funds will involve significant changes in grants to some EMAs and states. To avoid possible disruption of service delivery, the Congress may wish to consider phasing in formula modifications. This should minimize, if not avoid, disruption for the service delivery networks the CARE Act has made possible over the last 5 years.

If you or your staff have any questions regarding this report, please contact me on (202) 512-7119 or Jerry Fastrup, Assistant Director, on (202) 512-7211. Major contributors to this report are listed in appendix VII.



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Abbreviations

AIDS	acquired immunodeficiency syndrome
CARE	Comprehensive AIDS Resources Emergency
CDC	Centers for Disease Control and Prevention
EMA	eligible metropolitan area
GSP	Gross State Product
HHS	Department of Health and Human Services
HIV	human immunodeficiency virus
HCFA	Health Care Financing Administration
MHWC	Medicare Hospital Wage Cost (Index)
PCI	per capita income
PPS	prospective payment system
SPNS	Special Projects of National Significance
TTR	total taxable resources

Assessing the Equity of the Funding Formulas

To determine how equitably title I and II funds are distributed, we examined the existing formulas, applied two widely recognized equity criteria, and determined whether the existing or alternative formula factors would best allocate funds according to these standards.

Existing Formulas

Title I funds are distributed on the basis of the cumulative number of AIDS cases EMAS report and their cumulative AIDS incidence rate.

$$Grant_i = \left(\frac{Distribution\ Factor_i}{\sum_{i=1} Distribution\ Factor_i} \right) * Appropriation\ Amount$$

where

$$Distribution\ Factor_i = \left[\frac{Cases_i}{\sum_{i=1} Cases_i} \right] * \left[3 + \frac{R_{EMA}}{R_{All\ EMAS}} \right]$$

In this formula,

$Cases_i$ = the cumulative number of AIDS cases in the i th EMA,

R_{EMA} = the per capita incidence of cumulative AIDS cases in an EMA,

$R_{All\ EMAS}$ = the per capita incidence of cumulative AIDS cases in all EMAS.

Note: i ranges over all EMAS.

Title II funds are distributed to states on the basis of the number of AIDS cases they reported in the 2 most recent fiscal years and their per capita income.

$$Grant_i = \left(\frac{Distribution\ Factor_i}{\sum_{i=1} Distribution\ Factor_i} \right) * \frac{Appropriation\ Amount}{}$$

where

$$Distribution\ Factor_i = \left[Cases_i * \left(\frac{PCI_{US}}{PCI_i} \right)^{1/3} \right]$$

In this formula,

Cases_i = the number of cases reported by the ith state in the 2 most recent fiscal years,

PCI = the average per capita income of the ith state/the United States.

Note: i ranges over all states, the District of Columbia, and territories.

Equity Criteria

The two standards of equity that we applied were the beneficiary and taxpayer equity criteria. To meet the beneficiary equity criterion, funding should be distributed in a way that enables EMAS and states to purchase comparable levels of AIDS and HIV medical and support services. In other words, per-case funding should be about the same in each of the EMAS and states after adjusting for cost differences.

The formula for producing a funding distribution that meets the beneficiary equity criterion is

$$Grant_i = \left[\frac{Cases_i * \left(\frac{Cost}{Index} \right)_i}{\sum_{i=1} Cases_i * \left(\frac{Cost}{Index} \right)_i} \right] A$$

In this formula,

Appendix I
Assessing the Equity of the Funding
Formulas

Cases_i = the number of people in need of services in the ith EMA or state,

Cost Index_i = an index measuring relative differences in the per-case cost of serving recipients in the ith EMA or state,

A = the total amount of funds to be allocated.

Note: i ranges over all EMAs/the District of Columbia, all states and territories.

To meet the taxpayer equity criterion, funding should be distributed in a way that enables EMAs and states to purchase comparable levels of AIDS and HIV services with comparable burdens on their taxpayers. Therefore, under this criterion, per-case funding should be about the same in each of the EMAs and states, once adjusted for differences in their service costs and fiscal capacities. Per-case funding should only differ to the extent that costs and fiscal capacities do. The formula for producing a funding distribution that meets the taxpayer equity criterion is

$$Grant = \left[\frac{Cases_i * \left(\frac{Cost}{Index} \right)_i * \left(\frac{Federal}{Percentage} \right)_i}{\sum_{i=1} Cases_i * \left(\frac{Cost}{Index} \right)_i * \left(\frac{Federal}{Percentage} \right)_i} \right] A$$

In this formula, cases and costs are the same as in the beneficiary equity formula and represent an EMA's or state's funding need. The federal percentage represents the share of an EMA's or state's funding need that will be counted in the formula and varies with EMAs' and states' fiscal capacity according to the following formula:¹⁰

$$\frac{Federal}{Percentage}_i = 1.0 - 0.20 \left(\frac{Fiscal}{Capacity} \right)_i$$

The fiscal capacity index represents the ability of grantees to fund services from state and local resources. We applied a weight of 0.20 to this index

¹⁰Equalizing taxpayer burdens requires the mathematical form shown here. See Maternal and Child Health: Block Grant Funds Should Be Distributed More Equitably (GAO/HRD-92-5, Apr. 2, 1992), pp. 55-62, for a more detailed discussion and derivation of this formula.

because that is the weight implicitly applied to fiscal capacity through the AIDS incidence rate found in the existing title I formula.¹¹

As shown in the preceding figures, to meet the beneficiary equity standard, the funding formula would base its allocation on states' or EMAS' cases and costs, and to meet the taxpayer equity standard, the formula would also include a fiscal capacity factor. Hence, in determining whether the formulas distribute title I and II funds in accordance with the beneficiary and taxpayer equity criteria, we sought indicators that were reflective of these three factors and were appropriate for use in grant allocation formulas.

Caseloads

We considered four approaches to estimating the number of people living with AIDS in each of the EMAS and states:

- cumulative AIDS cases,
- AIDS cases less reported deaths,
- AIDS cases reported in the 2 most recent years, and
- weighted AIDS cases.

The first approach—cumulative AIDS cases—is the caseload measure found in the current title I formula. In the context of our equity criteria, this approach assumes that the number of people currently living with AIDS can be estimated by using the cumulative number of AIDS cases reported since 1981. About 66 percent of these AIDS cases are no longer living, however, and the likelihood of death increases substantially the longer one has AIDS. As a result, this measure would direct funds more to where the epidemic occurred initially rather than to where it appeared more recently.

The second approach—AIDS cases less reported deaths—subtracts each state's and EMA's total reported deaths from their total reported AIDS cases for the 10 most recent years. The total number of living cases is then determined by adding each year's surviving cases.

While this approach appears to potentially provide a reasonable estimate of the number of people living with AIDS, it is not an appropriate caseload measure for allocating funds. Our interviews with experts and our review of the literature indicated that this estimate would be biased because AIDS-related deaths are more extensively and quickly reported in some

¹¹The existing title II fiscal capacity factor does not adjust states' per capita income by their AIDS incidence, which results in a perverse allocation of title II funds. Because of this, we did not use the weight associated with the existing title II fiscal capacity factor.

states and EMAS than in others, and this results in measurement errors. Furthermore, since funds are based on the number of people living with AIDS, those states and EMAS that underreport AIDS-related deaths would be rewarded, while others with more reliable reporting would, in effect, be penalized. Many of the experts we interviewed expressed concerns that this method could introduce incentives to purposely underreport deaths. Consequently, states and EMAS might delay or not even report these deaths, which could lead to another bias to the caseload measure and result in less reliable information on the lifespans of people with the disease.

The third approach that we considered uses the number of AIDS cases reported in the most recent 2 years to estimate the number of living AIDS cases. This is the caseload measure currently used in the title II formula, and it appears to reasonably estimate the number of living cases. However, because this measure consists of cases from a narrow time frame, we believe it could be too sensitive to sudden caseload changes and disrupt the continuity of funding over time. Also, the expected lifespans for people with AIDS could increase over time. If this occurs in the future, the cases reported in a 2-year interval may not accurately reflect the number of people living with the disease.

The final approach—weighted AIDS cases—is a proxy measure of living AIDS cases. This approach estimates the number of AIDS cases living in an EMA or state on the basis of on the number of AIDS cases reported to CDC for each of the most recent 10 years and national average survival rates since a case was first reported. Specifically, the number of AIDS cases that an EMA or a state had reported for each of these 10 years would be weighted by the national percentage of cases estimated to be living as of the first day of the most recent year of that period.¹² These percentages would be estimated from national data on the number of people reported to have AIDS during a 10-year period who had not been reported to have died of the disease.

Table I.1 shows the cumulative survival rates for each of 10 years as of fiscal year 1992. According to these data, 88 percent of the cases reported in 1992 were estimated to have survived at least 1 day in that year, and

¹²Basing our estimate on the number of people who survived as of this date means that it includes the largest number of people that could potentially need services during the last year of that period. In contrast, an estimate based on the number of people who had survived the entire last year of that period would tend to underestimate the population in need of services. This is because people who had survived part, but not all, of the last year would be omitted from the population even though they had potentially used services sometime during that last year.

57 percent of the prior year's cases were estimated to still be alive as of that date.

Table I.1: Cumulative AIDS Survival Rates for a 10-Year Period

Year reported with AIDS	Proportion surviving into FY 1992
FY 1992	.88
FY 1991	.57
FY 1990	.37
FY 1989	.24
FY 1988	.16
FY 1987	.10
FY 1986	.08
FY 1985	.06
FY 1984	.06
FY 1983	.06

This approach appears to be the most appropriate. Unlike the cumulative AIDS cases measure, it has been adjusted to account for people with AIDS who are no longer living and thus better reflects the intended service population. In contrast to the second approach, this one averages out differences in reporting mortality and avoids incentives to underreport deaths. Specifically, since the algorithm for estimating living cases would be based on national data, any uniqueness in how states and EMAS report mortality would not affect the amount of funds that they would receive. Finally, this measure applies differential weights to cases from a wide time frame. As a result, sudden caseload changes should not significantly disrupt funding continuity over time. Also, this measure can be adjusted to recognize changes in AIDS mortality.

Current Caseload Measures Could Be Improved

Table I.2 compares the proxy measure of people living with AIDS based on weighted-AIDS cases and the proxy measure based on cumulative AIDS cases—the existing title I case measure—for each of the EMAS as of December 1993. Also shown is each EMA's caseload share based on these measures. Since funds are distributed on the basis of caseload shares rather than number of cases, the former is actually the more relevant measure from a formula perspective.

The extent to which the cumulative case measure distorts EMAS' demand for services is shown by the differences in weighted and cumulative caseload shares. For example, the cumulative case measure overestimates

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caseload shares for the New York City, San Francisco, Newark, and Jersey City EMAS from 7.85 to 15.52 percent. Conversely, the cumulative case measure underestimates demand for services in EMAS such as Riverside-San Bernardino, Orlando, St. Louis, Tampa-St. Petersburg, and Phoenix from 13.22 to 18.39 percent. These differences reflect the distortions created by the large number of deceased persons in the case counts for the older and larger EMAS.

