Cite this article as:
W P Welch and M Wade
The relative cost of Medicaid enrollees and the commercially insured in HMOs
Health Affairs 14, no.2 (1995):212-223
doi: 10.1377/hlthaff.14.2.212

The online version of this article, along with updated information and services, is available at:
http://content.healthaffairs.org/content/14/2/212

For Reprints, Links & Permissions:
http://content.healthaffairs.org/1340_reprints.php

Email Alertings:
http://content.healthaffairs.org/subscriptions/etoc.dtl

Not for commercial use or unauthorized distribution
To Subscribe: https://fulfillment.healthaffairs.org

Health Affairs is published monthly by Project HOPE at 7500 Old Georgetown Road, Suite 600, Bethesda, MD 20814-6133. Copyright © by Project HOPE - The People-to-People Health Foundation. As provided by United States copyright law (Title 17, U.S. Code), no part of may be reproduced, displayed, or transmitted in any form or by any means, electronic or mechanical, including photocopying or by information storage or retrieval systems, without prior written permission from the Publisher. All rights reserved.

Not for commercial use or unauthorized distribution
The Relative Cost Of Medicaid Enrollees And The Commercially Insured In HMOs

by W. Pete Welch and Martcia Wade

Abstract: Under several national health care reform proposals in 1994, many Medicaid beneficiaries would have enrolled in health maintenance organizations (HMOs) with other persons. Several states already enroll Medicaid beneficiaries in HMOs with commercial enrollees. This DataWatch examines the cost of Medicaid enrollees in HMOs relative to the cost of commercial enrollees. Data from nine HMOs indicate that, on average, Aid to Families with Dependent Children (AFDC) and poverty-related Medicaid enrollees cost 13 percent more than commercial enrollees cost. If one adjusts for enrollees’ age and sex, Medicaid costs are 23 percent higher than commercial costs.

Several health care reform proposals at the national and state levels in 1994 would have required (or provided significant financial incentives for) Medicaid beneficiaries to enroll in managed care programs. National reform proposals often included Medicaid beneficiaries in health insurance purchasing pools with privately insured persons. Under some proposals, federal and state contributions to the purchasing pools (also called health alliances) for Medicaid beneficiaries would have been the average premium, which might not have covered the marginal cost of their coverage. Therefore, some of the cost might have been shifted to private payers.

Although major national health care reform is unlikely to be passed in the 104th Congress, the problems that motivated reform remain. Moreover, some of the issues discussed in 1994 are being considered at the state level. Some states, for example, Minnesota and Florida, have implemented voluntary purchasing pools.

States also have considered using their Medicaid programs as a vehicle for reform. In particular, several states have requested authority from the Health Care Financing Administration (HCFA) to modify their Medicaid programs through Section 1115 waivers. The common elements of the waiver proposals are mandatory managed care for Medicaid enrollees and expansions in the number and types of persons eligible for Medicaid. In Tennessee, for example, where an 1115 waiver was approved in 1993 and

Pete Welch is a principal research associate and Martcia Wade a senior research associate at The Urban Institute in Washington, D.C.
implemented as TennCare in 1994, all uninsured persons are eligible (including those with preexisting conditions). The program is financed by (1) projected savings from managed care; (2) premium contributions, deductibles, and copayments for persons with household income above the federal poverty level; and (3) federal contributions not to exceed estimated federal Medicaid expenditures in the absence of the waivers.

There are concerns that the capitation payments for enrollees are too low in some of the 1115 states. For example, when the Tennessee Medical Association filed suit against the state, one of its principal complaints was that payment rates were inadequate. If the payments offered by the states or bid by managed care organizations are too low, these organizations may eventually collapse financially and thereby disrupt or jeopardize the care provided to enrollees. Thus, the adequacy of the capitation payment is critical to managed care organizations’ ongoing ability to provide high-quality care to Medicaid enrollees.

The expansion of managed care for Medicaid enrollees and their inclusion in purchasing pools with privately insured persons raise questions related to the cost of Medicaid enrollees. First, what is the expected cost of Medicaid enrollees in health maintenance organizations (HMOs)? Second, what would be the impact of including the Medicaid population in a purchasing pool on the premiums of other members of the pool and on federal expenditures for Medicaid enrollees? The answers to these questions are important to accurately estimate the cost of future reform proposals.

This study analyzes the cost of Medicaid enrollees in HMOs relative to the cost of commercial enrollees using data from a sample of nine HMOs. The primary strength of our approach is that it compares the costs of these two enrollment groups in a common health care delivery system, as would have been the case under several reform proposals and which is sometimes the case in the 1115 states’ managed care organizations. HMOs are one of the few types of health insurers that now include Medicaid and commercial enrollees in the same delivery system. Hence, HMO cost data offer a unique opportunity to analyze what might happen under purchasing pools and roughly assess the adequacy of Medicaid capitation rates. Another advantage of our approach is that it analyzes a broad range of costs, whereas previous work has focused on expenditures for a limited range of services, typically hospital services.

Our approach has some disadvantages. One disadvantage, relative to policy considerations, is that our data do not include fee-for-service plans. Although purchasing pools might give low-income persons a strong incentive to enroll in HMOs where they are available, in some locations (such as most rural areas) HMOs are not available. Moreover, HMOs may not always be among the low-cost plans and, therefore, may not be the pre-
dominant choice among Medicaid enrollees. A second disadvantage is the data’s omission of aged, blind, and disabled Medicaid enrollees. A few 1115 waiver states include the blind and disabled in their managed care programs. In addition, although these groups might also have been included in purchasing pools under some reform proposals, they are rarely enrolled in HMOs at present.

Methodology And Analysis

In reviewing our methodology, readers should bear in mind that all data were voluntarily provided by nine HMOs. The HMOs typically provided aggregated data on Medicaid and commercial enrollees’ costs, member months, and age/sex distribution. Cost was disaggregated by broad categories of services.

**Measure of relative cost.** The cost figures represent payments derived from claims data for the six individual practice associations (PAs) in the sample. For the remaining three (prepaid group practices), cost figures are derived from encounter data. Encounters were weighted by the average cost to the HMO; that is, admissions were weighted by diagnosis-related group (DRG)-specific average cost, and physician visits, by specialty-specific average cost. Each HMO aggregated data from a twelve-month period in 1992 or 1993.

Our measure of relative cost is the ratio of the cost per member per month of Medicaid enrollees in HMOs and that of commercial enrollees. Our analysis includes Medicaid enrollees whose eligibility is based on Aid to Families with Dependent Children (AFDC) standards as well as low-income children and pregnant women. We label this group “AFDC and poverty-related Medicaid enrollees.” The analysis excludes aged, blind, and disabled enrollees whose Medicaid eligibility is based on Supplementary Security Income (SSI) standards.

To maximize comparability, the HMOs adjusted AFDC and poverty-related Medicaid and commercial cost estimates in three ways. First, an HMO may pay lower rates to hospitals and physicians when services are provided to a Medicaid enrollee rather than to a commercial enrollee. (That is, a different fee schedule is used for the two enrollee groups.) In such cases (four out of nine), commercial rates were applied to the services used by the Medicaid population.

Second, in some cases, the HMOs adjusted costs for differences between Medicaid and commercial coverage. Medicaid tends to cover a broader range of services than commercial plans do. For example, Medicaid typically covers prescription drugs, which may not be covered for all commercial enrollees. In addition, commercial enrollees often are responsible for
copayments and deductibles that do not apply to Medicaid enrollees. Such coinsurance provisions lower the cost to commercial insurers.

In four HMOs, coverage was essentially the same. In two HMOs, coverage differed only in terms of copayments. Here the copayments made by the commercial enrollees were added to the HMOs’ costs. In the remaining three HMOs, coverage differed only in terms of the scope of services. For two of the three HMOs, the services (for example, drugs) that were covered by Medicaid but not by commercial insurance were dropped from the analysis, so we compared costs for the common set of services. For the remaining HMO, we were unable to obtain data for a common set of services, such that the ratio of Medicaid to commercial costs is biased upward.

Third and finally, to control for demographic differences between the AFDC and poverty-related Medicaid population and the commercially insured population, cost figures were age/sex adjusted using indirect standardization. This method calculates the actual per member per month cost for each age/sex cell for all enrollees regardless of insurer. The actual per member per month cost for all enrollees serves as the expected per member per month cost for each enrollment group. The age/sex-adjusted cost for the Medicaid group is its actual cost divided by its expected cost, which is per member per month cost for all enrollees times Medicaid member months.

Below we report this cost ratio for each HMO in our sample. Our summary measure across all HMOs in the sample is the simple mean, unweighted by enrollment or other HMO characteristics. It should be noted that although the adjustments described above make the estimates more comparable than they otherwise would be, the cost figures were not derived from uniform information systems. However, we believe that the remaining differences do not systematically bias our conclusions.