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Table I.2: Title I Caseload Counts

EMA	Weighted cases		Cumulative cases		
	Count (#)	Share (%)	Count (#)	Share (%)	Percentage difference ^a
New York, NY	23,484	21.46	58,896	23.2	8.12
San Francisco, CA	7,238	6.61	18,107	7.13	7.85
Los Angeles, CA	9,512	8.69	22,710	8.95	2.93
Miami, FL	5,113	4.67	10,970	4.32	-7.51
Newark, NJ	3,246	2.97	8,207	3.23	8.98
Houston, TX	3,948	3.61	9,539	3.76	4.17
Washington, DC	4,376	4.00	10,127	3.99	-0.24
Chicago, IL	4,276	3.91	9,784	3.85	-1.36
Atlanta, GA	3,092	2.83	7,184	2.83	0.17
Fort Lauderdale, FL	2,332	2.13	5,530	2.18	2.25
Philadelphia, PA	3,725	3.40	7,933	3.12	-8.18
Dallas, TX	2,708	2.47	6,088	2.40	-3.09
Boston, MA	3,289	3.01	7,068	2.78	-7.36
Jersey City, NJ	1,194	1.09	3,200	1.26	15.52
San Diego, CA	2,445	2.23	5,298	2.09	-6.60
Oakland, CA	1,899	1.73	4,323	1.70	-1.84
Baltimore, MD	2,510	2.29	5,021	1.98	-13.77
New Orleans, LA	1,282	1.17	3,107	1.22	4.44
Seattle, WA	1,640	1.50	3,702	1.46	-2.67
Tampa-St. Petersburg, FL	2,040	1.86	4,069	1.60	-13.99
Orange County, CA	1,285	1.17	2,966	1.17	-0.51
Nassau-Suffolk, NY	1,453	1.33	3,363	1.32	-0.24
Detroit, MI	1,803	1.65	3,650	1.44	-12.71
West Palm Beach, FL	1,397	1.28	3,188	1.26	-1.59
Denver, CO	1,475	1.35	3,098	1.22	-9.46
Orlando, FL	1,258	1.15	2,391	0.94	-18.09
Riverside-San Bernardino, CA	1,587	1.45	3,004	1.18	-18.39
Bergen-Passaic, NJ	1,113	1.02	2,641	1.04	2.27
Kansas City, MO	1,083	0.99	2,292	0.90	-8.77
New Haven, CT	1,354	1.24	2,855	1.12	-9.08
Phoenix, AZ	1,129	1.03	2,272	0.89	-13.22
St. Louis, MO	1,233	1.13	2,398	0.94	-16.18
San Juan, PR	3,248	2.97	7,291	2.87	-3.23
Ponce, PR	676	0.62	1,595	0.63	1.79

^aWhile the data in the table have been rounded to two decimal positions, the percentage differences were computed based on additional decimal positions.

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Table I.3 compares our proxy measure of people living with AIDS that is based on weighted living cases and the existing title II case measure—2 years of cases—for each of the states and territories as of December 1993. The table also shows the caseload shares based on these two measures. Once again, an examination of caseload shares under these two methods demonstrates the distortions that result from using only 2 years of cases to estimate the number of people living with AIDS. The measure overestimates caseload shares for Delaware and South Dakota from 9.61 to 17.94 percent and underestimates caseload shares for Hawaii, Montana, and New Jersey from 5.22 to 7.18 percent.

Table I.3: Title II Caseload Counts

State	Weighted cases		2 years of cases		Percentage difference ^a
	Cases (#)	Share (%)	Cases (#)	Share (%)	
Alabama	1,164	0.73	1,173	0.76	4.82
Alaska	90	0.06	87	0.06	0.89
Arizona	1,589	0.99	1,621	1.05	6.05
Arkansas	664	0.41	684	0.44	7.16
California	28,299	17.67	27,346	17.76	0.49
Colorado	1,773	1.11	1,732	1.12	1.61
Connecticut	2,375	1.48	2,403	1.56	5.20
Delaware	483	0.30	509	0.33	9.61
District of Columbia	2,429	1.52	2,288	1.49	-2.07
Florida	16,574	10.35	16,007	10.40	0.43
Georgia	4,369	2.73	4,124	2.68	-1.84
Hawaii	556	0.35	496	0.32	-7.18
Idaho	111	0.07	112	0.07	4.55
Illinois	4,960	3.10	4,868	3.16	2.05
Indiana	1,343	0.84	1,353	0.88	4.73
Iowa	305	0.19	313	0.20	6.85
Kansas	524	0.33	546	0.35	8.26
Kentucky	548	0.34	537	0.35	1.99
Louisiana	2,351	1.47	2,218	1.44	-1.88
Maine	207	0.13	193	0.13	-3.27
Maryland	3,735	2.33	3,730	2.42	3.84
Massachusetts	3,692	2.31	3,573	2.32	0.64
Michigan	2,560	1.60	2,564	1.67	4.14
Minnesota	897	0.56	877	0.57	1.71
Mississippi	739	0.46	722	0.47	1.58
Missouri	2,461	1.54	2,455	1.59	3.72

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State	Weighted cases		2 years of cases		
	Cases (#)	Share (%)	Cases (#)	Share (%)	Percentage difference ^a
Montana	58	0.04	53	0.03	-5.55
Nebraska	242	0.15	240	0.16	3.12
Nevada	896	0.56	887	0.58	2.95
New Hampshire	184	0.11	171	0.11	-3.13
New Jersey	8,195	5.12	7,469	4.85	-5.22
New Mexico	414	0.26	401	0.26	0.80
New York	27,593	17.23	25,839	16.78	-2.62
North Carolina	2,019	1.26	1,950	1.27	0.42
North Dakota	20	0.01	20	0.01	1.85
Ohio	2,391	1.49	2,336	1.52	1.57
Oklahoma	962	0.60	989	0.64	6.93
Oregon	1,099	0.69	1,067	0.69	1.00
Pennsylvania	4,660	2.91	4,537	2.95	1.25
Rhode Island	452	0.28	454	0.29	4.44
South Carolina	1,817	1.13	1,869	1.21	6.99
South Dakota	31	0.02	35	0.02	17.94
Tennessee	1,589	0.99	1,609	1.04	5.32
Texas	11,055	6.90	10,452	6.79	-1.68
Utah	408	0.25	399	0.26	1.72
Vermont	96	0.06	100	0.06	8.11
Virginia	2,439	1.52	2,406	1.56	2.60
Washington	2,255	1.41	2,121	1.38	-2.20
West Virginia	175	0.11	160	0.10	-5.13
Wisconsin	947	0.59	960	0.62	5.37
Wyoming	49	0.03	46	0.03	-1.76
Puerto Rico	5,206	3.25	4,812	3.13	-3.88
Virgin Islands	70	0.04	66	0.04	-2.55

^aWhile the data in the table have been rounded to two decimal positions, the percentage differences were computed based on additional decimal positions.

Costs

Neither the title I nor title II formula includes a factor that reflects differences in the cost of serving AIDS cases. We were not able to locate existing information on the actual cost of providing health and support services to people with AIDS and HIV within different geographic areas. As a result, we constructed a proxy for the cost of serving AIDS cases.

The major factors that typically affect service costs are the personnel who supply the service, capital costs such as office rent, and supply costs such as for medications. Titles I and II primarily fund outpatient health, support, and case management services, which are labor-intensive. Hence, most of the service delivery costs for services funded by titles I and II would be associated with the personnel who provide the services.

Furthermore, from our discussions with experts, we determined that an existing measure of health labor costs—the Medicare Hospital Wage Cost (MHWC) Index—might be an appropriate indicator of differences in labor costs among EMAS and states. This wage index was derived by HCFA from hospital salary surveys and was designed to reflect personnel costs in hospitals subject to the Medicare prospective payment system (PPS). Accordingly, the index is based on the salaries of nurses, therapists, technicians, physicians, and administrative staff. In addition to being used for PPS, the MHWC Index has been used to estimate cost variation for ambulatory service centers, home health care providers, and skilled nursing facilities.

An underlying assumption in our using the MHWC Index to estimate costs for the personnel who deliver services funded by the CARE Act is that the relative differences in these costs should mirror the relative differences in costs of hospital personnel. That is, in places where hospital personnel costs are high, costs should also be high for the personnel who provide services funded by the CARE Act. Likewise, in places where hospital personnel costs are low, the costs for the personnel providing services funded by the CARE Act should also be low.

HCFA collects nationwide data on hospitals participating in PPS, so cost data are readily available for each of the EMAS and non-EMA areas. HCFA publishes these data for metropolitan areas, and using HCFA's automated MHWC database, we were able to construct a wage index for each of the states.

We were unable to locate existing data on the second major cost category—capital costs. High-cost areas, however, tend to have high costs both for salaries and capital (for example, rent for office space). In our view, therefore, the MHWC Index would appear to be a reasonable proxy for differences in both personnel and capital costs.

The third major cost category—the cost of supplies such as medications—is assumed not to systematically vary by location. This is

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because the amount an EMA or state pays for supplies like medications is determined by a number of factors, including the price that they are able to negotiate with suppliers.

For our analysis, we constructed a cost index assuming 30 percent of costs do not systematically vary by location and 70 percent do. The MHC Index served as a proxy for the variation of these costs.

$$\text{Cost Index} = .3 + (.7 * \text{MHC})$$

We applied a weight of 30 percent for costs that do not systematically vary because that is the approximate percentage of title II funds typically expended on medications.

Tables I.4 and I.5 display our estimated service costs for each of the EMAs and states. As shown in these tables, costs can vary by as much as 100 percent. For example, service costs in Oakland are twice those in Ponce and San Juan, and 48 percent higher than in Miami. Similarly, service costs in Alaska are over 50 percent higher than in Mississippi.