Choice of HMOs. To be included in our nine-plan sample, an HMO had to satisfy four criteria. The first criterion was having a management information system capable of estimating cost by age/sex groups. The second criterion was having sufficient numbers of enrollees (at least 2,500 Medicaid enrollees and at least 2,500 commercial enrollees in the same delivery system). The third criterion was willingness to participate and to provide the data within the time frame of the study.

The fourth criterion reflected concerns about enrollee-level selection bias, a prevalent methodological issue in analyses of HMOs. The literature suggests that commercially insured persons (with a choice of coverage) who enroll in HMOs tend to be healthier and to use fewer services than persons who choose fee-for-service plans. Thus, this analysis would be comparing Medicaid enrollees with the healthiest and therefore least costly persons with commercial coverage. If there were no selection bias among Medicaid
enrollees, the estimated cost ratios would be biased upward, that is, biased toward finding the cost of Medicaid enrollees to be greater than the cost of commercial enrollees. However, biased selection also has been found for Medicaid enrollees, with healthy beneficiaries disproportionately enrolling in HMOs.\textsuperscript{10}

Although we lacked a means for eliminating selection bias among commercial enrollees, we devised a strategy for minimizing selection bias among Medicaid enrollees. Thus, the fourth criterion limited our sampling frame to HMOs in states (or areas within a state) with mandatory managed care for the Medicaid population.\textsuperscript{11} It is useful to think of two types of mandatory managed care programs. In some states Medicaid enrollees must choose from among HMOs; in other states they must choose between HMOs and fee-for-service primary care case management.\textsuperscript{12} Under the latter, Medicaid enrollees choose or are assigned a primary care physician, who assumes responsibility for monitoring and coordinating their care. This physician must approve visits to specialists and hospitalizations and may or may not have a financial incentive to contain costs. Nevertheless, theoretically and empirically, managed care can reduce inappropriate and sometimes costly services in the fee-for-service system.\textsuperscript{13}

The sampling frame does not eliminate all potential sources of selection bias. Ideally, one would compare the costs of Medicaid and commercial enrollees, both of whose HMO enrollment was mandatory. Under our approach, there could be selection bias between Medicaid enrollees who choose HMOs and those who choose primary care case management, with HMOs disproportionately enrolling the healthy. Because our approach appears to mitigate selection bias among Medicaid enrollees but not commercial enrollees, if anything, this analysis is biased toward finding the cost of Medicaid enrollees to be higher than the cost of commercial enrollees.\textsuperscript{14}

**Sample characteristics.** In general, the sample HMOs are not nationally representative (Exhibit 1). However, because they tend to be larger and have a larger percentage of Medicaid enrollees than the average HMO, the sample HMOs are important providers in their geographic areas and in the Medicaid program. All but two HMOs had between 100,000 and 500,000 enrollees. The other two had more than 80,000 enrollees. Four HMOs had between 3,500 and 5,000 Medicaid enrollees. The rest had more than 10,000 Medicaid enrollees each. On average, Medicaid constituted 11 percent of the HMOs’ enrollment.

The sample HMOs also tend to be older and more likely to be not-for-profit and group model than HMOs nationwide. They most closely resemble the universe of HMOs in their geographic distribution. No more than two HMOs were in the same state, and six states were represented.
Exhibit 1
Characteristics Of Sample HMOs Versus All HMOs

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Nation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average total</td>
<td>224,274</td>
<td>75,791</td>
</tr>
<tr>
<td>Average Medicaid</td>
<td>25,875</td>
<td>3,51Bc</td>
</tr>
<tr>
<td>Medicaid as percent of total</td>
<td>11.5%</td>
<td>4.6%c</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>22%</td>
<td>19%</td>
</tr>
<tr>
<td>South</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Midwest</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>West</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td><strong>Age of HMO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 8 years</td>
<td>0%</td>
<td>39%</td>
</tr>
<tr>
<td>8-15 years</td>
<td>5 6</td>
<td>47</td>
</tr>
<tr>
<td>16 years or more</td>
<td>44</td>
<td>14</td>
</tr>
<tr>
<td><strong>Not-for-profit</strong></td>
<td>89%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Type of HMO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>Group</td>
<td>22%</td>
<td>9</td>
</tr>
<tr>
<td>Network</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>IPA</td>
<td>33%</td>
<td>58</td>
</tr>
<tr>
<td>Mixed</td>
<td>33%</td>
<td>16</td>
</tr>
</tbody>
</table>

**Sources:** See below.

- InterStudy, The InterStudy Competitive Edge: HMO Directory 2, no. 2 (Excelsior, Minn.: InterStudy, 1993).
- The only published national figures pertain to Medicaid and Medicare enrollment.