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Table I.4: Title I Cost Factor

EMA	MHWC Index (average = 1.00)	GAO cost index (.3 + .7 * MHWC) (average = 1.00)
Oakland, CA	1.47	1.33
New York, NY	1.41	1.29
San Francisco, CA	1.41	1.29
Nassau-Suffolk, NY	1.31	1.21
Los Angeles, CA	1.25	1.18
New Haven, CT	1.23	1.16
San Diego, CA	1.21	1.14
Boston, MA	1.17	1.12
Riverside-San Bernardino, CA	1.17	1.12
Bergen-Passaic, NJ	1.15	1.10
Philadelphia, PA	1.11	1.08
Newark, NJ	1.11	1.08
Jersey City, NJ	1.11	1.08
Washington, DC	1.11	1.08
Seattle, WA	1.10	1.07
Detroit, MI	1.09	1.06
Chicago, IL	1.07	1.05
Fort Lauderdale, FL	1.06	1.04
Denver, CO	1.06	1.04
Atlanta, GA	1.03	1.02
Phoenix, AZ	1.01	1.01
West Palm Beach, FL	1.00	1.00
Orange County, CA	1.00	1.00
Houston, TX	0.99	0.99
Baltimore, MD	0.99	0.99
Dallas, TX	0.95	0.97
New Orleans, LA	0.95	0.96
Kansas City, MO	0.95	0.96
Orlando, FL	0.94	0.96
Tampa-St. Petersburg, FL	0.94	0.96
St. Louis, MO	0.91	0.94
Miami, FL	0.86	0.90
Ponce, PR	0.45	0.62
San Juan, PR	0.44	0.61

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Table I.5: Title II Cost Factor

State	MHWC Index (average = 1.00)	GAO cost index (.3 + .7 * MHWC) (average = 1.00)
Alaska	1.29	1.20
California	1.25	1.18
New York	1.24	1.17
District of Columbia	1.21	1.15
Connecticut	1.21	1.15
Massachusetts	1.16	1.11
Hawaii	1.13	1.09
New Jersey	1.12	1.08
Nevada	1.11	1.08
Rhode Island	1.09	1.06
Washington	1.05	1.04
Michigan	1.05	1.04
Oregon	1.05	1.03
Delaware	1.03	1.02
New Hampshire	1.02	1.01
Pennsylvania	1.01	1.01
Minnesota	1.00	1.00
Maryland	1.00	1.00
Illinois	0.98	0.99
Arizona	0.98	0.98
Colorado	0.97	0.98
Utah	0.95	0.96
Florida	0.95	0.96
Ohio	0.94	0.96
Vermont	0.93	0.95
Indiana	0.92	0.94
New Mexico	0.91	0.94
Maine	0.91	0.94
Georgia	0.91	0.94
Texas	0.91	0.93
Wisconsin	0.90	0.93
Virginia	0.89	0.92
Nebraska	0.89	0.92
Missouri	0.88	0.92
North Carolina	0.88	0.92
Kansas	0.88	0.91
Louisiana	0.87	0.91

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State	MHWC Index (average = 1.00)	GAO cost index (.3 + .7 * MHWC) (average = 1.00)
Tennessee	0.86	0.91
South Carolina	0.86	0.90
Idaho	0.85	0.90
Montana	0.84	0.89
Kentucky	0.84	0.89
North Dakota	0.84	0.89
West Virginia	0.83	0.88
Iowa	0.83	0.88
Alabama	0.80	0.86
Wyoming	0.80	0.86
Oklahoma	0.80	0.86
South Dakota	0.78	0.84
Arkansas	0.76	0.83
Mississippi	0.70	0.79
Puerto Rico	0.44	0.61
Virgin Islands	N/A	N/A

Note: N/A = Not applicable.

Fiscal Capacity

A comprehensive indicator of an EMA's or state's fiscal capacity to provide AIDS and HIV health and support services is one that includes both a measure of the resource base (that is, tax base) and the potential demand placed on these resources to fund AIDS and HIV services.

For the title I formula, we used per capita income (PCI) as the proxy measure for EMA resources. PCI data are compiled by the Department of Commerce and are used to measure the income received by a jurisdiction's residents, including wages and salaries, rents, dividends, interest earnings, and income from nonresident corporate business. PCI also includes an adjustment for the rental value of owner-occupied housing on the grounds that such ownership is similar to the interest income earned from alternative financial investments. While PCI does not measure all taxable income, it is the most comprehensive measure of EMA residents' income currently available.

As a proxy for the level of demand placed on EMAS' resources, we used AIDS incidence rates based on our estimate of living AIDS cases. AIDS incidence indicates the proportion of each EMA's population that has been reported

to have AIDS. As such, AIDS incidence considers the relative rather than the absolute demand placed on an EMA's resources. Those EMAs with larger proportions of their populations having the disease are expected to have greater demands on their resources than are EMAs with smaller proportions of their populations infected.

A complete title I fiscal capacity measure was constructed by first producing cost-adjusted income amounts for each EMA through dividing their PCI by their MHC Index values. This adjustment ensured that EMAs were compared in terms of income that was of comparable purchasing power. Next, we divided these cost-adjusted values by each EMA's AIDS incidence rate.

$$\text{Fiscal capacity} = \text{PCI} / \text{MHC} / \text{AIDS Incidence}$$

We followed similar steps in constructing the title II fiscal capacity measure, with the exception of using total taxable resources (TTR)¹³ to measure income. TTR is a broader measure of income than PCI because it considers all income potentially subject to a state's taxing authority. TTR is an average of PCI and per capita Gross State Product (GSP). GSP measures all income produced or received within a state, whether received by residents, nonresidents, or retained by business corporations. Below is the the title II fiscal capacity measure.

$$\text{Fiscal capacity} = \text{TTR} / \text{MHC} / \text{AIDS Incidence}$$

Current Fiscal Capacity Measures Could Be Improved

Under the current formulas, fiscal capacity is incompletely measured. The title I formula includes a measure of EMAs' AIDS incidence but omits a measure of their resources, which creates a bias against those EMAs with relatively low tax bases. In table I.6, we show EMAs' fiscal capacity as measured by the complete indicator that we constructed—real PCI per weighted case—and by the existing measure—AIDS incidence. This table also shows the percentage difference or disparity between these two measures.

As shown in this table, fiscal capacity for the Riverside-San Bernardino EMA is estimated to be 147 percent of the EMA average when measured with a complete indicator—PCI per weighted case. When only AIDS incidence is considered, however, the EMA's fiscal capacity is estimated to be 245 percent of the average. Hence, when demand for services is

¹³TTR data are only available at the state level, so they cannot be used to estimate the fiscal capacity of EMAs.

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considered relative to available resources, Riverside-San Bernardino’s fiscal capacity is estimated to be 67 percent lower than what is estimated under the existing formula. Conversely, when measured with a complete indicator, San Francisco’s fiscal capacity is estimated to be about 21 percent higher than is estimated under the current formula. This occurs because of the EMA’s relatively high tax base.

Table I.6: Title I Fiscal Capacity Factors

EMA	GAO’s real PCI per wtd. case index (average = 100)	Current title I AIDS incidence index^a (average = 100)	Percentage difference^b
New York, NY	41	38	-8.46
San Francisco, CA	29	23	-20.68
Los Angeles, CA	94	104	10.67
Miami, FL	40	48	17.95
Newark, NJ	83	61	-26.16
Houston, TX	106	96	-8.93
Washington, DC	134	112	-16.46
Chicago, IL	218	201	-7.82
Atlanta, GA	118	114	-3.42
Fort Lauderdale, FL	67	61	-8.36
Philadelphia, PA	156	162	4.26
Dallas, TX	129	120	-7.68
Boston, MA	200	209	4.21
Jersey City, NJ	50	45	-9.31
San Diego, CA	102	128	24.75
Oakland, CA	112	129	15.12
Baltimore, MD	119	126	6.40
New Orleans, LA	103	109	6.03
Seattle, WA	168	149	-11.34
Tampa-St. Petersburg, FL	113	135	19.20
Orange County, CA	258	218	-15.33
Nassau-Suffolk, NY	226	204	-9.59
Detroit, MI	265	307	16.10
West Palm Beach, FL	108	74	-31.71
Denver, CO	138	144	4.26
Orlando, FL	108	142	30.96
Riverside-San Bernardino, CA	147	245	66.79
Bergen-Passaic, NJ	169	127	-24.53

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EMA	GAO's real PCI per wtd. case index (average = 100)	Current title I AIDS incidence index^a (average = 100)	Percentage difference^b
Kansas City, MO	176	184	4.61
New Haven, CT	167	149	-11.08
Phoenix, AZ	211	267	26.45
St. Louis, MO	255	273	7.01
San Juan, PR	33	67	103.54
Ponce, PR	17	56	236.48

Note: The average values are based on the average for all EMAs.

^aA high AIDS incidence rate value reflects a lower fiscal capacity while a high PCI value reflects a higher fiscal capacity. Consequently, we inverted the AIDS incidence rate to make it comparable with the other indicator.

^bWhile the data in the table have been rounded to two decimal positions, the percentage differences were computed on the basis of additional decimal positions.

In contrast to the title I formula, the title II formula measures states' income and omits their AIDS incidence rates. This omission creates a bias against those states with relatively high service demands on their resources. Table I.7 shows states' fiscal capacity when measured by a complete indicator—real TTR per weighted case—followed by the existing measure—nominal per capita income. Also, the table shows the percentage difference or disparity between these two measures.

Table I.7: Title II Fiscal Capacity Factors

State	GAO's real TTR per wtd. case index (average = 100)	Current title II nominal PCI index (average = 100)	Percentage difference^a
Alabama	208	82	-60.68
Alaska	544	109	-80.00
Arizona	129	86	-33.05
Arkansas	209	78	-62.72
California	64	107	68.81
Colorado	124	101	-18.43
Connecticut	101	136	34.43
Delaware	106	108	1.87
District of Columbia	18	133	618.07
Florida	48	98	103.41
Georgia	96	91	-5.23

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State	GAO's real TTR per wtd. case index (average = 100)	Current title II nominal PCI index (average = 100)	Percentage difference^a
Hawaii	134	107	-19.97
Idaho	545	81	-85.13
Illinois	162	109	-32.86
Indiana	257	91	-64.66
Iowa	610	92	-84.88
Kansas	314	98	-68.95
Kentucky	405	83	-79.40
Louisiana	111	79	-28.89
Maine	354	92	-74.01
Maryland	90	116	28.24
Massachusetts	109	121	11.03
Michigan	213	98	-53.74
Minnesota	321	101	-68.54
Mississippi	198	71	-64.18
Missouri	135	95	-29.74
Montana	777	81	-89.58
Nebraska	431	96	-77.67
Nevada	92	102	11.09
New Hampshire	397	116	-70.90
New Jersey	71	133	87.34
New Mexico	199	77	-61.06
New York	42	119	182.77
North Carolina	214	89	-58.48
North Dakota	1,910	85	-95.55
Ohio	283	94	-66.87
Oklahoma	199	82	-58.89
Oregon	147	92	-37.39
Pennsylvania	157	102	-34.97
Rhode Island	129	102	-20.47
South Carolina	113	81	-28.43
South Dakota	1,461	83	-94.29
Tennessee	193	87	-54.66
Texas	101	90	-11.05
Utah	226	77	-65.80
Vermont	362	95	-73.78
Virginia	185	104	-43.83

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State	GAO's real TTR per wtd. case index (average = 100)	Current title II nominal PCI index (average = 100)	Percentage difference^a
Washington	141	103	-26.84
West Virginia	548	76	-86.15
Wisconsin	337	94	-71.99
Wyoming	754	88	-88.35
Puerto Rico	N/A	N/A	N/A
Virgin Islands	N/A	N/A	N/A

Notes: The average values are based on the average for the United States.

N/A = Not applicable.

^aWhile the data in the table have been rounded to two decimal positions, the percentage differences were computed on the basis of additional decimal positions.

As shown in table I.7, Kentucky's fiscal capacity is estimated to be 17 percent below the national average when only PCI is considered. When income is adjusted by AIDS incidence rates, however, the state's fiscal capacity is estimated to be more than four times the national average. This occurs because of the relatively low AIDS incidence rate in Kentucky as compared with the state's available resources. Conversely, while the District of Columbia has a relatively large resource base (33 percent above the national average), its AIDS incidence is also relatively high. Consequently, when measured with a complete indicator, the District of Columbia's fiscal capacity is found to be 72 percent below the national average.

Title I Funding and Combined Titles I and II Funding Meet Neither Equity Criterion

We compared the distribution of title I funding and the combined title I and II funding against the beneficiary and taxpayer equity criteria. These comparisons indicated that the current formulas do not distribute funding in accordance with either of the equity criteria.

Equity of Title I Funding

Under the beneficiary equity standard, the size of the grant award depends on two factors: the number of cases and the cost of services. If the grant is expressed on a per-case basis, this implies that per-case funding should vary only with differences in the cost of services. To determine how well the current distribution of title I funds meets the beneficiary equity standard, we performed a regression analysis¹⁴ to determine the extent to which cost differences can account for differences in nominal per-case funding.¹⁵

If the current distribution of title I funds reflected the beneficiary equity standard, then a substantial share of the variation in per-case funding could be explained by cost differences. Our statistical analysis, however, indicates the current distribution of title I funds bears little relation to the variation in costs. The strength of a relationship is commonly measured by a statistic known as R^2 . In this case, the R^2 is 0.10, meaning that differences in cost account for only 10 percent of the variation in per-case funding for EMAs. Hence, 90 percent of the variation is related to other factors.

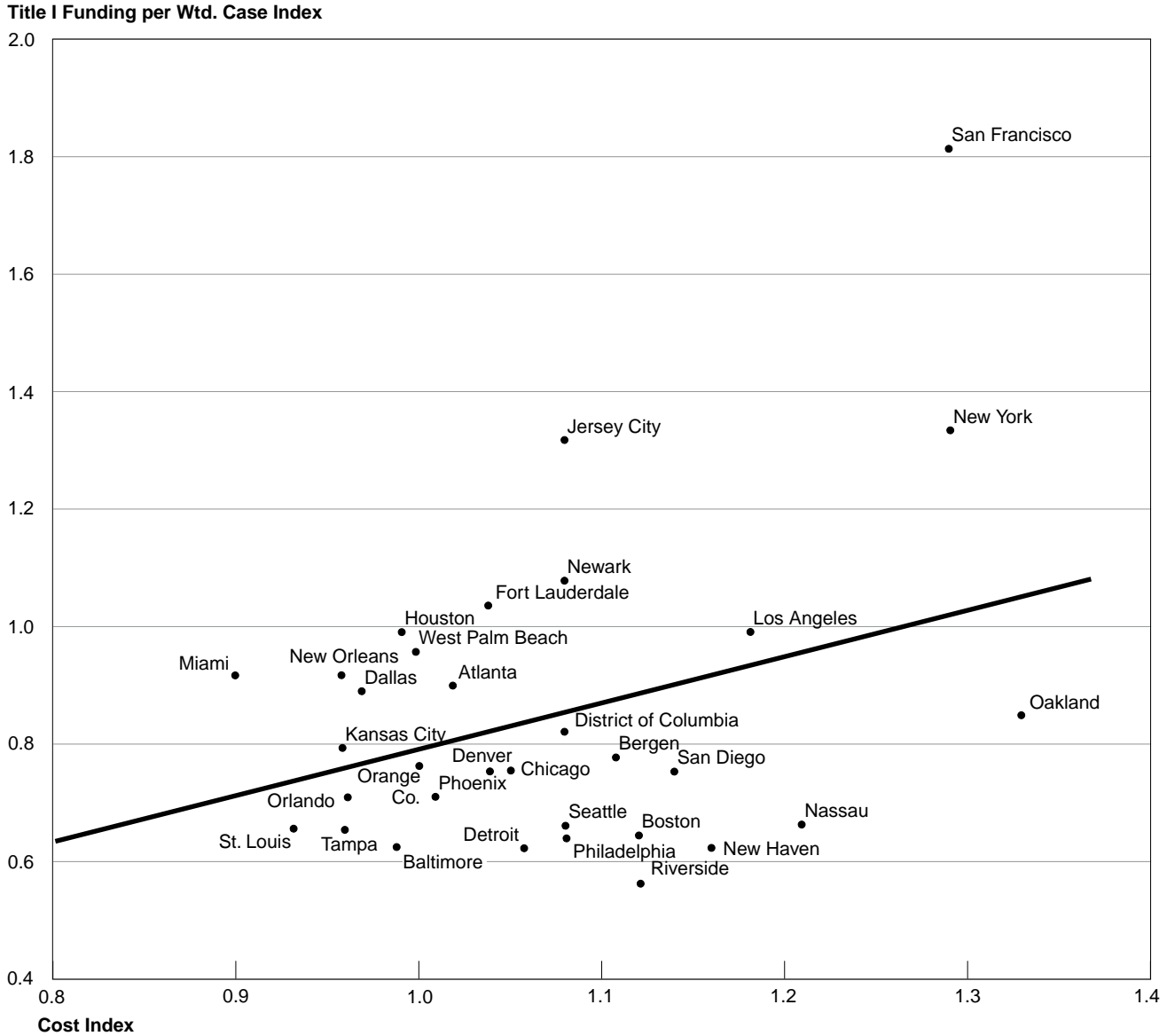
Examples of the inequities that result from this low R^2 are displayed in figure II.1. If differences in per-case funding and costs were perfectly correlated, all EMAs would fall along the straight line shown in this figure. The wide scatter around the line, however, demonstrates that per-case funding and costs are not systematically related. For example, the service costs for the Oakland and San Francisco EMAs are about the same; yet, per-case funding for San Francisco is about twice that for Oakland. If per-case funding and costs were more strongly correlated, both EMAs would be positioned closer to the straight line. Furthermore, Oakland's per-case funding would even be slightly higher than San Francisco's rather than vice versa.

¹⁴Regression analysis is a statistical technique used to measure the degree to which variation in a variable can be explained by variation in other variables.

¹⁵When we refer to nominal dollars or funds, we mean an amount that has not been adjusted for service cost differences among EMAs and states. In contrast, when we refer to real dollars or funds, we mean an amount that has been cost-adjusted.

**Appendix II
Title I Funding and Combined Titles I and II
Funding Meet Neither Equity Criterion**

Figure II.1: Nominal Title I Funding Per Case and Cost



Note: The two EMAs located in Puerto Rico—Ponce and San Juan—are excluded from this figure.

This relationship is also illustrated by other pairs of EMAs. For example, New York City's service costs are about 20 percent higher than Jersey City's, but their per-case funding is about the same—about 30 percent above the EMA average. Consequently, at their current funding levels, the Jersey City EMA can purchase more services for its patients than can New York City.

From the perspective of beneficiary equity, therefore, the current per-case funding distribution is inequitable. However, if these differences can be accounted for by differences in fiscal capacity, then the grant distribution may reflect our taxpayer equity criterion.

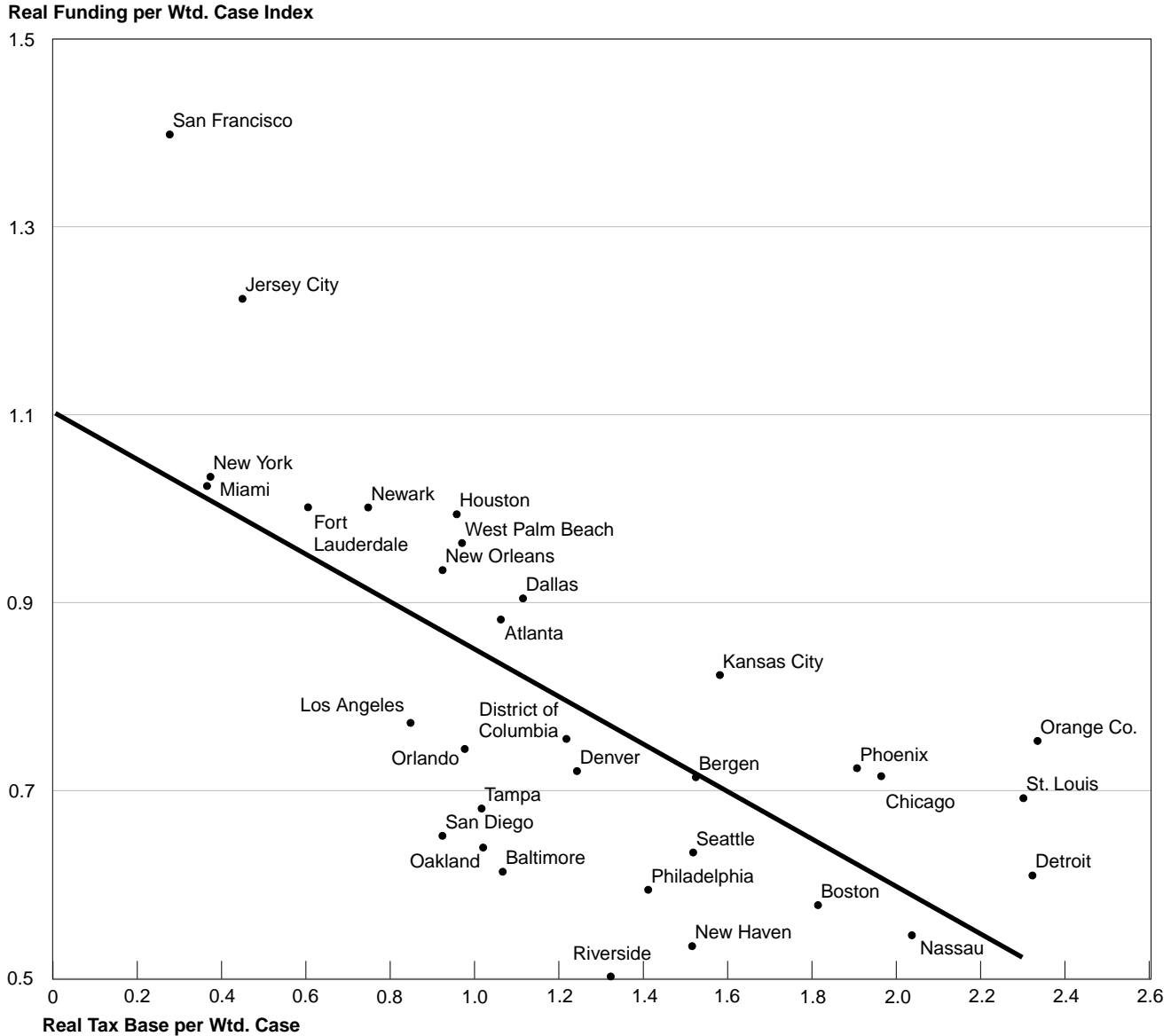
The taxpayer equity standard implies that per-case funding should be related to both cost differences and differences in fiscal capacity. Thus, to determine if the formula meets the taxpayer equity standard, we performed a regression analysis to determine the extent to which differences in per-case funding can be explained by both cost and fiscal capacity differences. We used per-case funding (measured in nominal dollars) as the dependent variable and used both cost and fiscal capacity (also measured in nominal dollars) as independent variables.

Our statistical results show that the current distribution of title I funds does more closely reflect the taxpayer equity standard. The R^2 is 0.56, meaning that differences in cost and fiscal capacity account for 56 percent of the variation in EMAs' per-case funding. Nonetheless, a considerable amount of unexplained variation in per-case funding—44 percent—remains.