**Notes:** HMO is health maintenance organization; IPA is individual practice association.

Study Results

Overall, the data suggest that, adjusting for age and sex, cost per AFDC and poverty-related Medicaid enrollee is 23 percent higher than the cost per commercial enrollee (Exhibit 2). Because the costs have been adjusted for differences in provider payment rates and coverage, the higher relative cost of Medicaid enrollees reflects their greater volume and intensity of service use, which may indicate greater health needs. However, for three out of nine HMOs (A, G, and I in Exhibit 2), Medicaid costs were within 10 percent of commercial enrollees’ costs—that is, the costs were essentially the same.

Of these three HMOs with age/sex-adjusted cost ratios in the neighborhood of 1.0, two have a notably high percentage of Medicaid enrollees (that is, more than 40 percent). This could suggest an inverse relationship between relative cost and the percentage of Medicaid enrollees. There are at least two possible explanations for such a relationship. First, HMOs with
Exhibit 2

Cost Of Medicaid Versus Commercial Enrollees In HMOs

<table>
<thead>
<tr>
<th>HMO</th>
<th>All enrollees</th>
<th>Excluding women of childbearing age</th>
<th>Children</th>
<th>Adults</th>
<th>Cost ratio without age/sex adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.01</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>1.12</td>
</tr>
<tr>
<td>B</td>
<td>1.20</td>
<td>1.08</td>
<td>0.99</td>
<td>1.51</td>
<td>1.19</td>
</tr>
<tr>
<td>C</td>
<td>1.55</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>1.35</td>
</tr>
<tr>
<td>D</td>
<td>1.36</td>
<td>1.19</td>
<td>1.16</td>
<td>1.65</td>
<td>1.31</td>
</tr>
<tr>
<td>E</td>
<td>1.40</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>1.25</td>
</tr>
<tr>
<td>F</td>
<td>1.44</td>
<td>1.38</td>
<td>1.44</td>
<td>1.53</td>
<td>1.43</td>
</tr>
<tr>
<td>G</td>
<td>1.09</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>0.96</td>
</tr>
<tr>
<td>H</td>
<td>1.12</td>
<td>1.07</td>
<td>1.06</td>
<td>1.19</td>
<td>0.99</td>
</tr>
<tr>
<td>I</td>
<td>0.91</td>
<td>0.88</td>
<td>0.87</td>
<td>0.91</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Source: Authors’ sample of nine health maintenance organization (HMO) plans.

Notes: Medicaid enrollees are limited to those whose eligibility is based on Aid to Families with Dependent Children (AFDC) standards as well as low-income children and pregnant women. Costs were computed per member per month and were adjusted for differences in provider payment rates and coverage.”Adjusted cost ratios” have also been adjusted for age and sex. The mean adjusted cost ratio for all enrollees is 1.23 (standard error, 0.068; 95 percent confidence interval, 1.07-1.39). The mean cost ratio without age/sex adjustment is 1.13 (standard error, 0.079; 95 percent confidence interval, 0.95-1.32).

Not available.

A high percentage of Medicaid enrollees may deliver services more efficiently to Medicaid enrollees than do HMOs with a low percentage of Medicaid enrollees, because doing so requires considerable experience. Second, the low ratios may reflect characteristics of the commercial population represented in the ratio’s denominator, rather than characteristics of the Medicaid population or the HMO’s delivery of services.

The cost ratios for several HMOs also were computed excluding women of childbearing age, because Medicaid women in this age group are more likely to have a delivery than are commercially insured women in the same age group. At least in part, the higher likelihood of a delivery is attributable to the recent expansions of Medicaid eligibility to low-income pregnant women. Exhibit 2 shows that the cost ratio of Medicaid enrollees to commercial enrollees is lower when women of childbearing age are excluded. However, the ratio is still greater than 1, further supporting the finding that AFDC and poverty-related Medicaid enrollees are somewhat more expensive than commercial enrollees. In addition, cost ratios were lower for children than for adults.