The tendency to allocate more aid to low-capacity EMAs is shown graphically in figure II.2. San Francisco's funding capacity is the lowest of all the EMAs and its cost-adjusted per-case real funding is high—nearly 40 percent above the average. West Palm Beach has approximately average funding capacity and receives an average per-case real funding amount. Detroit, Orange County, and St. Louis have high funding capacities and receive relatively lower per-case funding amounts. Thus, there is a clear tendency to target more aid to EMAs with lower funding capacities.

**Appendix II
 Title I Funding and Combined Titles I and II
 Funding Meet Neither Equity Criterion**

Figure II.2: Real Title I Funding Per Case and Tax Base



Note: The two EMAs located in Puerto Rico—Ponce and San Juan—are excluded from this figure.

However, there are many exceptions to this general tendency. For example, while the San Francisco and New York City EMAS' funding capacities are comparable, they receive very different per-case real funding amounts. Real per-case funding is 40 percent above the average for San Francisco and only about average for New York City. Since the grant amounts have already been adjusted for cost differences, we would conclude that the New York City EMA is underfunded compared to San Francisco. Similarly, both West Palm Beach and Tampa have average funding capacities, but West Palm Beach receives about 25 percent more title I funds than Tampa. Based on examples like these and our regression results, we conclude that while title I funding demonstrates a tendency to target more aid to low-capacity EMAS, substantial inequities exist.

Equity of Combined Title I and II Funding

The beneficiary equity standard for the combined distribution of title I and II funds uses caseload and cost measures that encompass the entire state rather than just an EMA. Using state rather than EMA data, we estimated the same regression models to assess the equity of the combined title I and II funding.¹⁶

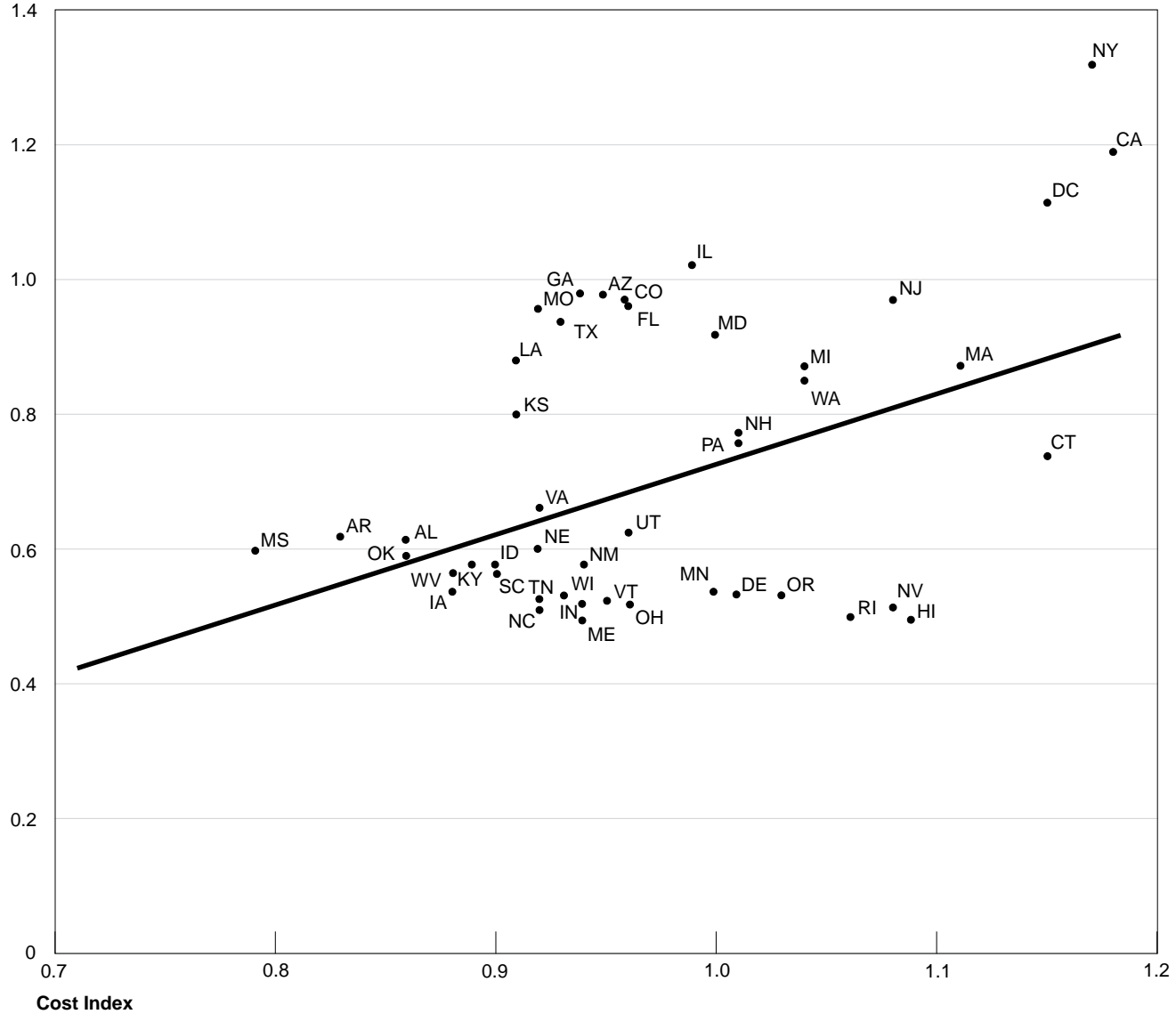
These results show that the current distribution of title I and II funds, in combination, does not meet either equity standard. If beneficiary equity were fully realized, cost differences would account for all of the variation in per-case funding, but costs explain only 14 percent of this variation. To express this another way, under the beneficiary equity model, states with the same relative cost of services should receive equal funding on a per-case basis. As shown in figure II.3, however, states with dramatically different service costs received comparable per-case funding amounts. For example, service costs for both Georgia and New Mexico are about average; but Georgia's per-case funding is 69 percent higher than New Mexico's. A similar situation exists for Ohio and Texas. Both the regression results and these examples indicate that title I and II funds, in combination, are not distributed in a way that meets the beneficiary equity criterion.

¹⁶States receiving the minimum title II grant amount of \$100,000 are excluded from these analyses because their funds are not distributed by formula and cannot be related to an equity analysis.

Appendix II
Title I Funding and Combined Titles I and II
Funding Meet Neither Equity Criterion

Figure II.3: Nominal Title I and II Per-Case Funding and Cost

Title I and II Funds per Wtd. Case Index



Note: States receiving the minimum title II grant amount of \$100,000 and the territories are excluded from this figure.

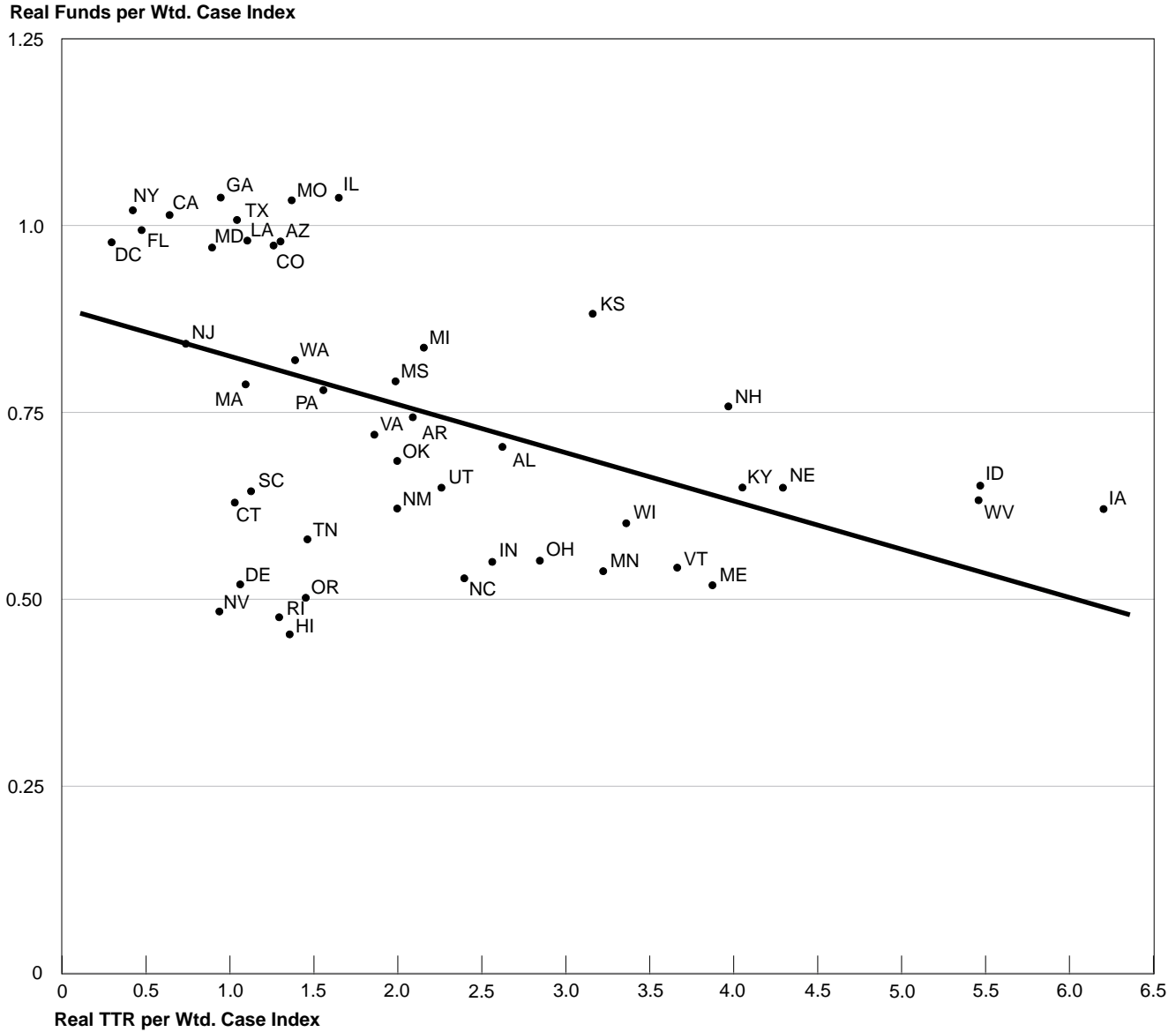
Appendix II
Title I Funding and Combined Titles I and II
Funding Meet Neither Equity Criterion

Under the taxpayer equity model, cost and fiscal capacity should account for 100 percent of the variation in per-case funding. Our regression analysis indicates these two factors account for only 33 percent of the variation in per-case funding. By implication, about 67 percent of the variation in per-case funding is unrelated to need as reflected by differences in cost and fiscal capacity.

Specific examples of the inequities are illustrated in figure II.4. For example, Massachusetts and New Hampshire receive comparable per-case funding amounts, but New Hampshire's tax base is about four times that of Massachusetts. Similar situations exist for the states of Connecticut and Kentucky and for Delaware and Maine. In contrast, Hawaii receives a grant that is about half the amount that Missouri receives; yet, the states' tax bases are comparable. This is also the case for the states of Georgia and Nevada and for Illinois and Oregon. On the basis of this analysis, we conclude that the combined title I and II funding does not meet the taxpayer equity criterion.

Appendix II
Title I Funding and Combined Titles I and II
Funding Meet Neither Equity Criterion

Figure II.4: Real Title I and II Per-Case Funding and Tax Base



Note: States receiving the minimum title II grant amount of \$100,000 and the territories are excluded from this figure.

Funding Inequities Result From the Structure of the Title I and II Formulas

When funding for titles I and II is considered jointly, the major cause of funding inequities is that EMA cases are counted in both formulas but cases outside EMAs are not. As a result, states with few or no cases in an EMA receive disproportionately less per-case funding than do states with large proportions of their caseloads in EMAs.

The following two-state example demonstrates how the current structure produces funding inequities between a state with an EMA and one without an EMA. For this example, we will assume that \$1,000 has been appropriated for each of titles I and II. Also, the two states are assumed to be alike in terms of their costs and funding capacity; however, they differ in the number of cases they must serve and whether these cases live in an EMA.

State A has 200 cases, all living in an EMA while State B has 100 cases and no EMA. Hence, State A has two-thirds and State B has one-third of the total cases. Since title I funds are allocated based on each state's share of EMA cases, the entire \$1,000 would be distributed to the EMA in State A, and none of the funds would be distributed in State B (see fig. III.1).

Figure III.1: Calculation of Title I Grant

Formula:						
	Appropriation	×	Percent of EMA Cases	=	Grant	
Example:						
State A	\$1,000	×	100%	=	\$1,000	
State B	\$1,000	×	0%	=	\$0	

Title II funding is allocated in proportion to each state's total caseload. Since State A has two-thirds of all cases, it would receive two-thirds (\$667) of the title II appropriation. State B would receive one-third (\$333) of the appropriation.

Each state's total grant is then determined by summing their title I and II grants (see fig. III.2).

**Appendix III
Funding Inequities Result From the
Structure of the Title I and II Formulas**

Figure III.2: Total Funding

Formula:					
	Title I Grant	+	Title II Grant	=	Total Grant
Example:					
State A	\$1,000	+	\$667	=	\$1,667
State B	\$0	+	\$333	=	\$333

To determine the states' per-case funding amounts, their total grant amounts are divided by their total caseloads (see fig. III.3).

Figure III.3: Per-Case Funding

Formula:					
	Total Grant	/	Total Cases	=	Per-Case Funding
Example:					
State A	\$1,667	/	200	=	\$8.34
State B	\$333	/	100	=	\$3.33

In this example, the current title structure produced differences in per-case funding for these two states that amounts to about 150 percent. Moreover, this difference is unrelated to the states' funding needs and occurs solely because of the existing title structure.

**Double Counting EMA
Cases Accounts for
Most of the Funding
Inequities**

To determine the extent to which the current structure accounts for per-case funding differences, we compared two regression models. The first model was our earlier one that examined the effects of differences in cost and fiscal capacity on states' combined title I and II per-case funding amounts. For the second model, we examined these effects along with the

Appendix III
Funding Inequities Result From the
Structure of the Title I and II Formulas

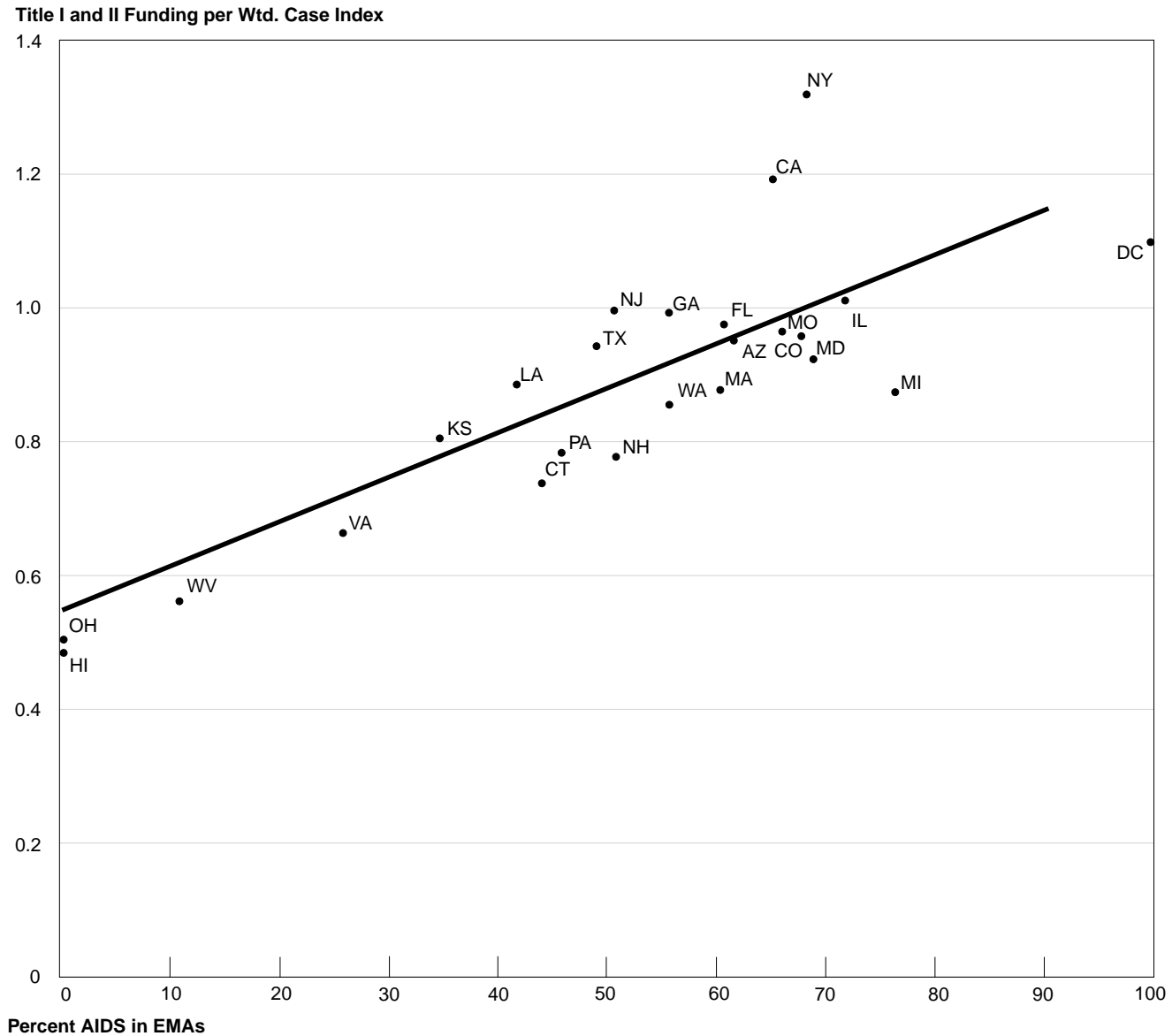
effect of the percentage of AIDS cases in an EMA on states' combined title I and II per-case funding amounts.

As discussed in appendix II, the cost and fiscal capacity model explains only 33 percent of the variation in nominal title I and II per-case funding. In contrast, however, the model that also includes the percentage of EMA AIDS cases as a factor explains 85 percent of this variation.

The relationship between the percentage of EMA AIDS cases and per-case funding is displayed in figure III.4. As shown in this figure, the states with fewer cases in EMAs, for example, Hawaii, Ohio, and West Virginia receive the smallest grants, and the states with larger percentages of cases in EMAs, for example, California, the District of Columbia, and New York, tend to receive the largest grants. As demonstrated by the regression analysis and this figure, the funding differences result from the structure of the formulas rather than funding needs as measured by cases, costs, and fiscal capacity. Consequently, these differences are inequitable.

**Appendix III
Funding Inequities Result From the
Structure of the Title I and II Formulas**

Figure III.4: Nominal Combined Title I and II Per-Case Funding and Percentage of EMA Cases



Notes: States receiving the minimum title II grant amount of \$100,000 and the territories are excluded from this figure.

Of the states without an EMA, only the two that received the smallest and largest grants are displayed.

Structural Changes Can Improve Equity

While improvements in funding equity can be achieved by adopting better indicators of caseload, cost, and funding capacity in the allocation formulas, greater improvement could result from changing the allocation structures to avoid inequities created by counting EMA cases in both formulas. A variety of approaches could be used that vary in terms of how they would affect existing service delivery responsibilities and structures.

Consolidated Grants

The simplest way to improve funding equity is to consolidate titles I and II into a single grant and distribute funds to the state governments through an equity-based formula. State governments would be the political entity responsible for using the aid provided for serving those in need. The funds would be allocated based on each state's total cases, thus avoiding any double counting of EMA cases.

Two implications of the consolidated grant approach, however, are the potential infringement on the autonomy currently afforded EMAs in delivering services and changes in existing service responsibilities and structures. Currently, EMAs are responsible for delivering services within their areas, and they have service delivery networks already in place. Under a consolidated grant, all funds would be distributed to the states. Hence, a state could potentially assume total responsibility for service delivery in EMAs or continue to allow the EMAs to administer the programs they now operate, funding them from its consolidated grant.

Geographic Division of Service Responsibilities

A second corrective approach maintains the two distinct titles—title I for EMAs and title II for states—however, the EMAs would become responsible for all services in their areas, including those services currently under the purview of the states through title II. Hence, EMAs and states would continue to be funded under separate titles, but the services funded under these titles would be identical. Both title I and II funds would be allocated through equity-based formulas. Title I funds would be distributed to EMAs on the basis of their respective shares of cases, and title II funds would be distributed to states on the basis of their respective shares of the non-EMA cases.

Like the previous approach, this one avoids the inequities currently caused by counting EMA cases in both formulas. Furthermore, as do the existing formulas, this approach maintains the EMAs' autonomy in the delivery of services. In addition, this approach allows comparable per-case funding levels among the states and EMAs. However, this approach would lead to

significant changes in service delivery responsibilities. Because EMAs are not currently responsible for providing services such as insurance continuation and medication assistance, they would have to develop the capacity to administer these services in addition to the medical and support services they now provide.

Funding by Types of Service

A third corrective approach involves allocating funds for medical and support services separately from those services that states provide statewide. This approach avoids inequities produced by double counting EMA cases, continues the existing autonomy afforded EMAs, and requires no changes in existing service delivery responsibilities. Furthermore, the approach ensures that comparable per-case funding is available across EMAs and states and between EMA and non-EMA areas.

The following example, using the same two states from the example in appendix III, illustrates how this approach would improve funding equity. The two states are alike in terms of their costs and funding capacity, but they differ in the number of cases they serve and whether the cases live in an EMA.

In this example, a total of \$2,000 is appropriated: \$1,500 for medical services and \$500 for statewide services. As will be shown through this example, dividing funds in this way would result in funding amounts for title I and II activities that are comparable to what was found in the earlier example in which both titles each had a \$1,000 appropriation. That is, \$1,000 would still be available for the EMA, and \$1,000 would still be available for the states because state funding would be determined by adding together the \$500 for non-EMA medical services and \$500 for statewide services.

State A has 200 cases, all living in an EMA, and State B has 100 cases and no EMA. Hence, once again, State A has 100 percent of the EMA cases and two-thirds of total cases. State B has 100 percent of the non-EMA cases and one-third of total cases. Expressed differently, two-thirds of all cases live in an EMA and one-third of all cases do not.