Exhibit 2 also presents the relative cost ratio unadjusted for age and sex. Overall, Medicaid unadjusted costs are 13 percent above commercial costs, whereas adjusted costs are 23 percent above commercial costs. We discuss the policy relevance of the adjusted and unadjusted cost ratios below.17

Where possible, the cost ratios were also computed by type of service...
When the data allowed disaggregation, we were able to delineate costs, at a minimum, for physician services and inpatient hospital services. In a few HMOs we were also able to delineate hospital outpatient services, which included services delivered in ambulatory surgery centers as well as in hospital outpatient departments and emergency rooms. Any cost not in these categories was placed into the “other” category, which is too heterogeneous across HMOs to be useful in its own right.

The most noticeable pattern in Exhibit 3 is that the cost ratio for physician services is lower than the overall cost ratio (with the exception of HMO H). When outpatient services are delineated, they are consistently above the overall cost ratio, which is consistent with Medicaid beneficiaries’ higher-than-average use of emergency rooms.

Data from HMO B allowed us more analytic flexibility. When hospital and physician costs for obstetrical services were combined, the age/sex-adjusted ratio was 2.26. This is not surprising, given that some Medicaid beneficiaries are eligible because they are pregnant, and it is consistent with lower cost ratios when women of childbearing age are excluded.

There is concern that Medicaid enrollees have disproportionate needs for mental health/substance abuse services. When hospital and physician costs for mental health/substance abuse services in HMO B were combined, the age/sex-adjusted ratio was 0.92. This indicates that in HMO B the use of mental health/substance abuse treatment services by Medicaid benefici-

---

**Exhibit 3**

Cost Of Medicaid Versus Commercial Enrollees In HMOs, By Type Of Service

<table>
<thead>
<tr>
<th>HMO</th>
<th>Physician</th>
<th>Inpatient</th>
<th>Outpatient</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.97</td>
<td>1.11</td>
<td>-</td>
<td>1.05</td>
<td>1.01</td>
</tr>
<tr>
<td>B</td>
<td>1.07</td>
<td>1.56</td>
<td>-</td>
<td>0.79</td>
<td>1.20</td>
</tr>
<tr>
<td>C</td>
<td>1.42</td>
<td>1.91</td>
<td>1.67</td>
<td>0.85</td>
<td>1.55</td>
</tr>
<tr>
<td>D</td>
<td>1.18</td>
<td>1.48</td>
<td>1.73</td>
<td>-</td>
<td>1.36</td>
</tr>
<tr>
<td>E</td>
<td>1.24</td>
<td>1.37</td>
<td>1.83</td>
<td>1.54</td>
<td>1.40</td>
</tr>
<tr>
<td>F</td>
<td>1.31</td>
<td>1.69</td>
<td>1.63</td>
<td>1.32</td>
<td>1.44</td>
</tr>
<tr>
<td>G</td>
<td>0.91</td>
<td>1.23</td>
<td>1.27</td>
<td>1.53</td>
<td>1.09</td>
</tr>
<tr>
<td>H</td>
<td>1.26</td>
<td>1.14</td>
<td>-</td>
<td>0.93</td>
<td>1.12</td>
</tr>
<tr>
<td>I</td>
<td>0.65</td>
<td>1.35</td>
<td>0.80</td>
<td>0.55</td>
<td>0.91</td>
</tr>
<tr>
<td>Mean</td>
<td>1.11</td>
<td>1.43</td>
<td>1.49</td>
<td>1.07</td>
<td>1.23</td>
</tr>
</tbody>
</table>

**Source:**Authors’ sample of nine health maintenance organization (HMO) plans.

**Notes:** Medicaid enrollees are limited to those whose eligibility is based on Aid to Families with Dependent Children (AFDC) standards as well as low-income children and pregnant women. Costs were computed per member per month and were adjusted for differences in provider payment rates, in coverage, and in the age/sex composition of the enrollment groups. The delineation of service types varies somewhat across HMOs.

*a* Outpatient hospital cost is included in “other” cost.

*b* Not available.
aries is less than that by commercial enrollees. The opposite pattern, however, holds for HMO H, in which inpatient and physician services costs have a ratio of 1.63 for mental health/substance abuse services but a ratio of only 1.17 for nonmental health services. A more extensive database will be necessary to systematically investigate the use of mental health services by Medicaid enrollees.