Under this approach, the medical services appropriation would be divided between EMA and non-EMA areas on the basis of their respective caseloads. Since two-thirds of all cases live in an EMA, two-thirds of the medical services appropriation (\$1,000) would be set aside for the EMA. The remaining one-third of the medical services appropriation (\$500) would be

set aside for distribution to states on the basis of the number of cases living outside an EMA.

EMA medical services funds are allocated based on the shares of cases living in an EMA. Since State A contains all EMA cases, all of these funds (\$1,000) would be allocated within State A. None of these funds would be allocated within State B as it has no EMA. Non-EMA medical services funds would be allocated based on states' shares of cases living outside an EMA. Since State A has no non-EMA cases, it would receive none of these funds. State B would receive the entire \$500 of non-EMA medical services funds because it contains all non-EMA cases.

The statewide services appropriation (\$500) would be allocated based on each state's share of total cases. Since State A has two-thirds of the total cases, it would receive \$334; State B would receive the remaining one-third of funds (\$167).

The states' total grants would be the sum of their EMA medical services grant, non-EMA medical services grant, and statewide services grant. In this case, State A would receive a total of \$1,334 and State B would receive a total of \$667 (see fig. IV.1).

Figure IV.1: Total Grants

Formula:						
	EMA Medical Services	+	Non-EMA Medical Services	+	Statewide Services	= Total Grant
Example:						
State A	\$1,000	+	\$0	+	\$334	= \$1,334
State B	\$0	+	\$500	+	\$167	= \$667

As before, the states' per-case funding amounts would be obtained by dividing their total grant amounts by their total caseloads. Figure IV.2 shows the per-case funding amounts for the two states.

Figure IV.2: Per-Case Funding

Formula:	Total Grant	/	Total Cases	=	Per-Case Funding
Example:	State A	\$1,334	/	200	= \$6.67
	State B	\$667	/	100	= \$6.67

Under our proposed approach, each state would receive identical per-case funding. This contrasts significantly with the current approach, which produces highly unequal per-case funding that is unrelated to either costs or funding capacity and is therefore inequitable.

Comparison of EMA and State CARE Act Grants Under Current and Equity-Based Formulas

In this appendix, we describe how title I and II funding would be distributed if the formulas were changed to meet either the beneficiary or taxpayer equity criterion. Both the beneficiary and taxpayer equity formulas were described in greater detail in appendix I, which also provided more detailed discussion of the caseload, cost, and fiscal capacity factors used in these formulas.

Depending on the amount of title I and II funds appropriated or the use of funding-loss mechanisms such as hold-harmless provisions, formula modifications could decrease funding to some EMAs and states and increase funding to others. Whether and how funding losses should be prevented would be the decision of the Congress; however, in this appendix, we show the effects of formula changes when title I and II appropriations remain constant and no funding-loss mechanisms are employed.

Beneficiary Equity Formulas

Table V.1 displays each EMA's title I fiscal year 1995 funding under both the existing and the beneficiary equity formulas, along with the difference in funding that would be received under these formulas. Relative to the existing formula, changes in EMAs' allocations under the beneficiary equity formula would range from a decrease of 33.57 percent to an increase of 58.72.

Table V.1: Title I FY 1995 Funding Under the Existing and Beneficiary Equity Formulas

EMA	Existing formula FY 1995 allocation	Beneficiary equity formula FY 1995 allocation	Difference	
			Dollars	Percentage
Atlanta, GA	\$4,007,435	\$4,081,413	\$73,978	1.85
Austin, TX	1,085,663	1,288,596	202,933	18.69
Baltimore, MD	2,691,832	3,377,671	685,839	25.48
Bergen-Passaic, NJ	1,452,105	1,605,315	153,210	10.55
Boston, MA	3,456,473	4,830,099	1,373,625	39.74
Chicago, IL	4,924,568	6,270,043	1,345,475	27.32
Dallas, TX	3,385,351	3,472,214	86,863	2.57
Denver, CO	1,668,174	2,043,282	375,107	22.49
Detroit, MI	1,716,243	2,377,827	661,584	38.55
Dutchess County, NY	359,357	391,211	31,854	8.86
Fort Lauderdale, FL	3,635,539	3,318,715	-316,825	-8.71
Houston, TX	5,803,257	5,715,983	-87,273	-1.50
Jacksonville, FL	1,214,884	1,307,390	92,506	7.61

(continued)

Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas

EMA	Existing formula FY 1995 allocation	Beneficiary equity formula FY 1995 allocation	Difference	
			Dollars	Percentage
Jersey City, NJ	2,406,293	1,759,633	-646,659	-26.87
Kansas City, MO	1,145,290	1,235,732	90,442	7.90
Los Angeles, CA	12,998,478	15,329,003	2,330,525	17.93
Miami, FL	8,079,775	6,585,215	-1,494,560	-18.50
Nassau-Suffolk, NY	1,676,365	2,441,033	764,668	45.61
New Haven, CT	1,484,228	2,143,285	659,057	44.40
New Orleans, LA	1,798,493	1,728,625	-69,868	-3.88
New York, NY	48,636,026	42,538,803	-6,097,223	-12.54
Newark, NJ	5,559,872	4,883,141	-676,731	-12.17
Oakland, CA	2,321,637	3,197,753	876,117	37.74
Orange County, CA	1,490,021	1,841,089	351,068	23.56
Orlando, FL	1,286,590	1,522,576	235,986	18.34
Philadelphia, PA	4,124,036	5,528,896	1,404,860	34.07
Phoenix, AZ	1,096,350	1,332,987	236,637	21.58
Portland, OR	986,510	1,278,214	291,704	29.57
Riverside-San Bernardino, CA	1,485,035	2,357,024	871,988	58.72
St. Louis, MO	1,137,857	1,385,224	247,367	21.74
San Antonio, TX	960,778	1,119,605	158,827	16.53
San Diego, CA	2,861,916	3,702,743	840,827	29.38
San Francisco, CA	19,126,679	12,705,987	-6,420,692	-33.57
Santa Rosa-Petaluma, CA	574,580	745,241	170,661	29.70
Seattle, WA	1,920,227	2,430,507	510,280	26.57
Tampa-St. Petersburg, FL	2,172,534	2,538,261	365,727	16.83
Vineland, NJ	197,896	207,866	9,970	5.04
Washington, DC	5,623,294	6,411,647	788,354	14.02
West Palm Beach, FL	1,961,600	1,849,331	-112,269	-5.72
Caguas, PR	489,261	529,640	40,379	8.25
Ponce, PR	1,020,387	885,680	-134,707	-13.20
San Juan, PR	4,662,110	4,390,498	-271,612	-5.83
Total	\$174,685,000	\$174,685,000		

Table V.2 displays the distribution of title II fiscal year 1995 funding under both the existing and the beneficiary equity formulas. Relative to the existing formula, changes in states' allocations under the beneficiary

**Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas**

equity formula would range from a decrease of 69.84 percent to an increase of 247.33 percent.¹⁷

Table V.2: Title II FY 1995 Funding Under the Existing and Beneficiary Equity Formulas

State or territory	Existing formula FY 1995 allocation	Beneficiary equity FY 1995 allocation	Difference	
			Dollars	Percentage
Alabama	\$1,349,942	\$3,175,846	\$1,825,904	135.26
Alaska	100,000	337,517	237,517	237.52
Arizona	1,759,313	1,552,919	-206,394	-11.73
Arkansas	753,038	1,649,752	896,714	119.08
California	27,867,193	21,249,330	-6,617,863	-23.75
Colorado	1,980,699	1,381,805	-598,894	-30.24
Connecticut	2,404,858	4,096,894	1,692,036	70.36
Delaware	585,604	1,646,242	1,060,638	181.12
District of Columbia	2,532,524	763,706	-1,768,818	-69.84
Florida	17,780,752	13,052,493	-4,728,259	-26.59
Georgia	4,731,696	4,778,646	46,950	0.99
Hawaii	499,350	1,734,379	1,235,029	247.33
Idaho	138,867	324,283	185,416	133.52
Illinois	5,577,650	2,981,750	-2,595,900	-46.54
Indiana	1,536,770	3,873,203	2,336,433	152.04
Iowa	333,360	792,428	459,068	137.71
Kansas	568,263	903,092	334,829	58.92
Kentucky	643,697	1,618,407	974,710	151.42
Louisiana	2,785,044	3,389,561	604,517	21.71
Maine	228,492	599,407	370,915	162.33
Maryland	4,684,012	1,984,893	-2,699,119	-57.62
Massachusetts	3,776,077	2,777,381	-998,696	-26.45
Michigan	2,675,943	2,904,689	228,746	8.55
Minnesota	973,550	2,649,145	1,675,595	172.11
Mississippi	954,192	1,909,469	955,277	100.11
Missouri	2,504,335	1,680,127	-824,208	-32.91
Montana	100,000	158,978	58,978	58.98
Nebraska	267,083	636,498	369,415	138.31
Nevada	964,174	2,910,751	1,946,577	201.89
New Hampshire	175,763	210,839	35,076	19.96
New Jersey	8,958,831	9,072,667	113,836	1.27
New Mexico	479,074	1,126,763	647,689	135.20

(continued)

¹⁷This range excludes Guam.

**Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas**

State or territory	Existing formula FY 1995 allocation	Beneficiary equity FY 1995 allocation	Difference	
			Dollars	Percentage
New York	29,093,044	16,378,152	-12,714,892	-43.70
North Carolina	2,414,668	6,292,042	3,877,374	160.58
North Dakota	100,000	89,715	-10,285	-10.28
Ohio	2,623,138	7,170,372	4,547,234	173.35
Oklahoma	1,050,786	2,242,488	1,191,702	113.41
Oregon	1,300,587	1,126,733	-173,854	-13.37
Pennsylvania	5,177,510	5,825,048	647,538	12.51
Rhode Island	554,753	1,618,244	1,063,491	191.71
South Carolina	2,679,771	5,747,815	3,068,044	114.49
South Dakota	100,000	89,241	-10,759	-10.76
Tennessee	1,846,877	4,406,616	2,559,739	138.60
Texas	12,636,414	10,282,829	-2,353,585	-18.63
Utah	428,266	1,094,580	666,314	155.58
Vermont	103,727	272,789	169,062	162.99
Virginia	2,642,609	4,722,057	2,079,448	78.69
Washington	2,310,797	2,180,920	-129,877	-5.62
West Virginia	184,768	418,183	233,415	126.33
Wisconsin	1,063,650	2,510,890	1,447,240	136.06
Wyoming	100,000	123,698	23,698	23.70
Guam	2,902	10,411	7,509	258.76
Puerto Rico	7,682,087	3,962,806	-3,719,281	-48.41
Virgin Islands	0	277,015	277,015	N/A
Total	\$174,766,500	\$174,766,500		

Note: N/A = Not applicable.

Taxpayer Equity Formulas

Table V.3 displays title I fiscal year 1995 funding under both the existing and the taxpayer equity formulas. Relative to the existing formula, changes in EMAS' title I allocations under the taxpayer equity formula would range from a decrease of 37.18 percent to an increase of 38.90 percent.

**Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas**

**Table V.3: Title I FY 1995 Funding
Under the Existing and Taxpayer
Equity Formulas**

EMA	Existing formula FY 1995 allocation	Taxpayer equity FY 1995 allocation	Difference	
			Dollars	Percentage
Atlanta, GA	\$4,007,435	\$3,875,802	-\$131,633	-3.28
Austin, TX	1,085,663	1,316,251	230,588	21.24
Baltimore, MD	2,691,832	3,222,078	530,246	19.70
Bergen-Passaic, NJ	1,452,105	1,296,500	-155,605	-10.72
Boston, MA	3,456,473	3,487,398	30,925	0.89
Chicago, IL	4,924,568	4,520,122	-404,446	-8.21
Dallas, TX	3,385,351	3,219,764	-165,587	-4.89
Denver, CO	1,668,174	1,852,549	184,375	11.05
Detroit, MI	1,716,243	1,223,021	-493,222	-28.74
Dutchess County, NY	359,357	380,235	20,879	5.81
Fort Lauderdale, FL	3,635,539	3,612,284	-23,256	-0.64
Houston, TX	5,803,257	5,798,947	-4,309	-0.07
Jacksonville, FL	1,214,884	1,307,433	92,549	7.62
Jersey City, NJ	2,406,293	1,997,181	-409,111	-17.00
Kansas City, MO	1,145,290	926,488	-218,801	-19.10
Los Angeles, CA	12,998,478	15,608,417	2,609,938	20.08
Miami, FL	8,079,775	7,618,124	-461,651	-5.71
Nassau-Suffolk, NY	1,676,365	1,669,138	-7,226	-0.43
New Haven, CT	1,484,228	1,783,837	299,609	20.19
New Orleans, LA	1,798,493	1,739,789	-58,704	-3.26
New York, NY	48,636,026	49,293,321	657,295	1.35
Newark, NJ	5,559,872	5,153,909	-405,962	-7.30
Oakland, CA	2,321,637	3,041,615	719,978	31.01
Orange County, CA	1,490,021	1,145,238	-344,783	-23.14
Orlando, FL	1,286,590	1,469,051	182,461	14.18
Philadelphia, PA	4,124,036	4,793,757	669,721	16.24
Phoenix, AZ	1,096,350	851,132	-245,218	-22.37
Portland, OR	986,510	997,508	10,999	1.11
Riverside-San Bernardino, CA	1,485,035	2,062,696	577,660	38.90
St. Louis, MO	1,137,857	714,755	-423,102	-37.18
San Antonio, TX	960,778	974,770	13,992	1.46
San Diego, CA	2,861,916	3,659,542	797,626	27.87
San Francisco, CA	19,126,679	15,050,088	-4,076,591	-21.31
Santa Rosa-Petaluma, CA	574,580	765,980	191,399	33.31
Seattle, WA	1,920,227	2,065,044	144,817	7.54

(continued)

**Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas**

EMA	Existing formula FY 1995 allocation	Taxpayer equity FY 1995 allocation	Difference	
			Dollars	Percentage
Tampa-St. Petersburg, FL	2,172,534	2,432,673	260,139	11.97
Vineland, NJ	197,896	212,618	14,722	7.44
Washington, DC	5,623,294	5,885,978	262,684	4.67
West Palm Beach, FL	1,961,600	1,805,503	-156,098	-7.96
Caguas, PR	489,261	534,078	44,817	9.16
Ponce, PR	1,020,387	893,101	-127,286	-12.47
San Juan, PR	4,662,110	4,427,284	-234,826	-5.04
Total	\$174,685,000	\$174,685,000		

Title II funding for fiscal year 1995 under the existing and taxpayer equity formulas is shown in table V.4. Relative to the existing formula, changes in states' allocations under the taxpayer equity formula would range from a decrease of 77.14 percent to an increase of 290.91 percent.

**Table V.4: Title II FY 1995 Funding
Under the Existing and Taxpayer
Equity Formulas**

State or territory	Existing formula FY 1995 allocation	Taxpayer equity formula FY 1995 allocation	Difference	
			Dollars	Percentage
Alabama	\$1,349,942	\$3,419,706	\$2,069,764	153.32
Alaska	100,000	270,771	170,771	170.77
Arizona	1,759,313	1,394,264	-365,049	-20.75
Arkansas	753,038	1,761,699	1,008,661	133.95
California	27,867,193	20,848,641	-7,018,552	-25.19
Colorado	1,980,699	1,131,187	-849,512	-42.89
Connecticut	2,404,858	4,397,664	1,992,806	82.87
Delaware	585,604	1,926,550	1,340,946	228.99
District of Columbia	2,532,524	915,525	-1,616,999	-63.85
Florida	17,780,752	14,238,085	-3,542,667	-19.92
Georgia	4,731,696	4,912,075	180,379	3.81
Hawaii	499,350	1,952,008	1,452,658	290.91
Idaho	138,867	260,849	121,982	87.84
Illinois	5,577,650	1,582,396	-3,995,254	-71.63
Indiana	1,536,770	3,990,018	2,453,248	159.64
Iowa	333,360	588,194	254,834	76.44
Kansas	568,263	724,849	156,586	27.56
Kentucky	643,697	1,505,770	862,073	133.93
Louisiana	2,785,044	3,601,976	816,932	29.33

(continued)

Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas

State or territory	Existing formula FY 1995 allocation	Taxpayer equity formula FY 1995 allocation	Difference	
			Dollars	Percentage
Maine	228,492	568,826	340,334	148.95
Maryland	4,684,012	1,561,736	-3,122,276	-66.66
Massachusetts	3,776,077	2,273,689	-1,502,388	-39.79
Michigan	2,675,943	2,126,388	-549,555	-20.54
Minnesota	973,550	2,547,146	1,573,596	161.63
Mississippi	954,192	2,085,536	1,131,344	118.57
Missouri	2,504,335	1,279,436	-1,224,899	-48.91
Montana	100,000	96,946	-3,054	-3.05
Nebraska	267,083	534,883	267,800	100.27
Nevada	964,174	3,408,013	2,443,839	253.46
New Hampshire	175,763	67,697	-108,066	-61.48
New Jersey	8,958,831	9,696,998	738,167	8.24
New Mexico	479,074	1,195,562	716,488	149.56
New York	29,093,044	16,787,811	12,305,233	-42.30
North Carolina	2,414,668	6,826,133	4,411,465	182.69
North Dakota	100,000	33,846	-66,154	-66.15
Ohio	2,623,138	7,253,179	4,630,041	176.51
Oklahoma	1,050,786	2,373,374	1,322,588	125.87
Oregon	1,300,587	950,165	-350,422	-26.94
Pennsylvania	5,177,510	5,283,271	105,761	2.04
Rhode Island	554,753	1,868,964	1,314,211	236.90
South Carolina	2,679,771	6,725,031	4,045,260	150.96
South Dakota	100,000	22,856	-77,144	-77.14
Tennessee	1,846,877	4,778,344	2,931,467	158.73
Texas	12,636,414	9,992,376	-2,644,038	-20.92
Utah	428,266	1,129,611	701,345	163.76
Vermont	103,727	254,367	150,640	145.23
Virginia	2,642,609	4,808,147	2,165,538	81.95
Washington	2,310,797	1,815,450	-495,347	-21.44
West Virginia	184,768	301,237	116,469	63.04
Wisconsin	1,063,650	2,358,029	1,294,379	121.69
Wyoming	100,000	76,242	-23,758	-23.76
Guam	2,902	10,475	7,573	260.97
Puerto Rico	7,682,087	3,973,781	3,708,306	-48.27
Virgin Islands	0	278,726	278,726	N/A
Total	\$174,766,500	\$174,766,500		

(Table notes on next page)

**Appendix V
Comparison of EMA and State CARE Act
Grants Under Current and Equity-Based
Formulas**

Note: N/A = Not applicable.

As demonstrated by these tables, changing the existing title I and II formulas would redistribute funds across EMAS and states. Compared with the existing formulas, either the beneficiary or the taxpayer equity formula would increase funding for more EMAS and states than it would decrease it (see table V.5).

Table V.5: Number of Grantees Experiencing Funding Increases and Decreases

Type of formula	Increased funding	Decreased funding
Title I beneficiary equity	31	11
Title II beneficiary equity	37	16
Title I taxpayer equity	22	20
Title II taxpayer equity	33	20

Nonetheless, under either formula, funding would decrease for some EMAS and states if appropriations remained stable. A number of mechanisms could be employed, however, to avoid EMA and state funding losses when funding equity is improved. Appropriations could be made to a level that obviates funding losses, hold-harmless provisions could be applied, or a limit could be placed on the amount of funds eligible for redistribution. For example, funding losses could be avoided by only redistributing funds that were appropriated in excess of a previous year's amount.

Comments From the Department of Health and Human Services

We solicited comments on our report from the Department of Health and Human Services (HHS) through the Director, Office of HIV/AIDS Policy, Health Education and Human Services. He provided us his comments, along with those of the Division of HIV Services, Health Resources Services Administration, which administers titles I and II of the CARE Act. We also received comments from officials of the Centers for Disease Control and Prevention (CDC).

In their general comments, the HHS officials stated that moving to a more equitable funding formula could cause significant funding changes and potential disruption to service delivery structures. We share these concerns and have discussed methods to avoid these kinds of difficulties in our report.

The HHS officials also raised questions about the appropriateness of the Medicare Hospital Wage Cost (MHWC) Index as a proxy for estimating labor costs for AIDS and HIV services among EMAS and states. While we believe a wage index that is more closely related to these services would be preferable to the MHWC Index, we were unable to locate such an index. On the basis of our discussions with experts, however, we determined that the MHWC Index would be an appropriate alternative to a wage index that is specific to AIDS and HIV services.

In addition, the HHS officials expressed concerns about the adequacy of both the level of funding and the health care infrastructure for AIDS and HIV services. While problems may exist with regard to funding and infrastructure, these issues were not within the scope of our study. The HHS officials provided specific comments about our report, which have been incorporated as appropriate.

The CDC officials indicated that they agreed that a caseload indicator based on an estimate of living cases was preferable to the existing measure; however, they recommended the use of the number of AIDS cases reported during the previous 2 years rather than our proposed measure of weighted cases. These officials stated that our caseload measure would require annual revision, would serve as an incentive to states to underreport AIDS-related mortality, would be technically difficult to compute, and was not a standard method for estimating living AIDS cases.

We agree that our caseload measure might periodically need revision, as would any such measure, in accordance with significant changes in AIDS mortality. However, our caseload measure, when adjusted over time,

Appendix VI
Comments From the Department of Health
and Human Services

would more appropriately reflect the impact of changes in AIDS mortality on the number of people living with AIDS than would a measure based on cases reported in the previous 2 years. We do not believe our proposed measure would serve as an incentive to underreport AIDS-related mortality because states' funding would not be directly affected by their reported mortality data. As discussed in appendix I, we propose the use of weighted AIDS cases as a proxy measure rather than an actual estimate of living AIDS cases to avoid this potential incentive. Finally, we do not believe that our proposed measure would be technically difficult to compute.

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