We note several limitations. First, selection bias is almost always an issue in studies of HMO enrollees. In this case, most commercial enrollees had the option to enroll in a fee-for-service plan. According to the literature, commercial enrollees in HMOs tend to be healthier than fee-for-service enrollees. In addition, Medicaid enrollees in four of the HMOs studied here could have chosen primary care case management. As with commercial enrollees, Medicaid enrollees who choose HMOs may be healthier than average. Although we attempted to reduce selection bias by only including HMOs in states with mandatory managed care, our results are biased toward finding Medicaid costs to be higher than commercial costs.

Second, the higher turnover for Medicaid enrollees than for commercial enrollees increases Medicaid per member per month costs, because medical needs arising during periods without coverage can sometimes be deferred until one obtains coverage. Universal coverage would greatly decrease this turnover and, hence, would lower per month costs relative to our measures. Again, the results are biased toward high Medicaid costs.

The third limitation is the sample size of only nine HMOs. Their cost ratios range from approximately 1.0 to 1.5. The 95 percent confidence interval is 1.07 and 1.39. Moreover, because the sample size is small, we cannot examine the characteristics of HMOs that might affect their cost ratios—such as characteristics of Medicaid enrollees, how services are provided by the HMO, and the state Medicaid program in which the HMO participates. Systematic examination of these factors with a large sample might explain some of the variation in cost ratios and increase our confidence in the results. For these reasons, more research is needed.

Policy Implications

Among our sample of HMOs, AFDC and poverty-related Medicaid enrollees are 23 percent more expensive than commercial enrollees if the differences in the age/sex structure of the two groups are taken into account and 13 percent more expensive if not. Do these results indicate that including AFDC and poverty-related Medicaid enrollees in purchasing pools with commercial enrollees (and other privately insured persons) would increase the premiums of the privately insured?

The answer depends on the nature and level of the contribution from
government to the purchasing pool on behalf of Medicaid enrollees. Suppose that government paid the pool the same premium (in terms of dollars per enrollee) as other payers and that this premium was the same regardless of the enrollee’s age and sex. Then the inclusion of Medicaid enrollees would raise the average premium. The size of the increase would depend on Medicaid’s proportion of the pool’s enrollment. For instance, if one-sixth of the enrollees in the pool were AFDC and poverty-related Medicaid beneficiaries, the inclusion of Medicaid beneficiaries would increase the premium by about 2 percent. (Keep in mind that this is likely to overstate the increase.)

On the other hand, suppose that for each enrollee the government contribution equaled the average cost of all enrollees (Medicaid and commercial enrollees) of the same age and sex. Then our finding that the age/sex-adjusted cost is 23 percent higher would be relevant. If one-sixth of the enrollees in the pool were Medicaid beneficiaries, the inclusion of Medicaid beneficiaries would increase the premium by about 4 percent. Our focus on age/sex-adjusted ratios presumes that premiums would be similarly adjusted in purchasing pools. Overall, if the government contribution on behalf of Medicaid enrollees was sufficient to compensate for their higher average cost, there would be no impact on premiums.

What do these results imply for assessing the adequacy of capitation rates in 1115 waiver states for Medicaid enrollees in HMOs? The results suggest that Medicaid HMO premiums should be 113 percent of commercial HMO premiums (after adjusting for coverage differentials) to cover the cost of treating these enrollees. Medicaid premiums that are less than commercial rates should probably cause concern about the adequacy of rates for ensuring access to care for enrollees.

As we noted above, there are two limitations to our ability to apply these results to the policy issue at hand. The first limitation is that our data are limited to HMOs. Under reform proposals, some Medicaid enrollees may choose fee-for-service plans. Although the cost ratios could be the same in fee-for-service plans as in HMOs, we have no evidence one way or the other. The second limitation is that our results apply only to Medicaid enrollees whose eligibility is based on AFDC and to low-income children and pregnant women. However, some national reform proposals and some mandatory managed care programs would include aged, blind, and disabled enrollees in the more general system.

In spite of these limitations, this analysis represents one of the first attempts to estimate the cost of Medicaid enrollees relative to commercial enrollees. We believe that these results will assist the federal government’s efforts to model the fiscal impacts of reform proposals and states’ efforts to assess the adequacy of Medicaid capitation rates in HMOs.
This research was funded by The Henry J. Kaiser Family Foundation. Opinions expressed are those of the authors and do not necessarily reflect the positions of the Kaiser Family Foundation or The Urban Institute. The authors thank the health maintenance organizations that contributed data for these analyses but that necessarily must remain anonymous. The research could not have been conducted without their participation. The authors also acknowledge Mary Dewane for her encouragement and advice.

NOTES

1. Section 1115 waivers from Hawaii, Ohio, Oregon, Rhode Island, South Carolina, and Tennessee have been approved by the federal government and are being or have been implemented in those states. Several other states have submitted or are submitting waiver applications.

2. The court subsequently dismissed the case on grounds that were unrelated to the issue of payment rate adequacy.

3. “Commercial enrollees” is an industry term that encompasses HMO enrollees with employer-sponsored group coverage. They are a subset of privately insured enrollees, which also includes persons with nongroup coverage.

4. The literature on the relative health care costs of Medicaid beneficiaries and commercial enrollees in HMOs usually compares their hospital charges or lengths-of-stay. See L.R. Bums, D.R. Wholey, and M.O. Abeln, “Hospital Utilization and Mortality Levels for Patients in the Arizona Health Care Cost Containment System,” Inquiry (Summer 1993): 142-156. Where health insurance status is not known, the literature may compare low-income and high-income persons’ costs. Typical of this literature, Arnold Epstein and colleagues found that hospitalized patients of lower socioeconomic status have longer stays and, presumably, require more resources. A.M. Epstein, R.S. Stem, and J.S. Weissman, “Do the Poor Cost More? A Multihospital Study of Patients’ Socioeconomic Status and Use of Hospital Resources,” The New England journal of Medicine (19 April 1990): 1122-1128. Less typical of this literature, Bums and colleagues found Medicaid patients to be less severely ill than privately insured patients for some diagnoses.

5. The analysis is in terms of cost ratios because of the difficulties of comparing absolute dollar costs across HMOs.

6. Those who qualify as medically needy by AFDC standards may also be enrolled in some HMOs.

7. Calculation details are available from the authors at The Urban Institute, 2100 M Street, NW, Washington, DC 20037.

8. Groups with 2,500 members have actual costs within 20 percent of expected costs 95 percent of the time. C.W. Wrightson Jr., HMO Rate Setting and Financial Strategy (Ann Arbor, Mich.: Health Administration Press Perspectives), 131.


11. States with mandatory HMO enrollment include Arizona, Minnesota, Missouri, Ohio, and Wisconsin. Florida, Kentucky, Massachusetts, Michigan, New York, and North Carolina require that beneficiaries in certain locations enroll in HMOs or primary care case management. In addition, Oregon requires Medicaid enrollees to enroll either in HMOs or physician care organizations, which are capitated for all physician services. (In many of these states enrollment is not mandatory for all categories of beneficiaries, such as the disabled.)
12. We included HMOs in states giving Medicaid beneficiaries a choice of primary care case management to increase the number of HMOs that met our criteria. In fact, four out of the nine HMOs in the eventual sample participated in Medicaid programs with a primary care case management option.


14. A sizable proportion of Medicaid beneficiaries gain or lose their eligibility in any given year. This results in high turnover rates among beneficiaries in HMOs. Because of unmet need, this increases per member per month cost. Universal coverage probably would decrease this turnover. Thus, we may further overestimate cost for Medicaid beneficiaries under reforms resulting in universal coverage.

15. The cost ratio is significantly different from 1.00 at the 5 percent level (with eight degrees of freedom). The ratio unadjusted for age and sex (see below) is not significantly different from 1.

16. Data on Medicaid enrollment are not reported, in order to preserve each HMO’s anonymity.

17. The unadjusted ratios are clearly lower than the adjusted ratios for four HMOs (C, D, E, and I), essentially the same for two (B and F), and higher for one (A). AFDC and poverty-related Medicaid enrollees are disproportionately children (a group with low cost per member per month) and females of childbearing age (a group with high cost per member per month). The fact that adjusting for age and sex tends to increase the relative cost of Medicaid enrollees suggests that the proportion of children lowers the expected cost of Medicaid enrollees more than the proportion of females of childbearing age raises the expected cost.

18. Even though favorable selection for Medicaid enrollees may bias downward our estimate of the absolute cost of Medicaid enrollees, the presumed greater favorable selection for the commercially insured probably biases upward our estimate of the relative cost of Medicaid enrollees.

19. Whereas our analysis has been in terms of per capita cost, premiums would vary by contract type, such as single, couple, and family. We do not model this complexity.